quilted waistcoats on a generous Monthly Liesure Plan. A shop a little further on has a rather more subtle approach to the Christmas shopper. It sells stick-on labels of all types with such inscriptions as 'Genuine Pigskin,' 'Highest Quality' and 'Real English Crystal.' After a brief call here our shopper wanders on, perhaps not reluctant to come across a Woolworth's. But such a hope is more than futile. The next shop is devoted to 'Skins Accessories'—useless to the man who has ignored Selected Skins. And so past the pawn shop (remember it?) and into Long Lane where he could have his saw sharpened or his armature rewound. The far end of Long Lane has even less Christmas atmosphere, being devoted to cafés, turkeys and industrial laundry.

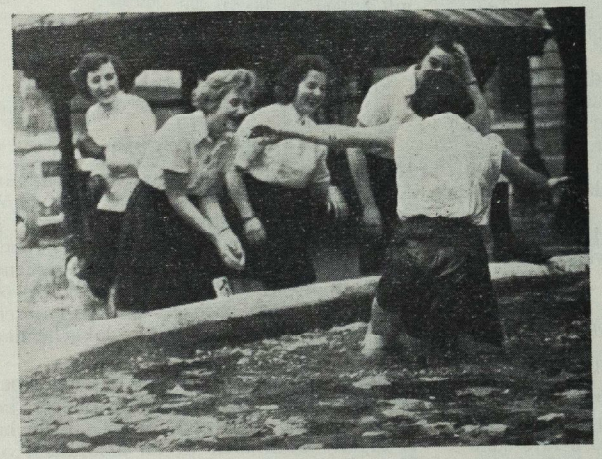
Turning through the Market and up St. John Street the prospect remains gloomy. Slicing machines, weighing scales (tactlessly not registering below 15 stone) and 'industrial wheels' offer little traditional festive cheer. At the entrance to St. John's Lane the situation even deteriorates slightly with cisterns, W.C.s and lead traps. (What fiendish person sets lead traps in his bathroom? Do they snap shut when the water rises wastefully above the six-inch level?)

Through the arch into St. John's Square he can buy watch components, but not in the form of a handy 'make-it-yourself' kit. Here also, next door to Foggo Bros. the Diamond Setters, is a shabby little shop, whose peeling letters on the window proudly advertise: —

EMBROIDER
AND
REGALIA

Surely none but the dear ones of Bart's men have received regalia at Christmas? Our shopper stands outside the dreary window, imagining the luxurious finery stored within —perhaps rehearsing to himself the opening phrases of a fairy-land negotiation—"A shilling's worth of embroider, please" or "May I inspect a selection of your more expensive regalia?" . . .

He finally returns to the hospital laden with strangely shaped parcels, and wraps them hurriedly in the privacy of his room. The recipients are surprised or shrug their shoulders resignedly, depending on the years he has been at the hospital. It little matters if he has forgotten to enclose a note. They get some satisfaction from the achievement of recognition, and write back, "Darling Peter, Thank you, you Angel, for the simply fascinating twist drill/industrial wheel/lodge fitting you sent me for Christmas . . ." But they really have to fall back on the knowledge that it is the thought behind the gift that counts.



Keep your powder dry!

CANDID CAMERA

Rugby Club Ball

This was held in the Recreation Room of College Hall on the evening of November 21. The Club were proud to welcome three of their Vice-Presidents, Mr. Capps, Mr. Coltart and Dr. Oswald, together with their wives. The refreshments were very kindly organised by members of the Ladies' Hockey Club, and after sampling these by candle-light everyone returned to the Recreation Room for the Cabaret, which was performed almost solely by members of the Club. Perhaps the outstanding item amongst a number of a high standard was a duet, both vocal and dancing, by Mackenzie and Lammiman, complete with policemen's helmets.

Afterwards Mrs. Capps kindly drew the winning tickets in the raffle, and great suspicion was aroused when the first ticket out was found to be owned by Mrs. Coltart. However, Mr. Coltart very kindly returned this prize and awarded it to Janice Swallow and John Dobson whom he adjudged to be the winners of a rock-and-roll competition. At 2 a.m. the first Rugger Ball for three years was regretfully brought to a close.

Out Patients Go Gay

On Friday, December 7th, the Medical and Surgical out-patient firms entertained their Chiefs at a mammoth firm party in College Hall. The recreation room was decorated to the nines. Music was supplied by the small combo of David Jones with Brian Richards on the clarinet. The tables groaned comfortingly with food and drink. Notable among the dancers and floor-side conversationalists were Dr. Bourne, Dr. Cullinan, Mr. Taylor and Dr. Balme. It was generally agreed to be a pleasant variation on the more *intime* type of individual firm party, but not to be taken as a precedent for general collectivisation.

Piano Wanted

The Rugger Club have been a veritable hub of social activity recently, having held three hops already this season in addition to their Ball. Unfortunately the piano which has been a mainstay of these lively occasions is no longer available, and the financial experts of the Students' Union are gloomy about the possibility of hiring one economically. If any old Bart's man finds that a piano is getting in his way around his house, the Rugger Club would be only too delighted to come and relieve him of it. Would the owners of lonely Hurdy-Gurdies please contact the Hon. Sec.

Congratulations

to Sir Thomas Dunhill, G.C.V.O., C.M.G., on his eightieth birthday.

In The Drink

Candid Camera this week catches Miss Janice Swallow receiving the Captain's Privilege from her hockey team. Another captain who might be sympathetic is Mr. R. Ridsdell-Smith, who had a more spontaneous experience of the same sort when captaining a Hospital Firefly in a recent inter-hospital event on Brent Reservoir. No discredit to Bart's, however, for every boat in the race either capsized or retired, and just to be in the picture the Race Controller fell in while getting into the rescue launch.

The crew, Mr. R. Gabriel, out for the first time, may well have thought that hospital sailing is a more energetic sport than it appears. But Mr. Ridsdell-Smith assures me that it is so long since he last capsized that he had almost forgotten how to swim. Most of us would probably prefer to risk Ladies' Hockey.

Journal Staff

Mr. J. T. Silverstone has resigned from the post of Editor. We hear that he now intends to devote himself more exclusively to Space Medicine, but the public will be pleased to hear that he will continue to serve them in the post of Honorary Treasurer to the Students' Union. We wish him equal success in his new office.

The Assistant Editor, Mr. J. S. Price, has been elected Editor in his place. Mr. J. K. Chong has been elected to the post of Assistant Editor.

Mr. L. J. Chalstrey who has been Manager for the past year has also resigned. The two editors who have worked with him have regarded him as a 'benevolent chancellor,' and he has been largely responsible for initiating a more luxurious era of *Journal* production.

Mr. C. J. Carr, the Assistant Manager, has been elected Manager in his place. Mr. M. I. D. Cawley has been elected Assistant Manager.

NOTICES

Literary Prize

THE Publications Committee have awarded the Literary Prizes for 1956 as follows: —

A prize of five guineas for the best scientific contribution *to* N. C. Roles for his paper 'An Unusual Case of Addison's Disease' (September).

A prize of five guineas for the best non-scientific contribution *to* J. G. Edwards for his article 'What do you think of America?' (March). 'William Palmer' *by* M. J. Linnett, proxime accessit, was awarded a prize of two guineas.

In view of the high standard of photography and drawing the Committee decided to ward two prizes of two guineas each for the best contributions in these fields:

Photography: 'Outside the Henry VIII Gate' *by* V. T. D. Major (March).

Drawing: Surgical Illustrations *by* A. M. Hall-Smith (June).

Sports Editor

The post of Sports Editor will fall vacant on April 1. Applications are invited for this post; they should be sent to the Editor by the end of February. No previous journalistic experience is necessary.

OBITUARIES

Charles William Archer

Charles William Archer, generally known to his friends as 'Chas', was educated at Rugby and Trinity College, Cambridge, from which he proceeded to Bart's in 1906, qualifying in 1909. He was House Surgeon to the late Mr. Bruce Clarke, and on conclusion of the appointment continued surgical studies at the hospital. He passed his F.R.C.S. (Eng.) in 1913. Subsequently he practiced in Harrogate and Hull, and during the 1914-18 war he served in the navy.

On the death of his father he retired from active practice and settled in Dorset. There he devoted his time to local county activities and sat on the bench as a Justice of the Peace. Throughout his life he maintained a keen interest in many types of engineering, especially joinery and wireless. He was seldom without a workshop, a good lathe, and a modern collection of tools. His engineering achievements included scale models of all sorts of engines and pumps (which, of course, all worked), and a good-sized reflecting astronomical telescope, the mirrors for which he ground himself.

He continued to keep in close touch with the hospital through membership of the Fountain Club, occupying the Chair as Master for 1935. His death on June 16 will be mourned by all his old colleagues and innumerable friends. Especially will he be missed at the Fountain Club at whose monthly dinners he was a most regular and popular member.

Godfrey Dru Drury

The death is announced of Dr. Godfrey Dru Drury, M.R.C.S., L.R.C.P., F.S.A. He was born on March 16, 1880, and educated at Monkton Combe School. After qualifying at Bart's in 1904, he held appointments of house-surgeon and house-physician at the Seamen's Hospital, Greenwich, and then settled at Corfe Castle, Dorset, where he was medical practitioner for 50 years.

He married Ethel Blanche Sims, also of Bart's, and there were two sons and a daughter of the marriage.

He was on the staff of the Cottage Hospital and the Children's Hospital at Swanage and served on the Dorset Local Medical Committee. His distinctions included the Freedom of the City of London and he was a Fellow of the Society of Antiquaries for 28 years. He became a national authority on Purbeck Marble, church brasses and effigies, and on Mediaeval charters and seals, with a wide knowledge of heraldry, and he was an expert on the history of Corfe Castle. With such attainments it is not surprising that he became chairman and later president of the Dorset Natural History and Archaeological Society and The Purbeck Society were fortunate to have him as their chairman. He served on the executive committee of the Friends of Salisbury Cathedral and on the Dorset Church Building Committee, but, perhaps, the work nearest his heart was his chairmanship of the Salisbury Diocesan Advisory Committee, a post he held for twenty years.

For 25 years he served his parish church as churchwarden and made himself entirely responsible for the tidiness of the churchyard. There was scarcely an aspect of village life with which he was not connected and his interests also included the formation and leadership of the local cricket club.

The death of this well-known and much-loved figure leaves a gap that will long be felt in his own corner of England.

ANNOUNCEMENTS

Births

BENNETT.—On December 1, at Epsom District Hospital to Elizabeth and Dr. Antony Bennett, Fetcham, Surrey, a brother for Sally.

FAIRBAIRN.—On November 23, at St. Bart's Hospital to Meriel (*née* Herring) and Dr. David Fairbairn, a daughter (Lesley).

GARROD.—On November 5, to Gwyneth, wife of Dr. C. H. Garrod, of 30, Murdoch Road, Wokingham, a third son.

JONES.—On November 14, at St. Bart's Hospital, to Elaine (*née* Jessett) and Dr. Ralph Jones, a daughter (Helen May).

Engagements

ELLIOTT—HAYWARD. The engagement is announced between Charles Gavin Elliott and Elizabeth Ann Hayward.

EVANS—MASSINGBERD-MUNDY. The engagement is announced between Wyn Evans and Jane Massingberd-Mundy.

LLOYD—EYES. The engagement is announced between Dr. David B. Lloyd and Miss Eileen Eyes.

NICHOLSON—LAURIE. The engagement is announced between Mr. J. R. Nicholson and Miss R. T. Laurie.

WESTON—DANIELS. The engagement is announced between Dr. Peter Alexander Murray Weston and Miss Ann C. Daniels.

Marriages

RANDALL—HALL. On November 1, at Kensington, Dr. James Randall, M.B., B.S., to Aileen Hall of Rio de Janiero, Brazil.

ROSS—CLARKE. On November 24, at the Queen's Chapel of the Savoy, James Keith Ross, F.R.C.S., to Jacqueline Annella Clarke.

Deaths

ANDERSON.—On November 11, Dr. Charles Anderson, of 14, Maida Vale, W.9. Qualified 1935.

BUCKLEY.—On November 14, at the General Hospital, Nottingham, William Buckley, F.R.C.S., aged 53.

COCKAYNE.—On November 28, at Tring, Herts, Edward Alfred Cockayne, O.B.E., D.M., F.R.C.P. Qualified 1909.

THOMSON.—On November 19, at 7, Twyford Avenue, N.2., Ian Fream Thomson, M.B., B.S., M.R.C.S., L.R.C.P., aged 38. Qualified 1942.

CALENDAR

Sat.	Jan.	5	Dr. R. Bodley Scott and Mr. R. S. Corbett on duty. Rugger: v. Old Rutlishians (H). Hockey: v. London Hospital (H). Soccer: v. Old Cholmeleians (H).
Tues.	..	8	Abernethean Society: Research Papers.
Sat.	,,	12	Dr. E. R. Cullinan and Mr. J. P. Hosford on duty. Rugger: v. Taunton (A). Hockey: v. National Provincial Bank (A). Soccer: v. U.C.H. (H).
Mon.	,,	14	Physiological Society: 'Genetics' by Prof. H. Grüneberg.
Wed.	,,	16	Rugger: v. London University (A). Soccer: v. Charing Cross and Royal Dental (A).
Thurs.	,,	17	Rugger: v. Guy's Hospital (Cup Match).
Sat.	,,	19	Medical and Surgical Professorial Units on duty. Rugger: v. Cheltenham (A). Hockey: v. Blueharts (A). Soccer: v. St. Thomas's Hospital (A).
Sat.	,,	26	Dr. G. Bourne and Mr. J. B. Hume on duty. Rugger: v. Oxford U. Greyhounds (H).
Mon.	,,	28	Physiological Society: Professor G. Hadfield, title to be announced.
Sat.	Feb.	2	Dr. A. W. Spence and Mr. C. Naunton Morgan on duty.

LETTERS TO THE EDITOR

GAME OF VIOLENCE

SIR,—I am, as usual at this time of year, kept busy repairing Rugger casualties. I came across the following extracts the other day, which I think may be of interest and amusement to the members of the Rugby Football Club and others.

These are the views of Sir Thomas Elyot, as pronounced in 1531. Football, he said, was "nothyng but beastely fury and extreme violence, whereof procedeth hurte, and consequently rancour and malice do remayne with them that be wounded."

Fifty years later Philip Stubbes wrote, "As concerning football playing, I protest unto you it may rather be called a freendly kinde of fight than a play or recreation; a bloody and murthering practice than a felowly sporte or pastime. For dooth not every one lye in waight for his adversarie, seeking to overthrowe him and to picke him on his nose, though it be uppon hard stones? in ditch or dale, in valley or hil, or what place soever it be, hee careth not, so he have him down, so that by this meanes sometimes their necks are broken, sometimes their backs, sometime their legs, sometime their armes. They have sleights to meet one betwixt two, to dashe him against the heart with their elbowes, to hit him under the short ribbes with their griped fists, and with their knees to catch him uppon the hip, and to pick him on his necke, with a hundred such murdering devices."

The game does not seem to have changed much in four hundred years!

Yours faithfully,

W. D. COLTART.

58, Harley House,
Regent's Park, N.W.1.

THE RAHERE CHOIR

SIR,—May I be allowed the courtesy of your columns to express my sincere appreciation of the beautiful recital given at All Souls, Langham Place, in November by the Boyd Neal Orchestra and the Rahere Choir.

The pitch of perfection of the choir was most noticeable. Their harmonious blend, their light and shade and wonderful clarity of diction were outstanding features of a recital which I shall long remember with pleasure.

The selection of their work was extremely tasteful. The renderings of the polyphonic Tudor period motets and anthems were really exquisite. Ave Verum Corpus by Byrd is a gem. The renderings of Purcell's Magnificat and Nunc Dimittis were extremely good. I feel in saving the good wine to the end of the programme in the shape of the Bach church cantata the choir excelled themselves. Their attack and expression were very marked and the effect of the massive chorus passages was quite awe-inspiring and deeply moving.

The choir are very fortunate in their conductor, Richard Sinton. It was clear he had the choir under perfect control and the choir responded very effectively indeed. As an old Bart's man with a knowledge and love of church music, I feel very proud to feel our alma mater has within its walls such a spirited body of singers. Their further recitals will be eagerly awaited. It is significant to notice how well to the fore music is in the two Rahere foundations of church and hospital. The choir of the old priory church enjoys a very high reputation of cathedral standard.

Thanking the choir and Mr. Sinton for a wonderful evening,

I am, Sir,

Yours sincerely,

J. B. GURNEY SMITH.

Fellow, Incorporated Guild of Church Musicians.
Royal Earlswood Institution,
Redhill, Surrey.

CASSEL NOT CASSELL

SIR,—I feel impelled to bring to your notice a most unfortunate misprint in the November issue of *St. Bartholomew's Hospital Journal.*

The name of the hospital referred to several times in the journal is spelt Cassel, and not Cassell. This latter spelling may lead to an error of association (however free), confusing the hospital with a certain pill-producing gentleman whose therapeutic value, psychic or somatic, is to say the least somewhat questionable.

Furthermore I see that the title of the article on page 357 contains a mis-spelling of the word, psychological.

Could it be that there is a certain unconscious hostility towards this subject in your editorial office?

Yours faithfully,

ELIZABETH BARNES, S.R.N.

until recently, ward sister at The Cassel Hospital.
30 Steele's Road,
N.W.3.

We apologise to all associated with the Cassel Hospital for the mis-spelling in the November issue. We should like to point out, however, that far from having an 'unconscious hostility' towards psychology we have a very conscious interest in the subject, as a consideration of the contents of the November Journal might suggest. In fact some members at Bart's have accused us of being much too sympathetic to what they derisively dismiss as 'trick-cycling'. — EDITOR.

ASPECTS OF LIFE ON A TEA ESTATE

by Pamela A. Lucas

COUNTRY AND PEOPLE

IN THE Central Province of Ceylon at an elevation ranging from four to five thousand feet you will find the tea estate I am about to describe. Its total area is 858 acres and from most parts of the estate you can see Adams Peak 7,360 feet above sea level, an object of veneration to many religions.

The south of the estate rises to 5,000 feet and meets the jungle covering the summit of the overshadowing hill, while on all other sides are to be seen neighbouring tea Estates. It is said that wild life in these upcountry jungles includes leopard, deer, boar, monkeys and many varied smaller animals and birds. There are many stories told of the elephants that were in this region during the last century; but with the opening up of jungle to make way for first coffee, then tea, they have all emigrated to lower regions. Snakes, mostly harmless types, are sometimes seen in the tea, but most of the more deadly varieties are only to be found below 3,000 feet.

The capital and main seaport of Ceylon, Colombo, is 100 miles to the west. a three and half hours journey by road, while Nuwara Eliya at 6,000 feet, although only 46 miles away, is a two hour car journey. The roads being very winding and narrow and the necessity of going round a range of hills instead of over them, accounts for the lengthy time taken on all car journeys. There are railways but the network is not widespread and one usually needs to travel several miles by road before reaching a station.

Pamela A. Lucas

Pamela Lucas (née Broad) S.R.N. trained at Bart's from 1949 to 1954, and shortly afterwards went to Ceylon as a nursing sister to a private nursing association. She married a tea planter in March last year.

At the moment there are also three other Bart's nurses in Ceylon.

The estate is divided into three divisions with a total tea-bearing acreage of 757 acres, the remaining 99 acres being composed of fuel clearings, rocks, roads, etc. The smallest of the three divisions is under the supervision of a Ceylonese assistant manager who is responsible for it to the estate's European manager.

There are 870 labourers employed of whom only fifteen are Sinhalese, the remainder being Tamils. The Sinhalese is a citizen of Ceylon, and most are Buddhists, while the Tamils have come from India or are of Indian parents who immigrated from India, and mostly profess to be Hindu. This difference of religion accounts for variation in dress, habits and character. The Tamils were originally brought from South India to work on tea estates as they are a harder-working people than the Sinhalese. Also they are happier working in the cooler upcountry climate. The Sinhalese does not like the cold or rain, quite an important factor as at times during the monsoon period there may be twelve inches of rain in one day!

TEA PRODUCTION

The labouring coolies, whose ages range from fifteen to sixty plus years, live in 'lines' on the estate. These lines are one-storeyed tenements, comprising one or two rooms, with perhaps twenty tenements in a row. Other estate workers such as the factory teamaker and office clerks live in detached bungalows surrounded by a small garden. The field labourer works from 7.30 a.m. till 4.30 p.m. with a break from 12 noon to 1.30 p.m. six days a week. Men, women and children over the age of fourteen years work together plucking tea, receiving an average weekly wage of one guinea, thirteen shillings and twelve shillings respectively. The heavier work of manuring, forking, pruning and lopping of shade trees is done by the men. The lighter work of

sifting the manufactured tea in the factory is carried out by the older women. The ever-needful task of weeding is done on contract, that is an area of land is given to a labourer to be weeded by him or his family each month for approximately nine shillings per acre.

The factory is staffed by the teamaker and his assistant, two engine drivers and about forty labourers. Owing to the vagaries of the weather and withering conditions these people although working an eight hour day may often have to commence work at 3 a.m. There is normally a ten day plucking round on an estate and each day's work is allocated on the basis that four labourers pluck one acre of tea per day. There are on average 3,500 tea bushes per acre.

Three times during the day the leaf is collected from the pluckers, weighed and taken by lorry or wireshoot to the factory. As soon as the leaf arrives it is taken to the lofts and spread over tats. These are lengths of hessian stretched over wire in banks four inches above each other. In this factory the total area of the tats is 200,000 sq. ft. After approximately twenty hours in natural conditions the tea is said to be withered and has a smell like that of an apple loft. Next it goes down to the rolling machines which cut and twist the leaf and extract the juices. After each roll lasting half an hour (there are four in all) the leaf is passed over a mesh which removes a proportion known as a dhool; the remainder goes on to the next roller. After the fourth roll the leaf left is known as big bulk, comprising mostly stalk. Each dhool is placed on tables to ferment for approximately three hours after which it is fired in a drier from which it emerges black and dry such as you know. Finally, it is graded by mechanical and hand sieves, blowers and cutters, then packed in chests which may hold up to 120 lbs. of tea. The tea then goes to the Colombo or United Kingdom auction markets and it is only after this that the tea is blended to the various strengths which are available in the shops.

Health

The health of the labourer is primarily in the care of the estate dispenser, who receives a salary of approximately £280 per annum together with living quarters for him and his family. The shortage of dispensers for the estates becomes more acute each year for amongst other reasons it was recently decided by the Ceylon Health Department to convert the Apothecaries Course into one for Pharmacists.

The illnesses which cause most lost working days may be classified under the headings of respiratory diseases, worms (hook and round) and the bowel diseases.

The dispenser can and should refer anything other than simple ailments to the District Medical Officer at the local government hospital. On this estate the number of patients treated by the dispenser in 1955 was 2,758, while only 33 of these did he find necessary to refer to the D.M.O. Approximately £80 was spent on drugs during the same year, of which one third was covered by government grant.

A midwife who has received the approval of the government health authorities is in charge of the maternity work. Qualified midwives are all desirous of getting into government service (which is pensionable) and consequently a good midwife is difficult to find for estate work. Apart from living quarters for herself and family she receives an annual salary of approximately £133.

During 1955 the midwife delivered sixty-four babies of whom two were stillborn. There were no maternal deaths during labour reported. The midwife goes to the labourers' lines to make her ante-natal visits, although the women are reluctant to have abdominal examinations made or to produce a urine specimen for testing; in fact they often hide on her approach. Efforts are being made to get the mothers to attend ante-natal clinics held by the D.M.O. but progress is slow. Most of the women suffer from anaemia to some degree, but there is no way of knowing what happens to the iron tablets often given to the expectant mother during the last months of her pregnancy.

The pregnant woman labourer will go on working in the field until two weeks before her expected date of delivery. On commencing labour she is taken by relations to the estate maternity ward for her delivery and five days post-natal care. Maternity benefits are paid to the mother by the estate at approximately £1 16s. per child. While the mother is in the ward 1s. 6d. per day is paid for the relatives to buy her food; this will consist mainly of vegetable curry, tea and bread. Milk is obtainable (though of poor quality) at approximately 3d. a pint but it is rarely that the mother will consent to drink it.

Within two weeks the mother will often be back in the field working a full day, returning to her home or the estate creche every four hours to feed her baby. The labourer will frequently go on breast feeding for two years or more in the hope of preventing a further pregnancy. Efforts are being made by some medical authorities to establish family planning, and although it is a new idea and a practice contrary to the Tamils established customs, some are appreciating the advantages to their health and the economy of fewer children at greater intervals. It is hoped that the slight downward trend of the birthrate which occurred after only two years instruction and propaganda on a number of estates will continue.

The creche is a small stone building, with a playground, and equipped with wooden cots where the working mother may leave her children in the care of an old ayah. Schooling is provided for children up to the age of fourteen years and the average daily attendance here is 133 children for which there are two schoolmasters. There is only a morning school session each day at which there is no way of enforcing attendance other than by the action of the government school inspector. The school can expect at least a bi-annual visit from him and the parents of a child with a poor attendance record are liable to a fine of 1s. 6d. by the local magistrate's court.

When comparing the wages and living conditions of the tea estate labourer with those of the present-day British workman one has to remember that England is many years ahead in her social work and one is assured that the conditions for the estate labourers have greatly improved in recent years.

(*I have converted the Ceylon currency into that of the United Kingdom on the basis that the Ceylon rupee is valued at one shilling and sixpence.*)

PARDON MY PENSION

Most people seem to think that it is a pretty dull thing to be a civil servant. However the following, which are extracts from letters sent to a pensions office, suggest that there is an occasional spark to relieve the gloom :—

"I cannot get sick-pay. I have six children, can you tell me why this is? This is my eighth child. What are you going to do about it?"

"Mrs. R. has no clothes. Has not had any for a year. The clergy have been visiting her."

"In reply to your letter, I have already cohabited with your officers, so far without result."

"I am glad to say that my husband that was reported missing is now dead."

"Sir, I am forwarding my marriage certificate and two children, one of which is a mistake, as you will see."

"Unless I get my husband's money, I shall be forced to lead an imortal life."

"I am writing these lines for Mrs. U., who cannot write herself. She expects to be confined next week and can do with it."

"Please find out if my husband is dead as the man I am now living with wont eat or do anything until he is certain."

"You have changed my boy into a little girl. Will this make any difference?"

"Please forward my money at once as I have fallen in errors with my landlord."

"I have no children as my husband is a bus-driver and works all day and night."

"I want my money as quick as you can send it. I have been in bed with the doctor for a week and he doesn't seem to be doing any good. If things will not improve I shall have to get another doctor."

"Re your dental enquiry, the teeth on the top are alright but the ones in my bottom are hurting terribly."

SAINT BARTHOLOMEW AND HIS ASSOCIATIONS

PART V: A MISCELLANY

by J. B. DAWSON

ARTISTIC REPRESENTATIONS OF SAINT BARTHOLOMEW

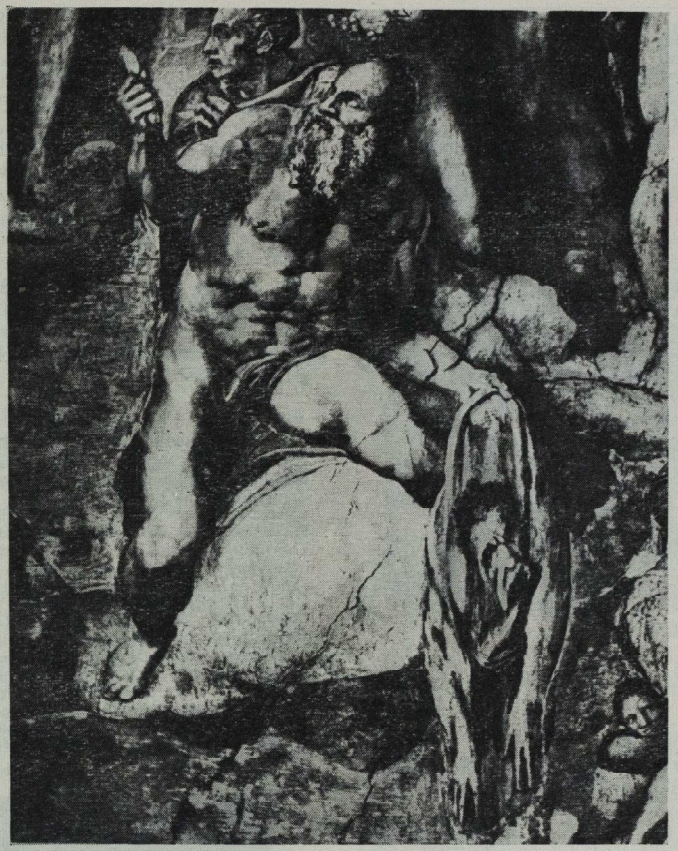
IN OUR Hospital we have several representations of St. Bartholomew; notably the very weathered picture over a fireplace in the Great Hall, and its very much finer brother which resides at the head of the stairs arising from the Mortuary Chapel; both of which, with a modicum of cleaning, and their restoration to prominent sites in the Great Hall, would greatly enhance the beauty of one of our greater heritages. In the latter picture of St. Bartholomew and in the right-hand section of the East window of St. Bartholomew the Less, the Saint is depicted with his knife of characteristic shape in his right hand. This knife is almost universally present in ancient pictorial representations of the Saint, whether in wood, as in the Choir Stalls of Blythburgh Church and the Lectern of St. Bartholomew the Great, or in stone as on the Portail de Sauveur of Amiens cathedral, in the Henry VII chapel of Westminster Abbey, and in old medieval "line drawings." Later other factors came to be representative of the Saint: of course his skin would be one's second choice, and this is chosen for the Statue in the Cathedral of Milan by D'Agrate and in the section of the 'Last Judgement,' Michelangelo's great achievement in the Sistine Chapel. In this latter the figure of Bartholomew is said to have been given the face of a poet called Aretino, who was reported to have severely criticised Michelangelo on the subject of depicting the body nude in a church, a novel feature at that time. Fable continues that the face on the skin of St. Bartholomew in the 'Last Judgement' is that of Michelangelo himself. This statue is alleged to have been the foundation for many frontispieces of works of anatomy and the like, and various figures and skins are represented with a small shred of association with this great Sistine Chapel work, giving rise to what are known as 'Muscle Men' or 'Ecorches' (Ecorcher being the French for 'To flay.')

Bartholomew, of course, is also in evidence at all artistic portrayals of the 'Last Supper,' such as that by Bouts, Giotto, Fra Angelico and inevitably that of Leonardo da Vinci. Here Bartholomew is once again in a questioning attitude on the left-hand end of the table as you face the picture, showing a truly magnificent head, for which a very fine line drawing in red chalk was first cartooned by da Vinci.

Saint Bartholomew, as we have previously said, often carries the Gospel of Matthew, and as is the case with many saints is frequently enthroned. In some places he is depicted carrying a banner, but this may be symbolic of the death of Emperor Henry VII at Buonconvento in 1313 on August 24 (which apparently was a matter for rejoicing), or it may just have crept in as a Guild banner. He is also often seen with his foot upon the neck of a wretched devil, which is generally a rather half-hearted effort to depict the glorious descriptions of Bartholomew with his foot on the devil's neck in his Apocryphal Gospel.

SAINT STONE

The Saint Stone in which we have our particular interest is that of the garnet. This is a mineral, which takes an octahedral crystalline form, and comes into the classification of semi-precious stones. Garnet itself appears in several forms, from the very rare 'Demontoid' which is an exquisite green, to the purple 'Almandine,' and to the brown and rather dull-looking 'Hessonite' which is found as an 'inclusion' in diamonds, and in 1880 became known as the relatively famous 'Cape Rubies.' The relevant type for our purpose is the purple 'Almandine.' This, by its transparency and fire-like appearance, frightened wild beasts, and recalled at the same time one's faith and the martyrs. In particular it symbolises Bartholomew who was anathema to the devil and whose body was made bloody by his cruel torture. The stone represents the zeal for saving souls, charity which is all-consuming, the love of martyrdom, and a burning faith accompanied by works worthy of appearing as a chosen jewel of Christ's apostolic crown.

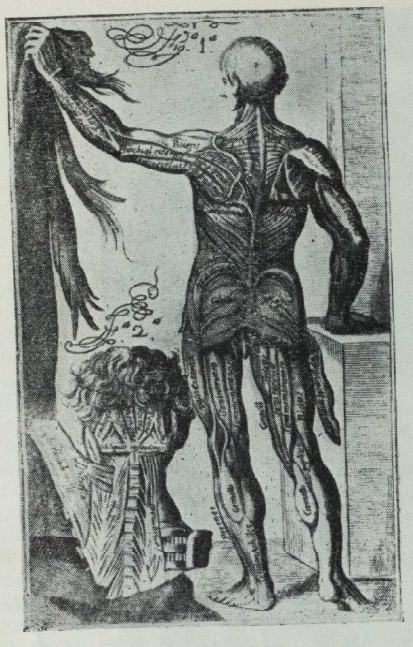


Detail, showing St. Bartholomew, from The Last Judgement by Michaelangelo

DEDICATION OF ST. BARTHOLOMEW TO MEDICAL ASSOCIATIONS

I have mentioned several reasons for associating Saint Bartholomew with medicine. However, a few more suggestions might be considered. The first of these is the fact of the Saint's flaying, and thereafter his pictorial portrayal with his skin draped in folds about his bones and sinews. This, of course, has a distinctly 'barber-surgeon' flavour about it, and may have led to the acceptance of the Saint as a patron of Medicine. In passing it may be mentioned that he is the patron of 'The Butchers,' in our circumstances a somewhat unnecessary extension of thought.

The last of these suggestions is one which derives from the exorcising of the devil from King Polimius' daughter, a fate which resulted in Bartholomew becoming a specialist saint for nervous diseases.



A 'Muscle Man'

Derogatory Terms

For those who appreciate a vicious tongue, the terms 'A Bartholomew Pig' and 'A Bartholomew Doll' are to be commended.

Pig. It was customary at the fair for a pig to be roasted whole and sold piping hot. From this stemmed the derisive term 'A Bartholomew Pig,' meaning a very fat person. In Henry IV (Part II) Falstaff calls himself 'A little tidy Bartholomew boar pig,' a fully justified title.

Doll. A tawdry overdressed woman, like a flashy bespangled doll, offered for sale at Bartholomew Fair.

His Creed Verse

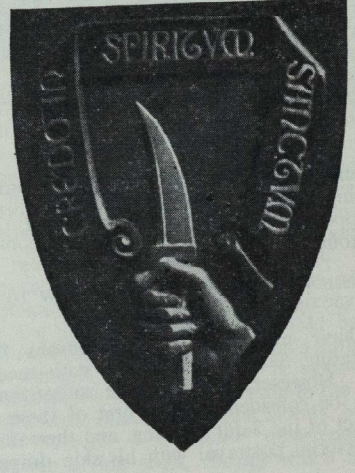
Finally, with the symbolism of this fine stone before us we come to his last great attribute. Here, unfortunately, there is once again a choice, but I have found only one example of the lesser choice, and so I offer it but refuse it support. As is well known, when the Apostles all gathered together at Pentecost to draw up the Apostolic Creed, each was identified with one passage, and this appears to be related to the order in which they were chosen by Christ. Now Bartholomew, according to differing reports, was chosen sixth or seventh in this line, and as such could lay claim to two passages. The first and the lesser is:—'Ascendit ad coelos; sedet in dexteram dei.' (He ascendeth into heaven and sitteth on the right hand of God the Father Almighty). The second is not at all similar, but is symbolic of our patron's life, work and faith and of our heritage.

'Credo in Spiritum Sanctum.'

ACKNOWLEDGEMENTS

Owing to my absence from Bart's during the publication of my last two articles on Saint Bartholomew and his associates, I was unable to thank the many and varied folk to whom I owe a great deal. As is usual with articles written by Bart's men, the kindness and guidance of Mr. Thornton which he extends so personally is much in evidence. I am much indebted to both him and Mr. Harrison of our Photographic Department. I wish also to mention Mr. Victor Major, Miss G. M. Rackham, the Rev. Roy Porter of Oriel College, Dr. Wallbank of St. Bartholomew the Great, and Dr. Poynter of the Burroughes Wellcome Library, as notable amongst the many people who assisted me in my wanderings.

Finally, may I thank some three generations of editors of the *Journal* for introducing me to the wonder of *Journal* production and for their constant forbearance.



A CASE OF TRAUMATIC PARAPLEGIA

by Victor Major

Thomas R., aged 27, was admitted at 3 p.m. on 6.2.55, having been thrown from his motor cycle; he had not been wearing a crash helmet.

On examination, he was very restless and severely confused, so that whilst he complained continually of pain in his right shoulder and arm, he was unable to respond coherently to any of the questions which were put to him.

His temperature was 97°F, pulse rate 120 of fair volume, and blood pressure 110/80.

There was profuse bleeding from a four-inch-long laceration of the scalp, running transversely across the vertex; a depressed fracture was clearly visible in the depths of the wound.

No abnormality could be detected in either the pupils, fundi, or cranial nerves.

Movement of the neck and the right shoulder caused considerable pain, but in the right forearm and hand it was strong and full. The left arm was weak, with complete wrist-drop.

Reflexes were normal in the right arm, but weak in the left; sensation appeared to be normal in both.

The chest moved fairly well with respiration, but compression of the ribs provoked considerable pain.

No reflexes could be elicited in the abdomen—there existed a complete absence of painful sensation below the level of the umbilicus. Both legs were in a state of complete flaccid paralysis and anaesthesia, and no reflexes were elicited save for a slight flexion of the great toes.

X-ray examination revealed a compound depressed fracture of the skull, fracture of the right glenoid, multiple rib fractures, and a crush fracture of the eleventh thoracic vertebra, with backward dislocation.

Initial Treatment

After admission, the condition of the patient steadily deteriorated. His blood-pressure fell rapidly, although the head wound was no longer bleeding, and there was no evidence of haemorrhage elsewhere. Two pints of blood were transfused quickly, but without response. The systolic blood pressure had fallen to 50 mm. when a nor-adrenaline ("Levophed") drip was set up; the rate of delivery was 6-12 μgms/min. Dramatically, after some twenty minutes, the blood pressure had been restored to a normal level, and was maintained by careful regulation of the drip.

By 1 am. on 7.2.55, the marked improvement in the patient's condition allowed the essential debridement of his scalp wound and elevation of the depressed fracture in the skull to be carried out.

After sedation with five c.c.s Paraldehyde intramuscularly, the operation was performed under local anaesthesia.

7.2.55, 1 a.m. Operation:
Mr. R. M. T. Walker-Brash.

The edges of the wound were first thoroughly cleansed of debris in the form of skin, hair and blood-clot.

The pericranium had been avulsed, and a stellate, depressed fracture overlay the right motor cortex over an area of 2½ in. in diameter. The fracture lines were clearly, grossly contaminated with particles of hair and skin.

A burr-hole was sunk, a few millimetres from the edge of the fracture, and the fragments of bone very gently loosened and removed. Beneath the fracture, there appeared a linear tear, 1½ inches long, in the dura mater. There were no signs of any subdural blood-clot, and although the underlying motor-cortex was evidently damaged, remarkably little bleeding occurred.

The dura was sutured, haemostasis secured, the wound closed, liberally sprinkled with penicillin powder.

The nor-adrenalin drip was found still to be necessary for the maintenance of the patient's blood pressure, running at a slow rate, until 8 a.m. on the morning of 7.2.55.

A paper read to the Abernethian Society.

Progress and Further Treatment

Post-operatively, the patient received 250,000 units of soluble penicillin, eight-hourly, by intramuscular injection, and 1 gramme of Sulphatriad, six-hourly, by mouth.

A regime of two-hourly turning, day and night, from back to right side, to back, to left side, to back, and so on, was instituted.

Packs of pillows—some of them sorbo-rubber—were used in supporting the trunk and lower limbs, in order to avoid prolonged pressure upon any bony point—which might quickly have led to bed sores.

Twice daily intermittent catheterisation, with a 16F Tieman's catheter, was commenced on the evening of February 7th. He was, at this time, still in a state of severe confusion, and had a complete flaccid paralysis of the left upper limb in addition to the waist-level paraplegia.

Twenty-four hours later, however, movement was beginning to return to the left arm, but the complete absence of movement and sensation below the waist persisted.

A peri-anal and a cremasteric reflex were noted, and the next day, 9.2.55, an extensor plantar response on both sides.

The pain in his ribs, together with the paralysis of the abdominal muscles, and general mental confusion, combined to produce an almost complete inability to cough satisfactorily—this, despite the intense effort of the physiotherapist and others. During the following week, the patient having developed a mild chest infection, his trachea was aspirated, using a fine catheter.

Quite suddenly, ten days after admission, the patient suffered a collapse of the lower lobe of the right lung; his temperature rose to 102°F. Aspiration was renewed, and the patient responded to treatment by this means and to Distaquaine penicillin 600,000 Units and Sulphatriad G2 per diem. Phenobarbitone gr. ¼ b.i.d. and pethidine 100 mgms. p.r.n. were also being administered at this time.

For the first ten days, it was very difficult to feed the patient, and to persuade him to drink sufficiently, but these troubles dissolved with his gradual return of bodily strength and mental composure.

On 26.2.55, nineteen days after admission, the urine became hazy for the first time, and a mild pyrexia developed. In order to deal with the signs of urinary infection, intermittent catheterisation was stopped, and replaced by a Foley self-retaining catheter. At that time, there were no signs of a return of bladder-function either natural or automatic, although some degree of vague bladder sensation was reported by the patient.

The condition of his skin, due almost entirely to the very high standard of nursing care, remained excellent.

The haemoglobin level, which was 82 per cent on the day following admission had been restored to 94 per cent. The neurological signs remained unchanged.

Towards the end of February, his mental state became virtually normal. No mention had been made to him of the marital implications of his paraplegia—which was a particularly difficult problem, since, at the time of his accident, he was engaged to be married.

On 4.3.55, the patient was transferred to Stoke Mandeville hospital, Aylesbury, in Buckinghamshire, where he remained for seven months, until his discharge in October, 1955. (Under Dr. L. Guttmann.)

At Stoke Mandeville

During his stay at Stoke Mandeville hospital he was taught not only to walk—by means of a tripod-gate and crutches, his legs held rigid in calipers—but also had to adapt himself to his previous trade, that of an electrical mechanic.

His bladder now functions automatically, four to six times a day, and he has been trained in the use of the special urinal designed by Dr. Guttmann.

At no time, in either hospital, did any bed-sores develop.

Like all spinal injury patients at Stoke Mandeville, he will be readmitted for examination at half-yearly, and later, yearly intervals in case any complications in his condition may arise.

A short time before his discharge in October, 1955, the patient married again (he was a widower). His training now enables him to support his wife and three-year-old son.

DISCUSSION

Nearly five thousand years ago, an Egyptian surgeon stated that paraplegia was "... an ailment, not to be treated." (The Edwin Smith papyrus). As recently as 1953, F. A. Nicoll wrote: "Patients with paraplegia should either be treated superlatively well, or not at all." (Both quotations are from Watson-Jones.)

Of the hundreds of American-soldier-paraplegics from the First World War, only one man was alive twenty years later. Despite the efforts of Gordon Holmes and others in England, the British victims of

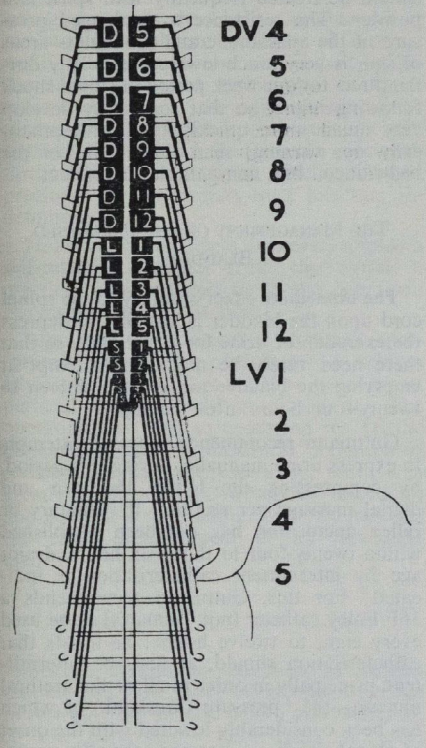


Diagram showing relationships of the spinal cord and nerve roots.

spinal-cord transection fared no better. Large, suppurating bed-sores, eroding both soft tissues and bone, led to serious protein-loss; severe flexor-spasms in the limbs, and most fatal of all, increasing urinary tract infection, combined in reducing the paraplegic to a state of rapidly mounting cachexia, toxaemia, and mercifully quickly, to death.

During the Second Great War, however, revolutionary progress began to be made in this field of treatment, led by Guttmann in this country, and by Munroe, Bors and Rodgers in the U.S.A. More than half of four thousand American soldiers who sustained paraplegia in the late war are alive today, and 80 per cent of these are able to earn their own livings (Watson-Jones).

This remarkable achievement has been due in the main to scrupulous attention to nursing and to the paralysed bladder (including the use of the antibiotics) and also to the introduction of carefully planned physiotherapy and rehabilitation in a general sense.

This case illustrates several of the features in the diagnosis and modern treatment of patients suffering from paraplegia following fracture-dislocation of the spine. There is substantial agreement upon the general lines of management, but a few of the variations relevant to this case will be mentioned below.

Diagnosis

Concerning the fracture and dislocation at T11, clinical examination revealed complete anaesthesia and loss of motor power and reflexes (except for a weak plantar response, with anal reflex) below the area of distribution of the 10th thoracic nerves, i.e. below the umbilicus.

It has been noted that these signs were complete and absolute immediately after the injury and that they showed no significant change at any subsequent time.

Reference to the diagram shows that such neurological signs as these, elicited as they were, very soon after injury, might indicate either cord transection at T7—not necessarily complete—or else cord transection together with involvement of the spinal roots T_{10}—L_1 at T10; or even a combination of these two alternatives. Upon the problem of such a diagnosis, Holdsworth writes, "Where, at the end of 12 hours, when the effects of spinal concussion have passed off, there is no evidence of function below the lesion, complete cord transection must be present; useful recovery will not occur, although anal, cremasteric and weak plantar responses may still be elicited." Since, in this case, examination upon the morning following injury indeed revealed no signs of either motor or sensory function below the level of the lesion, the cord transection was considered to be complete, and therefore irrevocable. Holdsworth states also, that it is usually impossible to judge, with any useful degree of accuracy, the extent of injury to the cord until at least

twelve hours after injury—since the permanent signs are, until then, often masked by those resulting from spinal concussion: but he (Holdsworth) has never seen complete motor and sensory loss resulting from spinal concussion alone.

Initial Treatment

The classical treatment of spinal fracture-dislocation, by complete immobilisation in plaster, owing to the invariable production of serious and troublesome bed-sores, has largely been abandoned. Today, all writers emphasise the vital importance of very careful and gentling handling of new patients, keeping the spinal column all the time in its normal alignment—or even in slight hyper-extension (Watson-Jones).

Upon what is to be done next, there is some divergence of opinion. Whereas Holdsworth advocates—in all but the simplest and most clearly stable of injuries—very early operation for the internal fixation of the fractured spine, using a pair of plates bolted on either side of the spinous processes across the site of injury, Guttman states that *only* the most extremely unstable of fracture dislocations—when associated with an incomplete cord lesion—are suitable for operation. Thus, contrary to Holdsworth's dictum "Nursing necessary to prevent bedsores may cause further damage to an anatomically intact cord, or transform a partial lesion to a complete transection", Guttmann, through his specially trained nursing staff, treats nearly all his patients by very careful handling, using sorbo-packs and pillows, maintaining natural curvature in the spine, and in this way belying Holdsworth's fears. Guttmann's disapproval of the operation for internal fixation has perhaps been intensified by his experience of having been compelled, on a number of occasions, to remove the fixating plates from the spines of patients; plates, which far from serving to stabilise the fractured spinal column, had, in fact, broken loose and were projecting through the skin. These cases may have been due to faulty technique at operation; Holdsworth reports no such occurrences in his series. In fact, it seems likely that, in the absence of specially trained staff, the Holdsworth operation may lessen the danger of further damage to the cord, in those cases which exhibit an unstable fracture-dislocation.

Whether the spine be fixed or not, a strict regime of two-hourly turning, from the back to alternate sides, must be instituted from the very outset, for pressure sores may develop—even in the absence of plaster—within twelve hours. For the same reason, the skin covering the bony 'pressure points' should be treated frequently with spirit and powder. The resistance to prolonged pressure of the anaesthetic and motionless areas of skin is very much lowered especially dur- the three- to four-week period of spinal shock following injury, so that sores may develop very much more quickly (and with practically no warning) than they could in the bed-ridden, but non-paraplegic, patient.

The Management of the Paralysed Bladder

The immediate effect of injury to the spinal cord upon the bladder is, usually, to depress the excretion of urine for a few days, so that there need rarely be made any attempt at emptying the bladder for at least sixteen to twenty-four hours after the injury.

Guttmann recommends repeated attempts to express urine manually, during this period, by compressing the lower abdomen and digital massage per rectum. If voluntary or reflex micturition has not been established within twenty-four to thirty-six hours, drainage by intermittent catheterisation is indicated. For this, Guttmann recommends a 16F Foley catheter (not Tieman's) to be used every eight to twelve hours; he insists that catheterisation should, at first, be intermittent, principally in order to allow the urethral mucosa—the 'pressure threshold' of which has been considerably lowered with the onset of spinal shock—to become gradually accustomed to the presence of a foreign body. Further, and particularly in cases of incomplete cord-lesions, the regular filling and emptying of the bladder provides an excellent stimulus for the return of normal bladder function, or else for the establishment of an automatic bladder. Small daily doses of sulphonamides—e.g. sulphatriad—or a suitable antibiotic should be administered as an 'umbrella' to the risk of urinary infection from the catheterisation.

After three weeks intermittent catheterisation, or earlier, should infection become established, Guttmann recommends its replacement by an indwelling Foley catheter—to be changed at intervals of between two and three days, accompanied by washouts of $\frac{1}{2000}$ flavazole or chloromycetin. Once the bladder begins to function automatically — usually after six weeks or so, intermittent catheterisation should be re-instituted (he writes) and continued until the detrusor is powerful enough to empty the bladder completely, or to leave a minimum quantity of residual urine (the amount and content of which should be measured regularly). In Guttmann's experience, the employment of the scrupulous 'no touch' technique—by two persons and holding the catheter only with Spencer-Wells' clips—upon which he insists, precludes serious urinary-tract infection indefinitely.

Holdsworth and others, however, employ a self-retaining catheter from the outset, a practice found satisfactory in the American Forces during the late war.

Supra-pubic cystostomy — formerly performed routinely for paraplegics—is seldom advisable these days, unless concurrent perineal injury should necessitate it. The operation has little to commend it. To the patient himself, his unnatural condition is constantly repugnant; secondly, there is a greatly increased risk of serious infection; and lastly, it is said that it effectively prevents the early establishment of an automatic bladder.

General Care and Management

Besides scrupulous attention to nursing and bladder care, every effort must be made in restoring the general health and resistance of the paraplegic. Particularly in cases where severe sepsis has become established, there is frequently a heavy loss in proteins, which may lead to a state of almost Belsen-like cachexia. These patients should be given a very high protein diet of meat, fish, cheese, etc., supplemented, where necessary, by such synthetic sources as Casilan or Casidrol, together with repeated whole-blood transfusions of one to two pints per week.

The paralysed bowel should be encouraged to act naturally by the judicious use of aperients, enemata, or even by manual evacuation. These measures are usually necessary to obtain a satisfactory and regular evacuation, although in some patients, abdominal straining combined with a trained habit reflex may prove sufficient.

There is always a considerable risk of pulmonary infection in the paraplegic, particularly where there is also injury (in the form, for instance, of crushed ribs) to the chest wall. For this reason every effort must be made to make the patient cough—so as to prevent his inhaling respiratory secretions, supplementing this when necessary by the aspiration of the mucus through a narrow catheter attached to a pump. Any infection of the respiratory tract—most frequently a broncho-pneumonia — must be dealt with immediately and effectively if serious complications are to be avoided.

Physiotherapy has a very important rôle at every stage of treatment. At the beginning, the performance of passive movements in the paralysed limbs effectively prevents the development of flexor spasms, which might otherwise be the source of continual distress to the patient. Should these spasms, in fact, become established and prove resistant to every form of physiotherapy, resort may be made to peripheral nerve block—by injecting alcohol—or by section of the nerve. If this procedure proves unsuccessful, intra-thecal alcohol-block will usually remove the spasm. Such formidable procedures as root sections, cordotomies, etc., are rarely required. Further physiotherapy may, with great advantage, be directed towards the development of the upper-limb muscles to such an extent as to enable the patient to support his whole body weight through his arms, on crutches. It has been found possible at Stoke Mandeville to teach any otherwise healthy and willing patient to walk, who has a cord lesion below C8, and who retains sufficient power in his arms to enable him to use crutches—with or without the aid of special braces. The latissimus dorsi muscles are particularly important in this connection, and formal physiotherapy is supplemented by selected sports—particularly archery and swimming.

Re-habilitation and After-Care

One may perhaps, in some measure, appreciate the feelings of the irrevocable paraplegic when he is first told of the full implications of his condition and of what his future is likely to be from this point of view. His reaction to this news will, naturally, vary very widely with his temperament and per-

sonality, with his previous ambitions, and most of all with his powers and willingness to re-adapt himself to his state.

With these considerations in mind, nearly all recent writers on this subject have stressed the necessity for cheerful, lively surroundings, with the reasonable maximum of physical and mental activity from the earliest possible stage in the treatment of these patients.

This is exactly the atmosphere to be sensed at the Spinal Injuries Centre at Stoke Mandeville, where the many crippled patients thrive together, encouraged individually by their mutual example. There is keen competition amongst them in the specially adapted sports —wheel chair basketball, table tennis, archery and so on, and every summer a National (and even International) Olympiad is held at the hospital.

From the beginning of their treatment in the special Spinal Injuries Centre, patients are kept fully and interestingly occupied, either in furthering a previous trade or career, or in embarking on a new one. Several University degrees have been conferred upon patients from Stoke Mandeville.

When, after between seven and twenty-four months, a patient is fit enough to leave the hospital, he will—in most cases—be able to resume normal employment almost at once, and to live an optimistic and reasonably independent life. He will return to the hospital once every six months, and later every year for re-examination and further treatment, where necessary.

ENVOY

Tom R— is now living at a hostel in London until suitable accommodation can be provided for him, his wife, and young son. One has only to glance back at the desolate position in the treatment of traumatic paraplegia existing up to the outbreak of World War II and compare it with that of today, to realise what profound tribute is due to those who, through their careful study, and vigorous practice have given to the victims of this terrible form of injury, this "ailment, not to be treated," the chance of life and achievement.

ACKNOWLEDGMENTS

My thanks are due to Mr. R. S. Corbett for permission to report on this case; and to Mr. R. M. T. Walker-Brash, who has suggested, encouraged and corrected the article; and to Dr. J. J. Walsh, M.B., B.S., of Stoke Mandeville Spinal Injuries Centre, for his patient replies to my queries.

I also thank Mr. F. W. Holdsworth, F.R.C.S., and the editors of the Journal of Bone and Joint Surgery and the Annals of the Royal College of Surgeons for permission to publish the diagram.

SIXTH FLOOR QUOTES

Q.—" Why do you have a blob of red paint on your light switch ? "

A.—" *So that when I turn out the light I know I'm in 618 and not 518.*"

* * *

" I always like to stand at Twickenham — it's so much easier to change partners."

ROYAL COLLEGE OF SURGEONS

NOVEMBER 1956

The following obtained the Diploma of Fellow:—

R. D. Nicholson

J. I. Burn

R. V. Fiddian

Primary F.R.C.S. — November 1956

N. L. Teck Kam

STUDENTS UNION

COUNCIL MEETING

There was a meeting of the Students' Union Council on Wednesday, 5th December.

The following business arising out of the minutes of the previous meeting was discussed:—

1. *Abernethian Room and cloakroom.* No further information was available regarding the Hospital Committee's plans for the extension of the Out Patients' Department and restyling of the Abernethian Room, or the modernisation of the cloakroom.

Complete refurnishing of the Abernethian Room had been suggested. but for financial reasons it was impossible only to replace individual pieces.

2. *College Advisers.* A decision taken at the A.G.M., to change College Advisers on moving from Charterhouse to the Hospital, was reversed. It was decided that a letter should be sent to the Dean suggesting that the system of College Advisers should be made more effective.

3. *Mid-week dances in College Hall.* The question was referred to the College Hall Committee.

The only item on the agenda was the provision of a piano for dances in the gymn. It was decided that the Union could not afford to donate a piano, and that it would be uneconomical to buy one and hire it out to clubs.

Other business:—

1. *Compulsory residence in College Hall.* A letter from the Dean was read, stating that The Medical College could not afford to subsidise the compulsory residence of first-time Clerks and Dressers; that he felt that preference should be given to first-year students for social reasons; and that therefore preference would be given to first-year students in allotting accommodation. The implication was that the subsidy would be discontinued. The meeting felt that there were so few night calls to residents that the month's residence was not of great value. It was decided to send a letter to the Dean asking whether the compulsory residence might be abolished, and pointing out that this would solve the financial problem, and also permit more final-year students to live in.

2. *Rugby fives court.* In view of the decision of the Board of Governors to use the Hospital Rugby fives court for storage purposes, it was decided to write to the Board, saying that many students and residents wished to play the game, and requesting alternative facilities.

3. *Honours Colours.* The following Honours Colours were awarded:

Athletic club: D. O'Sullivan.
C. Prys Roberts.
A. S. Tabor.
Sailing Club: G. Misierwicz.

4. *Ward show lunches.* The Council approved the College offer to provide lunch on Christmas and Boxing Day for students taking part in Ward Shows. The cost would be 2s. 6d., representing a subsidy of an equal amount.

5. Permission was given for the Athletic Club to use the College Hall music room for their A.G.M. on Friday, 7th December.

6. Permission was given to the Boat Club to hold their Annual Ball in the Gymnasium from 9 p.m. to 2 a.m. on Friday, 11th January.

7. The design for the Rifle Club tie was approved unanimously.

8. The Council approved the ladies' selection of the *Manchester Guardian, Daily Telegraph* and *Daily Express* for their sitting room.

ABERNETHIAN SOCIETY

Meetings

The Abernethian Society has had three interesting meetings in the last month. At the first of these a return was made to the old practice of hearing papers by members. Mr. M. G. Besser discussed the mechanism of ketosis in diabetes mellitus. Mr. P. J. Fenn gave an account of the sinister Dr. Lopez, poisoner to Queen Elizabeth I, and drew an intriguing picture of the medico-political life of the day. Finally, Mr. V. T. D. Major described a case of paraplegia recently admitted to Bart's, and discussed recent improvements in therapy and nursing care. The attendance at the meeting was rather poor, and it is to be hoped that the present-day trend of expert-worship will not make the society unappreciative of the efforts of its members. We consider that the papers were of a very high standard, and for the benefit of those who were unable to attend the meeting all three of them will appear in the *Journal*. It is to be hoped that one or more such meetings will be included in next season's programme.

On November 22nd Dr. Grantly Dick Read spoke on Natural Childbirth and its influence on obstetrical practice in the last thirty years. He did not discuss the principles or practice of Natural Childbirth, but he emphasised throughout that the birth of a child is in 97% of cases a perfectly normal phenomenon. He described fully his own career, and how, since the age of 19, he had been obsessed by the idea that pain at childbirth was unnecessary. He had studied native childbirth in Africa, and had practiced in that country after the war when there was considerable opposition to his ideas in this country. He ended on a more optimistic note, saying that his methods were receiving more interest in this country and had been approved by the Holy See.

On December 4th we heard three most interesting and amusing talks by members of the Staff on recent research in the Hospital. Dr. Dormer described the general organisation of research projects, illustrating his subject by an account of his research into oxalate metabolism: his talk was eventually accompanied by a song from the Professor of Mathematics at Harvard (recorded). Dr. Lawther then talked on Atmospheric Pollution, and showed electron microscope photographs of smog particles. Mr. Hadfield completed the symposium by discussing recent work on breast cancer and its metastases. He spoke of hormone dependence and the results of hormone treatment; and he contrasted this approach with that of the old 'carniverous' surgery, as a result of which it became fashionable to be single-breasted.

Elections

At a meeting of the Society on November 1st, 1956, the following officers and committee were elected for the period January to June, 1957:

President: L. J. Chalstrey
Secretary: C. Stevenson
Treasurer: P. L. Norris

Committee:
C. F. Allenby
J. Hedley-Whyte
J. D. Parkes
M. T. Barton (*Preclinical representative*)

Programme

In last term's programme the Committee returned to the traditional practice of inviting students and members of the Hospital Staff to contribute to many of the meetings, by reading case histories or papers on original research. This was very well received and it is therefore intended to continue this policy. Lectures will also be given by visiting speakers and it is hoped to have a film show. The programme for the first six months of 1957 will be published in January.

Again the Committee would welcome the greater participation of members, not only by attending but also by taking part in the discussions at meetings. Anyone wishing to read a paper later in the year is invited to contact the secretary.

NATURAL HISTORY SOCIETY

The City Bombed Sites

The area concerned is that which stretches from Moorgate to Aldersgate. In 1941 the tall buildings of small-time commerce squatted on a pattern of narrow streets. The carpeting of the close-set roofs by incendiary bombs yielded, during the Blitz, an unhindered conflagration. Most of the house sites were scooped more or less free of the loose debris left by the demolition teams. Open to the sky, the asphalted basements became rain-soaked. The mosses and the fungi moved in, flourishing until their growth produced a layer of shallow but fertile humus. There opened now a period when whatever rooted could settle in, unhindered by competition. An often bizarre flora resulted, originating in a host of ways. It was the lure of piecing together modes of invasion that brought naturalists to this strange oasis in the midst of London. The common weeds, the enigma of every wasteland, were found in abundance, e.g. dock and thistle. Windblown plants, trees and shrubs were plentiful. But how did Chestnut, Oak and Willow come? Every common vegetable and every fruit tree occurred; the probable vector here was the lunchtime city worker. The Opium Poppy and the Primrose were seen, amongst a usually transient sprinkling of garden flowers.

The Fauna of the area was quite large. In addition to the usual city birds, there came into existence a large colony of Black Redstarts. This bird had nested in 1940 for the first recorded time, near Westminster; it rapidly took over the cleared area provided by the opportune bombing. There also grew up a colony of almost wild cats. The numerous City Churches probably yielded, from their long stagnant graveyards, the beetles, snails and woodlice found eventually throughout the area. From about 1950, the period of heterogeneous flora was found to be drawing to a close. Even towards the close of the war, there had been observed on the rim of some of those basements lining the roadways crossing the area, a heavy growth of typical meadow grasses. The seeds had probably arrived in the dung occurring on city streets during the war-days of horse-drawn cartage. The sequel has been the progressive smothering under a grass-mat of all but the well-placed or perennial flora.

The data outlined in this account were brought to the notice of the Natural History Society at its Winter meeting on 16th November. The ornithologist and naturalist-photographer W. G. Teagle, F.Z.S., showed a film of the site, while the flora were discussed by A. Jones, for several years in charge of an Ecological Survey of the Sites.

PHYSIOLOGICAL SOCIETY

We have heard a great deal about the dangers of radio-activity in the atmosphere, but there is also a beneficial side to atomic radiation. This Professor Rotblat showed in his lecture to the Physiology Society on November 12, when he gave a very lucid outline of the applications of nucleophysics to medical science.

Radio-active isotopes may be used to study the metabolism of a particular substance without affecting the health of the animal, because very small amounts of the tracer are needed. Blood circulation can also be investigated with tracers, and recently, by giving radio-active sodium, it was possible to tell to what extent Siamese twins shared lives—thus assisting the surgeons in the operation for separation.

Secondly, the isotopes are used to destroy living tissue. Since the thyroid takes up far more iodine than any other structure, by administration of radio-active iodine the thyroid tissue can be selectively destroyed. This is useful in treating hyperthyroidism and in cases of cancer of the thyroid when the iodine will also destroy secondary deposits. Removal of the pituitary gland has been found effective in controlling cancer of the breast, but its surgical removal is extremely difficult. The isotope ^{60}CO is used in a cyclotron to produce a very narrow ray which can be arranged to pass through the pituitary body, and by rotation of the apparatus the surrounding tissue receives much less radiation than the pituitary itself.

After giving further examples and some ingenious demonstrations, Professor Rotblat concluded by saying that, while radio-active isotopes are quite widely used, very little is known of the mechanism by which radiation destroys tissue.

SPORTS NEWS

RUGGER

1st XV v. Treorchy. At Treorchy, November 24th. Lost 3-11.

This was Bart's first match in the Rhondda Valley. As Mackenzie remarked in his speech afterwards, this game was rather like carrying coals to Newcastle, for no fewer than eleven of our side had Welsh connections. Many of the team had travelled down to their homes on the Friday and joined the main party at Treorchy.

In the first half the team did not seem to have shaken off the effects of their journey, for the forwards were lifeless and the handling of the backs was poor, even though Lammiman playing his first match of the season in the 1st XV, had a couple of strong runs on the left wing. By half-time Treorchy had scored a goal and a penalty goal, and soon after the interval they added a dropped goal. Then at last Bart's began to find some real life and to justify their trip. Continuing to throw the ball around they pressed hard, and once Halls put Lammiman right through after drawing the full back, but a covering Treorchy back knocked him into touch only a yard from the line. Phillips on the opposite wing was often dangerous, and on one occasion two men went for the ball with a resultant knock-on only a yard from our opponents' line when there were two more men outside them. In the end we got a consolation score when M. J. A. Davies dropped a neat goal.

No report can be complete without a word in praise of the magnificent hospitality shown us by the Treorchy officials and players, and we were glad to hear how much they had appreciated the open game which we continued to play even when eleven points down. We were also very glad to meet Dr. Melbourne Thomas, who had been capped for Wales when captaining Bart's in 1920.

Team: B. W. D. Badley; R. M. Phillips; G. J. Halls; M. J. A. Davies; D. A. Lammiman; R. Bonner Morgan; A. P. Ross; J. C. Dobson; C. J. Carr; D. A. Richards; L. R. Thomas; W. P. Boladz; A. H. Thomas; R. Jones; J. C. Mackenzie.

1st XV v. Esher. Home. Won 8-3.

The team for this match showed several changes, the two chief ones being positional—Mackenzie moved to the second row of the pack and Phillips was at fly-half. Both players amply justified the changes, the former setting a fine example in the essential art of covering, and the latter, apart from initiating both our tries, gave the backs a fast start to all their movements.

Our scores came in the first 20 minutes, both as a result of good breaks by Phillips. He scored the first himself and gave Halls the opening to score the second. The first was converted by M. J. A. Davies, whilst Esher's score, a fine penalty, came soon after our second score. After this there was no further score, although Esher pressed continuously in the second half, and were only kept out by some fine kicking by Badley and some good covering by the forwards, notably by Mackenzie and D. Richards.

This was an encouraging result after three consecutive defeats, and it seems as if the side is becoming more of a team rather than a mere collection of individuals. There is, however, still room for improvement in the basic arts of giving and taking a pass and in first-time tackling.

Team: B. W. D. Badley; D. A. Lammiman; G. J. Halls; M. J. A. Davies; A. B. M. McMaster; R. M. Phillips; B. Richards; W. P. Boladz; P. Knipe; D. A. Richards; J. C. Mackenzie; D. W. Roche; R. P. Davies; L. R. Thomas; A. H. Thomas.

1st XV v. Saracens. Southgate. Lost 8-14.

From the start, despite a wet ball, we threw it around, and within five minutes were rewarded by a try, which was made by Phillips who from his new position at fly half had a 40 yard twisting run and found Halls beside him to take the final pass 5 yards from the line. Saracens responded with a try by one of their centres, who won the race for a touchdown. Neither of these tries was converted. Bart's then came back with a try by Phillips, who when challenged on the '25' found Howard Thomas inside him, the latter playing his usual good game, and the ball then went back to Phillips who ran over 5 yards wide of the posts and so Halls converted to make the half time score 8—3 to us.

Saracens scored half way through the second half, as a result of a three-quarter movement. This was not converted. They were getting a good deal of the ball, and it was not long before their fly half dropped an excellent goal. This was rather dispiriting for us, and although play switched from one end of the field to the other, it was Saracens who scored through a concerted forward rush, which they converted.

Bart's in this last period were completely outplayed at forward, fitness was the main reason, but also we did not resort to enough foot play. Phillips was extremely good at fly half, and with a little more of the ball, we might have kept up our first half standard of play and maintained our lead.

Team: B. W. D. Badley; A. B. McMaster; J. C. D. Plant; G. J. Halls; D. A. Lammiman; R. M. Phillips; B. Richards; W. P. Boladz; P. Knipe; D. A. Richards; D. W. Roche; J. C. Mackenzie (Capt.); R. P. Davies; L. R. Thomas; H. Thomas.

1st XV v. Old Paulines. Drawn 3-3.

This match was played with a strong wind blowing, a greasy ball and slippery conditions underfoot. Considering these factors, both sides kept the game going very well, although naturally it was chiefly a forward battle. Bart's were perhaps a trifle lucky to be leading 3-0 at half-time—after a scissors with Phillips M. J. A. Davies dropped a magnificent goal into the teeth of the wind. Early in the second half the Paulines equalised with a similar score, and although Bart's had the better of the remainder of the play the Pauline covering prevented any further score.

The pack, although well beaten in the tight, played well in the loose, where it was good to see John Tallack, playing his first 1st XV match of the season, leading them well. Of the backs, Phillips, despite a good service from Ross, was not allowed much scope. Halls came near to scoring on at least two occasions and Badley was always willing to join the attack from the full-back position.

Team: B. W. D. Badley; D. A. Lammiman; G. J. Halls; M. J. A. Davies; A. B. McMaster; R. M. Phillips; A. P. Ross; J. C. Dobson; C. J. Carr; W. P. Boladz; D. W. Roche; J. S. T. Tallack; R. P. Davies; M. W. Sleight; J. C. Mackenzie.

SOCCER

1st XI v. St. Thomas' Hospital. Home. Drawn 2-2.

This was our first meeting with St. Thomas' Hospital for two years. The game started in sunshine with both teams playing attractive football. Bart's had to introduce four reserves into their team for a variety of reasons and it must be said that the reserves played well. The reserves introduced were D. Kingsley in goal, J. Bench a "borrow" from the Rugby club, P. Kingsley at inside left and M. Plumptree at outside left.

The game itself started with Bart's pressing and several long shots by Kingsley went perilously close to scoring. However the opening score was to be denied Bart's as St. Thomas' scored in one of their infrequent attacks on the Bart's goal. This made Bart's redouble their efforts and near half-time Gould was put through by Watkinson and scored with a well-directed close shot past the goalkeeper.

The second half opened amidst a cloudburst and soon the Bart's goal was again endangered. A faulty and expensive miskick by Kennedy allowed the opposing Right wing to score with a fine cross drive which gave our goalkeeper no chance whatsoever. Following this St. Thomas's pressed even more and a miraculous clearance off the line by J. Bench prevented a further score. With time running out and Bart's pressing for an equaliser, a well flighted centre from our right winger Andan went into the net via the post and the opposing goalkeeper—a rather lucky equaliser. No more goals were scored and the match ended in semi darkness with a 2—2 draw and both teams glad to get into a hot bath.

A mention must be made of the creditable performance of the four reserves introduced into the Bart's team at such short notice and also of the "sterling stopper" at centre half, namely D. Prosser.

Team: D. Kingsley; J. Bench, R. Kennedy; P. Watkinson; D. Prosser; R. G. L. Smith; A. Andan; R. Pilkington; A. Gould; P. Kingsley; M. Plumptre.

HOSPITAL LEAGUE

1st XI v. Westminster Hospital. Won 5-2.

Scorers: Whitworth 3 (1 penalty). Gould 2.

Smarting from our 0—5 defeat in the Hospital Cup at the hands of St. Mary's Hospital the previous Wednesday, we started this game with the fight and enthusiasm which had been lacking in the Cup game. Under almost continual pressure, the Westminster defence kept their goal intact for practically two thirds of the first half, defending desperately in order to do so. Suddenly, from a long upfield clearance by the Westminster full-back, defence was switched to attack, and following weak and inept tackling by the Bart's defenders the Westminster left winger was able to force the ball home. First blood to the visitors!

This spurred the Bart's forwards and they proceeded to bombard the Westminster goal and eventually succeeded in levelling the scores. A long shot was only partially saved by the opposition goalkeeper and Gould was on hand to score with a well placed shot just inside the near post.

Following the kick off Bart's again swept down on the Westminster goal, and from a throw-in, the ball moved from Gould to Pilkington to Johnson who placed the ball into an open space 30 yards out from goal for the 'Skip' (A. Whitworth) to score with a beautiful drive. One of the best goals seen on this ground for many years.

On changing ends Bart's again continued to press and it was not long before our lead was increased. Gould crossed a low centre from the left and Whitworth was again on the spot to drive the ball well wide of the goalkeeper into the net. Bart's continued to press home their advantage and soon Gould was able to slip the ball past the opposing goalkeeper to notch our fourth goal. Our final goal was scored by Whitworth from the penalty spot following a foul on Gould when a score was probable.

Our goalkeeper, not seriously troubled during the game by the Westminster forwards, eventually allowed a ground shot to pass through his hands into the net for the second 'consolation' Westminster goal.

During the closing minutes the game became very scrappy owing to injuries caused to both sides and the fact that both teams were reduced to 10 men.

A good clean game was enjoyed by all.

Team: J. Mercer; R. Kennedy; D. Prosser; P. Watkinson; C. Juniper; M. Noble; A. Andan; A. Whitworth; T. Johnson; R. Pilkington; A. M. Gould.

1st XI v. St. Thomas' Hospital. Won 2-1.

This was our fourth game in the newly formed Hospital League and St. Thomas' started the game as if they were out to win it. This however was not to be. After an early period of uncertainty the Bart's defenders gradually gained the mastery of the opposing forwards. This allowed the forwards to play up the field as a line and it was not long before a score resulted. A quick, long throw-in by Smith enabled Johnson to first time the ball into the middle where Whitworth, standing outside the penalty area, without a moment's hesitation, hit a high curling shot into the top left hand corner of the goal. This seemed to infuse new life into our opponents' attack which however was nobly quelled by our goalkeeper, Kingsley, and a much improved defence.

Half time came with Bart's still leading by the odd goal. The second half opened in much the same way as the first and again it was left to Whitworth to notch our second goal. Receiving the ball from our left winger, Whitworth proceeded to dribble round an opponent before releasing a drive which had the goalkeeper helplessly beaten. It must be stated that since the introduction of Whitworth into the forward line the whole line has improved as a whole and that extra finishing power, lacking before, is now present.

Following this reversal, St. Thomas' renewed their efforts to score and a long shot from outside the penalty box gave them a consolation goal. The game ended in semi-darkness with the Bart's defenders fighting a noble rearguard action to keep their line intact which they did until the final whistle.

A fine ending to a game enjoyed by all.

Team: D. Kingsley; R. Kennedy; D. Prosser; A. Watkinson; C. Juniper; R. Smith; A. Andan; A. Whitworth; T. Johnson; R. Pilkington; A. Gould.

HOCKEY

1st XI v. Kingston Grammar School. Drawn. 3-3.

The annual match against K.G.S. is usually rather revealing to Bart's hockey and this year, with the scalps of Thomas's and Guy's to their credit, we wondered what might happen.

K.G.S. began attacking immediately and, using their inside forwards cleverly, were soon one up when a sluggish defence failed to clear. There followed some good hockey and play swung from end to end with our forwards taking the ball nicely to their circle, but too often losing it. It was now that K.G.S. scored their second goal, when, with Doherty drawn out of his goal and the left half preparing to take a swing at the ball, it was ignominiously removed from beneath his stick over the goal line. Soon, however, Barts were awarded a penalty corner from which Drinkwater scored. Almost immediately K.G.S. scored their third goal with a beautiful shot from the edge of the circle, following a long corner. Just before half time we were again awarded a penalty corner and from this Drinkwater scored our second goal.

The second half seemed to go on for far too long from the Bart's point of view! We scored our third goal when Drinkwater sent a clever through pass to Anderson who drew the goalkeeper and flicked it neatly past him into the side of the net. From then on the defence came into their own and the two backs, Nichols and Goodwin, were especially effective in breaking up some dangerous forward movements. Neither side, however, could score again.

This was a creditable performance by the whole side. The forwards, on the whole combined well, but will benefit by playing together more and perfecting the all-important through pass. The defence started slowly but, by the second half were an effective team, playing well together. A notable feature of this game was the welcome return of C. S. Goodwin after his long absence from the Bart's hockey side.

Team: R. P. Doherty; C. S. Goodwin; J. B. Nichols; D. Godwin; E. J. Batterham; N. C. Roles; H. V. Blake; A. S. Tabor; A. S. Anderson (1); P. Drinkwater (2); D. R. Dunkerley.

1st XI v. Sevenoaks. Won 4-2.

Playing with only ten men on a fast but slippery ground, Bart's started in a determined way and were soon a goal up when Blake scored, following a skirmish in their goal-mouth. Sevenoaks seemed to wake up at this juncture and scored twice, when their forwards split our defence, giving Doherty little chance. Before half-time, however, Batterham scored from a penalty corner to equalise.

In the second half, we had some very good forward movements, in one of which, Dunkerley dribbled down the left wing and sent across a hard centre which Blake managed to flick past their goalkeeper. There followed some desperate defence by Bart's, in which Doherty played brilliantly, twice saving when all seemed lost. We managed to hold out however and just before time were awarded a penalty bully which Anderson took and won, giving us our fourth goal.

Team: R. P. Doherty; H. B. Ross; J. B. Nichols; C. S. Goodwin; E. J. Batterham (1); N. C. Roles; H. V. Blake (2); A. S. Tabor; A. S. Anderson; D. R. Dunkerley (1).

CUP MATCH—1st ROUND

1st XI v. St. George's. Won 11-1.

This match was played in icy conditions on a decidedly rough and tricky ground at Chislehurst. It is almost impossible to describe this game since Bart's were almost continually on the attack. We started very briskly and were three goals up in the first seven minutes. However, we did not add another until just before half time. Soon after the second half began, the rot started and with almost monotonous regularity the ball was removed from the George's net and returned to the halfway line.

One cannot mention individual names in a team which was so effective because of its teamwork. The forwards, especially, played cleverly, combining devastatingly and taking all chances given to them in the circle. The defence supplied them well and always seemed to have command of the situation.

This was, indeed, a heartening match for Bart's hockey.

Team: J. E. Stark; C. S. Goodwin; J. B. Nichols; D. Godwin; E. J. Batterham; N. C. Roles; J. R. Nicholson (1); A. S. Tabor; A. S. Anderson (4); P. Drinkwater (4); D. R. Dunkerley (2).

1st XI v. Old Cranleighans. Won 3-0.

Still with the thoughts of our eleven goals in the previous match, we took the field with our eyes skinned for further scalps. We soon showed that we meant business, for it was not long before Dunkerley scored a nice goal from the left. There now followed some open play and Bart's missed several opportunities to score. The O.C.'s came back strongly and several times looked dangerous, but time after time one line of defence or another broke up each attack. Doherty especially made his usual quota of brilliant saves, clearing the ball admirably over the heads of their advancing forwards. Not long before half time, Anderson scored after a beautiful solo run.

In the second half, play was not so inspiring. There were missed goals and passes went astray. Our third goal, however, was the result of a good combination. Nicholson took the ball quickly up the wing and sent across a lovely hard pass which Dunkerley took and, drawing the goalkeeper, pushed it neatly past him.

This match certainly showed a new Bart's side —a very fit side, playing robust hockey.

Team: R. P. Doherty; C. S. Goodwin; J. B. Nichols; D. Godwin; E. J. Batterham; N. C. Roles; J. R. Nicholson; A. S. Tabor; A. S. Anderson (1); D. R. Dunkerley (2); A. P. Marks.

CUP MATCH—2nd ROUND

1st XI v. St. Thomas's. Won 3-2.

We were lucky enough to be able to turn out our full eleven for the first time this season and the results were most satisfactory.

Thomas's were all over us for the first quarter of an hour and, looking back, it is miraculous that they did not score. Attack upon attack was launched, but the defence kept them out somehow, Doherty in goal, surpassing himself with some brilliant saves. Then quite suddenly, something clicked and the Bart's forwards started their attack, which was soon rewarded when Anderson scored. There followed now a furious battle, play going from end to end with great rapidity, but Thomas's definitely had the better of it for by half-time they had scored twice. However, Bart's had had two short corners awarded to them, both of which had been saved on the goal line, so we were by no means despondent when we changed over one down.

Soon after half time, with our forwards using hard accurate passes to each other, Drinkwater sent a beautiful through pass, beating the defence, which Anderson took on to score. 2 2 and still lots of time to go. Could Bart's possibly hold out; they are notorious for giving the game away near the end. Not a bit of it, though, the whole side played as though their lives depended upon the result and they held out, for at the final whistle it was still 2—2. Mention must be made here of Drinkwater's fine play during this half, for he not only was most dangerous in attack, but managed to find time for defence as well, almost completely obliterating Paddle, the Thomas's inside-right, whose reputation we most feared. He was also helped in this by some sterling work by Nichols, whose great coolness in a dangerous situation inspired the rest of the side.

We now embarked on twenty minutes of extra time with the light failing and both sides grimly determined to get that last goal. Soon Bart's were awarded a penalty corner and, with a borrowed stick (for he had just broken his own), Drinkwater sent in a very hard shot which never gave their defence a chance. The match could not now have ended too soon for us. We managed to hold on to our lead for another fifteen minutes and were even seen to be attempting another goal as the final whistle went.

Team: R. P. Doherty; C. S. Goodwin; J. B. Nichols; D. Godwin; E. J. Batterham; N. C. Roles, J. R. Nicholson; A. S. Tabor; A. S. Anderson (2); P. Drinkwater (1); D. R. Dunkerley.

1st XI v. Lloyd's Bank. Lost 6-3.

This was an unfortunate result, due in a large degree to a complacent apathy after our victory in the Cup Match. We did not have a full side, but this was no excuse for the bad lapse in the second half which cost us the match. It was a game of varying fortunes, for Bart's started well and looked to be well in command, scoring early on in the match. Towards half time however, Lloyd's came into their own and had scored two goals before changing over. Soon after half time we scored again but there followed the lapse mentioned earlier when four goals were scored against us, partly due to the Lloyd's forwards playing

very well together, but mostly to careless tackling and hitting on our part. Towards the end, the fire returned, but although we added our third goal, it was too late.

Team: R. P. Doherty; J. B. Nichols; H. B. Ross; C. S. Goodwin; E. J. Batterham; D. Godwin; J. R. Nicholson; A. S. Tabor; A. S. Anderson (2); N. C. Roles (1); H. V. Blake.

LADIES' HOCKEY

The Women's Hockey Club began the season with team trials on October 3rd, 1956, at Chislehurst. The twenty players attending the trials included several newcomers, whom we were very pleased to welcome. The first match of the season against our neighbours, The Middlesex Hospital, resulted in a resounding victory for Bart's of 11 0 goals, a stimulating start to the season, and, we hoped, a reflection of things to come. However, not a week passed before our record was broken, as we were defeated by Queen Mary College by 1—3 goals. Spirits were soon raised again following the victory over King's College, London, by 5—3 goals on 20th October, so bringing an end to their 2-year record without defeat. This was an excellent match, with good positioning among the half and back lines, and some well planned co-ordinated movements by the forwards.

OXFORD TOUR

This year the annual tour was spent in Oxford over the week-end 2nd 5th November, where four matches had been arranged. The first was against University College, who confidently fielded a team consisting of 1st and 2nd XI players, the goalie well wrapped up and prepared for nothing but an occasional glimpse of the ball. Before long, however, the Bart's team netted a splendid goal, but an equaliser soon brought the score to 1—1. After half-time, another goal by Miss Swallow came as a surprise to the hard-worked goalie, who revealed remarkable agility in defending all four corners of his goal. This slender lead was maintained throughout most of the second half, despite repeated attacks on our goal, both on the ground and otherwise, which we were assured were not a personal attack on our excellent goalie, Miss Isobel Tomkins, undoubtedly the heroine of the match. A final concerted effort by our opponents brought the score to 2 2, and with minutes to go, and stiffness setting in, an airborne shot by our forwards was prevented from reaching the net by the outstretched hand of the goalie. Unfortunately, a goal was not realised from the resulting penalty bully, and U.C. emerged worthy winners by a goal scored as the final whistle blew. After the game, we were entertained by U.C., who subsequently proved to be excellent hosts for the rest of the week-end. Unfortunately, two matches were cancelled, but again U.C. stepped into the breach, and it is to them that we are indebted for such an enjoyable week-end, both on and off the field.

On Monday, Lady Margaret Hall were defeated by 10—0 goals, our own goalie stemming the flow of goals by offering to defend the empty L.M.H. goal after half time.

CUP MATCHES

London University Inter-Collegiate Knockout Tournament.

The team reached the quarter-finals without difficulty. A decisive victory over Royal Holloway College 2nd XI by 9—2 goals was followed on 10th November by a second easy win over Chelsea Polytechnic by 9—0 goals. University College, London, proved to be our stumbling block; in a hard-fought match at Chislehurst, their quickness on to the ball and superior combining together of the forwards earned them a 2—1 victory. May we wish them luck in succeeding rounds.

Inter-Hospital Tournament.

The first round was played on 24th November versus St. Mary's Hospital and resulted in a win for Bart's by 4—2 goals.

The teams have largely consisted of the following: Isobel Tomkins; Jill Tufft; Audrey Woolf; Margaret Childe; Jennifer Hall; Angela Tressider; Elizabeth Knight; Lorna McPhail; Pat Kielty; Jennifer Angell-James; Jean Arnold; Judy Wilson; Janice Swallow; Shiela James; Jennifer Hartley; Jane Chambers (Captain).

SQUASH

The Squash season began with trials which were held on Monday and Tuesday, 8th and 9th October. These revealed some promising players, and included a number from Charterhouse.

We have had a bad season so far, owing in part to the great difficulty in getting our best players together, and we are lying bottom of our division in the Cumberland Cup. However, the end of the exams., and the return of our captain, M. J. Scorer, after his injury, should see us winning some matches in the latter half of the season.

FENCING CLUB

The Club would like to draw the attention of students to the opportunities available for those who are drawn towards this agile sport. For the person with past experience in fencing, there is the chance to "Take Sword" against Club members. For those who have no previous knowledge, tuition is available from our Instructor, Professor Delzi. For all members, there are the lessons given during the Club practices on each Wednesday afternoon, by Professor Delzi. These practices continue throughout each term of the year. The Club provides all equipment: weapons, masks, gloves, jackets. Practice is in the Gymnasium, Charterhouse. At the A.G.M., the following were elected officers for the Season 1956-57:

Captain: K. J. Sugden.
Secretary: B. M. J. McGrath.
Treasurer: J. Parker.
Committee: J. Townsend; M. Woolnough.

Over the Season 1955-56, the Men's Teams fought 7 matches, winning against St. Thomas' Hospital and against The Middlesex Hospital. The Women's Team lost 8:4 against The Royal Free.

So far this season, three matches have been fought: a match of 3 Foil; Epee; Sabre was lost to Guy's Hospital; a match of 3 Foil was lost 3 Bouts to 6, against The Middlesex Hospital; finally, a match of 4 Foil was won against The Westminster Hospital, by 10 bouts to 6.

ATHLETICS

The A.G.M. of the Athletic Club was held on 30th October, 1956, when the following Officers were elected for the 1957 Season:

President: Dr. C. F. Harris.
Captain: A. S. Tabor.
Vice-Capt.: C. Prys-Roberts.
Hon. Sec.: B. D. G. Hill.
Hon. Treas.: J. Hedley-White.

Dr. A. E. Dormer was elected as a new Vice-President.

It was decided that Vice-Presidents no longer on the Hospital Staff should be elected Hon. Life Members, together with notable ex-Bart's athletes. Four Hon. Life Members were elected, namely:

Sir Adolphe Abrahams.
Dr. A. S. Wint.
Dr. K. Backhouse.
Mrs. C. W. H. Harvard (née Bott).

HOSPITAL RUGGER CUP

1956 - 57

1. BYE			Guy's	Thurs. Jan. 17th		
2. BYE			St. Bart's			
3. BYE			St. Thomas's		Tuesday February 26th	
4. MIDDLESEX	Tues. Jan. 8th			Tues. Feb. 5th		
5. CHARING CROSS			———			
6. WESTMINSTER	Thurs. 10th Jan.					WEDNESDAY MARCH 20th
7. KING'S				Thurs. Feb. 7th		
8. BYE			St. Mary's		Thursday February 28th	
9. ST. GEORGE'S	Tues. Jan. 15th					
10. U.C.H.			———	Tues. Feb. 12th		
11. BYE			London			

(The 'A' XV will play according to the same draw, except that it plays the Royal Free in the first round. Dates refer to 1st XV matches.)

BOOK REVIEWS

That writer does the most who gives his reader the most knowledge and takes from him the least time. — COLTON.

A MANUAL OF HUMAN ANATOMY *by* J. T. Aitken, G. Causey, J. Joseph and J. Z. Young. E. & S. Livingstone Ltd. 1956. Vol. I (Thorax and Upper Limb), price 14s. Vol. II (Head and Neck), price 16s. Vol. III (Lower Limb), price 12s. 6d.

It is the declared intention of the authors of this new manual to give the student "a method of dissecting the body and to guide him as to the extent of the knowledge expected of him in the second medical examination . . . Much detail has been omitted." The truth of the latter statemen is amply evident on reading the text, but opinions will naturally vary as to whether the deliberate omissions are, in the light of clinical requirements, in all cases justifiable. The endeavour to condense and simplify has certainly led to some laxity of statement; thus, the thoracic sympathetic chain is said to lie on the necks of the ribs, the ulnar nerve to be subcutaneous in the forearm and the femoral artery to give off medial and lateral circumflex femoral arteries. Instances of a similar lack of precision are very numerous in volumes I and III.

In volume I errors of fact occur too frequently: thus, the extensor carpi radialis longus is stated to form the lateral wall of the cubital fossa, the brachial artery to divide at the apex of the fossa and the ulnar nerve to pass through the flexor retinaculum, while three papillary muscles are described for the right ventricle.

In volume III there is a marked general lack of topographical precision: thus, the nerve to quadratus femoris, the internal pudendal vessels and nerve and the obturator artery are completely ignored, the nerve supply of the soleus muscle is given as the medial popliteal nerve alone and the anterior talo-calcaneo-navicular joint is described without reference to the bifurcate ligament. Brief accounts of cutaneous innervation and of lymphatic drainage are given at the end of the volume but the deep lymph drainage of the gluteal region passes unmentioned. Throughout this volume there is an emphasis on functional considerations which would be admirable were it more firmly based on adequate topographical considerations. Many of the detailed accounts of muscle actions, for example, lose in value from want of more precise information concerning relevant muscle attachments.

Volume II brings a rather refreshing approach to the study of the head and neck. Though less topographical detail has been sacrificed, there remain, however, many minor defects and errors in both the text and the diagrams.

In overall review of these first three volumes it is fair to state that the authors have attempted a new approach to anatomical dissection which, except in the case of volume II, falls far short of the ordinary requirements of the medical student as the curriculum is now constituted. In spite of the authors' claim to satisfy second M.B. requirements, the use of this new book must entail a continual reference to larger systematic works both to obviate dubieties and to ensure that sufficiency of topographical knowledge necessary for successful clinical work.

OUTLINE OF BACTERIOLOGY AND IMMUNITY *by* Ronald Hare. Longmans, Green & Co., Ltd., London. IX+418 pp. 35s.

In the introduction to this admirable new book Professor Hare points out that in teaching and hospital practice attention is often given chiefly to diagnostic bacteriology, sometimes to the exclusion of wider aspects such as immunology and epidemiology. Here, based on lectures given to clinical students at St. Thomas's Hospital, is an exposition of the relationship of micro-organisms to man in health and disease, in which viruses are accorded equal status with bacteria. As a result of this policy approximately two-thirds of the book is taken up with a lively and readable account of general problems concerning the life and death of bacteria, the way they and viruses spread and cause infection, and how we react to them. Tucked away in the remaining pages are relatively short accounts of bacteria, fungi, spirochaetes, rickettsiae, viruses and bacteriophages.

For someone looking for a general account of immunology, how infection is transmitted, or another of the contents of the first section, this book can be strongly recommended. Those faced with a particular problem might wish that in the next edition more will be said about individual bacteria, and that a little more space will be given to utilitarian bacteriology.

Chemotherapy and the problems of cross-infection have produced a quickening interest in the natural history of bacteria. Professor Hare is to be congratulated on providing a guide to this interesting and not unimportant subject.

R. H. SHOOTER.

AN ATLAS OF DISEASES OF THE EYE *by* E. S. Perkins & P. Hansell. J. & A. Churchill Ltd., London. 42s.

It is indeed unfortunate for the future General Practitioner and his patient that in most medical schools the crowded curriculum has now reduced the study of diseases of the eye to six or less attendances at an Out patient clinic and about four lectures, which are voluntary.

It is evident from the tragedies of missed glaucoma, unrecognized intra-ocular neoplasms and

serious inflammatory disorders that ophthalmology does not receive the attention it deserves. Moreover a study of the eye is of immense value in establishing the diagnosis and assessing the prognosis of many systematic disorders.

This Atlas, edited most ably, by E. S. Perkins and P. Hansell, is a coloured pictorial representation of pathological ocular conditions with brief descriptive legends interpreting the main clinical features. It will fill the defects of limited undergraduate teaching without requiring the expenditure of much time in reading. The illustrations, representative of external ocular diseases and fundus paintings, have been specially selected from paintings and photographs of the wealth of clinical and pathological material collected at Moorfields Eye Hospital and the Institute of Ophthalmology.

This Atlas is of value to all students and practitioners.

Messrs. W. S. Cowell of Ipswich are to be congratulated on the excellence of their technique in reproducing the coloured plates. The generosity and public spirit of the firm of Roche Products Ltd. has made it possible (by their very handsome subsidy) to make this Atlas available to the profession at about one-tenth of its cost of production. For this considerable aid in teaching ophthalmology and for the help it will afford our patients we are most grateful to them.

H. B. STALLARD.

NEW EDITION

PRICES TEXTBOOK OF THE PRACTICE OF MEDICINE 9th edition *edited by* Donald Hunter. Oxford University Press. Pp. 1,774. 63s.

This well-known textbook has undergone several changes since the last edition four years ago. Dr. F. W. Price has resigned from the editorship, and in honour of him the title has been enlarged to include his name. This will make little difference to students who have long been in the habit of referring to the book as 'Price'.

During the complete resetting which accompanied the change in form the text has been completely revised. Although the reduction in the number of pages is to be welcomed, it is a pity that this has partly been achieved at the expense of the illustrations. The complete lack of figures is a serious disadvantage. In cardiology in particular, it is difficult to understand electrocardiographic changes without being able to see examples. Therefore this book cannot be recommended to students who require an introduction to medicine; it should be regarded purely as a work of reference, and as such may usefully be included in any doctor's library.

J.T.S.

BOOKS RECEIVED

Inclusion in this column does not preclude review at a later date.

CONCISE ANATOMY, 2nd ed. *by* Linnen F. Edwards. McGraw-Hill. Pp. 502. 49s.

AIDS TO BIOLOGY, 4th ed. *by* W. H. Neville. Baillière, Tindall and Cox. 8s. 6d.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXI **FEBRUARY 1957** **No. 2**

EDITORIAL

AS ONE stands in the Square and watches the enormous cranes across Little Britain attacking now the third storey of the new hospital block, one's mind turns inevitably to the more concrete aspects of hospital life. And with the slightly historical attitude of mind which so becomes a member of an old and traditional institution, it is natural to turn about and survey the Out-Patient and Casualty block. This building was completed just half a century ago. Browsing through the records of the period, it is possible to capture some of the excitement, pride and pageantry which attended the last stages of the construction programme.

The *Journals* of 1907 were full of enthusiastic comment as the Resident Staff moved into their quarters, the first part of the building to be finished. To quote the February editorial, "Those who have endured the wretched conditions in the present quarters will no doubt feel amply rewarded for their past misery by the thought that their successors will in future dwell in the lap of luxury."

But possibly this commendable altruism existed largely in the mind of the editor, who had no doubt experienced little of the 'wretched conditions'—for even in the first few months things did not run quite smoothly. From the May *Journal* we learn that a group of Housemen had started to grow beards, a protest against the absence of hooks in their rooms to hang their razor strops from. Photographs in later numbers of the *Journal* suggest that the movement either succeeded or was ruthlessly crushed. Further unrest was caused by the fact that, in order to complete the rest of the building according to schedule, the workmen had taken to working night shifts.

Finally, however, three years after the Foundation Stone had been laid by the Prince of Wales, the Out-Patient and Casualty block was officially opened by the President of the Hospital, the Prince of Wales (2 July 1907). The August *Journal* is devoted to the opening ceremony and to a description of the new facilities.

The many distinguished guests at the ceremony included the Italian Ambassador and his wife, the Masters of many of the City Livery Companies, and of course a large number of the distinguished medical men of the time. The actual ceremony was brief and effective. The Treasurer of the Hospital, Lord Ludlow, read an address. The Prince of Wales replied, and declared the building Open. Later the Princess of Wales received her Charge as a Governor of the Hospital.

After the ceremony the Royal Visitors were taken on a tour of the hospital. They showed considerable interest in the wards and various departments, and even deviated from the official programme. The visit ended with afternoon tea, which had been prepared in the square, but threatening rain drove the Royal Party into the Library.

As one views the bustling Out-Patient Department today, it is hard to believe that the Clerk to the Governors, Mr. Hayes, was practically ridiculed in 1907 for providing such an extensive lay-out. Some pessimists even predicted that only two of the rooms would ever be used. We can well be thankful now for his foresight.

Transposition in Time

A monthly journal such as this requires great powers of imagination from its readers. Like a lawyer in some dusty law-court, resurrecting for his jury the pressing motives and passion of some almost-forgotten crime, we present to our Public the little excitements of the months gone by. And we expect that you, lying on some couch in the drab latter half of February, will conjure up the gaiety and festivity of Christmas, recollecting emotion in tranquility, perhaps seeing before your inward eye a host of flickering candles, recalling the deep satisfaction of present-giving, the wild hilarity of ward-shows, the catch in the breath at a carol heard over the snow on a December night. What the bare text lacks in pictorial power, you must supply from your mind.

Possibly the best solution would be to print our seasonal news twelve rather than two months after the event.

Matron's Ball

This year, Matron's Ball was held at Grosvenor House on Wednesday, January 2. It was considered by many to have been one of the best 'Grosvenors' for many years; the spirit and atmosphere being extremely festive.

The band appeared to appreciate the mood of the evening and maintained the gaiety by varying the dances from the old-fashioned ballroom steps to the modern 'Rock-&-Roll.' As Matron's Table was often found deserted, it was to be presumed that her guests were enjoying the dancing.

Among those present were several Chiefs, one of whom, not to be outdone by the younger set, took to the floor when the tempo became a little more lively.

The effects of a large and enjoyable dinner were worn off by energetic dancing and before long, it was to everyone's great amazement and profound regret, the last waltz was played. A delightful evening appeared to have ended too early.

Practice in Canada

In what is practically an era of medical emigration, it seems reasonable to devote considerable space to accounts of medical life in other countries. Many Bart's men have gone abroad and naturally wish to write about their experiences there; and they have many interested readers here, especially among students and others who contemplate taking the plunge themselves. Many of our contemporaries have been horrified by stories of overcrowding and cut-throat competition in some section of the Profession here; nor have they been reassured by their elders' gloomy forebodings about the future. We seem to be entering a phase similar to the old medical pioneering colonialism, if perhaps not from such noble motives.

This month we print a description of a country practice in Saskatchewan. Dr. T. M. F. Roberts, the author, has offered to provide further information for anyone who would like it. Letters should be addressed to Dr. Roberts, care of the Editor of the *Journal*.

We hope that this will encourage other Bart's doctors and nurses abroad to write of their experiences. Articles and letters, no matter how brief, on medical practice, the people, the weather, in fact on anything likely to be of interest to a potential settler, are all very welcome.

Christmas Dinner

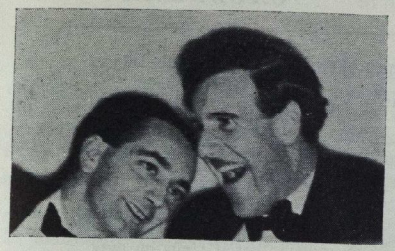
The annual Christmas Dinner for residents in College Hall was held on Friday 21 December.

The evening got off to a good start with sherry in the Recreation Room, kindly provided by Dr. Ellis, the Warden. The catering staff excelled themselves in providing a good meal of traditional Christmas fare. During the meal entertainment was provided by a Cat, later discovered to belong to Dick Whittington, giving a late-night preview of the Children's ward show, *Kidsophrenia*.

Warden entertains ex-Warden.

The Cat gave much pleasure by kissing selected members of the Company; notable among those so honoured was the Guest of Honour, Dr. Scowen.

The four speeches which followed shared the characteristic of extreme brevity. In fact each speaker commenced his oration with the contention that he did not propose to make a speech. Although one must admit that this was if anything an error on the right side, one cannot help feeling that an opportunity was lost with what was by then a most tolerantly expectant audience.



Dr. Parrish and Mr. Bower share a joke.

After the speeches the Company adjourned into the Recreation Room for charades and carol singing.

C.M.O. to B.O.A.C.

We congratulate Dr. Kenneth G. Bergin on his appointment as Chief Medical Officer to B.O.A.C.

Dr. Bergin was educated at Clifton, Queens' College and Bart's. During the last war he was a Medical Officer in the R.A.F. with the rank of Wing Commander, and has flown more than 2,000 hours as a pilot. He was twice mentioned in dispatches.

He joined B.O.A.C. in 1946 and has recently been Medical Superintendent, Air Services.

New Society

We are delighted to hear of a new student society formed for the purpose of performing Gilbert and Sullivan opera. During the last few weeks the organiser Brian Richards has been holding auditions, and he informs us that there has been a most enthusiastic response.

A company of 80 has been selected, and the hall of Gresham College will provide an ideal setting for the first production, which will be a concert performance, with full orchestra, of 'The Gondoliers.' It will be held on Friday, March 1st at 8.30 p.m. Admission is by programme, and these can be obtained from Mr. Garwood at the students' cloakroom, from Miss Oxborrow at Charterhouse, or they may be reserved by ringing Mon. 0111.

If this venture is successful a full scale stage production is planned for next October. This society deserves all support, and we wish it every success.

Canadian Tour

Sir Geoffrey Keynes has recently completed a lecture tour in Canada as the Sir Arthur Sims Travelling Professor.

Harvey Tercentenary

June 3rd of this year will be the three-hundredth anniversary of the death of William Harvey, a famous Bart's physician who wrote the first treatise on the circulation of the blood.

The Royal College of Surgeons, in conjunction with the Harveian Society, has arranged a week's Congress in London to commemorate the occasion. The Congress will consider contemporary work on the problems of the circulation. It opens with a symposium on *Knowledge of the Circulation from the 17th to 20th Centuries*, in which Professor Franklin will be the principal speaker. Some of the meetings are due to take place at Bart's, and they will be broadcast from the hospital on colour television (closed network only). After the London meeting there will be a weekend of historical discussion at Harvey's birthplace near Folkestone, under the chairmanship of Sir Geoffrey Keynes.

We hope to devote most of the June number of this Journal to an appreciation of William Harvey and his works, and to reports of current work on the circulation of the blood being carried out in the Hospital.

New Year Honours

Sir Weldon Dalrymple-Champneys, D.M., F.R.C.P., D.P.H., lately Deputy Chief Medical Officer at the Ministry of Health, has been appointed a Companion of the Bath (Civil Division).

ANNOUNCEMENTS

Births

LUSCOMBE.—On October 6, 1956, to Ann, B.M., B.Ch., (*nèe* Wickham) and Angus Luscombe, M.B., B.S., a son (Francis Edward).

ROYLE.—On December 2 to Wendy (*née* Carter) and Dr. Bill Royle of 91, Bitterne Road, Southampton, a son, a brother for Nicola and Frances.

WATTS.—On December 18, 1956, to Joan and Dr. R. W. E. Watts, a son (Richard Arthur).

Engagements

HAYES-MORBEY.—The engagement is announced between Dr. M. E. B. Hayes and Miss R. S. Morbey.

ROSBOROUGH-WILKINSON.—The engagement is announced between Dr. Desmond Rosborough and Miss Olive Wilkinson.

THOULD-FURNER.—The engagement is announced between Dr. Antony Keith (Tony) Thould and Miss Bernine T. Furner.

Marriages

GOODE-SMEED.—On December 8, 1956, at St. Bart's-the-Less, Dr. John Howard Goode to Dr. Inez Mary Patricia Smeed.

WATKINS-GOULD.—On December 8, in London, Dr. David Watkins to Gillian Mary Gould.

Deaths

BUCKLEY.—On November 14, 1956, Mr. W. Buckley, F.R.C.S., of Nottingham, aged 53. Qualified 1928.

COLE.—On Christmas Day, Florence E. Cole, at Hereford General Hospital, for many years Sister Martha at Barts.

SCOTT.—On November 20, 1956, at Thames Ditton, Surrey, Noel Archibald Scott, M.R.C.S., L.R.C.P. Qualified 1915.

WATERS.—On December 11, 1956, in London, Dr. Alfred Charles Stanley Waters, M.R.C.S., L.R.C.P., late of March, Cambs. Qualified 1901.

CALENDAR

Thurs.	Feb.	14	Hockey Club Dance.
			Abernethian Society: *Films.*
Sat.	,,	16	Dr. E. F. Cullinan and Mr. J. P. Hosford on duty.
			Rugger: v. Streatham (H.)
			Soccer: v. Normandy Coy. Sandhurst (A.)
			Hockey: v. University College (A.)
			Rugger Club Informal Dance.
Sat	,,	23	Medical and Surgical Professorial Units on duty.
			Rugger: v. U.S. Chatham (H.)
			Soccer: v. Caledonians (H.)
			Hockey: v. Orpington (A.)
Mon.	,,	25	Physiological Society: *Films.*
Tues.	,,	**26**	**Rugger: Semi-Final Hospitals' Cup (Richmond).**
			Abernethian Society: *Symposium on Oedema.*
Wed.	,,	27	Soccer: v. London Hospital (H.)
Sat.	March	2	Dr. G. Bourne and Mr. J. B. Hume on duty.
			Rugger: v. Old Millhillians (A.)
			Hockey: v. St. Mary's Hospital (H.)
			Rugger Club Informal Dance.
Sun.	,,	3	Hockey: v. Bandits (H.)
Thurs.	,,	**7**	Abernethian Society: Dr. J. P. D. Thomas and Mr. J. D. Griffiths on *Recent Research at Bart's.*
Sat.	,,	**9**	Dr. A. W. Spence and Mr. C. Naunton Morgan on duty.
			Rugger: v. Loughborough College (A.)
			Soccer: v. Middlesex Hospital (A.)
			Hockey: v. Past Bart's XI (H.)
Wed.	,,	13	Soccer: v. St. George's Hospital (H.)
Sat.	,,	**16**	Dr. R. Bodley Scott and Mr. R. S. Corbett on duty.
			Rugger: v. Aldershot Services (A.)
			Hockey: v. Oxted (H.)
Sat.	,,	23	Dr. E. R. Cullinan and Mr. J. P. Hosford on duty.
			Rugger: v. Harlequin Wanderers (H.)
			Soccer: v. Old Parkonians (A.)
			Hockey: v. King's College Hospital (A.)
Sat.	,,	30	Medical and Surgical Professorial Units on duty.
			Rugger: v. Inter-Firm Sevens.
			Soccer: v. Westminster Hospital (A.)
			Hockey: v. Westminster Hospital (A.)

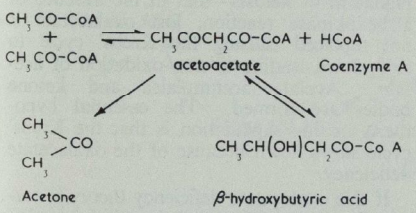
THE MECHANISM OF KETOSIS IN INSULIN DEFICIENCY

by G. M. BESSER

THE PURPOSE of this paper is to examine critically the suggestions which have been put forward to explain the production of ketone bodies—acetoacetic acid, β-hydroxybutyric acid, and acetone—which occurs during any deficiency in insulin secretion, i.e. in Diabetes mellitus. These suggested mechanisms have been found wanting and an alternative theory will therefore be proposed.

SOURCES OF KETONE BODIES

We must first review the possible sources from which the ketone bodies may be formed. The parent substance is acetate—or more accurately 'active acetate,' acetyl coenzyme A. This will be referred to henceforth as 'acetate.' It has been shown quite satisfactorily that acetoacetate is formed in the main by the reversible condensation of two molecules of acetate:



From acetoacetate both β-hydroxybutyric acid and acetone may be formed. Acetoacetate is formed in the liver whenever an excess of acetate accumulates and thus ketosis will be adequately explained if it can be shown how an abnormal accumulation of acetate has occurred. Ketone bodies can be metabolised by the extrahepatic tissues, but not by the liver, and hence the blood ketone level will rise when the production of ketone bodies exceeds the capacity of the extrahepatic tissues to oxidise them.

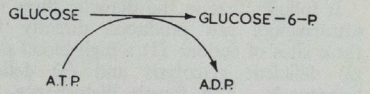
An address given to the Abernethian Society.

What are the possible sources of acetate? It may be seen from Fig. 1 that acetate may be produced from carbohydrate by the process of glycolysis, or from fats and fatty acids by β-oxidation and that it is then oxidised via the Krebs' cycle, producing energy in the form of energy-rich adenosine triphosphate (A.T.P.). The source of this acetate and energy in the normal person is mainly carbohydrate, but this is not so in the diabetic as will be seen below.

ACTIONS OF INSULIN

When attempting to explain a lesion related to a deficiency in the secretion of a hormone, one must do so in the light of present-day ideas as to the sites of action of the hormone. These must be briefly reviewed for insulin.

The hormone appears to have three main sites of action[2]. Firstly, insulin appears to promote the uptake by the cells of glucose and some other sugars, as well as their passage across the cell membranes[13]. Secondly, insulin appears to promote the hexokinase reaction in glycolysis[18].



The evidence of an action here is only indirect, no reproducible direct evidence having emerged as yet. The mode of action is also uncertain, but it seems possible that hexokinase may be inhibited by an anterior pituitary factor, this inhibition being removed by insulin.

Thirdly, insulin appears to be concerned in certain synthetic or anabolic processes. Evidence exists that insulin favours protein synthesis[2,6] although it is stated that this may be an indirect effect, the result of the provision of the energy for the synthesis. However, the evidence that insulin promotes

the build-up of acetate and short-chain fatty acids into long-chain fatty acids i.e. lipogenesis, shows conclusively that the effect here is direct, and not merely dependent on the provision of energy. The main evidence for this is provided by the metabolism of fructose. It is seen from Fig. 1 that when fructose is metabolised it bypasses the glucose-hexokinase reaction, being directly converted to fructose-6-P by a different enzyme. Thus any action of insulin on glucose-hexokinase will not affect the conversion of fructose to acetate which is oxidised in the normal way, both in the non-diabetic and the diabetic—energy being released. If the hexokinase reaction were the only metabolic site of action of insulin, then lipogenesis—the build-up of fatty acids from acetate—would proceed normally in diabetic animals fed on fructose. This does *not* occur, indicating that insulin has a direct promoting effect on lipogenesis[7]. That it is not merely energy for lipogenesis which is deficient in the diabetic, is suggested by the fact that (1) fructose is oxidised normally[9], and (2) other substances requiring energy for their synthesis from acetate (such as cholesterol[1] are still synthesised in the diabetic. Therefore we may accept that insulin specifically controls and promotes lipogenesis.

The three most generally accepted sites of action of insulin are thus (1) the uptake of glucose by the cells, (2) the promotion of glycolysis by influencing hexokinase, and (3) the promotion of lipogenesis from acetate.

It follows that in the diabetic three main disturbances are produced directly from these sites of action: (1) a high blood sugar, (2) deficient glycolysis and (3) deficient lipogenesis. The fourth disturbance—that of ketosis, with which we are mainly concerned today, must be considered as an indirect effect explicable on the basis of the three previously mentioned actions of insulin.

Previous Explanations of Ketosis

Let us now consider the theories which have been advanced on the basis of this knowledge to explain ketosis. The first action of insulin to be discovered was that of promoting the glucose-hexokinase reaction and it is thus not surprising that the most widely acclaimed and accepted explanation of ketosis should incorporate this action.

For the adequate oxidation of acetate and the production of energy, the Krebs' cycle must be kept going and any intermediates in the cycle which are lost must be replaced. The chief loss in this direction is of oxalacetate which is normally replaced from pyruvate, derived mainly from carbohydrate (see Fig. 1.). Now in the diabetic, the hexokinase reaction and glycolysis as a whole are slowed, and less pyruvate is formed. If less pyruvate is formed, then the oxalacetate which is being continually lost is not adequately replaced. This causes the Krebs' cycle to slow down, and the oxidation of acetate is reduced. This acetate is obtained in the diabetic, when glycolysis is reduced, principally from sources other than carbohydrate, for example from fat which is then mobilised to a much greater extent than normally in an attempt to provide energy in the absence of carbohydrate utilisation. It is thus evident that when the Krebs' cycle slows down acetate will accumulate, and as we have seen before, when acetate accumulates, acetoacetate and other ketone bodies are formed. Ketosis ensues[12].

This then is the currently accepted explanation of ketosis—that in the absence of a hexokinase reaction, lost oxalacetate is not replaced causing the Krebs' cycle to slow down leading to non oxidation of acetate. Acetate accumulates and ketone bodies are formed. The essential hypothesis in this explanation is that the Krebs' cycle slows down because of the oxalacetate deficiency.

If this oxalacetate deficiency theory is correct then it is evident that the administration of any substance which will provide oxalacetate in the body should speed up the cycle again and relieve the diabetic ketosis. Substances such as this which yield oxalacetate include any intermediate in glycolysis appearing subsequent to the hexokinase reaction, or not involved in it, or any intermediate in the Krebs' cycle. The effects of administration of these compounds to diabetic men and animals have been studied with succinate, dihydroxyacetone, pyruvate, citrate, lactate and fructose [4,5,9]. It has been found that in the cases of ketosis induced by starvation, fat feeding, phlorhizin poisoning or injection of ketone bodies the administration of such substances does indeed relieve the ketosis. However in the case of the diabetic subjects the ketosis is not relieved. Evidence that oxalacetate must have been formed in the diabetic animals at some stage after administration of succinate was provided by the fact that the succinate was converted to glucose (a process during which it must have been converted to oxalacetate) but yet did not alleviate the ketosis.

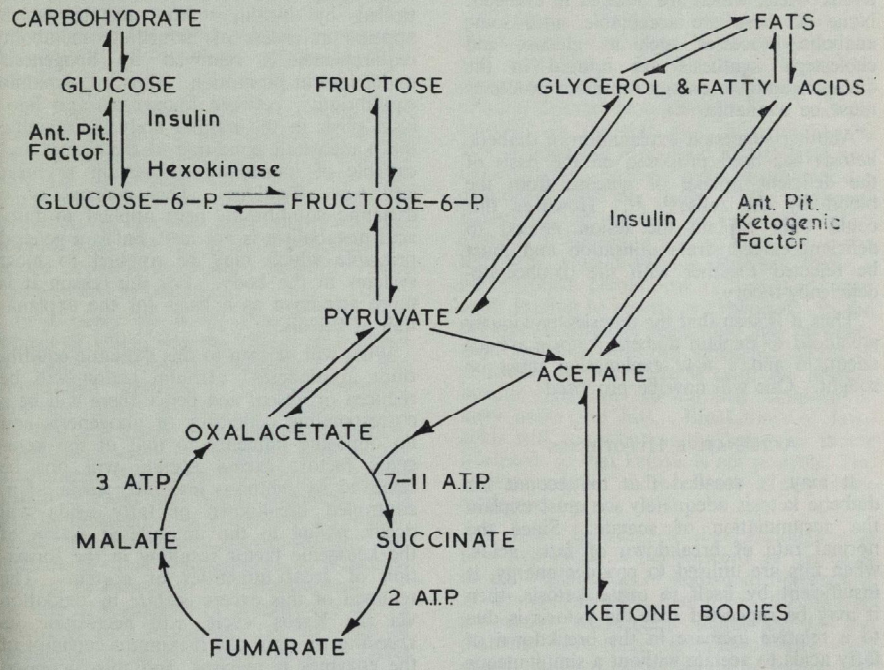


Figure 1

There thus appear to be at least two types of ketosis; (1) a carbohydrate-starvation ketosis, to which all the non-diabetic forms of ketosis already named, belong, in which there is a relative deficiency of carbohydrate leading to a deficiency of oxalacetate, and (2) a diabetic ketosis. Only the carbohydrate starvation type of ketosis can be adequately explained on the oxalacetate deficiency theory, and the explanation of diabetic ketosis on this basis must be rejected.

What other theories have been advanced to explain ketosis in the diabetic? The energy-producing reactions in the Krebs' cycle involve a large number of dephosphorylations, during which high energy phosphate groups are removed from the Krebs' cycle intermediates, with the production of energy rich A.T.P. Lipmann and Lardy have demonstrated that for this to occur adequately, phosphate acceptors must be present. Now the hexokinase reaction (glucose ⟶ glucose-6-P) has been shown to be an effective acceptor reaction, and it has been suggested that as hexokinase is inhibited in diabetes, then the acceptor mechanisms of Krebs' cycle might fail and the cycle slow down. This does not seem to be the case either, for as will be shown later, there is good evidence that the Krebs' cycle is

working adequately in the diabetic, and furthermore, succinate is converted to glucose in the diabetic, a process involving liberation of energy (5 A.T.P.), and dephosphorylation.

Some explanations have been advanced suggesting that insulin may control other processes of energy liberation from the Krebs' cycle, which are blocked in diabetes. None of these are acceptable since some anabolic processes such as glucose and cholesterol synthesis are normal in the diabetic, and the energy for these processes must be available.

Another suggested explanation of diabetic ketosis has been proposed on the basis of the deficient uptake of glucose from the blood by the cells [13, 15]. However this could only explain the lesion related to deficient carbohydrate utilisation and must be rejected together with the oxalacetate-deficiency theory.

Thus it is seen that the theories previously advanced to explain diabetic ketosis are inadequate and a new explanation must be sought. One will now be proposed.

Alternative Hypotheses

It may be recalled that to account for diabetic ketosis adequately we must explain the accumulation of acetate. Since the normal rate of breakdown of fatty acids, when fats are utilised to produce energy, is insufficient by itself to cause ketosis, then it may be suggested that the ketosis is due to a relative increase in the breakdown of fatty acids to acetate without a simultaneous fatty acid synthesis; this causes acetate accumulation.

What are the controlling factors in the breakdown of fatty acids to acetate—the process of lipolysis? Experiments on hepatic and extra-hepatic tissues and on whole animals have indicated that various anterior pituitary factors [7, 16, 17, 19, 20], and perhaps some adrenal corticoids[3, 7] promote lipolysis and inhibit lipogenesis i.e. control breakdown of fatty acids to acetate, which when accumulated forms ketone bodies. These may therefore be regarded as being ketogenic hormones. The exact nature of the ketogenic hormone in the body is controversial. The bulk of the evidence favours a pituitary factor—Adrenocorticotrophic Hormone, Growth Hormone and Thyroid Stimulating Hormone having all been suggested. This ketogenic factor opposes the lipogenic action of insulin, and it would seem likely that in the body there exists normally a constant breaking down of fatty acids to acetate, controlled by the ketogenic factor, opposed by a constant building up of fatty acids from acetate, controlled by insulin. Any acetate which appears in excess of immediate metabolic requirements is removed by lipogenesis under insulin promotion. Thus a "dynamic equilibrium" between lipogenesis and lipolysis exists in the normal body maintaining the homeostatic condition of the tissues and capable of immediate adjustment to meet any new situations. This concept of a dynamic equilibrium here applied to fatty acid metabolism is not new, but is a general principle which may be applied to most systems in the body. For this reason it is more attractive as a basis for the explanation of ketosis.

What will happen to this dynamic equilibrium in diabetes? Insulin action will be reduced or absent and hence there will be a corresponding deficiency of lipogenesis and no opposing influence to that of the ketogenic factor; excess acetate will not be removed by synthesis into fatty acids. Uncontrolled breakdown of fatty acids will occur, owing to the uninhibited action of the ketogenic factor resulting in the formation of great quantities of acetate. The removal of this excess acetate by oxidation via the Krebs' cycle, will necessitate its *speeding up* until the maximum capacity of the enzymes is reached, and this increased activity will be maintained so long as uncontrolled lipolysis continues. If the uncontrolled breakdown of fatty acids results in the formation of acetate at a rate exceeding this maximum capacity of the Krebs' cycle, then the acetate will accumulate. This is the condition which causes the production of ketone bodies!

The fundamental concepts behind this explanation of ketosis are, firstly, that in the normal subject a dynamic equilibrium exists between synthesis and breakdown of fatty acids, the equilibrium being destroyed in diabetes in favour of uncontrolled breakdown of fatty acids to acetate. This concept of a dynamic equilibrium is easily acceptable since it is in

line with all the known facts about the body's 'metabolic pool' and also with other systems in the body. Secondly, it is seen that this hypothesis suggests that the Krebs' cycle, instead of slowing down as is required by the oxalacetate deficiency theory, speeds up until its maximal capacity is reached. The ketosis is due to the rate of formation of acetate from fatty acids exceeding this maximal capacity of the cycle, insulin not being present to promote the removal of the excess acetate by lipogenesis.

To disprove finally the oxalacetate deficiency theory and to substantiate this hypothesis it must be shown that in the diabetic state (1) the Krebs' cycle does not slow down but speeds up, (2) that the rate of formation of acetate increases above the normal level, (3) the rate of formation of ketone bodies increases. Recently such evidence has appeared.

In a paper by A. L. Greenbaum[10], the subject of which was the 'Short-term Effect of Pituitary Growth Hormone,' it was shown that injection of Growth Hormone into rats caused secretion of insulin during the first six hours following the injection. Greenbaum was not concerned with ketosis in diabetes, but from his table of results certain relevant and highly significant facts may be deduced. He conducted his experiments on normal and alloxan-diabetic rats and among other investigations he measured the rate of formation of 2 carbon units, i.e. the rate of formation of acetate; the rate of 2 carbon unit oxidation, i.e. the rate of oxidation of acetate, this being a direct measure of activity of the Krebs' cycle; and also the rate of formation of acetoacetate (ketone body). From his results it may be seen that there is in the diabetic a slight increase in the rate of formation of acetate and acetoacetate, accompanied by a significant increase in the Krebs' cycle activity. Thus the fundamental requirements of the new 'uncontrolled lipolysis' hypothesis are fulfilled, i.e. the activity of the Krebs' cycle is *increased, not decreased,* in the diabetic, and there is an increased acetate and acetoacetate formation.

Further evidence in favour of this hypothesis comes from the determination of the level of Krebs' cycle α-keto acids in the blood of diabetics. It has been found that the level of α-keto acids of the cycle is not significantly altered in the diabetic when compared with the level in the non-diabetic. This is completely in accord with the hypothesis just proposed and indicates again the invalidity of the oxalacetate-deficiency theory, since the latter would necessitate a fall in α-keto acid level of the blood in the diabetic with ketosis.

Clinically, diabetes mellitus may be divided into two types [11], the obese type, and thin type. In the obese type, the characteristic features are hyperglycaemia, obesity, normal blood insulin level and no ketosis. In the thin type hyperglycaemia, loss of body fat, low blood insulin level and ketosis occur. If these types of diabetes are examined from the angle of the proposed hypothesis, in relation to the presence or absence of ketosis, it will be seen that in the thin type when insulin is deficient, there is uncontrolled breakdown of fats and fatty acids leading to ketosis as explained. In the fat type, a tentative suggestion may be made that possibly here the ketogenic factor is deficient, so that there is with the normal insulin level, an uncontrolled build-up of fatty acids and fats. Breakdown of fatty acids will not occur as the ketogenic factor is absent, so that ketosis is not possible. The hyperglycaemia of the obese type is not explained by this.

It must be realized that although this new hypothesis is put forward as the basis of the explanation of ketosis in diabetes, it is not inconceivable that there still may be a partial oxalacetate deficiency in the diabetic, for there is undoubtedly very greatly reduced carbohydrate utilisation and this may contribute towards the ketosis without being its primary cause in the diabetic.

That this may indeed be the case is also suggested by Greenbaum's results, for when the uncontrolled diabetic lipolysis is increased very greatly (166%) by the administration of Growth Hormone to diabetic rats, then the Cycle's activity is slightly reduced over the resting diabetic activity, but is never in the diabetic less than that in the normal animal.

Summary

Current explanations of the mechanism of diabetic ketosis have been reviewed and

it has been suggested that they do not explain the full experimental findings. An alternative hypothesis has been advanced in which it is suggested that there is in the normal person a dynamic equilibrium between lipolysis and lipogenesis controlled by a ketogenic factor and insulin respectively. In the diabetic, in the absence of insulin there is uncontrolled lipolysis leading to formation of amounts of acetate in excess of the maximum oxidising capacity of the Krebs' cycle. The cycle activity increases until this maximum capacity is reached, after which acetate and then ketone bodies accumulate. It is also suggested that an oxalacetate deficiency may contribute to a small extent to the diabetic ketosis.

Experimental Approach

In an attempt to throw further light onto this problem, we have started certain tissue-slice experiments which we hope to be able to continue later. These experiments involve incubating slices of rat liver at 37°C. in glucose-free Krebs' saline solution to which has been added sodium octanoate—the salt of an eight carbon fatty acid. The rate of breakdown of the octanoate to ketone bodies is measured by determining the acetoacetate and other ketone bodies present in the saline after incubation for 2 hours. The rate of ketone body formation in the livers of normal, diabetic, and starved rats will be compared, and the influence on this rate of the addition of insulin, pituitary extracts, and cortisone will be investigated. Experiments will be carried out parallel to these, in which arsenate will be added to the incubation medium. Arsenate, by blocking oxidative decarboxylations, will block the Krebs' cycle, producing the equivalent of an oxalacetate deficiency. As the acetate which is formed now will not be oxidised at all, we shall be able to measure the amount of ketone bodies which is formed from all the acetate, and compare it with the amounts in excess of the oxidising capacity of the cycle under the various conditions of the experiments.

Acknowledgements

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References

1 Najjar, V. A. (Ed.). *Fat Metabolism. Symposium* (John Hopkins Press, Baltimore, 1954), pp. 117-149.
2 Stadie, W. C. *Phys. Rev. 34,* 52 (1954).
3 Balmain, J. H. et al. *Nature. 169,* 447 (1952).
4 Beatty, C. & West, E. *J. Biol. Chem. 190,* 603 (1951).
5 Beatty, C. & West, E. *Fed. Proc. 13,* 9 (1954).
6 Bollmann et al. *Am. J. Phys. 174,* 467 (1953).
7 Brady, R. O. and Gurin, S. *J. Biol. Chem. 187,* 589 (1950).
193/683 (1951).
8 Brady, R. O. et al. *J. Biol. Chem. 193,* 683 (1951).
9 Chernick, S. S. & Chaikoff, I. L. *J. Biol. Chem. 187,* 589 (1950).
10 Greenbaum, A. L. *Biochem. J. 63,* 159 (1956).
11 Lawrence, R. D. *Brit. Med. J. 1,* 4703 (1951).
12 Lehinger, A. L. *J. Biol. Chem. 161,* 413 (1945).
13 Levine, R. et. al. *J. Biol. Chem. 179,* 980 (1949).
14 Miller, M. et al. *J. Clin. Invest. 31,* 115 (1952).
15 Park, C. R. *J. Clin. Invest. 32,* 593 (1953).
16 Peterson, V. P. & Lotspeich, W. D. *Am. J. Phys. 176,* 232 (1954).
17 Peterson, V. P. & Lotspeich, W. D. *Am. J. Phys. 182,* 273 (1955).
18 Price, W. H., Cori, C. F. et al. *J. Biol. Chem. 160,* 633 (1945).
19 Stadie, W. C. *J. Biol. Chem. 132,* 411 (1950).
20 Welt, I. D. & Wilhelm. A. E. Yale *J. Biol. Med. 23,* 99 (1950).

BRIGHT AND EARLY

They woke me up at half past five
To see if I was still alive.

They came again at six o'clock
To see how I had stood the shock.

At half past six they brought a basin
For me to wash my hands and face in.

At seven o'clock they came and said
We've got to sweep beneath your bed.

At half past seven they said to me
Perhaps you're ready now for tea.

The doctor may be round at ten—
Don't disarrange your bed till then.

CHRISTOPHER PULLING

ARE YOU S?

"'Somatotype' is S against non-S 'physique';
'Therapeutic index' is S for non-S 'effectiveness';
The 'maladjusted juvenile' is the S counterpart of the non-S 'crazy, mixed-up kid' . . . . . "

NA**Y M**FORD.

By now people know pretty accurately whether they are U or non-U. It may have been a tactful word from a friend; or perhaps the tainted words 'bike' and 'serviette' have slipped out unawares. However the self-knowledge was obtained, it is safe to bet that few *Journal* readers have not faced up to their status on the U-non-U continum.

But how many have been really honest with themselves about their S-position? There even seems to be an undercurrent of feeling that one can get away without being either S or non-S. This is not true; in fact it reveals an almost pathological state of wishful thinking in those concerned. The purpose of this short exposition is to help the stumbling Clerk and Dresser to view himself with ice-cold impartiality, and also to enable him to see his teachers clearly in their S-perspective.

The characteristics of the S-doctor are not chosen by the whim of the author—nor do they conform to any absolute standard of S-ness. They are merely the language and behaviour common to a number of doctors who are quite obviously S; and similarly the description of the non-S doctor is taken from the observation of doctors who are unmistakenly non-S.

Language is a good initial guide, provided the person to be classified speaks at all and is reasonably audible. It is S, for instance, to prescribe in milligrams rather than grains, and to talk of milliequivalents per litre rather than milligrams percent. On a good day the S-doctor may even be heard discussing the body fluids in milliosmoles. He naturally uses the Centigrade scale rather than Farenheit, and converts quickly sotto voce before remarking on the significance of a temperature. When asked for the normal range of blood pressure for any age group he will shudder slightly and give the Mean and Standard Deviation.

The S-chief publishes regularly in Clinical Science and the Journal of Postgraduate Medicine. His patient is viewed as a psychosomatic organism in its proper Gestalt. He reads German fluently and may even quote it in the original on ward rounds. The non-S chief writes occasional letters to the B.M.J. and may once have been badgered into writing an article for the *St. Bartholomew's Hospital Journal*. He treats his patients as human beings: in fact he considers neurosis to be a fiction trumped up by the Tavistock Clinic to disturb the easy flow of hospital life. He has enough difficulty with English without bothering about German.

The S-registrar is carrying on a bit of research on the side, and if very S has probably walled off part of his students' path room for the purpose. He understands filing and is very keen on photography; in fact his use of microfilm is generally considered obsessional by the non-S. He is a handy man with a radioactive isotope; the non-S registrar, on the other hand, would no sooner dream of injecting an isotope than of using the de la Warr Diagnostic Instrument (dDI).

There is unfortunately no time to be both S and a houseman.

The S-dresser, when asked on a round for the complications of thyroidectomy, speaks hesitantly about such things as thyroid crises, myxoedema, tetany, and, if particularly brazen, vocal disturbances. The non-S dresser merely reels off shock, haemorrhage and sepsis, in that order. This is one of the occasions when it pays to be non-S. Another occasion when the dresser may observe himself and his colleagues differentiating is that of urine testing—when it is discovered that the Clinitest bottle is empty and non-S dresser retires for coffee; the S-dresser writes out an indent for a new bottle and fumbles for Benedict's reagent.

The S-pathologist has invariably been a don at one of the two ancient British universities. Realising the essential deadness of his

subject, he punctuates his lectures with stimuli to controlled laughter. His non-S counterpart tends to succumb to a form of romantic anthropomorphism. To his eager uninitiates he reveales the sublime mysteries of pathology as a chronic romance between Mr. Polymorph, a handsome young man-about-town, and Miss Spirochaete, a no-good dancing girl.

The S-nurse is the non-S dresser's best friend. It is she who by scratching her bosom vigorously on a round can save him from missing an obvious lump in the breast. She understands calories and burns randomly selected dinners* in a makeshift calorimeter in the sterilising room. (If the Sister is also S she may get away with this.) Her patients can be recognised by their meagre and hungry aspect.

The reader will by now have some idea of whether he is S (Scientific) or non-S (non-Scientific). (Anyone who at this stage still thought that S stood for Sexy is advised to give up films and stop travelling by underground.) The question is, what to do with this brand new knowledge? The natural British reaction to any self-realisation, apart from acute embarrassment, is to establish a vigorous defensive position around the area of personality concerned. The S-reader should therefore cultivate such phrases as 'hopelessly non-S', 'of course, my dear, she's really much too S for him', and 'but then, old boy, he's quite desperately non-S'. These must be countered by the non-S conversationalist with such gambits as 'how depressingly S can you get?' and 'What on earth's the matter? You look positively S this morning!'. The interchanges between the S-dresser and the non-S chief will of course require some modification.

The non-S student may wonder whether it is possible for him to become S and vice-versa. The position appears to be somewhat discouraging. Some very S research is currently being pursued to elucidate the tantalising problem of whether S-ness is innate or acquired. Since this involves the raising of medical students from infancy without any contact with the environment, the results will not be available for some years. However, interim observations suggest that there is an innate predisposition to S-ness and non S-ness which is fairly modifiable by experience up to the age of 18 months.

The reader must therefore make the best of what he is. In the interests of individual variation we will refrain from giving advice on this topic, except in one particular. The non-S student is advised to attend as much U-activity as he can, such as Ascot, Henley, Cowdray Park and deb dances; each U-contact that he makes is another cheque-book to back up his future West End practice. The S-student, on the other hand, is warned to avoid the Upper Classes at all costs. He should not find this difficult, as it is generally considered distinctly non-U to be S. But if he ignores our warning and persists in his attempts to become U, he is more than likely to end up as that strangely pathetic creature, the US physician.

JOSEPH AND MARY

* *Dinners*: I am aware that some readers will consider this usage non-U. However, I refer them to *Noblesse Oblige—An Investigation into the Identifiable Characteristics of the English Aristocracy* by N. Mitford, in which it is accepted that the lunches of animals and small children may be called 'dinners'. It seems reasonable to add patients to this class.

HOUSE APPOINTMENTS

January, 1957

Dr. Bourne	D. Cameron
Dr. Cullinan	C. J. W. Hunter
Dr. Spence	E. G. Wooster
Dr. Bodley Scott	F. J. C. Millard
Dr. Scowen	J. B. Dawson
Mr. Hume	H. V. Blake
Mr. Corbett	D. W. Downham
Mr. Hosford	H. J. O. White
Mr. Naunton Morgan	J. A. McKinna
Prof. Sir J. P. Ross	R. P. Doherty
CASUALTY H.P.	A. C. Butler
CASUALTY H.S.	R. L. Buchanan
CHILDREN'S DEPT.	R. E. Troughton
GYNAE. AND OBS. DEPTS.	B. T. Thom
ORTHOP. DEPT. (Hill End)	D. W. P. Thomas
	D. Rosborough
ORTHOP. DEPT. (Accident Service)	C. N. Hudson
E.N.T. DEPT.	D. S. Freestone
	M. S. Whitehouse
THORACIC DEPT.	J. Shaw
	D. H. Black
CHILDREN'S DEPT.	R. M. Buckle
SKIN AND V.D. DEPTS.	J. A. Tait
OPHTHALMIC DEPT.	K. E. A. Norbury
INTERNS	L. Cohen
	A. D. Ferguson
NEURO-SURGICAL DEPT.	E. F. Brooks
ANAESTHETISTS	J. A. Stainton-Ellis
	A. McL. Keil

LIFE OF A PRAIRY DOCTOR

by T. M. F. ROBERTS

I AM living in a fairly typical prairy small-town some 150 miles south-west of Regina and lying right in the heart of the wheat district. The country is about 3,000 feet high and rising slowly to the Rockies 500 miles west. Although generally flat it is not level as there are numerous shallow depressions, ravines and minor hills. There are few trees in the area and within 100 miles no rivers that run all the summer; however there are a number of big lakes, small rivers that dry up to scattered pools in summer and numerous shallow marshes or 'sloughs' as they are called here, all of which are alive with duck and other water fowl. Deer of various sorts, and antelope are common and one hasn't got to go very far to see Elk, Moose, and Boar. One of the commonest animals here is the skunk and woe betide the motorist who runs over him at night, his car is really quite uninhabitable for a long time.

The towns with a usual population of 300-500 are scattered fairly regularly at 8 mile intervals along the railway lines, though now there is a tendancy for a town every 50 miles to grow at the expense of its neighbours which are slowly dying. The country side is divided up into rectangles by roads at every mile or every two miles running to the four points of the compass with farm buildings, usually without a house as the farmers live in the towns, scattered haphazardly around. Most of the roads are just dirt trails which are impassable in winter and after rain, but provincial highways, again running to points of compass, connect up the towns. These roads are wide, raised up and are kept open all the year; their surface is bad, loose gravel with plenty of bumps, and no sane Englishman would drive at more than 30 m.p.h. on them. Despite this, everyone here averages double this for their journeys, so automobile accidents figure largely in practise.

The people are of very mixed extraction, mainly from Great Britain, France, Germany and Belgium; the great majority are bilingual. Once settled here their former country is referred to rather sentimentally as 'the old country' and they become Canadians as such—rightly proud of their new country and rather quick to resent any criticism of it. The whole country here is new; there are still a few of the old 'homesteaders' left who settled here at the end of the last century. Thus newcomers are welcomed by everyone as there is still plenty of room for all. This part of the country was a dust bowl from 1930—39 and no crops were raised—so everyone was bankrupt. Since then crops have been good and the country is flourishing, but there is a world surplus of wheat; so money is in short supply until farmers can sell their grain. As a result of these facts everyone here is equal and there is no class distinction at all, which an Englishman will find hard to understand. People are very kind, generous and quick to help anyone and everyone in trouble. As a doctor I appreciate their gratefulness more than anything; it is a great contrast to the reaction of the average Health Scheme patient.

The interests of the people are rather similar to an English village of 20 years ago; they support the local baseball and ice hockey teams and they all 'curl,' an old Scottish sport equivalent to bowls on ice. Other than this no sports are to be had excepting, of course, shooting and fishing which are wonderful; the duck shooting in fact is probably the best in the world. Great interest is taken in local societies, meetings, lectures and naturally in everybody else's business. There is no art or culture here in the English sense; neither classical music nor serious fiction is appreciated. People tend to be rather narrow-minded as, except for ex-servicemen, few have been more than 500 miles from here and within that distance there is nothing new to see.

Dances and parties are frequent—always very lively and enjoyable; they are all very wet whereas the province is dry and consumption of liquour is forbidden except in beer parlours (for men only) and in private

houses. Hard liquour is bought at Government liquour stores and must be taken straight home. Beer parlours sell beer only and no form of music, singing or entertainment is allowed. The result is that everyone carries a bottle of neat spirits to any public dance or function and, so as not to break the law for longer than necessary, keeps going to any dark corner or secluded spot and gets outside his bottle as fast as possible. The amount drunk is quite staggering and I personally know about a dozen confirmed alcoholics drinking 40 or so ounces of spirits a day. Liquour laws in other provinces are not so strict, though fairly similar.

Religions of every sort flourish here and nearly everyone goes to church on Sunday ; in fact I don't think the R.C. churches are better attended than the Anglican. People really work here ; in fact whatever they do they put their whole heart into it, both at work and at play. If you watch a gang of men working here you again have the awful contrast with England—there are no tea-breaks, no time off for smokes and trivial injuries, and whether the foreman is there or not, they work. In winter everything is slack, very little is done, jobs are scarce and people tend to drink and gamble the winter away. The winter here lasts for 6—8 months and this is probably one of the coldest inhabited places in the world. Last year there was snow from late October to early May, and in the months November to February the temperature never went up to the zero mark and was usually 20°F. below zero continually. Blizzards came every 3 or 4 weeks and shut the country down for several days ; to go out in them is to risk death and young adults have been lost walking a hundred yards from a house to out-buildings. I stand cold well and cannot say I was worried in any way by the winter, though its length did upset me. I thought by March and April it should end but it did not. The sun shines every day and all day except in blizzards and there is no fog or drizzling rain here ; in fact, rain only falls on about 10 days a year.

Practice here is of two types, municipal and private. Many municipal councils of towns hire a doctor to run their hospital and look after everyone in the town. He is paid a set wage by the municipality and treats everyone free. Usually all surgery is excluded from this contract and people have to pay his fees for any surgery done for them. The other type of practice is private with complete payment by the individual patient, though many people have a private insurance scheme that pays the doctor for his services. All good towns have their own hospital, 10—20 beds in size and run by local doctors. Most people are treated in hospital if at all sick and a house visit is a rare event here : I do about three a week. The hospitals are well equipped and at times very major surgery is done in them. The next local doctor, often 50 miles away, will always come in to assist at an operation and give the anaesthetic. This solitariness in an emergency is the thing that will affect an English doctor most—there is usually no second opinion to be had and people live or die on your lone responsibility. In a bad case the Saskatchewan Government run an air ambulance service that flies the patient to Regina or Saskatoon for a nominal fee, but this is little help in an acute abdomen that you cannot decide whether to open or not.

The Canadian doctor is incredibly good ; he can handle efficiently most medical cases, surgical cases up to gall bladders and, of course, all emergency surgery. Work done does not vary much from England though accidents of every grade up to fatalities are horribly prevalent. I do more suturing in a week here than in a year in English practice. The main operations done are tonsils and appendix, but a lot of gynae ops (repairs, suspensions, hysterectomies, etc.), hernias, haemorrhoids, varicose veins, etc., are also done. Anaesthetic and nitrous oxide machines are not used, the substitute being open vinethene and ether which work very well. The standard obstetric care is poor and most doctors here get out of any difficulties by caesarian sections. All laboratory and X-ray work is done by the doctor himself, though he can send specimens in to the city for an expert's opinion.

A lot of tetracycline and cortisone is used here—and at 4/– a capsule these are expensive (as are all drugs) but the patients pay and do not appear to mind. Prices generally are about equal to England, smaller items are much more expensive and larger items, especially motoring, cheaper. Incomes are about double English ones and a doctor's net earnings four times those of an English doctor. People tend to be loyal to a doctor and not to a practice, thus you cannot successfully buy a practice here. They are very slow to try a new doctor out, and they think little of travelling 100 or more miles to a doctor who they think is good: thus once you are known you do well.

All my remarks above apply to the small town ; the big towns are much more like English private practice, though most city doctors are qualified specialists and do their speciality as well as general practice. Competition is frightful in big cities, overheads are heavy, and it is almost impossible to settle there straight from England.

I did a month as a junior intern in a Canadian hospital, a bad one I am sure, but I could not tell that from England—though I wondered why they could not get Canadian interns. As a junior intern you are less than the junior probationer in an English teaching hospital and have about as much responsibility and no teaching. Everyone, nurses and doctors, order you about in an unpleasant manner and I can see no object or virtue in a Canadian internship for an English trained doctor. I stood it 4 days and then gave my notice in. In a big hospital the G.P. is the boss—he looks after his patients himself and orders every conceivable type of investigation ; he probably won't call a specialist in unless the patient is dying as the specialist is probably doing G.P. work on the side and is a potential or actual rival. City doctors are terribly jealous of each other and cut each other's throats as fast and often as possible.

May I emphasise that I was unlucky in my view of big Canadian hospitals, but my remarks are true generally with the exception of University hospitals, which I understand to be very good.

To end with may I say how much I like Canada ; it is a great country and its future is very bright ; it is expanding fast and anyone here who is prepared to work hard and put up with some rather minor inconveniences is bound to prosper. Finally here you are really free to practise good medicine unhampered by petty restrictions, and the rewards more than compensate you for the long hours and worry that you are certain to have.

A NAVAL EPIDEMIC

by SURGEON LIEUTENANT R. J. KNIGHT, R.N.

THIS HAS been written for those who like to solve detective stories, and in the hope that someone will be able to tell me what caused an epidemic of 94 cases of P.U.O., mostly diagnosed as Benign Tertian Malaria, which occurred on board H.M.S. NEWCASTLE, between 24.5.55 and 12.6.55. This account was first written within a month of the outbreak. The epidemic started with three officers being sent to the British Military Hospital, Singapore ; one on 24.5.55 with the diagnosis of an anxiety state, and two on 25.5.55 diagnosed as pyrexia of unknown origin. These three were diagnosed by the Hospital as Benign Tertian Malaria, the first on a blood smear, the other two on clinical grounds. They had the same symptoms and signs as the rest of the cases, headache and general malaise, intermittent fever and no other physical sign.

While at sea on 30.5.55 another officer developed a similar fever ; in view of the diagnosis in the previous cases a blood film was made and stained with Lieshman's stain. The film showed anisocytosis and poikilocytosis, and in many of the red cells were structures which looked, to the author's inexperienced eye, like the ring and amoeboid forms of Benign Tertian Malarial parasites as seen in the pages of Hutchinson and Hunter. These structures when viewed under the oil immersion lens were highly refractile.

The next day two officers and thirty-five ratings reported sick ; of these, only two ratings, both Sick Berth staff, were not put to bed. All those reporting sick had blood films made, and they all showed appearances similar to those seen the day before. On the first of June seventeen ratings reported sick with the typical triad of headache, malaise and fever, only four of these were ill enough to have to be put to bed. On this day the ship's company was started on Paludrine 0.1 grammes twice a day. This was based on the

assumption that the objects we had seen through our microscope were malarial parasites. As I could not remember having had malarial parasites demonstrated to me, there was some doubt as to the truth of this assumption. Ten ratings reported sick on 2.6.55 of whom two had to be put to bed. The same appearances were found in the blood of four ratings and an officer on 3.6.55, one of the ratings and the officer being put to bed. 4.6.55 produced six more cases, two of whom were put to bed. By this time the incidence had fallen off as there were no cases on 5.6.55, and only three on 6.6.55, two of whom were put to bed.

The ship returned to Singapore Naval Base on 7.6.55, and all those who were not completely recovered, two officers and thirteen ratings, were discharged to the British Military Hospital, Singapore. This number included two who were sent direct to hospital, having gone sick that morning. On 8.6.55 two more ratings went sick, one was sent to hospital, the other stayed on board doing light duty. On 9.6.55 just before the ship went to sea again, seven ratings were sent to hospital, only one of them had his blood examined on board, and it showed the picture described earlier. The others were diagnosed on board as various chest infections in four, and glandular fever in two. The hospital put them all in the category " Naval Epidemic of P.U.O.". One further case, which developed at sea on June 12 was sent to hospital on June 18.

Symptoms and Signs

Symptoms and signs present in all patients were: an intermittent fever, which rose to 103 degress F. but seldom above and which settled by lysis in 24 to 48 hours (only six of the patients had rigors); malaise and headache, usually clearing before the fever had finally settled, but in some cases the headaches lasted for a few days longer than the fever. The only other physical sign was the blood picture. Respiratory infections occurred during the course of the illness in 18 patients. In nine it was a presenting symptom, a cough or a cold with a sore throat; the others developed a cough with white to yellow sputum, with rhonchi and sibili in the chest about a week after reporting sick. Three of the patients had been sent back to duty and had to be readmitted to the Sick List.

During the course of their illness three patients developed generalised glandular enlargement which lasted for about a week; three others developed jaundice, one of these was thought to have infective hepatitis, but no explanation has been found for the other two, who had very slightly jaundiced sclerae for between 24 and 48 hours. One patient complained of pain in his loins five days after going sick, having recovered from his initial symptoms and been on light duty for two days. He was tender in both loins, and the right kidney, spleen and liver were palpable. There was no change in his urinary output; no pus and very few red cells were seen in his urine on microscopy, and no albumin was seen on boiling. He was never jaundiced, and on admission to the British Military Hospital, Singapore, two days later his condition was considered to be normal by the admitting doctor.

Treatment

All those who had this illness, which was thought to be malaria, and were treated on board, had Mepacrine 0.3 grammes t.d.s. for one day, and Paludrine 0.3 grammes b.d. for ten days, starting together. Aspirin or compound codeine tablets were given as necessary. The treatment given in hospital is not known for certain, but the antimalarial drugs were stopped. Two patients complained of nausea and vomiting with the Mepacrine, and two others had colicky abdominal pain on about the third day of their Paludrine course. As a result these patients had a lower dose of Paludrine for the rest of their course. They were all encouraged to drink a lot of water, and their tots and beer were not stopped. From June 1 everyone on board was taking Paludrine 0.1 grammes twice daily. There were fairly good stocks of Mepacrine and Paludrine on board, and this was the only treatment available in the ship at sea.

Accommodation and Staff

The Sick Bay in H.M.S. NEWCASTLE has six cots. To make room for the invalids the occupants of two messes were turned out. The two mess decks were officially capable of holding 46 men. When there were only three hammock hooks unoccupied, and the deck

was covered with campbeds, there were thirty-four men down there; there was room for three hammocks, but no room for another camp bed. This space ran across the ship, and had a scuttle on each side, so that there was some natural as well as the plenum ventilation. After the first night the starboard side of the lower bridge was reserved for the invalids, with the awning spread, and most of them spent their days and nights up there. As the ship was on exercises at the time it was darkened, that is blacked-out, at night; the Sick Bay is provided with light excluding windscoops, but these had to be specially made for the mess decks which had been taken over.

There were two medical officers and five Sick Berth ratings on board: one Sick Berth Chief Petty Officer, one Sick Berth Petty Officer, and three Sick Berth Attendants, one of whom worked with the Dental Officer. The two Petty Officers and the Dental S.B.A. were ill, but the two Petty Officers carried on with their work. As can be seen, this staff was inadequate to look after all the patients and to do the normal treatments and attendance lists. Two seamen, and one engineering mechanic (until last year a Stoker Mechanic), later replaced by four Royal Marine Bandsmen, were lent to look after the patients on the Mess Decks. They had a very short course of instruction, being shown how to take temperatures and to count the pulse, and being told to see that none of their charges went thirsty, and to see that they all took their tablets. It was impossible to supervise them closely, but they appeared to do their job very well.

Progress

The patients were allowed up when their temperature had settled, in fact those who were on the mess decks which had been taken over were allowed up and on deck as soon as they felt like it. They were sent to light duty after they had been afebrile for 24 to 48 hours, which was usually two or three days after going sick. Full duty was resumed after a further two to four days depending on the working conditions. When the ship returned to Singapore for June 7 to 9 twenty-three were sent to hospital; they had either just started their illness or developed a complication, or not fully recovered and were in need of a rest ashore. In a warship at sea on exercises Light Duty is a misleading term. It means that those 'fit for Light Duty' work the same hours as the others in their branch, but are excused the small amount of hard physical labour that comes their way by their Petty Officers.

Diagnosis

The diagnosis of malaria was made from the blood film, which showed anisocytosis, poikilocytosis, and rings and spots in the red cells. Under the oil immersion lens, 1/12th, the rings and spots were seen to be highly refractile, with no discernible structure. Whether they were artifacts or not I do not know, but they were not present in a sample of my blood to more than 1 per cent, whereas in the blood films of the patients there were 80 per cent or more of these abnormal cells. Almost all the smears were stained by the same S.B.A. and there was no difference between those he did stain and those he did not stain. All the smears were sent either to the British Military Hospital, Singapore, with the patients, or to the Royal Naval Asian Hospital in the Naval Base, Singapore, when the ship returned to Singapore. None were reported as showing malarial parasites. No other investigations were undertaken on board following the failure of three attempts to do a white cell count. Some of the patients had blood taken for antibody testing at the British Military Hospital, but none gave a positive result. All the patients discharged from the British Military Hospital, Singapore, had the diagnosis of Pyrexia of Unknown Origin.

Possible Aetiology

The explosive nature of the main epidemic suggests that the patients were all infected at the same time. Three weeks before the main outbreak the ship had been at an island called Pulau Tioman, which is off the east coast of Malaya. H.M. ships often visit the island, and at that time it was thought to be free from malaria. Here the crew went ashore, without antimalarial precautions, and many of them were ashore after dark. There were many biting insects on the island, and most of those who went ashore after dark, and sat around the bonfires, got well bitten.

The ship's movements were as follows. Left Hong Kong on 28.4.55 and arrived at Singapore Naval Base on 2.5.55. Left the same day for Pulau Tioman, arriving on

3.5.55. Left on 11.5.55 arriving at the Naval Base on 12.5.55. Sailed for a bombardment of Malayan terrorists on 18.5.55 returning to the Naval Base on 20.5.55. On 27.5.55 sailed to take part in exercises with the Royal Australian and Royal New Zealand Navies; and the epidemic burst on us on 31.5.55. The island of Pulau Tioman and the Singapore Naval Base were the only places where shore leave was given. No other ship in the Naval Base reported an epidemic of this nature. So it would seem reasonable to suggest that the infection came from Pulau Tioman. But the two officers who were most affected, and some half dozen of the ratings had not been ashore there.

I have picked out from "Control of Communicable Diseases in Man", published by the American Public Health Association, these fevers, whose description could be made to tally with my epidemic (vide infra).

The Army Authorities conducted a malaria field survey on the island about a month after the outbreak. On the side of the island where the ship had been anchored they found that 80 per cent of the mosquitoes that they caught had Benign Tertian Malarial parasites. On the other side of the island the rate was 70 per cent infected. All the native inhabitants who were examined had large spleens, presumably due to chronic infection with malaria.

In view of these findings, could the epidemic on board H.M.S. NEWCASTLE have been due to Benign Tertian Malaria, in spite of the pathologists' inability to find parasites in the blood smears?

SUMMARY

An epidemic of P.U.O. occurring in H.M.S. NEWCASTLE between 24.5.55 and 12.6.55 is described. It is suggested that it was due to infection conveyed by insects, and was transmitted to the ship's company at Pulau Tioman, an island in the South China Sea. As to what it was, your guess is as good as mine, perhaps better.

ACKNOWLEDGMENT

I wish to thank the Medical Director General of the Navy for permission to publish this article.

FEVER	POINTS FOR	POINTS AGAINST
Dengue	Mosquito borne. Occurs in S.E. Asia. Acute, short lived.	No intense headaches. No joint or muscle pain. No rash. Incubation period 3-15 days.
Malaria	Mosquito borne. Mosquitoes on Pulau Tioman heavily infected. Fever went during treatment. Incubation periods 13 to 30 days. Occurs in S.E. Asia.	Few rigors. No parasites seen by those who ought to know what they look like.
Scrub Typhus	Incubation period 6 to 21 days. Occurs in S.E. Asia.	No rash. Fever lasts 14 days. Most of the sailors stayed on the beach.
Yellow Fever	Plenty of mosquitoes which could be vectors. A large number of the ship's company had been immunised against Yellow Fever.	No signs of haemorrhage. Incubation period 3-6 days. Very low incidence in Malaya.
Phlebotomus Fever ...	The vector could be on the island.	No pain in the limbs or in the back. Incubation period 3 to 6 days. Climate is probably too wet for the vector.

QUEEN ELIZABETH'S POISONER

by P. J. FENN

THIS IS a brief account of the Life and Death of Dr. Roderigo Lopez or Lopus, often referred to as "Queen Elizabeth's Poisoner."

Dr. Lopez is of particular interest to us at Bart's because, as far as can be discovered, he was the first resident Physician at this Hospital—and the only Bart's physician, to date, to be quite literally hanged, drawn and quartered. He is of more general interest in that his dramatic and unpleasant end was preceded by a complex series of events which involved him, directly or indirectly, with many of the most prominent figures of that day, including Elizabeth I of England and Philip II of Spain.

ORIGIN AND EARLY CAREER IN ENGLAND

Lopus was by birth a Portuguese Jew; little is known of his life prior to his arrival in England in 1559, but he must have obtained Spanish or Portuguese degrees, as he was admitted to the Royal College of Physicians soon after his arrival.

Lopus almost certainly had friends and/or relations in England before he came here; Sir Sidney Lee thinks that he may have been related to Hernando Lopez, a physician who arrived from Spain in 1520, or to Fernando Lopez, also a physician, who lived in the city parish of St. Helens during the reign of Edward VI. This last would not have been such a desirable connection, as he is quoted as having been charged with immorality in 1550, and "banished the realme of England forever." The particular kind of immorality is not specified.

It may have been at the behest of these friends or relatives that Lopez came to England; but in later years far less savoury and more dangerous reasons were to be suggested for his coming.

Lopez seems to have been quickly successful and to have built up a flourishing practice in the city. It was possibly at this time that he became a professing Christian; bearing in mind the strong religious prejudices of the age, it can readily be seen how such a step would have been of advantage to him.

He lived at different times in several houses in the city and elsewhere. He is noted in the census of foreigners in London in 1571 thus: "Dr. Lopus, a Portingale, householder denizen, who came into this realm about twelve years past to get his living by physic" and he is mentioned as living in the parish of St. Peter Le Poer, together with his brother, Lewis. He also lived at one time in Wood Street and in a house belonging to the hospital. Later on, a grateful (in fact what must have been a very grateful!) patient built and presented to him Mountjoys Inn, a house in Holborn. He also once rented property in Winchester College, where his son was being educated.

As early as 1567 reference is found to him as resident physician at Bart's. Although there is no actual record of his appointment, he is traditionally regarded as being the first to hold such a position. It does not appear to have been a full time post, Lopez or an adequate deputy being required to be present on two days of the week. For his services he is recorded several times in the Hospital Ledgers between the years 1573-81 as receiving 40/– p.a., plus "billetes and coales." Even bearing in mind the vastly greater value of money at that time, this seems a small annual payment—unless he received a quite unreasonable amount of "coale." Lopez certainly kept up his private practice during the period in which he served the hospital and it seems to have become steadily more lucrative.

As well as his appointment to Bart's, there are other indications of a successful and rising physician. In 1569 he was selected to read the Anatomy lecture at the Royal College of Physicians; for some reason he declined to do so and was fined. In 1571, he is known to have attended Sir Francis Walsingham, who was high in the councils of the Queen and in 1575 he appears in Stowe's list of prominent London doctors.

Lopus first appears in the Hospital records with an entry of 19th June, 1568 referring to

An address given to the Abernethian Society.

some repair or improvement in the house belonging to the Hospital which he occupied —" this day it is ordered by the Courte that Mr. Dr. Lopus shall be boarded for with dele board or other like."

Career at Bart's

On the 14th March 1572/3, further work is being ordered " at the special and ernest request of Mr. Dr. Lopus " that " the said Mr. Dr.'s hall shall be boarded this summer at the discretion of Mr. Treasurer and Mr. Renter with the other masters."

Again on the 22nd January 1574/5, it is ordered that " 100 of pale board shall be supplied from the Hospital's stores " for the repair of the fence in Lopez's garden—this time he is to pay for the workmanship, however. Other references to " tiling " and to the boarding of his parlour occur in 1575 and 1578—with the proviso that he " be the more paynefull in looking to the poore of the hospital."

On the 9th May, 1579, Lopus requested of the Court that he might let his house, as he wished to move into the city for the reason (surprisingly), that the air was better there ; possibly it was also better for his private practice. He was allowed to let the house, provided it was to " a citizen, a lawyer or a physician " and to retain the rent to put towards that of another house. He was also to have the same allowances as before from the hospital, providing he continued to do his duty by " the poore " of the hospital to the satisfaction of the Masters and Governors.

This was a most generous concession and seems to indicate that Lopus was highly thought of. It is interesting to note how the interests of the patients were safeguarded.

Reference is made to Lopus' departure from Bart's in an entry dated 4th March, 1580 as " this day Mr. Dr. Turner made request to the Governors of the house for the roome of Mr. Dr. Lopus Physician. Order is therefore taken by this court that the said Dr. Turner shall have the roome of the Physician after the death or other departure away of the said Dr. Lopez with the duties therto belonging in as ample manner as the said Dr. Lopus hath the same."

This changeover did not go smoothly, however, for on the 3rd June, 1581 we find Dr. Turner appearing before the court asking for admittance to the house in the tenure of Lopus, which Lopus was still occupying in spite of the fact that he had left the service of the hospital and that the house now appertained to Turner.

Lopus was warned to leave by Midsummer or St. James-tide, but in spite of this he remained and on the 9th September, 1581 a letter is ordered to be sent to Lopus, requiring him to vacate the house by Michaelmas without any further delay.

Even so, the 16th December, 1581 finds Turner, who must have been a very patient man, complaining that he still cannot get his house. Another letter was sent to Lopus, ordering him to leave by Christmas.

Eventually, on the 3rd February, 1582, Turner requested that two of the Governors should view the house, Lopus having at last moved out.

One further reference, ten years later, mentions a letter received from the Lords of Her Majesty's Council requesting that the revision of the lease of the Farm of Hatfield Broadoak, which belonged to the hospital, should be granted to Lopus. This request was refused. Such an application suggests that Lopus may have kept up some association with the Hospital for which he felt entitled to reward, or possibly it is an example of Elizabeth seeking to reward a favourite at someone else's expense. In any case, the fact that the letter originated from the Lords of the Council shows well the eminence and influence at court to which Lopez had attained.

Additional to the Hospital records proper are some entries referring to the family of Lopez in the Parish Register of St. Bartholomew the Less. Between 1563 and 1577 the christenings of five children of Master Dr. Lopus are recorded, confirming the belief that he was already a professing Christian early in his career in England. Over the same period, the burials of four children are recorded, as is the burial of Dominarius Lopus, described as secretary to Lopus and presumably also a relative. It is interesting to note that in several later entries Lopus is referred to as " Ambassador " or " Lord Ambassador "—quite why this is so I have not yet discovered.

Lopus' departure from Bart's may have been due to the rising demands of his private practice, which had been steadily increasing amongst the richer class and the court ; he was, in fact, becoming a fashionable doctor. At that time, also, there may have been some stigma attached to working in a hospital, which would have injured such a practice as his.

Medical Practice of the Time

Although a talented and skilful man, Lopus' methods must have been based on the doctrines of Galen, as it was professional heresy to think otherwise : the dead hand of the past still lay very heavily on the profession at that time, although a new and increasing scepticism and liberality of thought had been born with the Renaissance.

Lopus' ideas would thus have been governed by the conception of the four humours : Blood, Phlegm, Choler (Yellow Bile) and Melancholy (Black Bile), imbalance of which in the body was supposed to cause ill-health. Treatment, by bleeding, cupping or drugs, was aimed at restoring the normal balance of the humours and thus curing the patient. The practice of surgery by physicians was discouraged by the Royal College of Physicians, which wielded immense power, and Physicians usually had an agreement with a surgeon to undertake any surgical treatment which might prove necessary.

Astrology also came within the scope of the physician, diagnoses sometimes being made by this means. There is no evidence as to whether or not Lopus employed this method.

Social Status

The social status of the physician had risen sharply since the inception of the Royal College of Physicians and many attained considerable social eminence and wealth. Lopus was not wealthy (perhaps due to a large and extravagant family), and he is recorded as having difficulty in finding dowries for his daughters. His poor financial position may have had some bearing on later events.

In 1586, Lopus crowned his career by being appointed a Royal Physician, possibly on the recommendation of Don Antonio, pretender to the Portuguese throne, who was living in exile in England. At this time Lopus was physician to a number of important people, prominent amongst them being the Earl of Leicester, Walsingham and the Earl of Essex, whom he cured of what is described as " a secret and painful disease."

However, although, or perhaps because, he was so successful, he was not universally popular. Gabriel Harvey wrote of him : " He is none of the learnedest of expertest physicians in the court, but one that maketh a great account of himself as the best, and by a kind of Jewish practice hath grown to much wealth " (untrue) " and some repute as well with the Queen as with some of the greatest Lords and Ladies " which all sounds very much like sour grapes !

Lopus has also been accused of having been poisoner to the Earl of Leicester, but this has never been proved and as the noble Earl already employed one full-time poisoner, it seems rather unlikely.

On the other hand, Clowes, the Queen's surgeon, described him as " careful and skilful not only in dieting, purging and bleeding, but also for his direction of Arceus Opozema " (medicated decoction used at Bart's), and Francis Bacon said he was " very observant and officious and of a pleasing and pliable behaviour."

Events Leading to His Death

In 1586, soon after his appointment as a Royal Physician, came the first recorded signs that Lopez was becoming involved in political intrigue.

The Earl of Essex, rich, rash, quick-tempered and very ambitious, maintained, as an instrument for furthering his ambitions, a private secret service with wide ramifications on the Continent. He appears to have thought that Lopus, to whom he had taken a fancy, would be an asset to this organization as a result of his extensive knowledge of Spanish and Portuguese affairs, and possibly also because of his close professional relationship with the Queen. Lopus refused to join, however, and informed Elizabeth of the offer.

However, in 1589 he travelled to the Continent, possibly to meet in Brussels two men, Count Fuentes and Stephen Ibarra : they were the heads of Philip II's espionage and assassination service. A secret understanding may have been arrived at, either on behalf of Essex or of Lopus himself. He possibly

even travelled as far as Spain on this journey. It should be noted that both the Royal College of Physicians and Elizabeth knew of his absence abroad at this time.

International Picture

It is necessary to indicate briefly the international situation at that time. In 1589 Henri de Navarre was King of France, but was fighting a bitter civil war against the Holy League, led by the Duc de Mayenne, uncle to the Duc de Guise, Catholic Pretender to the throne.

Philip of Spain was not only fighting Henri openly, but also had a section of the League in his pay. This faction were pressing the claim of Philip's daughter to the throne of France, based on her being Henri II's granddaughter, and this claim was, of course, in defiance of the Salic Law.

The Netherlands were in a state of permanent eruption against Spanish rule.

Elizabeth, while never committing herself openly, supported Henri and the Dutch indirectly with money and sometimes men (volunteers?) just sufficiently to keep everything going nicely.

In England

Political opinion was split into two groups :—

1. *The Pacifist Party*

This was led by Burghley and Walsingham and supported secretly by Elizabeth. Elizabeth desired peace with Spain : England was a small but vigorously expanding nation requiring time in which to develop ; nothing would have been more disastrous than a protracted war with the greatest power in the world, which would have bled her white with no hope of any long term advantage.

On the other hand, Elizabeth had no wish to see Spain acquire France or another Armada in the Channel. Hence her complicated manoeuvres in support of Spain's enemies, designed to keep the Spaniards occupied elsewhere.

2. *The War Party*

This was led by Essex and composed of the adventurous youth of the country (and some interested persons who hoped for personal advantage). This party wished for sea attacks on Spain at every point and active support of Spain's Continental enemies.

Antonio Perez

This was the situation internationally in 1589 when one Antonio Perez arrived in England, intent on doing his King and country all the harm he possibly could.

Perez was born in Aragon in 1540, supposedly the natural son of Gonzalo Perez, Secretary to Charles V and Philip II. He was legitimised in 1542 by Imperial diploma (which is strange).

His patron, Ruy Gomez, who may have been his real father, saw that he was well educated and brought to the King's notice. Philip appointed him to be one of his secretaries, in which post he displayed such brilliance that when Gomez died in 1575 he became to all intents and purposes Chief Secretary of State.

In 1579, Perez was involved in the murder of Juan de Escobedo, another secretary of Philip's, who had been seconded as secretary to Don John of Austria, on whose activities Philip wanted an eye kept. Escobedo knew of a liaison between Perez and the Princess of Eboli, a lady whose interest lay close to Philip, and threatened to tell the King unless more favour were shown to Don John, for whom Escobedo had acquired an admiration which may well have extended up to and even beyond the point of treason.

Perez decided Escobedo was too dangerous to live and engineered his murder, at the same time leading Philip to believe Escobedo traitorous and hence to condone the crime. Philip found out the truth a little later and, driven by his conscience, began to prepare for Perez's punishment ; hasty actions would not do, as Perez knew too many secrets. Eventually, eleven years after Escobedo's death, in 1589 Perez was arrested, but he escaped to France, where he found a patroness in Catherine de Bourbon, sister of Henri de Navarre. Henri listened to what he had to say, but remained suspicious of him.

Perez was invited to England by Essex, as part of his anti-Spanish schemes, to give Essex insight into Philip's secrets. Essex presented him to Elizabeth, who also listened to him (particularly to his scandalous stories of Philip's private life), but was also suspicious and did not grant him the pension he desired. That escape of his was a little too miraculous, and there was a strong suspicion that he might be a double agent in Philip's pay. This lack of response was most disappointing to both Essex and Perez.

Lopus and Perez soon met as they were fellow members of Essex's household. Lopus seems to have several times acted as interpreter for Perez, who had no English, and this may have led to his being drawn to some extent into some of Essex's schemes, probably unwillingly. Lopus had fallen very much in Essex's favour, probably for many reasons, but for two prime ones :—

1. He had told Elizabeth about Essex's secret service.
2. He told Don Antonio and Perez (at that time fellow-guests at Eton College) of the nature and circumstances of the disease for which he had treated Essex. They laughed at Essex, revealing the source of their knowledge and Essex did not like this.

Plot Against Don Antonio

In 1591—2, another Portuguese appeared on the scene, one Emmanuel Andrada, who knew Lopus. Andrada was a professing adherent of Don Antonio, but in fact a chief spy of Fuentes and Ibarra. Andrada was in prison in London, possibly on a charge of attempted espionage. At this juncture, Walsingham, a patient of Lopus, required an agent to go to Madrid and place certain overtures before Philip. Lopus suggested Andrada for the job and at Walsingham's instigation petitioned the Queen for Andrada's release, which was granted. Walsingham obviously used Lopus as a cat's paw to safeguard against possible repercussions.

Andrada went to Madrid, but his mission came to nothing. While he was there a plot was instigated to eliminate Don Antonio, whose presence in England gave excuse to English privateers for raids along the Portuguese and Spanish coasts. Andrada suggested that Lopus might be prevailed on to administer poison, and Philip, who is said to have known Lopus personally, approved this and sent Lopus a valuable Diamond and Ruby ring by Andrada's hand.

The fact that Andrada, who knew Lopus, put forward his name and Philip approved the choice seem to indicate that Lopus was no stranger to intrigue of this type. However, on receiving the ring, Lopus did not keep or sell it but presented it to Elizabeth, which suggests that he was dissociating himself from the plot ; he may even have informed the Queen of it.

Andrada, meanwhile, had written to Madrid saying that Lopus would do it, but that it would be expensive as he was a poor man and heavily in debt. Philip at once ordered Fuentes in Brussels to approach Lopus and to pay him anything in reason for his services. Lopus was approached indirectly by Fuentes and Ibarra, via a Portuguese named Estaban Ferreira da Gama, who lodged in Lopus' house and who was supposed to be an adherent of Don Antonio. The transmitter of the letters was one Emmanuel Luis de Tinoco.

At this point Perez, with suspiciously good timing, informed Francis Bacon, Secretary to Essex, that Ferreira was a Spanish spy and that although he could not prove it, Lopus was almost certainly one also ; and that there was a plot afoot to kill Don Antonio.

Perez must have known a great deal about Spanish espionage in England, and his accurate information and timing on this occasion may indicate that he was still in contact with the network.

Such a plot was just what Essex required to strengthen his opposition to the Pacifist Party and the Cecils. On confirmation being obtained by his agents in Flanders, Essex laid the matter before the Queen and Ferreira was arrested.

Lopus, perhaps remembering his success in Andrada's case, sought audience with the Queen to obtain Ferreira's release. He appears to have managed the interview badly, however, abusing Don Antonio as a bad master and suggesting that Ferreira might be employed as Andrada had been before him ; he does not appear to have pleaded that Ferreira was innocent. The Queen was angry, and his request was refused.

Following Ferreira's arrest all Portuguese letters entering the country at Rye, Dover and Sandwich were examined and, as a result of the discovery of some suspicious passages in a "business letter" seized at Sandwich, its bearer, Gomez D'Avila, was arrested. D'Avila lived in Holborn near Lopus and travelled regularly to the Continent. While awaiting examination he asked a bystander to carry news of his arrest to Dr. Lopus ; he could hardly have chosen a better way of increasing the suspicion already touching Lopus.

Investigation revealed letters passing between Lopus and Ferreira (when living in the same house?), in which Ferreira asked Lopus to prevent D'Avila leaving Brussels

and Lopus replied that he had done so. Under threat of torture, both Ferreira and D'Avila confessed to complicity in a plot to poison Don Antonio and stated that Lopus had been long in the service of Spain, having been bought over by Philip. In addition, D'Avila stated that he had carried letters between Ferreira in England and Tinoco, who was employed in Philip's assassination department in Brussels.

Essex, Bacon and Perez were now convinced that Lopus was a Spanish spy, but their evidence, extracted from rogues under threat of torture, was really not good enough to bring down a man of Lopus' standing. Their luck was in, however. Tinoco wrote to Burghley at this juncture, asking for a safe conduct to enter England in order that he might lay before Elizabeth information touching the safety of the realm. Tinoco got his pass, which allowed him to enter the country, but made no mention of his departing again.

Arrest and Trial

On arrival Tinoco was arrested and searched, and two letters addressed to Ferreira were found. These yielded little information, but under examination and threat of torture Tinoco said that he had been sent by Fuentes and Ibarra to stimulate Lopus in his pledge to poison Don Antonio. With three witnesses Essex waited no longer and on the 1st January, 1594, Lopus was arrested and taken to Essex's house. Elizabeth had only unwillingly allowed the arrest of her physician, and she insisted the Cecils be present at the examination. A search of Lopus' Holborn house yielded nothing.

Cross-examined, Lopus declared himself innocent and accused Essex of seeing Spanish plots everywhere—which, when it was to his advantage, Essex most certainly did.

Burghley and his son reported the charge false to the Queen, who thereupon summoned Essex and reprimanded him severely, calling him "a rash, tempestuous youth" for so accusing an innocent man. Essex withdrew in a sulk, but was so sure that Lopus was a Spanish agent that he did not release him and refused to let the matter drop.

On further examination, under threat, all three (Tinoco, Ferreira and D'Avila), proved receptive to a new idea of Essex—that the plot was really one to poison the Queen. The three men produced a long rigmarole of evidence about the rewards (money, good marriage for his daughters, etc.) which Lopus was to have received, and corroborated one another's evidence with the greatest freedom.

All this "evidence" Lopus flatly denied, but he had to admit that Philip had sent him by Andrada a ring and that he had obtained a release for Andrada and petitioned for that of Ferreira. Now Andrada was known to the Cecils as a spy and Lopus was admitting to not only having obtained his release, but to having been in communication via him with Philip of Spain. Also there was his petition on behalf of Ferreira. He was disbelieved.

Under further third degree treatment by Essex and Bacon, Lopus lost his head and began to make wild statements, first saying that he knew nothing and then making up stories of all sorts of plots. After several weeks of this questioning, with threats of torture thrown in, he was completely worn down and exhausted and was driven to agree that he had been engaged to poison the Queen.

His fate was then sealed, as the Cecils now believed him guilty. For good measure, letters were intercepted alleging a plot to burn the English fleet. At the end of January, 1594 he was transferred to the Tower and on February 28th he was tried before a special commission, Essex presiding. Tinoco and Ferreira were tried as accomplices.

The prosecution was ferociously conducted by Sir Edward Coke, who described Lopus as "a perjured and murdering villain and Jewish doctor, worse than Judas himself"—hardly suggestive of an atmosphere of even-handed justice.

Lopus retracted his confession to plotting against the Queen's life and affirmed his loyalty to her. He did admit, however, having been in secret correspondence with the Spanish court. His defence was sadly hampered by the fact that Walsingham, who could have supported him in the matter of Andrada, was dead. He was found guilty. As Sir Robert Cecil wrote, "a most substantial jury found him guilty of all treasons with the applause of the world."

Execution

Only one sentence was possible after such a verdict, but Elizabeth delayed for three months before signing the Death Warrant, for reasons which have never been determined. Eventually she did so and on June 7th Lopus was taken from the Tower to the Court of Queen's Bench, where he made submission and once more affirmed that he had never intended to harm the Queen. He was then carried on a hurdle to Tyburn with Tinoco and Ferreira and duly hung, drawn and quartered. At Tyburn he yet again declared his innocence of any design on the Queen's life. He said, in fact, that "he loved the Queen as well as he loved Jesus Christ," which amused the spectators, as Lopus was thought to be a Jew, his professed Christianity of many years standing not being, apparently, so widely known.

After the execution, Elizabeth desired to send an envoy to the Governor of the Netherlands, the Archduke Ernest, complaining that three members of his council, Christoval de Mourra (Secretary of State), Count Fuentes and Stephen Ibarra had been involved in a plot against her life and to demand their punishment; or, in case of refusal, to arraign Philip and the Archduke as accomplices in the crime. The Archduke refused, not very surprisingly, to give the envoy a safe conduct.

So a history of the treason of Dr. Lopus was written by Bacon and widely distributed—it is a very clever piece of anti-Spanish propaganda. Thus the official attitude of Elizabeth: her private one appears to have been startlingly different.

She is recorded as having said that Lopus was the victim of others for their own ends, and she exercised her prerogative and allowed his family to retain much of the doctor's property, which would normally have been forfeit, as he was a convicted traitor. Later she awarded his son a parsonage of value thirty shillings a year to enable him to complete his education at Winchester. Altogether a surprising show of generosity to the family of one executed for plotting against her life; especially for Elizabeth, who was not a particularly forgiving person and who had a marked appreciation of her own health.

Traces of the public furore at the time can be discovered in plays and other writings of the period. In most Lopus is represented as a complete villain, but William Shakespeare may have been influenced by Lopus' hard fate in his handling of Shylock, for he is not unsympathetic to the Jewish usurer.

Conclusion

The question of Dr. Lopez's innocence or guilt is a very vexed one, which has been much debated but will probably never be finally answered one way or the other.

An outstanding feature of the case is the extreme flimsiness of the evidence on which he was condemned—dubious hearsay and possible forgery, most of it—combined with the extreme zeal with which it was pressed. This was probably mainly due to political expediency; Essex found in this plot an ideal means of whipping up anti-Spanish feeling, and in Lopez an ideal victim. Ideal because his involvement in political intrigue, possibly deeply and over a long period, was fairly certain, and also because he was a foreigner and had Jewish associations—thus bringing Racial and Religious prejudice to back up political convenience. Possibly Essex was also motivated by a genuine belief that Lopez was guilty of some crime, even if he wasn't quite sure what, and last but not least, by personal dislike of Lopez.

The attitude of Elizabeth may be revealing:—

1. She made what looks like a determined attempt to quash the proceedings against Lopez at an early stage.
2. She delayed long in signing the death warrant.
3. She showed an amazing solicitude for his family after his death.

These facts, considered together with the close association of Elizabeth and Lopez over several years, suggest the possibility that his secret activities were undertaken on her behalf. He may, in fact, have been a double agent, employed by Elizabeth personally, to penetrate the Spanish espionage organisation. If so, she would be anxious to save a valuable servant, but would not be able to acknowledge him openly and hence ensure withdrawal of the charge against him—and if she did not acknowledge him, any protestation on his part as to his true role would merely have embarrassed her without helping him.

Or he may in very truth have been a Spanish agent of long or short standing—the story is so complex, and a foundation of certain fact so hard to find that the possible explanations multiply with speculation.

But it seems likely, when all is said and done, that Dr. Lopez was much more a victim than a villain, and should be pitied rather than condemned.

SPORTS NEWS

VIEWPOINT

The Hospital Rugby Cup Competition has been moved forward a month this year, so that the first match, Westminster v. King's, was played on 10th January. The decision to re-arrange the 'Cuppers was regarded by everyone as inevitable after the chaos perpetrated by the snow and ice last year. If the elements are unreliable yet again, at least there will be more time available for any postponement of fixtures. The U.H. Committee are to be congratulated on their foresight.

Bart's has not had the best of luck with the draw, but at least the holders, St. Mary's, will not be met in the first match as last season. We have a bye in the first round and meet Guy's in the second. Unless the 1st XV improve on the result of the first half of the season, they will be hard pressed to beat Guy's. If they manage to overcome this hurdle, and the result will be known before this article is in print, then it seems as if their path to the Final will be more straightforward, as the strongest teams, London and St. Mary's, are in the other half of the draw. In any case, best of luck to the Hospital XV, and as always it is hoped that this is the year we bring the Cup back to Bart's.

It is welcome to record here that the Bart's Hockey Team are still in the Hockey Cup, and it is said that they have a good chance of carrying it off, so it is hoped that this forecast will come true.

RUGGER

1st XV v. Old Cranleighians December 22
Lost 6—17

This match was played on the heaviest pitch met this season. Despite this the team played well in the first half, and were unlucky to be trailing 3-5 at half-time. Bart's scored first when Sleight took the ball on the burst and ran 30 yards before drawing the full-back and sending Mackenzie in for a try which was not converted. The opponents' score was the result of weak Bart's tackling. Soon after the interval Bart's regained the lead when a 40 yard drop-kick by Davies landed on the bar and fell over. This however was the end of the Bart's effort, and for the rest of the game they gave one of the most spiritless displays for a long time. The Cranleighians had things all their own way, and scored two tries and two foolishly conceded penalty goals.

Guy's, our Cup opponents, had an easy win over this team a fortnight previously, so if we are to achieve our long overdue Hospitals' Cup success the team will have to get far, far fitter.

Team:— B. W. D. Badley; D. A. Lammiman, G. J. Halls, M. J. A. Davies, J. Plant; R. M. Phillips, B. Richards; D. A. Richards, C. J. Carr, W. P. Boladz; D. W. Roche, J. Bench; J. S. T. Tallack, M. W. Sleight, J. C. Mackenzie

1st XV v. Old Rutlishians Drawn 6—6

The 1st XV opened the New Year with their fifth draw of the season, on a pitch which was as heavy as Chislehurst ever becomes, and with a greasy ball. Playing against the wind and the slope they spent most of a lifeless first half on the defensive, and were lucky to cross over only three points down. The only score had been an early penalty to the Rutlishians, although once Phillips had broken through from his own '25' and after kicking the ball on was unlucky when the referee ruled that he had not touched down properly before the ball went dead.

In the second half the Bart's forwards found their form, and the whole picture of the game was reversed. They dominated the lines-out and the loose, either taking the ball through or else plying their backs with the ball. Unfortunately the latter could not take full advantage of this service and the only try came midway through the half, when McMaster crossed, after Badley had made the extra man. Five minutes from the end, and right against the run of the play, the Rutlishians regained the lead when their left-wing intercepted and ran unopposed for the corner flag. Bart's however were not to be denied, and in the last minute, after a knock-on had lost them a certain try, they were awarded a penalty from the resultant scrum, and M. J. A. Davies duly converted it.

A remarkable feature of the match was that no fewer than six tries were disallowed, three on either side. Badley, apart from a failure to stop the Rutlishian try, played a magnificient game, kicking beautifully and linking up well with the attack. The pack as a whole played well in the second half, with D. A. Richards perhaps the most consistently prominent.

Team:— B. W. D. Badley; D. A. Lammiman, G. J. Halls, M. J. A. Davies, A. B. McMaster; R. M. Phillips, B. Richards; W. P. Boladz, C. J. Carr, D. A. Richards; J. S. T. Tallack, D. W. Roche; A. H. Thomas, L. R. Thomas, J. C. Mackenzie.

1st XV v. Taunton at Taunton 12th January
Lost 3—11

This match, played on a very muddy pitch, was not the ideal pre-Cup match trial, and the result was a disappointment. The forwards did well to hold their own against strong opponents, but despite good play by the halves the three-quarters had an off day.

By half-time Taunton had an eight points lead, having scored one try by fly-kicking ahead and another following a quick heel from the loose, this latter being converted. Bart's had never really looked like scoring, depite one good run by McMaster and some good play by the forwards, in which Dobson, making a great comeback to the side, was frequently prominent.

In the second half things went a bit better, and eventually a try came, when after a long run by Halls the ball was passed out to Roche, who charged over gleefully from 15 yards out. As this was probably his last club match for the Hospital it was fitting that such long and invaluable service should have been so aptly concluded. This try was not converted, and although Bart's nearly scored straight from the kick-off they could make no further impression on the Taunton defence, and in fact the only further score was a rather harshly awarded penalty goal to Taunton. The last few minutes were marred by an injury to McMaster which will keep him out of the Cup match.

Teams:—B. W. D. Badley; R. M. Phillips, G. J. Halls, M. J. A. Davies, A. B. McMaster; R. R. Davies, B. Richards; D. A. Richards, C. J. Carr, J. C. Dobson; D. W. Roche, J. S. T. Tallack; H. Thomas, L. R. Thomas, J. C. Mackenzie.

HOSPITAL CUP—SECOND ROUND

St. Bartholomew's—5 pts. **Guy's—Nil**

Having received a bye in the 1st Round, Bart's met to do battle with Guy's in the 2nd Round, on the 17th January at Richmond—and what a battle it turned out to be! Rugby skill and finesse was in evidence only very occasionally, but this in no way detracted from the excitement of the occasion because honest endeavour, and a determination to win on the part of the Bart's men kept their vociferous supporters on their toes throughout.

Because of some vague, mythical superstition, which probably originated in the West Country, the previous captain, Tallack, had forbidden the presence of the Hospital Mascot, "Percy," in the ties of the previous two years: but this year, Percy's head was shown to the assembled crowd by some very enthusiastic Pre-clinicals. Obviously the Scots have different ideas, as this year's captain, Mackenzie, condoned the whole episode and drew much moral support from Percy's presence, so much so that rarely, if ever, has he led Bart's with such verve and vigour. Indeed, considering the rather dismal performances put up by the Hospital during the first half of the season, every member of the team played his part well, and the success was merited.

Guy's kicked-off, and immediately the Bart's three-quarters were in action, the ball passing along the line well, and this was followed by a break by Mackenzie in which he ran 30 yards before attempting to kick over the full-back's head. Unfortunately, the kick was sliced and went into touch. After 5 minutes play, Guy's were awarded a penalty which did not find touch, and was well fielded by Badley. He tried to make ground with the ball but was tackled, and a mid-field scramble ensued from which the Guy's pack dribbled the ball on, but good covering stopped this threat. Two penalties were then awarded in quick succession, the first to Bart's, which did not find touch, and the second to Guy's, which fell short of the posts.

Bart's were now beginning to press, and Hackett, the Guy's stand-off, was prominent with a good relieving run and kick, and immediately afterwards was well tackled by Mackenzie when trying to initiate a movement. With the game only 10 minutes old, yet another penalty was awarded to Guy's, and touch was found. This was followed by a period of pressure by the Bart's pack with Laurie Thomas in the van, and Hackett somewhere underneath; and then Lammiman was put away down the left wing, a movement which finished well in the Guy's half. Bart's were then awarded two penalties in quick succession, the latter falling short of the posts, from which the Guy's backs came away strongly, and effected a neat scissors. However, L. Thomas and M. J. Davies were prominent with some stout tackling, and the movement faded out.

At last the Bart's three-quarters started to come into their own, and a good passing movement saw the ball reach Mike Phillips on the right wing. He beat his man with ease, and when confronted with the cover defence placed a well-judged cross-kick under the posts. To the everlasting credit of the Bart's pack, the eight were up there to a man and caught Armour, the Guy's full-back, in possession. A loose maul followed, but the ball came back clowly, by which time the Guy's defence had re-organised, and Badley, finding himself with the ball, elected to drop at goal. This went along the ground and Guy's managed to scramble the ball safely to touch. Still pressing, Bart's were awarded another penalty, and Badley followed his up-and-under with rare speed to catch Armour in possession. Unluckily, while atempting to pick up the loose ball, Badley was injured and what looked like a certain try went begging. For the next ten minutes Bart's continued to attack from all quarters, and it was only stout defence that kept the Guy's line intact. L. Thomas and Dobson were prominent in the rushes, and Roche and Tallack jumped well in the line-outs, while M. J. A. Davies attempted a drop at goal, and Phillips twice came into a movement from the opposite wing and looked dangerous. All this came to nought, and for the next 15 minutes, until half-time, the game deteriorated into some nondescript play in midfield, when neither side looked like scoring. During this period, both halves, B. Richards and R. Davies, put in some good touch-finding under pressure. Immediately before half-time Guy's were awarded a penalty which never looked like reaching the posts.

Immediately after the resumption of play, B. Richards made a good break from the scrum and kicked ahead, and Halls kicked up to the

Guy's line, but again, the Guy's backs came away, and only good tackling by Phillips and M.J.A. Davies held them up. At this stage there was plenty of handling by both sets of backs, but there was no incisive thrust in mid-field, and when a score did come, it was as expected, by a forward pouncing on an opposition error. A set scrum formed about 10 yards from the Guy's line, and they heeled. As the ball emerged, wing forward Howard Thomas, managed to put his foot to it, dribbled it over the line, and fell cleanly on it to he also received Mackenzie with it. About four attempts at a drop-goal made by the two Davies's were interspersed between bouts of handling, and Bart's really looked as if they had the situation well in hand, although Guy's never gave up fighting. The best movement of the game was reserved for the dying minutes when the ball came out from a loose scrum to the ever-alert H. Thomas. He made ground before passing to Badley, who had distinguished himself by making an extra man on numerous occasions, who in turn gave Phillips

Cup Match—Bart's forwards get their man.

score, amidst a roar of applause from Bart's supporters. All praise must be given to Thomas for his quick thinking in eluding the Guy's defence in the one moment of the game when they were completely off-guard. It is rather a shame that the next day, the National Newspapers credited the score to another player. M. J. A. Davies kicked a very good conversion from a short distance inside the touch line.

Except for one brief period, Bart's maintained a constant attack on the Guy's line from then until the end of the game, and it is to their credit that they continued to keep the game open. H. Thomas was again prominent leading a forward rush which gained about 40 yards of ground, and this was followed by a good passing movement in which Badley made the extra-man. H. Thomas then made a good mark under pressure which enabled Bart's to go on the offensive again. It was also noticeable that whenever the Guy's stand-off received the ball a perfect pass, and a run to the corner. With a magnificent burst of speed Phillips beat the cover defence and touched down, only to knock the corner flag over in the process, and the referee ruled no try. Not finished even then, Guy's pack made one last rush to save the game, and huge forward, Cooke, burst through many would-be tacklers, until eventually brought down by weight of numbers, and from the resulting loose maul, the ball reached R. Davies, who calmly put it safely away into touch as the final whistle blew.

Bart's fully deserved this win, and the whole team rose magnificently to the occasion—good luck in the next round.

Team:— B. W. D. BADLEY; D. A. LAMMIMAN, M. J. A. DAVIES, G. J. HALLS, R. M. PHILLIPS; R. R. DAVIES, B. RICHARDS; D. A. RICHARDS, C. J. CARR, J. C. DOBSON, D. W. ROCHE, J. S. T. TALLACK, A. H. THOMAS, L. R. THOMAS, J. C. MACKENZIE (*Capt.*)

1st XV v. Cheltenham Away 19th January
Lost 8—11

Only two days after their great triumph over Guy's, the team had to travel to Cheltenham. Four of the cup side were unable to play, including the experienced second row of Roche and Tallack, and also the try scorer on Thursday, Howard Thomas. However Palmer made a welcome re-appearance after 10 weeks on the injured list.

Despite a natural reaction on the part of the forwards after Thursday's game the team held its own up to half-time, when, thanks to some magnificent place kicking by Halls, they led 8-5. The backs continuously looked dangerous, all making good breaks, and, after Cheltenham had scored first, Halls reduced their lead with a long penalty goal, and then Phillips came into the line to finish off a break by R. Davies and Halls added the goal points with another very good kick.

In the second half the forwards were outplayed in every department so that the backs had no chances to attack. They did however defend magnificently against continuous Cheltenham pressure, so that although one try was scored half-way through the half the scores were still level with two minutes to go. Then however the Cheltenham wing-forward won the match with his third try of the game. This was the second year running that we had lost this match in the last minutes, for last year the score was 14—15.

Team:—B. W. D. Badley; R. M. Phillips; G. J. Halls, J. Plant, D. A. Lammiman; R. R. Davies, B. Richards; J. C. Dobson, C. J. Carr, D. A. Richards; J. W. B. Palmer; J. C. Mackenzie; R. P. Davies, W. P. Boladz, L. R. Thomas.

SOCCER

1st XI v. Old Cholmeleians Home Won 2-1

Our first game of the New Year was played on a rather wet and windy day at Chislehurst. The rain, however, did stop just before the kick-off. An auspicious start was made by the Hospital side, only nine men being available at the kick-off. However our missing players soon arrived.

The Old Cholmeleians kicked off against the wind and after a short interval of hard play it became increasingly obvious that the Christmas fare was still hanging over the heads of the Hospital players—so much so that one of our team (he shall be nameless) went on the wing after a short space of time in order to recover from his social obligations of the previous few days.

The Hospital, having regained their wind, pressed the opponents' goal but were unable to score before the half-time whistle went. This brought a well earned rest to both teams.

In the second half, playing against the wind, Bart's soon scored. This followed a dribble and a quick shot by Gould, which unfortunately hit the inside of the post with the goalkeeper hopelessly beaten. Whitworth, however, was on the spot to collect the rebound and score our first goal of the New Year.

Our opponents increased their attack on our goal and twice we were saved by defenders, once by Parrish and the other time by Watkinson. Our opponents were not to be denied a score though. A long high shot was well covered by our goalkeeper but was then allowed to slip out of his hands into the net—an unfortunate equaliser.

Soon afterwards however the ball was moved quickly from Smith, Gould, Johnson and onto Whitworth who scored our second and winning goal.

Outstanding in the defence was C. Juniper who seems to have regained his old bite when tackling and in his ball distribution.

Team:—D. Kingsley; A. J. Parrish, D. Prosser; P. Watkinson, C. Juniper, R. Smith; P. Savage, A. Whitworth, T. Johnson, R. Pilkington, A. Gould.

EXAMINATION RESULTS

ROYAL COLLEGE OF SURGEONS

The following candidate was successful in the Primary Fellowship Examination of the Faculty of Anæsthetists in December, 1956:

STANTON, T. J.

UNIVERSITY OF OXFORD

Final B.M. Examination

December, 1956

MEDICINE, SURGERY AND MIDWIFERY

Bradbury, M. W. B.
Buchanan, R. L.
Griffith, R. W.
Poyntz-Wright, R. C.
Troughton, R. E.
Whitehouse, M. S.

UNIVERSITY OF CAMBRIDGE

Final B.M. Examination

December, 1956

PATHOLOGY AND PHARMACOLOGY

Allenby, C. F.
Bower, H. P. H.
Chalstrey, L. J.
Edwards, A. J.
Grant, N. J. C.
Hughes, R. C. G.
Herniman, R. H.
Hall-Smith, A. M.
Maurice-Smith, J. M.
Mackenzie, J. C.
Nichols, J. B.
Nicholls, S. A.
Palmer, J. W. B.
Scorer, M. J. S.
Stainsby, G. D.
Tidmarsh, D.
Waldron, B. Le G.
Wood, C. B. S.

MEDICINE

Jewell, G. J.
Thomas, D. W. P.

SURGERY

Bloomer, A. C. S.
Cameron, D.
Goodliffe, A. D. R.
Shaw, J. H. W.
Whalley, R. C.

MIDWIFERY

Abraham, P.

UNIVERSITY OF LONDON

Special First Examination for Medical Degrees, December, 1956

Ernst, E. M. C. — Metten, A. D.
Watkinson, P. J.

The following completed exemption from the First Medical:—

Britz, M.	Kark, A. M. R.
Gallop, A. M.	Kingsbury, A. W.
Harvey, J. A.	Langford, E. M.
Iregbulem, L. M.	Lewis, J. M.
Irvine, R. J. M.	Metcalfe, B. J.
Jackson, G. B.	Miller, A. J.
James, J. E. Angell	Prosser, D. I.
Jones, J. R. L.	Sinclair, A. M.
Jones, V. M.	Wilson, A. I.

CONJOINT BOARD

First Examination December, 1956

ANATOMY

Donaldson, W. — Craggs, J. C.
Ernst, P. R. M. — Musgrove, J. S.

PHYSIOLOGY

Donaldson, W. — Craggs, J. C.
Ernst, P. R. M. — Musgrove, J. S.

PHARMACOLOGY

Farrow, L. J.	Woolf, A. J. N.
Marks, A. P.	Hackett, M. E. J.
Bench J. T.	McKerrow, M. M.
Wilson, J. A.	Vyle, E. A.
Thwaites, J. M.	Lloyd, A. V. C.
Ellison, A. J. H.	

BOOK REVIEWS

MODERN OPERATIVE SURGERY. 4th Edition. Edited by the late G. Grey Turner, LL.D., D.Ch., M.S., F.R.C.S., F.R.A.C.S, F.A.C.S., and Lambert Charles Rogers, V.R.D., M.D., M.Sc., F.R.C.S., F.R.C.S.E., F.R.A.C.S., F.A.C.S. Two vols. (pp. 2,614) London. Cassell. 145s.

Old friends of Grey Turner's operative surgery will welcome the two volumes of the fourth edition of this well known work which have now appeared disguised in covers of sombre blue in place of the familiar green. Professor Lambert Rogers has succeeded the late Professor Grey Turner as Editor and he has been ably assisted by 38 contributors. St. Bartholomew's Hospital is to be congratulated in that A. W. Badenoch, H. Jackson Burroughs, Sir Harold Gillies, J. C. Hogg, John Howkins, Sir Geoffrey Keynes, C. Naunton Morgan, Sydney Scott, H. B. Stallard and Oswald Tubbs all contribute sections on their subjects.

The book remains as comprehensive as ever and all fields of surgery are dealt with in the two volumes. In a work of such magnitude it is inevitable that a few faults be found. Some sections still contain out-dated material which could have been pruned with advantage and the section on arterial surgery is not wholly adequate by present day standards. In the chapter on Hernia it was disappointing not to see a description of the McEvedy approach for femoral hernia, an operation which has rightly gained considerable popularity in this country. Perhaps most fault can be found with the illustrations which, although good in some sections, generally, fall below the high standard set by the text. However, these minor criticisms should not be allowed to detract from the very real value of this important contribution to British surgical literature. This fourth edition of *Modern Operative Surgery* fully maintains the standard set by its predecessors and it will give valuable service as a guide to the surgeon in training and as a reference work to the practicing surgeon.

G. W. TAYLOR.

PROGRESS IN CLINICAL MEDICINE. 3rd ed. *edited by* R. Daley & H. Miller. Messrs. J. & A. Churchill, Ltd. 40s.

Four years after the publication of the second edition, a new edition of 'Progress in Clinical Medicine' has appeared. During this time so much has changed that the opportunity has been taken to re-write the text completely, and in so doing the survey has been brought admirably up to date. The method which the authors have chosen in order to present recent advances is to be commended, for they record no mere list of newly acquired facts, but rather review and interpret a disease in the light of new knowledge. The sections on chronic bronchitis and emphysema are excellent examples of this treatment.

Adverse criticism of the work is limited to comment and to carping over detail. The discussion of the mercurial diuretics is carried on in too general terms, being rather reminiscent of the B.B.C. falling over backwards in an attempt to avoid advertising material. It is here stated that where trouble is encountered from preparations requiring intramuscular injection a material which can be given subcutaneously is of value; and that the difficulties formerly encountered in using oral mercurial diuretics have been largely overcome. It is a pity that the reader seeking knowledge of these remains in the dark, and must seek their identity elsewhere.

By contrast the section on penicillin suffers from a plethora of names. That this should be so is no fault of the author for he inherits the burden of words laid upon us all as a result of the combined efforts of chemists, drug firms and the British Pharmacopoeia Commission. One cannot expect in such a work a detailed review of all the preparations of penicillin, but there should have been greater clarity in referring to their varied names, discussing their routes of administration and assessing their relative value.

If, as a result of excess of work, or lack of application the post-graduate doctor finds that he has accumulated a pile of journals still with their wrappers intact, then he may resort to this edition for 'The story so far,' and then read on. Candidates who aspire to become members of The Royal College of Physicians will find this book of tremendous value to help them to come up to date, and more important, to clarify their ideas. Their examiners, should they wish, could derive similar benefit.

The authors have omitted presenting new knowledge whose value remains dubious so that no undergraduate clinical student who decides to consult its pages could be accused of being that type of bright boy who knows the contents of next week's journals before they appear. Rather will he find that the mode and matter of presentation may help his understanding of a subject which his textbook, dating as rapidly as this volume, but with a greater handicap, leaves confused. For although new discoveries lead to a greater welter of facts, they often aid the visualisation of the whole—as the discovery of the plasmodium parasites simplified the confusing effects of malaria.

This work will be read by a wide medical public; it is to be recommended.

A. L. DORMER.

AIDS TO OPHTHALMIC NURSING *by* Una C. M. Farfor, S.R.N., Baillière, Tindall & Cox Ltd. 8s. 6d.

A book in this popular series on ophthalmic nursing is welcome, since it signalizes the position of this branch of our work. The care of eye patients is not so obviously dramatic as that of some others, but may be of critical importance. A bad result from an eye operation may not only be disfiguring, but as disabling in its total effects as a bad result from partial gastrectomy.

The descriptions of the diseases, operations and treatment are soundly based on considerations of anatomy and physiology. Most of the diagrams are good, and there are some excellent photographs. Procedures such as the eversion of the upper lid, which are difficult to describe, are well shown by illustrations.

The section on bacteriology does not seem closely applied to the needs of the student nurse, to whom the details of the Ziehl-Neelsen staining technique must seem quite academic. The section on nursing treatments might well include the insertion of a speculum and the removal of conjunctival stitches.

CONCISE ANATOMY *by* Linden Edwards. McGraw-Hill Publishing Co., Ltd. 2nd edition. 1956. Price £2 9s. 0d.

Courses on anatomical instruction for medical students in American Universities are usually both condensed and abbreviated in comparison with our own, though basic courses of instruction may be later supplemented by tuition in applied anatomy. Judged, however, by the standards of

the British medical curriculum, which are preeminently concerned with ensuring a sufficient *preclinical* basis for medical training, most American text-books of anatomy are less than adequate. In this country, and the present review is concerned only with the possible value of Professor Edwards's books in Great Britain, *Concise Anatomy* will not be found suitable for medical students. Indeed, it is doubtful if it can be said to be suitable for students of ancillary medical subjects either, since there are, in general, existing text-books more specifically designed to meet their needs. Physiotherapists, for example, will find that the book does not provide sufficient information on either muscles or joints to satisfy their requirements: a disadvantage from the point of view of any potential readers is that the attempt to condense and simplify textual description has not always been successful, nor has it been wholly consistent.

The general arrangement of the book is unusual in that a section on "general anatomy" is followed by one on topographical anatomy in which the treatment is partly regional and partly systematic. A certain amount of elementary physiology is included in the text, and there are short sections on elementary applied anatomy. Most of the illustrations have been taken from various editions of Morris's *Human Anatomy*, and these are good. The nomenclature is largely based on the B.N.A. which is not now used in this country.

In summary, then, *Concise Anatomy*, has evidently been designed to meet some particularly transatlantic requirements and it is unlikely that it will be recommended for any group of students in this country.

M. J. Blunt.

DISEASES OF THE HEART AND CIRCULATION. 2nd edition *by* Paul Wood. Eyre & Spottiswoode. Pp. 1,005. 5 gns.

This book was widely welcomed when it first appeared in 1950, published on behalf of The Practitioner. Now it has been enlarged and thoughly revised.

The new edition is extremely well illustrated and the chapter on electrocardiography is one of the clearest expositions on a rather difficult subject. Especially valuable to the medical student is the new chapter on Physical Signs. In fact the first 250 pages can be read with advantage by all approaching their final examinations.

This text is primarily intended for graduates and is a necessity for any who intend to pursue a career in cardiology. Although expensive, it is so well produced it is worth the price. A full list of references make it of value to the research worker.

In a previous review it was suggested that the order of the chapters be revised. Some note has been taken of that, but the author contends that the arrangement was 'determined chiefly by physiological and etiological consideration, rather than by morbid anatomy'.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXI MARCH 1957 No. 3

EDITORIAL

What quirk of vanity prompts doctors to talk about the writings of their colleagues as 'literature'?—John Parr.

Although the vanity of the medical man is very probably infinite, one may with confidence protest that the insinuation in the question of John Parr is unjustified. That Medicine is an Art, a Science, a Philosophy and even an Intuition one may devine from the writings of Wilfred Trotter and others of our great predecessors; but no-one has yet claimed, to our knowledge, that Medicine is a Literary Profession. The facts themselves deny such an allegation. We have never received a case note in iambic pentameters, and one might surmise that the Editor of the *British Medical Journal* would admit the same. Even James Joyce would be hard put to it to discover the structure of the Novel in a textbook of surgery, although he might fare better with the *Journal of Psychoanalysis*. It is difficult to say what literary form one would choose for the medical treatise. Personally we would prefer to see it veering towards the algebraic equation in preference to even the most homely style of English literature.

When one's syntactical enormities have drawn the ridicule of a literary acquaintance, it is a useful ploy to invert the argument and remark on the clumsy handling of medical events in contemporary fiction. Miss Nina Coltart has done some very useful research on this subject with reference to a particularly susceptible nineteenth century novelist, and we refer you to her article *An Attack of the Vapours* both for information and for an illustration of research methods. If this gambit is outployed and you are feeling particularly ruthless, you can always mention the *Reader's Digest*.

Reverting to and generalising the original argument, the question of the Culture required of a medical man is one which has and probably always will furnish a constant source of enjoyable discussion. Deans of Medical Colleges (not, fortunately, our own) are particularly liable to indulgence, as are those who write to *The Times*. For the benefit of readers who are unfamiliar with such channels of information, we quote from an anonymous author a passage which may be considered typical of the sentiments normally expressed:

"Our profession, so rich in men of surpassing industry, so full of men of mechanical genius, abounding, too, in men of great self-denial and benevolence, but bare — how sadly bare — of men who can, with professional distinction, carry with them an atmosphere of literary refinement and a true appreciation of beauty in nature and art."

Had the author not been writing at a time when a classical education was compulsory, no doubt he would have touched on that subject also.

The general tenor of these arguments is to the effect that an understanding of the significance of the Chorus in the Agamemnon, the ability to discuss the brushwork of Hogarth in the Great Hall, the tendency to hum a snatch of Stravinski rather than *Razzle Dazzle*, all go to make the individual better; not only a better writer of medical works, not only even a better doctor, but in some indefinable way a better *person*. Let us ignore the truth or falsehood of such a proposition — (We note, incidentally, that Mr. Plumptre courageously attacks one aspect of the problem in the correspondence column). Rather let us ask why the medical practitioner should wish it to be true of his

colleagues, rather than of barbers or lawyers or sanitary inspectors or any other section of the lay public.

Looking past the disinterested motives towards the real ones, we find the basic human desire for increase of status, for the enhancement of individual status by the reflected status of the group. The reason for the advocacy of Culture is that evident Culture is a quality which confers status, according, that is, to the prejudices of our society. From his days on the 'modern side' at school, considered by the rest of the sixth form to be something of a barbarian, through a scientific course at University, where he spends the hours of enlightened conversation poking at a cat with forceps, to his striving years as a young doctor, when the copies of *Blackwoods Magazine* pile up unread, he feels cheated and deprived of something desirable which is rightfully his. His later years are then spent in decrying the lack in his colleagues of what he lacks himself.

But the approach is wrong. We suggest that it would be easier to alter the social standards of the day than to instil Culture into the Medical Profession. It might even be more beneficial. Suppose for instance that medical knowledge rather than Culture were to give a man status and dignity in the eyes of Society. At the moment the odd Classical Sixth gets a lecture on *Medicine at the time of Hippocrates*, and a layman who picks up a medical book is immediately labelled a hypochondriac; but under the New Rules, what a respected body we would be! How the classical scholars and historians would rush to form medical societies, the artists would delve beneath the surface and the priests probe further than the prognosis of Clergyman's Knee . . . . Then we should have the pleasure of hearing Learned Counsel deprecating the medical ignorance of the young barristers-at-law, and the Deans of Medical Colleges and those who write to *The Times* would be free to . . . to do what? . . . why, to discourse on some other deficiency of the Profession. Perhaps, after all, we are better off as we are.

(We apologise to anyone who thought that we were winding up for an exhortation to students to write more for the *Journal*. Being cynical about such things we merely refer your attention to the few lines in the Notices column.)

On Terra Firma

The annual Boat Club Ball was held in the recreation room of College Hall on Friday, 11th January.

The Boat Club managed to maintain the high standard of decoration, music and buffet which had been set by the Rugger Club dance. The cabaret, advertised as *Christ's Pieces*, made up for its lack of local talent by a smooth and almost professional presentation. Notable among many amusing items was the *Chipped Potato Blues*, a Calypsonian lament on the prevalence of this type of vegetable.

There was a certain lack of co-ordination between the Boat Club and the Skiing Club, as the dance was held on the night before the distressingly early departure of the skiing party for Austria. Nevertheless there were a few brave hearts with evening dress over their ski clothes, the general feeling being, "Oh well anyway we've got couchettes . . ."

This dance confirms the view that College Hall, apart perhaps from the unfortunate position of the bar, is a most suitable place for dances of this sort.

Record Library

The excellent library of classical records in the music room of College Hall has been acquired largely from the records which are sent *gratis* for review in the *Journal*. Unfortunately our former music experts are now preoccupied with the more mundane task of passing examinations, and the flow of records into the library is dwindling. The Editor would therefore welcome offers from more leisured gentlemen who feel inclined to undertake this critical assignment. Some knowledge of classical music is desirable.

Practice in Canada

Since the publication of Dr. Roberts' article on Canada last month, we have received some details on the regulations concerning the emigration of British doctors to Canada. These are not simple.

In order to practise in Canada, a doctor must be registered with the Provincial Licensing Authority of the province concerned. Practitioners on the Home List of the Register of the General Medical Council of Great Britain are admitted to registration without examination in Alberta, Manitoba, Newfoundland, Nova Scotia, Prince Edward Island, Saskatchewan and the Yukon Territory. To be registered in the other provinces they must take the examination for the diploma of Licentiate of the Medical Council of Canada (L.M.C.C.). This examination is in pathology and the usual clinical subjects, and is held in several places across Canada in the Spring and Autumn. In order to sit for it, a candidate must obtain an enabling certificate from his province of choice (unless he is already registered there) for which he must produce evidence as to character and education, and for some provinces a report on a year's house appointment. All provinces now require a year's house appointment before registration. Quebec is the only province to require full Canadian citizenship for registration. There is no reciprocal registration between any two Canadian Provinces or between any Canadian Province and any American State.

Internships (house appointments) in Canada are for one year commencing on 1st July. One internship gives experience in medicine, surgery, obstetrics and paediatrics. Some of these posts do not require complete registration, and may be held prior to registration with our G.M.C. (in which case it is as well to make sure that the appointment is recognised by the G.M.C.) or while preparing for the exam for the L.M.C.C. Internships in teaching hospitals are hard to get and apparently unpaid; those in other hospitals were described by Dr. Roberts last month — they do however command sufficient salary to support a single man.

For specialists the situation is more difficult still. The Royal College of Physicians and Surgeons of Canada awards Fellowships in Medicine and Surgery, and Certificates in other specialities. No reciprocity exists with examining bodies in Great Britain. Permission to take the exams is not given until the applicant is established in practice in Canada, and 'the quality of his work properly assessed'. Salaried hospital appointments are very rare, and the emigrating specialist would have to go into private practice.

A circular issued by the B.M.A. states that the output of the Canadian medical schools is sufficient to satisfy the country's requirements, the doctor-patient ratio being one to 950, not unlike this country. But "a well qualified G.P. who meets the licencing requirements and who is prepared to accept the rigorous conditions of country practice may establish himself in such locations as are inadequately served." It goes on to quote the General Secretary of the Canadian Medical Association:

"I have been increasingly concerned at the flow of doctors from the United Kingdom and at the very great difficulty we are encountering in advising them on prospects for practice. This is particularly evident among well-qualified specialists."

The regulations for doctors entering practice in Canada are in a constant state of flux, and it cannot be said for certain that the above are fully up to date. Anyone contemplating such a move is advised to write well in advance to the Licencing Authority of the province in which he wishes to practice.

Telling Diet

The Seven Ages of Man:

1. Milk.
2. Milk and vegetables.
3. Milk, ice-cream, soda, candy.
4. Steaks, coca-cola, French fries, ham and eggs.
5. Frogs' legs, Caviare, crêpes suzettes.
6. Milk and crackers.
7. Milk.

From *The Santa Fe Magazine*.

Textbook Trouble

One frequently hears newcomers to the various branches of medicine complaining that they are afloat in a sea of textbooks, and, if they continue in the same metaphor, that they have very little clue of the best waters to anchor in. Textbook lore at the moment is handed down rather surreptitiously by word of mouth. But there is no reason why this knowledge should not be made respectable, and the *Journal* would seem to be a suitable medium for its transmission. We therefore invite students and others who have battled with the textbooks of any particular subject to write of their trials, tribulations and successes, so to make the way less hazardous for their successors.

Operation Percy

Percy has recently been a much travelled mascot. His wanderings began with the visit of his head to the Cup Match against Guy's, where he was remarked by many to have been one of Bart's most enthusiastic supporters. Perhaps it was this excessive partisanship which induced a raiding party from Guy's to carry off his head that evening. His absence was only brief, however, and a return foray brought back the head the following night.

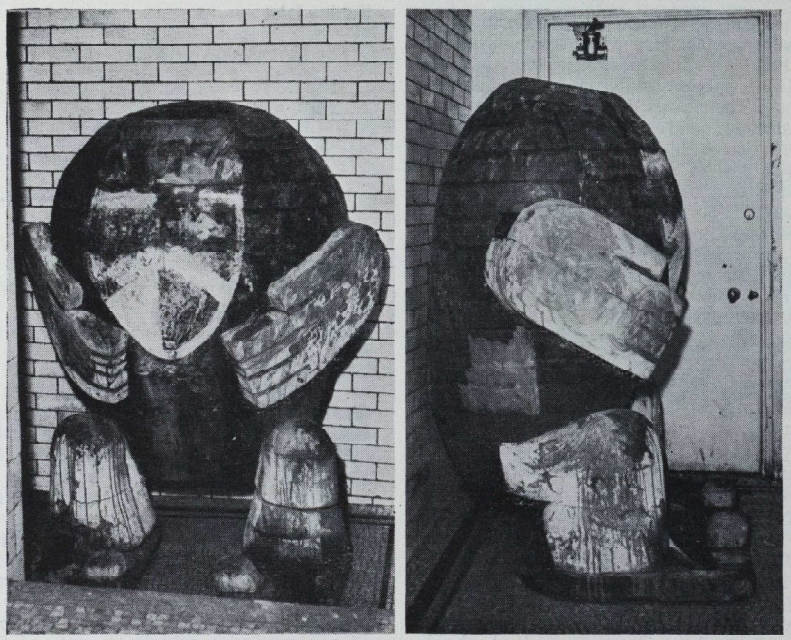
The next expedition from Guy's was more energetically humane, and due care had been given to Public Relations. They arrived with a representative of a daily newspaper in attendance, and made off with head and body and all.

There was little consternation or panic at Bart's the next morning, when news of the exploit was read in the papers. A commendable calm attended the organisation of the Reprisal Group, whose activities took place in two discreet phases:

Phase 1.

The same evening a party of twenty approached Guy's from a northerly aspect. Two nurses who courageously tried to give the alarm were taken into protective custody. The Hospital was entered by the main gate. A bystander was asked the whereabouts of Percy, and kindly pointed him out. He lay on some waste ground behind the Residential Quarters, headless and forlorn in his inhospitable resting-place.

Guy's were kind enough to lend the party a trolley, which was hoisted over the wall at some expenditure of energy. Before leaving, the party indulged in light entertainment by tarring and feathering the statue of Thomas Guy. The returning party were apprehended on London Bridge for proceeding without lights on the Public Roadway, but otherwise



Percy in captivity — outside the P.M. room at Guy's.
(With acknowledgments to the Department of Medical Illustration, Guy's Hospital.)

the operation was carried out with no opposition.

Phase 2.

Percy's body had been retrieved, but his head was still in the hands of Guy's. The planning of phase two was notable for its intelligence work, and the operation might be described as a cross between a commando raid and a confidence trick.

Espionage at Connaught House revealed that the head was carefully guarded in a Guy's flat, and by methods which are still on the secret list the name and address of the custodian were obtained. Then when the body had been headless for over a week, the bus from Chislehurst stopped outside the flat one Wednesday afternoon. Two Bart's agents, wearing Guy's scarves (trophies from the match), presented themselves to the flat's occupant as Guy's men come to unite Percy's head with his body. With admirable hospitality they were invited in out of the rain, and shown the head. Just as suspicion was beginning to be aroused, a 'casual passer by' informed the 1st and 2nd XV's of the successful entry. A horde of rugger players swept into the flat, pinioned the host against the wall, and carried off the head of Percy in triumph.

A somewhat exhausted but reunited Percy now stands safely at home, 'somewhere at Bart's'.

A sensible account of this 'mascot warfare' appears in the recent issue of the Guy's *Gazette* (which rather ironically also contains a letter thanking the Ministry of Works et al. for 'the greatly improved appearance of Guy's statue'). It commends the skill and bravado of the exploits, but regrets the lack of opposition with which they were greeted. With this view we entirely agree — it is ominous that our little forays should become, like modern military strategy, largely a problem of transport.

The Guy's *Gazette* rather surprisingly refers to Percy as an 'elephant'. This interpretation is understandable if the author was a member of one of the raiding parties (Percy is reputed to weigh half a ton); and incidentally this appears to be the first occasion when the torso has been taken as well as the head. Views as to Percy's place in phylogeny are far from uniform at Bart's.

Percy regained.

Various people have stated with confidence that he is a gorilla, a microbe, a magpie, the Abominable Snowman, or a new species reared in the animal house at Charterhouse. The *Journal* view is that he was designed as a Rorschach test. What do *you* think?

Science Moves In

There has been so much news of construction in recent months that the *Journal* must read rather like the *Building Trade Monthly*. However it is a pleasure to write, even if not to read, of work which is improving so rapidly the facilities of the Hospital and Medical College. It is work of which John Freke would justly have been proud.

The latest development is the completion of a new science block, although one cannot yet give it a name as the final scroll of occupants is not complete. The original plan was to devote it to physiology and to build a new block for physics and chemistry. However the prospect of such an addition

has receded even further than usual, and Biochemistry have ensconced themselves firmly on the top floor of the present building. The first floor is being used as a physiology classroom and the second floor for histology. There is a tentative plan to move the didactic section of Pathology into some part of the building, but a strong feeling exists in many quarters that clinical and academic pathology should not be separated, even for the sake of such luxurious laboratories.

The building itself is in the style of the physiology building. The metal-looking story on top, which we thought was a special insulation to protect the surrounding city from deadly rays or the roar of powerful machines, turned out to be disappointingly ordinary. The metal is merely to make waterproof the boarding which was used for the fourth floor as an economy measure. There is an admirable view from the top of the building, which will no doubt gain popularity as a sunbathing resort. The hall has been much admired, and the staircase needs no description when one learns that it has been dubbed 'Liberace Staircase' by the research and preclinical side.

Congratulations

to Surgeon Vice-Admiral Sir Kenneth Ingleby-Mackenzie, K.B.E., C.B., M.R.C.S., who has been made a Knight of the Order of St. John of Jerusalem.

to Mr. Michael Smyth on his appointment as the first Gordon-Watson Lecturer.

New Fleet

It has recently been announced by the United Hospitals Sailing Club that the old 16-foot Burnham One Designs are being sold and a fleet of 12 Square Metre Sharpies is being bought.

The One Designs were open clinker boats; they were Bermuda rigged with a spinnaker in addition to their working sails.

Twelve Square Metre Sharpies were raced at the recent Olympic games — they are an international class. The boats are 17½ feet long and they carry 130 sq. ft. of sail. They are three-quarter decked, hard chine; in rig they are gunter sloops. These new boats are faster than the old One Designs and should provide better sailing. On a broad reach it is not unusual to see them planing.

ANNOUNCEMENTS

Engagements

BEARD—COX. The engagement is announced between Richard William Beard and Jane Elisabeth Cox.

DAWSON-RACKHAM. The engagement is announced between John Bernard Dawson and Gillian Mary Rackham.

HARVEY—GUTHRIE. The engagement is announced between Kenneth J. Harvey and Mrs. Barbara Guthrie.

HAYES—MORBEY. The engagement is announced between Martin E. Broughton Hayes and Susan Morbey.

LAURENT—KILBEY. The engagement is announced between Jacques Maurice Laurent and Maureen Claire Kilbey.

MALPAS—CATHCART. The engagement is announced between James Spencer Malpas and Joyce Cathcart.

OGDEN—EVERY. The engagement is announced between William Stewart Ogden and Barbara Every.

Births

EVANS.—On January 29, 1957, to Sheila, wife of John W. B. Evans, a brother for Elisabeth.

GRIFFITHS.—On January 12, 1957, to Valerie, wife of Dr. E. J. Griffiths, a son, brother for Diana, David and Richard.

ROWNTREE.—On January 3, 1957, to Paul and Gwendoline, a son, Neil.

WATTS.—On December 18, 1956, to Joan, wife of Dr. R. W. E. Watts, a son, Richard Arthur.

WHITELEY.—On December 27, 1956, to Lena, wife of Major Michael Whiteley, a son, Nicholas Simon.

Deaths

BOWEN.—On January 14, 1957, Owen Henry Bowen. Qual. 1909.

BROOKE.—On January 13, 1957, Eric Barrington Brooke. Qual. 1922.

DAVID.—On January 10, 1957, Thomas William David. Qual. 1914.

DUCAT.—On January 16, 1957, Arthur David Ducat, aged 86. Qual. 1894.

HOUNSFIELD.—On January 15, 1957, Sydney Coupland Hounsfield, aged 84. Qual. 1895.

LLOYD.—On January 28, 1957, George William Lloyd. Qual. 1911.

NEWTON.—On January 17, 1957, Herbert William Newton, aged 90. Qual. 1889.

NOON.—On January 19, 1957, Charles Noon, aged 71. Qual. 1910.

PITTMAN.—On January 19, 1957, John Cecil Pittman. Qual. 1951.

STORRS.—On January 2, 1957, William Townsend Storrs, aged 83. Qual. 1897.

WATERS.—On December 11, 1956, Alfred Charles Stanley Waters. Qual. 1901.

NOTICES

Literary Prize

The Publication Committee has pleasure in announcing that it offers the same prizes for 1957 as were offered for 1956. These are:—

Five guineas for the best scientific contribution.

Five guineas for the best non-scientific contribution.

Two guineas for the best drawing.

Two guineas for the best photograph.

Bart's students and nurses and members of the staff of not more than ten years' standing are eligible for the prizes. The results will be announced in the January, 1958 *Journal*. Contributions should be sent to the Editor.

View Day Ball.

The View Day Ball will be held at the Park Lane Hotel on Friday, May 17. There will be a cabaret and dancing to Tommy de Rosa's band. Double tickets (including dinner) are three and a half guineas, or three guineas if purchased before May 10. All who wish to go are advised to order their tickets early on the attached pro forma.

Burnham Regatta

The Bart's Regatta will take place at Burnham-on-Crouch from Wednesday, May 29 to Friday, May 31 this year. Racing will be for the Commodore's Trophy; there will also be a Ladies' Race and a Seamanship Race. All members of the Hospital are encouraged to attend and to take part in suitable events.

Abernethian Society

All members are encouraged to attend the debate on March 26. The subject will be "The specialist is not a doctor." The principal speakers will be Dr. J. H. Coulson and Mr. E. A. J. Alment. As there is bound to be a shortage of time, members who wish to speak from the floor will have more chance of succeeding if they inform the Honorary Secretary of the Society beforehand.

* * *

Assistant required for Dental Practice in North and East London, with view to future partnership. Excellent prospects. Apply—S. Neuberger, Flat G, Highpoint, Highgate, N.6. Tel.: MOU 4878.

Advertisements may be inserted in the JOURNAL *at a cost of two shillings per line. They should reach the* JOURNAL *desk by the First of the month before that in which they are intended to appear. Replies should be sent to the advertiser; it is regretted that box numbers cannot be given.*

CALENDAR

Sat.	Mar.	9	Dr. A. W. Spence and Mr. C. Naunton Morgan on duty. Anaesthetist: Mr. R. A. Bowen. Rugger: v. Loughborough College (A). Soccer: v. Middlesex Hosp. (A). Hockey: v. Past Bart's XI (H).
Tues.	,,	12	Oxford-Bart's Dinner.
Wed.	,,	13	Soccer: v. St. George's Hosp. (H).
Sat.	,,	16	Dr. R. Bodley Scott and Mr. R. S. Corbett on duty. Anaesthetist: Mr. R. W. Ballantine. Rugger: v. Aldershot Services (A). Hockey: v. Oxted (H).
Sat.	,,	23	Dr. E. R. Cullinan and Mr. J. P. Hosford on duty. Anaesthetist: Mr. C. E. Langton Hewer. Rugger: v. Harlequin Wanderers (H). Soccer: v. Old Parkonians (A). Hockey: v. King's College Hosp. (A).
Tues.	,,	26	Abernethian Society Debate: *The Specialist is not a doctor.*
Sat.	,,	30	Medical and Surgical Professorial Units on duty. Anaesthetist: Mr G. H. Ellis. Rugger: Inter-firm Sevens. Soccer: v. Westminster Hosp. (A). Hockey: v. Westminster Hosp. (A).
Sat.	Apr.	6	Dr. G. Bourne and Mr. J. B. Hume on duty. Anaesthetist: Mr. F. T. Evans.

RENAL CALCULI

by A. E. DORMER.

THE ANNUAL morbidity due to urinary tract calculi is difficult to assess, for many cases go unsung, only a proportion are admitted to hospital, and of these a lesser number require surgical treatment. Statistics covering in-patients who were discharged from the teaching hospitals in 1951 show that there were 449 men and 286 women diagnosed as having urinary tract calculi, representing some 0.4% and 0.2% respectively of the total numbers discharged. In 1955 the Registrar General recorded a total of 147 male and 154 female deaths due to renal or ureteric stones.

From a different view point, in an unselected series of necropsy studies microscopical evidence of renal calcification was found in 31 (5.7%) of 540 infants, and 149 (15.5%) of 960 adults, 25 cases in adults being described as of moderate degree.

Study of the sites of calcification in kidneys and of early stone formation lead to the belief that local factors (vascular, lymphatic and infective) are chiefly responsible, but disorders of metabolism, and of total ion excretion are more important because they tend to be associated with more severe disease and may be more susceptible to modification.

In this article it is therefore proposed to discuss some aspects of stone formation and renal calcification from what may be termed the medical point of view, confining attention to matters on which in recent years there has been change of emphasis.

THE ROLE OF CALCIUM

Deposition of calcium in the urinary system will be found more commonly where there is increased renal excretion of calcium and here two factors require consideration.

1. *Increased absorption from the gut.*
   - a. High calcium intake.
   - b. Increased gastric acidity.
   - c. Reduced oxalate intake.
   - d. High vitamin D intake.
   - e. Increased sensitivity to vit. D.
   - f. Increased protein intake.

2. *Mobilisation of calcium from bones.*
   - a. Old age.
   - b. Immobilisation.
   - c. Hyperparathyroidism.
   - d. Acidosis.
   - e. Paget's disease of bone.
   - f. Osteolytic bone disease—myelomatosis, secondary carcinoma.

Multiple osteolytic bony metastases due, for example, to a breast cancer may mobilise calcium from the bones to such an extent that the level of serum calcium is raised, producing the clinical picture of hypercalcaemia, anorexia and constipation, muscular fatigue and weakness. Although asociated with this process there is an increased renal excretion of calcium, the natural history of the basic disease renders it of lesser importance. This is not so, however, with Paget's disease of bone, and to immobilise such a patient is to court disaster to the kidneys.

In patients with peptic ulcer factors such as an increased intake of calcium (in milk), increased gastric acidity favouring calcium absorption, and the effect of alkalies in producing an alkaline urine and so favouring the precipitation of calcium phosphate, and periods where bed rest may be required might be expected to lead to an increased incidence of renal stones. This is borne out by figures published by Pyrah.

1953—54.	Admissions	38,939
	Peptic ulcer	1,383 (3.55%)
	Renal stone	149 (0.38%)

Of 495 patients with peptic ulcer questioned,

expect stone in 0.38% i.e. 2 cases
actual number with stone 8 cases

Of 308 patients with renal stone questioned,

expect peptic ulcer in 3.55% i.e. 11 cases
actual number with peptic ulcer 32 cases

Dr. A. E. Dormer qualified in 1951, took his Membership in 1953, and is now First Assistant on the Medical Professorial Unit.

The position of hyperparathyroidism is of interest, for originally the accent of description fell upon the bony aspects of the disease-osteitis fibrosa cystica generalisata. That renal complications are the commoner mode of presentation is well borne out by analysis of cases published in the world literature. Of 314 cases published up to 1947, some 60% had skeletal changes only, with 5% demonstrating nothing but renal calcification or calculi. But of 266 cases after this date the figures were 22% and 51% respectively. Such changes may be those of nephrocalcinosis, but can merely be of a stone in the urinary tract.

Early diagnosis is of the greatest importance for, although the parathyroid tumour be found and removed, if the kidney has been too grossly damaged the prognosis may be affected by the development of hypertension or of renal failure. An uncommon disease therefore, if it is to be diagnosed early, hyperparathyroidism should be suspect in all patients presenting with a calcium containing urinary stone. This implies that the investigation of such a case is not complete unless the values of the serum calcium, phosphate and alkaline phosphatase have been determined, diagnosis being confirmed in the presence of a raised calcium and lowered phosphate level. Any borderline values require further investigation, the calcium level being the best indication of this need. On a normal diet the daily urinary excretion of calcium should not be greater than 350 mgms. but greater accuracy is obtained if the patient is put for a 6 day period on a diet containing 125-150 mgm. of calcium. The daily urinary calcium excretion for the last three days of this period is then obtained and if over 200 mg. strongly supports the diagnosis, a level of 150-200 mg. remaining suspicious and requiring further more detailed investigation or observation.

RENAL ACIDOSIS

As a result of a renal tubular defect, congenital or acquired, there may be failure of the normal function of conservation of base. This drain of base from the body may result in calcium being diverted from the bones and itself lost in the urine, with consequent failure to grow, skeletal weakness and deformity, together with nephrocalcinosis and stone formation. The treatment is to provide adequate base in the form of sodium which, in spite of the excessive loss, is sufficient for the needs of the body, and adequate material with which to recalcify the skeleton. Thus a patient D.W. was first noted to have skeletal abnormality when aged 2. When aged 9 years his femur was fractured when his mother clutched him as she carried him in her arms. At this time the alkali reserve was found to be 24.6 vol. CO_2%. He was treated with adequate calcium and with Shol's solution, mls. 50 t.d.s., a solution which supplies the loss of base by providing sodium in the form of its citrate and also contains citric acid to facilitate calcium absorption from the gut. Two years later the radiologist reported that his bones were 'virtually normal.'

CYSTINURIA

Cystinuria is an inherited abnormality in which a small proportion of patients suffer from renal stones, such stones only occurring in the higher ranges of cystine excretion. This disease, originally described by Garrod, was for long thought to be a metabolic defect with resultant over-production and subsequent loss in the urine, of cystine. Recent work by Dent has shown that in fact the urinary loss of cystine is the consequence of a defect of renal tubular function leading to failure of reabsorption and consequent loss in the urine of cystine together with the other amino-acids lysine, arginine and ornithine. There has therefore been a reorientation of ideas regarding treatment. The urine loss, for the present, has to be accepted and attention is turned to attempting to keep it from precipitating out. Luckily, the solubility of cystine is such, that with an average fluid intake the urine only becomes supersaturated for cystine during the night. Such cystine may therefore be brought into solution by arranging for a urine flow over the night period similar in amount to that passed during the day, with the result that a cystinuric patient is asked to exchange the possibility of premature death due to uraemia for a life in which the need to drink and micturate disturbs sleep twice nightly.

Other examples of renal tubular functional defects are known involving failure of reabsorption of glucose, of phosphate, of a number of amino-acids ; indeed these defects are often multiple but are not further discussed here.

Oxalate

Recently research has been carried on in the Medical Unit by a group under Dr. E. F. Scowen into the subject of oxalate metabolism, for although the majority of renal stones are found to contain oxalate, little attention has on the whole been paid to this ion in the past.

On an average diet the daily ingestion of calcium is some 1,000 mgms. or 50 m.eq. and is in excess of the oxalate intake of some 1,300 mgms. or only 21 m.eq. The foods which would be most likely to lead to some oxalate absorption may be assessed by noting their relative calcium and oxalate contents. The latter analysis is not easy and the reliability of earlier figures published is uncertain. Extensive analyses were performed by Kohman, but the results of Andrews and Viser are the most recent and would appear to be the most reliable. Taking their figures and the figures for calcium content by McCance the following foodstuffs show an excess of oxalate over calcium :

	Calcium		Oxalate as $(COOH)_2$	
	mg./100 G	m.Eq.	mg./100 G	m.Eq.
Rhubarb	103	5.1	275	6.1
Beetroot	30	1.5	127	2.8
Sweet Potatoes	20.5	1.0	141	3.1
Cocoa	51.2	2.6	908	20.2
Peanuts	61	3.1	225	5.0
Rice	3.7	0.2	186	4.1
Apples	3.6	0.2	30	0.7

The Strawberry is an example of a food in which these values are closely balanced

Strawberry	22	1.1	47	1.0

and Spinach, while having a very high oxalate content has an even higher calcium content.

Spinach	595	29.7	1050	23.3

Undoubtedly matters are not as simple as these figures suggest, for the expressed juice of rhubarb carries the high oxalate content but negligible calcium, and presumably digestion of the fibre is a slower process than digestion of the juice.

During the recent war it was feared that a people short of milk, but in season having a plethora of rhubarb, might suffer from loss of availability of calcium to the body as a result of its combination with oxalate in the gut. Some research into this effect was undertaken but the fate of oxalate itself was but little studied. We have performed some experiments with the feeding of oxalate, and have shown that when the calcium salt is ingested such that the total oxalate intake is increased by some fourfold over the normal value, a negligible rise of urinary oxalate was observed. A greater absorption and subsequent excretion was found when the more soluble sodium salt was fed, but even under these circumstances the total excreted amounted to less than 5% of the ingested dose.

Thus it may be concluded that, in the ordinary way, dietary oxalate has but little effect upon the urine, the extent to which it is of importance depending upon the degree of gastric acidity, the relative intakes of calcium and of oxalate and the ease with which these elements come together in the gut.

Our own experiments suggest that the normal daily urinary output of oxalate in man is about 20 mgms., 40 mgms. being the upper limit of normal. Many subjects however excrete much smaller amounts which cannot be estimated accurately by present routine methods. These figures are a little below some previous values reported in the literature which lie between 14 and 64 mg. A series of patients with oxalate stones also had values which were within normal limits and it is improbable that there was any defect of oxalate metabolism in this group.

Further interest was aroused by the report in 1950 by Davis who described a male child who, at the age of 3 years began to have polyuria and soon after passed gravel and stones composed of calcium oxalate. Further stones were passed at frequent intervals until death at the age of 12 from uraemia. Necropsy showed oxalate crystals deposited in the kidney substance and widely throughout the body, especially in the bones.

To date a total of 18 such cases have been described in the world literature, 11 of the patients having their first symptoms recorded before the age of 5 years. All died of uraemia, only 5 surviving beyond the age of 20. These cases, together with two further patients who continue to be studied in this hospital, would appear to be examples of the condition of oxaluria. This word has been applied loosely in the past, the appearance of crystals in the urine being held sufficient to substantiate the diagnosis. In line with current thought oxaluria might now be redefined as :—

A condition presumed to be present from birth and characterised by excretion in the urine of excessive quantities of oxalate (about 150-250 mg./day). The condition may be present in the patient's siblings and results in the formation of stones composed almost entirely of calcium oxalate, and the production of nephrocalcinosis. General health is unimpaired until or unless urinary tract infection, stone formation, or the progressive destruction of kidney substance produce their effects.

Uraemia is the usual cause of death which occurs prematurely. Organs, other than the kidneys, may also show the presence of oxalate crystals, a condition of oxalosis. The cause is presumed to be due to a metabolic defect.

This severe defect is probably rare, for in 1955 the Registrar General for England and Wales recorded only 24 deaths under the age of 40 years due to urinary tract stones. But to be certain about its rarity, and to ascertain whether lesser degrees of the syndrome exist will require further study of the oxalate excretion of patients who have such stones. This, the defining of the metabolic defect, and the possibility of cure lie ahead.

Urinary Infection

The importance of an abnormal urinary tract in predisposing to urinary infection is well known, and Garrod, Shooter and Curwen have also shown its effects in perpetuating such infection. In such circumstances stones, usually phosphatic, often occur. In this vicious circle the role of antibacterial agents is well known, but some aspects will be briefly mentioned.

The concentration of urine which occurs in the renal tubules may help one to obtain levels of an anti-biotic which could not be obtained in the blood, and thus enable an otherwise resistant organism to be brought under control. For example the injection over 24 hours of 0.25M. of crystalline penicillin at 3-hourly intervals might be expected to lead to a blood level varying between 0.1 and say 8 units penicillin/ml. according to the time after injection, whereas with an average urine output the urine level would be expected to be of the order of 800 units/ml.

Where streptomycin is used to treat such infection certain points should be noted. The activity of the drug increases some ten fold with every unit pH rise in alkalinity. An alkaline urine therefore becomes highly important. But it does not suffice to rely upon any alkalinity produced within the tract by bacterial action, for this effect will cease when most of the bacterial population has been greatly reduced and just when one is hoping for its final elimination. Long courses of this drug are pointless for if a course over 2-3 days has not sufficed, the organisms will probably have become resistant. Lastly, in the presence of renal failure, it must be recalled that higher blood levels than are usual will be obtained with correspondingly greater risk of damage to the 8th nerve.

Under certain circumstances, where any organism is particularly difficult to eliminate and where to some extent they may be protected by organic debris, then it may be advantageous to view the treatment of the infection in the same manner in which bacterial endocarditis is viewed — namely, that a bactericidal drug or combination of drugs (and again a combination of penicillin and streptomycin is often found to be the most useful) must be given for an adequate period to allow penetration to all groups of bacteria. It is obviously important that such treatment is under strict bacteriological control.

As has been implied, with phosphatic stones there is a marked tendency to recurrence. The best chance of preventing this is to correct the anatomical structure of the urinary tract where necessary, to free it from existing stones and to rid it of infection. But a further improvement might be expected, and has been obtained in practice, by reducing the urinary phosphate excretion as far as possible, e.g., from about 1,000 mg. to 400 mg./day. Such treatment requires a reduction of phosphate in the diet where it is usually present in unnecessary excess — especially in such foods as milk, cheese, meat and egg yolk. Absorption of such phosphate as is ingested is then reduced by precipitating it within the gut lumen by aluminium hydroxide. This aluminium must needs be taken with each meal, and with the preparations normally available a rather large amount is necessary, e.g., approximately 180 mls./day in the case of 'Aludrox.' This amount has been reduced to some 120mls./day by a new preparation with a higher aluminium content, 'Hyalgel,' which contains some 2.9-3.1% of aluminium together with some magnesium to avert the constipation which might otherwise ensue. But it is obvious that such a regime is rigorous and is only likely to be practicable in a minority of patients, more particularly those with an

obsessional trait. It might also be observed that such treatment can reduce the blood phosphate level, and hence the tendency to secondary hyperparathyroidism in chronic renal failure.

ACKNOWLEDGEMENTS

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REFERENCES

1. Andrews, J. C., Viser, E. T. (1951). *Food Research* 16. 306.
2. Badenoch, A., Scowen, E. F., Shooter, R. A. Awaiting Publication.
3. Davis, J. S., Klingberg, W. G., Stowell, R. E. (1950). *J. Pediat.* 36. 323.
4. Dent, C. E., Senior, B. (1955). *Brit. J. Urol.* 27. 317.
5. Garrod, A. E. (1924). *Inborn Errors of Metabolism* 2nd ed. (Lond. Ox. U.P.).
6. Garrod, L. P., Shooter, R. A., Curwen, M. P. (1954). *B.M.J.* 2. 1003.
7. Kohman, E. F. (1939). *J. Nutrition* 18. 233.
8. McCance, R. A., Widdowson, E. M. *Chemical Composition of Foods.* (1946). M.R.C.
9. Pyrah, L. N., Roper, F. P. (1955). *Brit. J. Urol.* 27. 333.
10. *Registrar General's Statistical Review of England and Wales.* H.M.S.O.

LETTERS TO THE EDITOR

"AUT VARUS AUT VALGUS AUT COMPERNIS"

Sir,—As a boy it was always drilled into me, no doubt with much effort, that a sound knowledge of both Latin and Greek would be of inestimable value in the course of any profession which I might choose to follow after leaving Shrewsbury.

I remember that "much study is a weariness of the flesh." I think of the many painful years spent on the nursery rhymes *a, ab, absque, coram, de*—not to mention further years spent in acquiring some knowledge of the art of Gallic warfare and the various methods of bee-keeping.

It is with these thoughts in mind that I would like to suggest that it is all a terrible waste of time. At the moment I find myself no better off than those who have not had this 'privilege'—in fact worse, for now, not only do I have to think, a painful process at the best of times, but also to double think, as I hope these confusing terms will indicate. Valgus-a-um (adj.) Latin bow-legged, has in clinical medicine come to mean knock-kneed (Genu valgum). Similarly Varus-a-um (adj.) Latin knock-kneed, is now used to mean bow-legged (Genu varum).

As both these terms have become interchanged can any orthopaedist or other reader give any rational reason for this apparent stupidity?

Yours faithfully,

A. M. M. PLUMPTRE.

Abernethian Room.

CAMBRIDGE - BART'S CLUB

Sir,—The Cambridge Graduates' Club of St. Bartholomew's Hospital is greatly honoured this year by having, as its President, Sir Henry Dale, O.M., past President of the Royal Society. Except for the interruptions of war, the Club has held a dinner every year since its foundation in 1876, and, with the permission of the Ladies, the male members continue this custom. This year the dinner will be held at the Royal College of Surgeons on Friday 29 March at 7 for 7.30. The secretaries endeavour to inform every Bart's man in this country who is a Cambridge Graduate, and they would be grateful to hear from any whom the notice has not reached.

Yours, etc.,

H. JACKSON BURROWS,
R. A. SHOOTER,
Honorary Secretaries.

RIFLE CLUB

Sir,—I would be grateful if you would correct the misapprehension which recent issues of the *Journal* have created in the minds of some readers with regard to the activities of the Rifle Club.

Notwithstanding the fact that this is one of the smaller of the Hospital's clubs—(with an active membership of approximately 30)—it is engaged in a series of matches both against the other London hospitals and against teams from Oxford and Cambridge Universities—whom we were pleased to entertain this week.

I will at any time be glad to hear from such of your readers as may be interested in the activities of the club. In the winter months firing takes place on the Hospital miniature range on Mondays, Wednesdays and Fridays and in the summer frequent outings to Bisley are organised.

The club provides rifles and all accessories. Ammunition is sold to members at very reasonable prices.

A monthly programme of the club's activities is posted on the noticeboards both in College Hall and in the Abernethian Room.

Yours sincerely,

G. R. HOBDAY (*Capt.*)

Abernethian Room.

AN ATTACK OF THE VAPOURS

by NINA COLTART.

WHEN ASKED to name my favourite novelist, I have no hesitation in saying Charlotte M. Yonge. For those of my readers, unfortunate creatures, who may not have heard of her, let me explain that she was writing in the middle of the nineteenth century, and that the few who are today devoted to her are passionately and blindly devoted, and will brook no criticism of their idol. However, her general merits as a novelist are not what we are concerned with at the moment.

It might be expected that in a Victorian novel the size of **Pillars of the House** (Two Vols., 1,200pp.) there would be a pale heroine or so, languishing on a beaded couch, a decline or two here and there. But has it been fully appreciated that a novel of this type is a glittering store-house of treasures for the reader with a medical bent? Anxious relatives beg me to grab for a textbook at this juncture, when they see me engrossed in one of Miss Yonge's books. 'But your exam, dear . . . what about your revision?' 'I **am** revising,' I tell them haughtily. For indeed, here it all is . . . obstetrics, orthopaedics, general medicine, with just that extra bit of mystery, of things tantalisingly left to the imagination, which breathes the faint tang of the detective story to the medical sleuth-hound.

Pillars of the House is the prototype, and best, of these novels. Some of the afflictions, though referred to only allusively, are of a fairly obvious nature. But there is one, which I will describe in a moment, which left me casting about for even a differential diagnosis, let alone a clear idea of what it could possibly have been, long after the doctors had shaken their heads for the last time, and the sufferer had gone. But first for some of the more commonplace ancillaries in the Victorian novelist's medical repertoire.

You must know that the family group in this book consists of father, mother, and, initially, eleven children. The father was a curate. He has, in the opening chapters, what is clearly a pretty disastrous pair of tuberculous lungs and, although he goes about the work of his parish — a filthy hole called Bexley — to the last, he is smitten with a nasty haemorrhage in Chapter 4, and has a fairly rapid deathbed scene. In the midst of this, completely unexpected to the reader and, apparently, to the rest of the family, a 'thin cry' comes through the thin wall from the next room, and there are the twins, delivered at this inauspicious moment by Sibby and Martha, the general household helps. I cannot refrain from adding here that Martha is prevented from getting a better job by a 'horrible squint and a loutish manner,' but they conceal a heart of gold. The twins are carried in to their papa, who breathes his last bacilli over them, and expires.

Fortunately for the rest of the family, Wilmet and Felix, the two oldest, take on the title role of the book; just as well, since Mama, who fell downstairs a week before her confinement and hit her head, never seeems to pick up again, in fact goes into a near-comatose state and dies within the year. I think she also has a sort of pre-senile dementia, but I am not very sure about Mama. The next interesting case is Geraldine, who is fifth from the top. She has got something wrong with her 'ancle' (sic) and spends much of the early part of the book doing what is expected of her and languishing on a couch looking like a 'little old fairy.' At first, her complaint would seem to be a tuberculous ancle joint, but very much later in the book, her symptoms change somewhat, and 'a piece of bone comes out,' suggesting osteo-myelitis. Anyway, on her own initiative, she becomes one of the very few of Miss Yonge's characters to have an operation, and I think the only one to have chloroform, which was very avant-garde at that time. She has a below-knee amputation, and with a 'metal contraption' and a stick is thenceforth a new creature and gets all over the place.

Before moving on to the real problem of the book, I should just mention that Theodore, the baby, fails to pass any of his milestones, and is soon outstripped by Stella, his twin. He is taken to a 'London specialist' who pronounces him quietly and simply to be 'hopeless,' and indeed, one of his nastier brothers, Bernard, thinks he ought to be put away. But Theodore surprises them all by being one of those low-grade mental defectives who nevertheless has one extraordinary gift; his is singing and playing the accordion.

He has no vocabulary, but his pitch is perfect, and his 'mindless humming' is a great support to the local choir, although it nearly drives poor old Bernard round the bend. Theodore is later drowned in the river, and it is at this point that Felix begins to interest us.

A boat is upset, and they all fall out. Felix, who by now is about thirty, grabs Theodore, strikes out for the bank, and hauls himself and the boy out by reaching up for a railing and swinging up under it. The boy is actually drowned by this time, and although the faithful Sibby does artificial respiration for nearly five hours, it is of no avail. Meanwhile, Felix has had a 'haemorrhage from the mouth' and caused great consternation. Within the bounds of the novel, he has *not* got pulmonary tuberculosis, because he had a horrid cough the winter before last, and they took particular care to eliminate that diagnosis, knowing the family history. So that is counted out from the start. He gets over this haemorrhage and lives for two or three more years; but he is never the same. He loses energy, gets pale, and puts on weight —this last is specifically mentioned twice. He also suffers very much from 'the old strain in my side.' We never know quite where, or in which side. Nevertheless, he goes uncomplainingly on with his work, although he has been to see no less than 'four London specialists,' and the general concensus is that he may die suddenly. Accordingly, he puts his affairs in order, showing no symptoms except lassitude and an occasional pain in his side; and sure enough, on the occasion of Stella's wedding, he has a gross haemorrhage — site not stated — and within a week dies; the week being one of apparently intolerable pain, with his screams ringing through the house. As anyone who knows him will appreciate, this is most unlike Felix, and must indicate real agony. Now, whatever was the matter with him? Suggestions would be most welcome. All that is relevant from the book is here. Even if you cannot solve the problem, you may by now have an inkling of the wealth of medical interest which an apparently dry old novel contains.

Christmas Eve Carols outside Bart's-the-Less.

EVOLUTION — A BARRIER TO BELIEF?

In addition to its regular weekly meetings and the monthly services in Bart's the less, in which a steady and active interest is maintained, the Christian Union plans to arrange termly meetings to be addressed by well-qualified speakers on subjects of controversial and general interest.

This January, O. R. Barclay, Esq., Ph.D., spoke on "Evolution — a barrier to belief?" There was a not unwelcome breath of originality in the posters painted by various members, and if the sinister attractions of a 'compulsory' forensic medicine lecture had not prevented some from attending, the Recreation Room might have been uncomfortably full.

Evolution, said Dr. Barclay, had been a barrier to belief in the past, firstly by implying that 'education' and 'progress' had replaced the doctrines of creation, the fall and sin, and secondly by claiming to have undermined the authority of the Bible and by denying any revelation of God. The history of the dispute was sad, and neither side had behaved in a very sensible manner.

Evolution brought to public notice a number of then new ideas, which Dr. Barclay discussed. Firstly, that all forms of life have one common ancestor. Evidence for this was inevitably circumstantial, argued from analogy. Darwin himself had refused to do this, and spoke cautiously of 'at least four or five progenitors' of the present animal population, and current zoological opinion agrees on this point. People before Darwin had believed in change. He put forward an idea of how this could happen. Natural selection can be shown to occur on a small scale, but it is a matter of conjecture whether it could produce great changes as between the different phyla. A third idea was of progress. Progress is hard to define; past progress is no guarantee for the future, and while we may be able to see biological progress on looking back, have we any right to draw conclusions about present and future moral progress?

Is all this a barrier to Christian belief? 'Evolution, in fact, makes Adam and Eve almost a biological necessity,' said Dr. Barclay. There must inevitably be a single line of descent through the animal possessing the essential mutation entitling him to be called 'man.' Genesis I speaks of man being 'in the image of God,' and there is no suggestion that this is in a physical sense. In spiritual and mental capacities man has some of the attributes of God, and he is unlike the animals, not just in degree, but in kind. Sin, to the agnostic evolutionist, is just a legacy from a primitive past, to be cured by social improvement and education; to the Christian it is the result of a deliberate rebellion of man against God, to go his own way, and requiring divine intervention and redemption for its cure. Material progress and education were proving themselves inadequate both nationally and individually.

To some, Evolution also destroyed the possibility of the sovereignty of God. There was a tendency to feel that creation must be sudden and de novo. But the miraculous is not unscientific, and a knowledge of the means God might have used to perform the miracle does not deny His power and intervention. Any idea we have of the means should lead us to greater wonder — nothing has been 'explained away.'

Scientific method, and the theory of Evolution, is concerned with observation and description, and at the limit of this we should be forced to look further for the purpose and significance of what we have described. This cannot be derived directly from science, nor are the views of a scientist on this necessarily of more value than anyone else's. It must come by revelation, which the Christian claims we are given, not just impersonally in the Bible, but personally in the Lord Jesus Christ.

There was time for questions, and these ranged from the purpose of the animal creation (ultimately to glorify God) through the idea of Adam's rib to the challenge that modern civilization represented an obvious progress over society of primitive man. Dr. Barclay agreed that there was an increasing complexity and interdependence, but from the point of view of moral progress, exemplified by the stability of the home, the picture was one of devolution.

Next term it is hoped that a missionary of wide overseas' experience will speak and answer questions on the subject of the Christian's attitude to other religions.

THE POT-POURRI

Christmas 1956

THE POT-POURRI, as almost every reader must know, is a selection of the shows staged in the wards each Christmas and Boxing Day by students and housemen, who forego the pleasure of the family fireside in order to entertain the patients. The enthusiasm lavished on this Thespian interlude by the diffident followers of Hippocrates is truly astonishing; and to many a Chief it must be a matter of regret and possibly also of surprise.

This year's Pot-pourri was one of the best in the post-war series, perhaps the best; and, with a single reservation concerning its production to be touched on later, I doubt very much whether the standard set can be surpassed. The ward shows themselves, of which six were included more or less complete, were varied and enjoyable: *Woad to Eternity* and *The Hill End Residents Show* contained a great deal that was original, but probably appealed less to the patients than the more straightforward *Parting Shots*. The success of the ward shows is due in great measure to the unsparing efforts of their producers, and I do not see why this should not be recognized by the inclusion of their names in the printed programme.

The evening began with the pantomime *Kidsophrenia* (Children's), which had to do with the blighted love of a penniless Dick Whittington and fair Ann Solysin, the Dean's beautiful daughter. Fortunately for the hero, but not for his cat, there was a local shortage of catgut. In addition to the cat, engagingly played by Janice Swallow, and a rock 'n' roll finale, there were two irrelevant but quite brilliant revue numbers that were the best things in the Pot-pourri. Producers and writers of next year's ward shows would do well to study their success. Both the 'Suez Soldiers Song' and the parody 'Robin Hood and Davy Crockett' were topical, witty, mercifully free from medical jargon and put over extremely well. They were a personal triumph for John Bench, who arranged and starred in them. His india-rubber face and natural acting ability enabled him to portray a fierce Guards' sergeant in one song and a shy and boyish Robin Hood in the other with remarkable fluency. Here is the first verse of the 'Suez Soldiers Song':

Look at us and see some of the British Military,
Whom Eden sent across the sea to keep the peace.
How we scared the wogs, they cringed and
squirmed like ruddy frogs,
Whilst Nasser yelled 'You filthy dogs, you're not
police.'

* * *

The Queen's forces, the Queen's men, marched
into Suez and marched out again.
The Queen's forces and the Queen's men.
With the air force and the ships what fun we had
entertaining the gyps.
The Queen's forces and the Queen's men.

* * *

Did we go to fight the foe, you might think so, but
oh dear no.
We went because we did not know how far the
Israel army intended to go.
In a yashmak and a fez we'll stay and do as Sir
Anthony says.
The Queen's forces and the Queen's men.

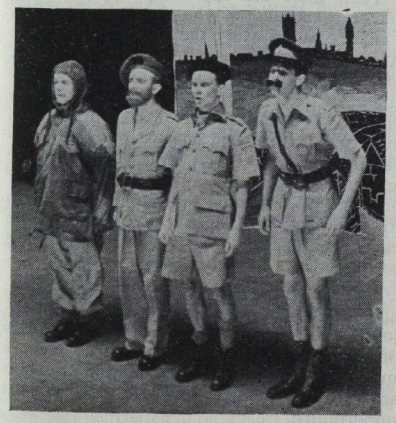
'The Bummarees Song', an excerpt from the Clerks and Dressers show, was not in the same class as the 'Suez Song'; but the porters had just the right deadpan attitude to life, and their faces were a testimony to the skill of 'Bert'.

Xmas Delivery (Midder and Gynae) was a stylish and colourful musical, excellently produced by Hugh Bower. The theme was again a blighted romance, this time of a penniless Gynae houseman and a girl abandoned (or, as it turned out, mislaid) as a baby on the steps of Peabody Buildings. All the personnel of the Gynae Department were involved in 'Getting Him to the Birth on Time', and there were several apocryphal impersonations. The music, as yet unknown on this side of the Atlantic, the costumes and the scenery were all good. It is only lack of originality that prevents me from naming this lively and enjoyable show the best of the evening.

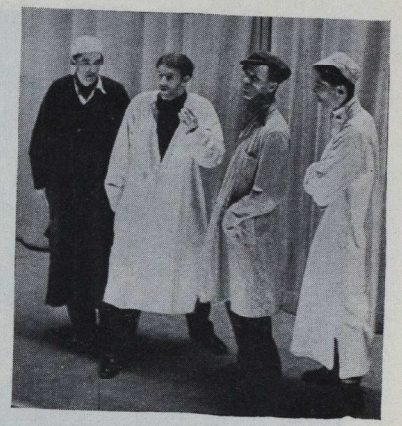
Next came *Parting Shots* (Finalists), a well-rehearsed revue containing some remarkably good singing. Its economy of effort, unpretentiousness and sensible balance of medical and non-medical songs made this show as successful in the theatre as it was in the wards. Producer Jacques Laurent, who has been arranging ward shows for some five years, gave each number a high degree of polish, and was fortunate in having at his disposal two such experienced song writers and cabaret stars as John Creightmore and Nancy Watts. The latter's solo, which would not have discredited the late Ruth Draper, and the 'Song of the Girl Guides' were the most effective numbers in the best ward show of 1956.

The Hill End Theatre Belts and Residents provided the two shows playing on alternate nights after the interval. *The Residents Show*, with its repartee and on-stage costume changes, seemed more like a concert party than a revue. The show was not as successful as it might have been, largely because the abundance of novel and good ideas demanded rather too much of the cast. Its triumph was the miming of a melodrama as seen on the old-fashioned 'flicks'.

Woad to Eternity (Out-patients) was the fantastic, satirical and distinctly Thurberish odyssey of a wretched little caveman plagued with devils in his rectum. Having survived the shock of seeing a large family of cavemen lounging about in tiger skins, and the rather direct approach of the Stone Age physician, we were transported in the second act to an 18th Century ballroom. Here the progress of a charming gavotte was interrupted first by the still-suffering caveman, who detected a likeness between one of the dancers and his former G.P., and later by a supremely self-assured consultant (excellently played by George Hobday), who burst on to the stage to explain just why he had changed his original and professionally non-U name of Bloggs to the multi-hyphenated tongue-twister it now was. This song, to the music of L'Apprenti Sorcier and splendidly supported by the chorus of elegant dancers, was one of the high-lights of the evening.



The Men of Suez.



The Bummarees.

The Hospital was taken as the theme of *Frame-up* (The House), which concluded the programme. The curtain went up on a set of the Great Hall, where an inquisitive and irreverent workman and a magnificently decrepit caretaker (Drs. Nottidge and Tait) discussed the history of some of the paintings, which thereupon came to life. A chorus and dance number in which Percival Pott revealed how his fracture came to be so named, and a pigeon's malicious bird's-eye view of the Square were particularly enjoyable.

Even the pigeons do not dare
When Carus Wilson's in the Square.

The ingenious 'Songs of the Chiefs,' that traditionally end the House show, yearly become more slanderous. Some would go well in print, but the subjects are likely to be less tolerant of libel. A large cast, colourful costumes and an effective production by Dr. Mulcahy made this extravaganza comparable to the best House shows of former years, and also a splendid ending to the Pot-pourri.

Over the years the Pot-pourri has largely transcended its original purpose of enabling the performers to see and admire each other's

Percival Pott (dismounted).

ward shows; it has established itself as a complete entertainment, sufficiently enjoyable to fill the Cripplegate Theatre on three successive nights. It seems therefore a pity that Pot-pourri Committees should persist in crediting the audience with an almost Wagnerian endurance. Stage performances lacking theme or dramatic development cannot reasonably be expected to hold the attention for more than two hours, and there is surely much to be gained by not allowing the Pot-pourri to exceed this time. If the Pot-pourri Committee, whose difficult and unenviable task it is to select and edit the ward shows, can be prevailed upon to wield the knife more energetically, the standard will be raised and the whole made more than the sum of its parts.

There can, for example, be little excuse for allowing a weak or minor presentation of a theme to take the edge off a similar yet better presentation later in the programme (there were three Chiefs' songs this year). And when there is little to choose between two shows, neither of which lends itself to cutting, it would seem more reasonable to play them on alternate nights than to risk prejudicing everyone's enjoyment by making the Pot-pourri too long. After all, the Hill End shows have already set the precedent

Then there are the compères, charming and amusing fellows, who clearly if given half a chance would usurp the whole programme. Are they to be considered an integral part of the Pot-pourri? Or are they something added in the interests of continuity? *Ceteris paribus*, I would prefer less compère and more ward show, and suggest that the intervals between the shows, during which scene and costume changes take place, be filled by numbers from a show that has been split up for this purpose. There is usually one revue each year that would not suffer loss by being so treated (e.g., *Parting Shots*).

In conclusion, let me say that this critic, and the audience, and the performers, all enjoyed Pot-Pourri, 1956, enormously. Readers of the *Journal* who were unlucky enough to miss this year's show are advised to book seats for Pot-pourri, 1957, at the earliest opportunity.

G.R.K.W.

DIVERTICULOSIS OF THE COLON

by BERNARD MYERS

ALTHOUGH THE presence of diverticula in the colon was recognised in the last century at autopsies, no particular clinical importance was associated with them until early in the present century. Since then much has been written on the subject more especially by Harold Edwards. Yet judging from the enquiries one receives both from practitioners in the United Kingdom and abroad there are many who are not as well acquainted with this condition as they would desire, more particularly with regard to treatment.

Diverticulosis of the colon occurs in both sexes, but more frequently in males. The first indications usually present themselves in the age period between forty-five and fifty years, but sometimes at earlier ages.

The patient notices a tendency to constipation, which gradually becomes more pronounced and requires greater effort at stool. He might try laxatives and obtain some relief, but the condition remains. Some depression may now appear, although his general health is probably good and his weight normal. If he is wise he consults his doctor who, after clinical examination, will arrange a barium meal and, if the x-ray appearances suggest it, will follow it with a barium enema and, if present, the diagnosis of diverticulosis is firmly established. The patient may have noted that after an unusually big effort at stool a crackling sound might have been audible and as coming from his abdominal cavity, which would indicate the forming of diverticula. He will be told by his doctor under no conditions to make too much effort at stool, lest the diverticula already formed increase in size.

As to the aetiology, it has been suggested that spasm at the lower end of the descending colon or sigmoid flexure and possibly occasionally deformities at the lower end of the bowel may be the responsible agent necessitating greater effort, but from my own clinical observations I am of opinion that the usual cause is a gradual decrease in the amount of mucus present in the descending colon and sigmoid. In a few instances it has been noted that a gradual decrease in the wax formation in the ears and some degree of dryness of the mouth accompanies the decrease of mucus. I have endeavoured to obtain information on the gradual decrease in the mucus in the bowel from Oxford and also the U.S.A., but apparently no research on this subject has obtained so far.

I believe the lessening in the amount of mucus in the bowel to be all important in the formation of diverticula of the colon.

As to the course of diverticulosis, the importance of early and efficient medical treatment is obvious to prevent the formation of more diverticula and those already present from growing larger. Among the various possibilities to be kept in mind are that a diverticulum may become inflamed and form diverticulitis, which would require immediate treatment, as if neglected an abscess may form. That may remain localised or burst into a neighbouring hollow organ, or again give rise to general peritonitis. A diverticulum may become adherent to the abdominal wall and perforation may occur with exudation. It is not infrequent for a diverticulum to become adherent to the bladder, and if perforation should take place with fistula formation, gas and even faeces may be passed per urethram. Fortunately in many cases, a fibrous wall, so to speak, seems to seal off the diverticulum from the bladder. In any of the above conditions, surgical intervention should be available, if required.

The diagnosis is made by giving a barium enema when the x-rays will demonstrate any diverticula that may be present. It is advisable for further such x-ray examinations to be carried out every two years to watch the progress of the condition.

The diverticula form at the weakest part of the colon, i.e., where the blood vessels enter the bowel.

Dr. Bernard E. Myers, C.M.G., M.D., qualified in 1898. He has been President of the Clinical Section of the Royal Society of Medicine and also of the West London Medico-Chirurgical Society. He is a consulting physician to the St. Thomas's Hospital Group.

He published an article on Diverticulosis of the Intestine in the *Journal* in 1949 (Vol. 53, p. 233), which may be referred to for a more detailed treatment of some of the points mentioned here.

Treatment

The patient is usually in a nervous state and needs reassuring. He should be informed that if he carries out the treatment laid down for him he is likely to remain in good health so far as the diverticulosis is concerned, have regular actions of the bowel and lead a full life. The essentials are: the ordering of a correct diet with good cooking and thorough mastication of all food eaten; the daily taking of just sufficient medicinal paraffin to make up for the lessened mucus in the bowel; and in addition such other aid in the form of a laxative as may be necessary. In addition to the above I am strongly of opinion that many advanced cases need high colonic irrigation at regular intervals. The irrigation should only be administered by a real expert, and there are now a number of trained nurses who devote their lives to this important work, and have saved many lives from a previously miserable existence.

Now regarding diet, all seeds, skins of fruits and indigestible fibrous material of all kinds whether in meats or vegetables, and roughage of any kind must be avoided, as any undesirable material entering a diverticulum may mean trouble and perhaps be serious, if not dealt with efficiently.

Red and white meats are allowed, boiled ham and game such as pheasant occasionally, if it agrees. Boiled fish is preferable to fried and can be given with a suitable sauce. Among vegetables I suggest boiled potatoes, cauliflower, spinach as a purée, soft well-cooked peas, broad beans without the outer coat, sprouts, the soft part of cabbage, and vegetable marrow. Of fruits, apples (not hard), bananas, grape-fruit, strawberries are suitable, and orange juice is always acceptable. Stewed plums or stewed pears are excellent and can be eaten with a well-cooked milk pudding.

Concerning drinks, choice can be made of plain water, milk and water, tea and coffee, weak whisky and water, and an occasional glass of sherry. It is better to avoid gassy drinks.

Now as to laxatives. Medicinal paraffin is essential, a tablespoonful every night at bedtime. Some patients find it necessary to take it at night and morning for a time. Of laxatives there are a variety such as petrolagar, isogel and milpar. Whichever is desired, it is usually enough to take it once in the 24 hours and preferably at night before retiring. I have found milpar particularly useful in the majority of cases. It contains magnesium hydrate with paraffin and gives an easy action.

I will summarise by again stating the importance of suitable diet, the thorough mastication of all food, no big meals, the taking of a suitable laxative every night with just sufficient medicinal paraffin, occasional high colonic irrigation by an expert nurse, and the keeping of a cheerful attitude of mind, as worry is apt to produce spasm of some part of the descending colon. I have not found antispasmodics of any value.

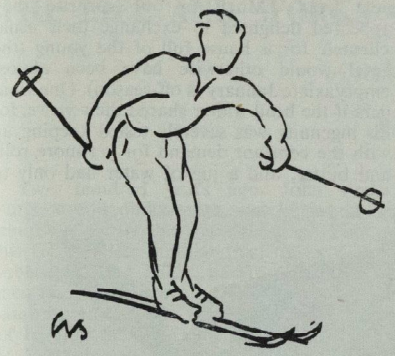
I agree with Edwards that patients suffering from diverticulosis of the colon are no more liable to carcinoma of the lower part of the bowel than other persons.

COLD-BLOODED OBITUARY

It is with great regret that we announce the death in The Fountain on 19 February, 1957, of George, senior goldfish to the Hospital. Many generations of Bart's men will remember with affection this venerable fish, who has for the past twenty years entertained and consoled them with his unlimited indifference.

The latter years of his life were perhaps marred by controversy, and by an embarrassing publicity for which this *Journal* must accept a share of the blame. Our readers are no doubt familiar with the correspondence betweeen Professor Garrod and Mr. Carus Wilson as a result of which the appalling breeding conditions in The Fountain were — alas! too late — finally rectified. The flood of letters which ensued, from D. W. Winnicott, the Bart's Hearts and A. Fish, to mention only a few, are a testimonial to the deep solicitude and affection which George aroused in those who knew him.

George will be missed by all who patronise The Fountain. He was a very fine fish.



ZURS 1957

For its holiday this year the Hospital Ski Club spent a fortnight at Zürs in Austria. It was certainly a fortunate choice, as Zürs proved one of the few places where the grass was not appearing, and skiing on powder snow was possible throughout the holiday.

Couchettes provided us with a really comfortable journey, at least one compartment feasting royally on chicken and wine carefully smuggled across, and once at Zürs our palates were by no means disappointed by the wonderful cuisine of the Zürserhof — an hotel in the grand style which few of us could normally afford.

The party numbered fifty (most of the men from Bart's), and thanks to Tom Gibson's hard work, all we had to do was to sign a cheque.

Misfortune deprived David Wells of a well-filled glenoid early on, but before long he earned renown as the one-armed skier. Not quite so constant in his appearances on the slopes, Mike Newton figured in many night-time photographs; unlike Alan Galbraith, whose determined progress downhill was accompanied by frowns of concentration. Veteran skier Hugh Bower introduced special Rewob tours for those tired of ski school routine, and his jovial hymn-singing on hair-raising knife edges confirmed many a feeble knee. Mike Scorer found himself in a class with Dutch Princesses, and no doubt dazzled them with his array of sweaters, while John Tooth had them puzzled by Rock and Roll in the evening.

Hotel life was made more confusing by the presence of a family of German triplets, who kept the girls guessing on the dance floor, and entertained us in a grand style in return for invitations to our whoopee-bag parties — a strange heritage of the club observed as reverently as ever this year.

Those leaders of fashion, John Price and Dick Smith, kept our good name in the hotel by producing black bow ties on Candle-lit Dinner nights, but their prestige was somewhat deflated when they were mistaken for waiters in the bar. The band was given the music of *Salad Days* and *My Fair Lady*, but they remained sceptical of their new tunes, until they discovered another band playing *I Sit in the Sun*, after which they never stopped. Music could also be heard now and again in one of the mountain huts, where delicious gluhwien was served, and Mike Hall-Smith discovered a guitar.

Because of the size of the party, we could not all be in the hotel; at least half the party were in a nearby annexe, or in a house up in the main village, euphemistically called 'The Villa.' The inmates of the latter were rewarded by breakfast in bed, John Martin and Brian Waldron being especially partial to the horizontal, so rumour had it, and Tony Garrod was not always at the ski school on time.

Nic Roles founded an exclusive club, for those hooked up in the air at the end of the ski lift. Denis Savage also looked haughty as his name (qualifying Filet de Boeuf) appeared on the menu on our last evening, together with those of Abernethy (cocktail), and the Sub-Dean (consommé).

Among the girls were some great walkers. Jane Chambers, Joyce Hinton and Sheila McGill actually walked to St. Anton one afternoon, and Jill Thwaites is reported to have walked up from Lech in the very small hours.

The skiing possibilities of Zürs are without equal in Austria. Lifts take skiers up to a col, which gives a lovely run down to Lech, where there are more lifts, and there is a new cable car which will return skiers to Zürs, making a round trip. Some of us travelled like sardines in those wonderful Volkswagen buses to St. Cristophe, skied down the famous Kandahar run to St. Anton — almost deserted for want of snow — and then caught the formidable Valluga cable car,

which took us up to a magnificent restaurant the Austrians have just built right on top of one of the highest peaks in the district. The view from the look-out point extends northwards into the German plains, and in itself is well worth the fare up.

From the Valluga, one can ski back to St. Cristophe, or down to St. Anton, or right back to Zürs along the Pazieltal — a long tour, with an initial walk down ice and rock over a sheer drop which made the hair stand on end. Hugh Bower led a small party back by this route, and had an anxious moment when one of the girls, noted for her speed on skis, ran on to someone else's ski stick, causing a local change of colour in the snow, and subsequently had to continue with one eye closed. She afterwards admitted that it was an ill wind, as the doctor at Zürs was every girl's dream, and proved himself a competent stitcher as well.

On our last night our hosts Herr and Frau Skardarasy gave us a farewell cocktail party and hoped that they would be seeing us again next year. Much to our surprise they appeared delighted to exchange their usual clientele for a house full of the young (the hotel would otherwise have been almost empty as late January is off-season). One wonders if the head waiter shared their views, for his ingenuity was severely tested keeping up with the constant demand for yet more rolls and butter, and a jug of water had only to be put down on a table before it was returned emptied!

Relaxation on the sun-terrace of the Zürserhof.

As our buses left for Langen, Madame and the whole staff came out to embrace us and say good-bye ; even the band appeared and dashed off *Salad Days* before sinking into *Auf Weidersehen.*

We are all very grateful to the Dean for granting us leave for such a splendid holiday. January is the only part of the season when cheap rates can be had with a reasonable hope of good snow, and in this respect Bart's Skiers are luckier than those who go out with the University parties.

M. H.—S.

THE LIFE AND WORKS OF JOHN FREKE (1688-1756)

by JOHN CHALSTREY.

PART I

Two hundred years ago, John Freke, surgeon and philosopher, was buried in the church of St. Bartholomew-the-less. Though his name is less familiar than those of Pott, Abernethy and Paget, he is of that line of men who, by their energy and devotion, have contributed much to the unparalleled record of tending the sick which is the history of St. Bartholomew's Hospital.

John Freke was born in 1688 at Ockford Fitzpaine, a parish near Blandford in Dorset. He was the fourth child of the Rev. John Freke, M.A., who was the Rector of Ockford and came of a family which had been well known in the County since 1588, when Queen Elizabeth had granted the Manor of Shrotton near Blandford to Francis Freke.

Young Freke reached adult years at the beginning of a period in English history which has been described as an oasis of tranquility between two agitated epochs. Before it there had been a century of revolutionary unrest and afterwards, the wars with France and America. Admittedly, there were the Jacobite risings of 1715 and '45, but in general the English people of the first sixty years of the eighteenth century, tired of internal struggles and sated with the successful foreign campaigns of Queen Anne's reign, were content to stabilise the results of revolution and accept a form of government which, for the time being, seemed exactly suited to their needs. It was an age of stability in religion, in politics, in literature and in social observances ; though this was not the stability of inertness, for many of the ideas and movements which flourished in later years originated at this time. It was an age which abounded with outstanding and self-reliant personalities, a period when individual enterprise was encouraged and social reform was neglected.

On November 6th, 1705 at the Barber-Surgeons' Hall, in Monkwell Street, John Freke, then seventeen years old, was bound apprentice to Mr. Richard Blundell, an eminent London surgeon and a member of the Court of Assistants, which was the ruling body of the Barber-Surgeons' Company. As was the custom, he lived with his master's family and as well as learning surgery, no doubt, helped with the more menial tasks in and around the house. The next seven years must have been a strenuous, though interesting time for the young man. No details are known of this period of his life, except that at some time during his apprenticeship he became fond of Elizabeth, the Blundells' daughter, whom he later married.

Towards the end of 1712, his period of serviture ended and, upon the testimonial of his master he was admitted a freeman of the "Mystery and Commonalty of the Barbers and Surgeons of London." In the manuscript Register of Freemen, now kept at the Guildhall Library this is recorded as follows :

"Johannes Freke qui fuit apprenticius Ricardi Blundell chirurgi, admissus fuit per servitium ese relatione Magri sui et iurat tertio die februarii 1712."* This is also recorded in the minutes of the Court of Assistants, together with the fact that on the same day he paid his dues and "took the clothing of the Company"; that is, he became a liveryman."**

In August of the same year, he was examined "touching his skill in surgery." His answers were approved and he was granted a Diploma under the Company's Seal.

Following this, there is another long period

From the Wix Prize Essay, 1956.

*With regard to dates, it should be mentioned that until 1752 the year legally began in Great Britain on Lady Day, March 25th. After 1752, the Gregorian or New Style calendar was adopted, in which the new year commenced on January 1st. Thus the day after December 31st, 1751 became January 1st 1752 (instead of 1751). In the modern system then, the date when Freke became a freeman was February 3rd 1713.

**Like many other Chartered Corporations of that time, the Company consisted of a Master, Wardens, Courts of Assistants and Examiners, liverymen, freemen and apprentices.

in which no details of Freke's life or work can be traced. He probably practised as a surgeon in or near the City of London and, presumably, it was during this time that he married Elizabeth Blundell and the birth of their daughter Phoebe occurred.

The next recorded incident in his life was his appointment as an assistant surgeon at St. Bartholomew's Hospital in 1725. This is set down in the Hospital Journal, which is the record of the meetings of the Governors. The minutes of a General Court, held on May 27th, 1725 state:

"Whereas the place of one of the Assistant Surgeons to the Hospital is vacant by the Election of John Dobyns to be one of the Master Surgeons and upon reading the several petitions of Thomas Bigg, William East, John Freke, James Hickes, Henry Holloway, James Phillips, Legard Sparkham, Joseph Webb and Charles Whadcock Citizens and examined Surgeons, they were severally put to the Vote and the election fell on the said John Freke. It is thereupon ordered that the said John Freke shall be one of the Assistant Surgeons to this Hospital in the room of the said John Dobyns during the Governors pleasure."

It is worth noting that at the time of Freke's appointment, St. Thomas's and St. Bartholomew's were the only proper hospitals in London, though the Westminster Dispensary, which later became the Westminster Hospital, had been founded in 1719. The opening during his lifetime of Guy's (1725), St. George's (1773), the Middlesex (1745), Queen Charlotte's and the Central London Lying In Hospitals indicate the degree to which medicine and surgery progressed during this period.

In June, 1726, Freke was appointed to take charge of a room which had been prepared to house anatomical and pathological specimens. This is the earliest record of the existence of a proper museum and he was, therefore, the first curator. The following is taken from the Treasurer and Almoner's Order Book:

"23rd die Juni 1726.

Order for a Dead Room.

Two convenient rooms being prepared under the Cutting Ward, one for the more decent laying the dead Patients before their buryale, the other a Repository for anatomical or chyrurgical Preparations. It is ordered that the Sisters of every Ward do for the future, by the Beadles lay the dead Patients in the Room aforesaid and that the Sister of the Cutting Ward do keep the key of the Dead Room. It is likewise Ordered whatever preparations shall be given to the Repository shall be numbered and the Name of the Person who gave it and the History of it be entered in a book to be kept at the Compting house for that purpose and that Mr. Freke do keep the key of it who shall be accountable for the loss of any Preparations and when he shall Decline it the Youngest Assistant Surgeon shall do the same."

This room beneath the Cutting Ward was probably situated in the area which is now just outside the south-west corner of the Square and Bounded by the ends of the present South and West Wings and the Hospital Dispensary. The calculi removed by the lithotomists and previously placed in the Counting House when they received payment for their operations, were put here and probably arranged by Freke.

His reputation as a surgeon must have grown rapidly, for in 1727 — less than two years after his appointment as an assistant surgeon — he was chosen by the Governors to care for the eye cases. This is recorded in the Journal as a resolution passed at a meeting held on June 1st, 1727:

"Through a tender regard for the deplorable state of the blind People, the Governors think it proper to appoint Mr. John Freke, one of the Assistant Surgeons of this house to Couch[1] and take care of the Diseases of the eyes of such poor persons as shall be thought fit by him for the Operation, and for no other than the six shillings and eightpence for each person so Couched as is paid on other Operations."

Although a century and a half was to pass before a separate eye department was formed with Henry Power as the first Surgeon-in-charge, Freke was certainly the first surgeon of the hospital to be appointed to care especially for ophthalmic cases.

In 1729, when he was forty-one, his election as a Surgeon of the Hospital was thus recorded in the Journal:

"*Curia Generalis* 24 *die July* 1729.

Whereas by the surrender of Robert Gay Esqr. one of the Surgeon's Places to this Hospital is become vacant and upon reading the petition of John Freke, the senior Assistant Surgeon, praying to succeed the said Mr. Gay in the said place, and he being the only candidate was unanimously chosen one of the Surgeons of the Hospital and shall have and receive the Sallary thereunto belonging during the Governours pleasure, and his Charge was read to him."

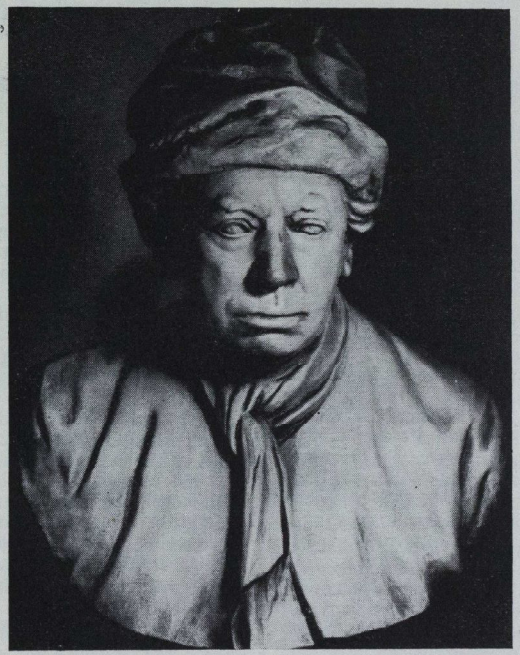
The "Sallary thereunto belonging" consisted of an annual gratuity of thirty pounds, plus six shillings and eightpence for each operation performed.

It is perhaps worth digressing to consider briefly the social background against which Freke's life was lived. This was an age in

(1) Remove cataracts.

which the privileged families were setting a high standard of culture, and increasing numbers of stolid, middle-class merchants were extending and consolidating England's commercial supremacy at home and abroad. Although there was little or no appreciation of the great need for social reform, it was a time of opportunity in which the adventurous poor had every opportunity to rise to prosperity, by the use of their wits. The manners of the period were a curious mixture of elegance and coarseness. Men, though they bowed and posed, greeting each other and conversing with most elaborate and well-turned compliments, also used the most horrible oaths and indulged in the coarsest of pleasures. Ladies, too, although they languished and swooned, would also swear and even spit, and often cruelly beat their maids. Highway robbery was common on all the roads leading out of London and the streets of the City were unsafe after dark. Elaborate masked Balls and Assemblies were the rage in fashionable London, and the famous coffee-houses were the daily meeting places of nobles, and professional and literary gentlemen.

John Freke, besides being one of the most accomplished surgeons in the City, was also reputed as a man of parts, learned in science and fond of art and music. Among his friends and acquaintances were some of the best known men of the day. William Cheselden, the famous surgeon, was his friend and so he may have been at least an acquaintance of Alexander Pope, to whose aristocratic circle of friends Cheselden belonged.



John Freke, M.D., F.R.S.

The painter Hogarth, who was a Governor of St. Bartholomew's Hospital, knew him well, and the following story, told in a Life of Hogarth, indicates that he had mixed views about Freke's ability as a critic:

Hogarth was told, when dining with Cheselden, that Freke, a few nights before at Dick's Coffee House, had said that Dr. Maurice Greene, the organist of St. Paul's Cathedral, was as good a composer as Handel.

"'That fellow Freke,' said Hogarth, 'is always shooting his bolt absurdly one way or another! Handel is a giant in music: Greene only a light Florimel kind of composer.'

'Ay,' said the informant, 'but at the same time Mr. Freke declared you were as good a portrait painter as Vandyck.'

'There he was in the right,' added Hogarth; 'and so I am, give me my time, and let me choose my subject.'."

It is certain that these remarks were not made maliciously for, to quote Peter Quennell [1],

"Always fond of mirth and good fellowship, he (Hogarth) had not lost the habit of expressing his opinions in a 'strong and pointed' manner, regardless of the company's feelings, and he proved just as incapable of resisting the charm of some seductive piece of flattery."

Now and then his friends would exploit this failing, as we have read above!

In Hogarth's famous painting of the Pool of Bethesda, which decorates one wall of the staircase to the Great Hall of St. Bartholomew's Hospital, all the sufferers are said to have been drawn from patients of that time. The late Sir D'Arcy Power in his *Short History of St. Bartholomew's Hospital* goes further, to suggest that, "Perhaps his friend Freke had demonstrated them to him."

Henry Fielding knew Freke and twice mentioned him in his novel *Tom Jones*. In Book II he referred to his friend's well known ingenuity in conjecting as to the cause of natural phenomena, and urged him to find out the real cause of those changes of fortune which the ancients attributed to Nemesis:

"We wish Mr. John Fr—, or some other such philosopher, would bestir himself a little in order to find out the real cause of this sudden transition from good to bad fortune."

The other reference in the fourth book, is when Black George has produced quiet in his family by the use of a switch, the contagious effect of the blows of which is thus described:

"for the virtue of this medicine, like that of electricity, is often communicated through one person to many others, who are not touched by the insrtument. To say the truth, as they both operate by friction, it may be doubted whether there is not something analogous between them, of which Mr. Freke would do well to enquire, before he publishes the next edition of his book."

Could Fielding have been serious, or was he having a sly dig at Freke, who in his writings on medicine and science often allowed full play to his imagination?

At several other places in his works, Fielding brings in details appertaining to hospitals and surgery. It may well be that this was the result of conversations held with Freke.

Also among John Freke's acquaintances were the eminent physicians Mead and Sloane, who were Governors of St. Bartholomew's Hospital. Both were extremely successful professionally, numbering the Royal Family among their patients; and they were equally generous, often charging nothing to the poor. They were enthusiastic patrons of the arts and it is very likely that Freke was among the many interested people who were invited to view their valuable collections. Sir Hans Sloane was one of the best known figures of the eighteenth century. He was honoured by many European Universities and, apart from his success as a physician, had followed Sir Isaac Newton as President of the Royal Society. He was one of the greatest collectors and antiquarians of all time, and his vast collection, which he left to the nation, formed the nucleus around which the British Museum was founded. Among the Sloane manuscripts is an undated letter signed by John Freke and the other surgeons and assistant surgeons of St. Bartholomew's Hospital, asking for the support of Sir Hans in a matter which they wished to present to the Hospital Governors:

"Sir,

The Surgeons and Assistant Surgeons humbly desire that some of them may perform the operation of Lithotomy in your Hospitall of St. Bartholomew hoping that you will think them as capable as they are willing. Your favour in this affair will very much oblige.

Yr Most Humble Servts.

Wm. Greene	Tho. Brigg
John Freke	Jos. Webb
James Phillips	Edwd. Nourse."

This matter is mentioned in detail in the Court Minutes of 1732. Before that date all "cutting for the stone" had been done by two lithotomists especially appointed by the Governors. However, in 1731, after the death of one of these and the resignation of the other, the surgeons asked that they might

[1] *Hogarth's Progress.* Published: 1955, by Collins.

do the operation. Subsequently it was decided that no new lithotomists would be appointed and that, "all the surgeons and assistant surgeons who want to may cut for the stone."

Following this decision:

"the surgeons and assistant surgeons were called in and acquainted with the said resolution and Mr. Freke, one of the surgeons and Mr. Biggs, Mr. Webb and Mr. Nourse, the three assistant surgeons did declare their readiness to cutt for the stone the poor within this Hospital."

Freke seems to have been ready to take on as much surgery as possible, and there is every reason to believe that he was fascinated by and devoted to the work. As well as his general surgery and the two special branches already mentioned (eyes and lithotomy), he did a considerable amount of midwifery, and his inventive ability enabled him to devise an improvement in the forceps.

He designed several other instruments, one of which was for operating on fistulae of the anus. This instrument was described and commended in a book on the subject, edited by William Barrowby,[1] a physician. Barrowby stated that to cure a fistula of the anus, "the complete division of the sinus into the anus is necessary and the Probe Scissors may be depended upon for this Operation unless the sinus runs up too high." He remarked that many inventions for dealing with a high sinus had proved unsatisfactory, but that "in these difficulties we are assisted by the fertile invention of that no less successful than industrious Practitioner, Mr. John Freke, who has invented an instrument which completely answers the desired end."

On November 6th, 1729, John Freke was elected a Fellow of the Royal Society. That year indeed must have been a memorable one for him, for in it he had become both a surgeon of his hospital and Fellow of the Royal Society. At this time, the Royal Society was flourishing under the able and zealous presidency of Sir Hans Sloane, who had already proved himself a worthy successor to Newton.

Freke's first communication to the Society was in 1736, when he sent a description of an interesting case which he had seen at St. Bartholomew's Hospital. It was published in the Philosophical Transactions of the Royal Society in 1736. His original letter is preserved in the Birch Collection of Manuscripts at the British Museum and the details are probably the earliest description of myositis ossificans progressiva. This is a rare disease with a familial tendency, which chiefly affects young males and starts with the irregular deposition of flat plaques of bone in the muscles of the back. The condition is almost painless but slowly spreads to other groups of muscles and eventually causes death by immobilising the muscles of respiration.

Apart from the signature on the letter to Sir Hans Sloane, this letter seems to be the only example of Freke's handwriting still existing. It is the hurried work of a man with much to do, but it reveals that he had that faculty which is possessed by all successful clinicians, of being able to summarise quickly and concisely the important facts of a case.

In 1735 Freke presented to the Hospital a carved oak chandelier. This hung in the Steward's Office until 1925, when it was moved to its present and more suitable place above the staircase to the Great Hall. It is gilded and on a smooth encircling band has the inscription:

"Johannis Freke hujusce noscomii chirurgi 1735."

It is believed by many that Freke carved the chandelier himself and Sir Norman Moore[1] in mentioning the inscription, precedes the above with the word "Opus." in italics. A recent careful examination of the chandelier has failed to reveal any sign of this word, though there is enough space for it before "Johannis." However, it seems unlikely that this one word has worn away, while all the others have remained, or that it alone was obliterated on some occasion when the chandelier was regilded. The fact that Moore put 'opus' in italics poses the question of whether he "assumed" it in view of the genitive ending of 'Johannis.' Freke's dexterity as a surgeon is evidence in favour of his being equal to this task, but for him to have carved it is not at all in keeping with the customs of the age. Unfortunately there is no written record of the presentation of the chandelier and we are therefore left to conjecture as to the origin and accuracy of this attractive story.

(To be completed next month.)

[1] A Physician to St. Bartholomew's Hospital from March 1750 until his death in December 1751.

[1] *History of St. Bartholomew's Hospital*, Vol. II, P. 635.

RUGBY FOOTBALL

VIEWPOINT

Surely this must be Bart's "Cup Year," as the Hospital Rugger XV has now reached the Final without conceding a point in the preliminary rounds. The last time we were represented in the Final was in 1933 and we were winners of the competition two years prior to that, so it is hoped that great days for Bart's rugger are upon us. An account of the Semi-final appears in this *Journal*. and tribute is paid to Mackenzie's leadership, but it must not be forgotten that the foundations of this successful team were laid during the previous two seasons under the captaincy of Tallack, and it is fitting that he should still be a leading player. The best wishes of the Hospital will be with the team in the Final on 20th March.

Other Cup successes have been experienced by both Hockey XI's. The Ladies Hockey team are again in the Final after winning for the last three years, and the Men's Hockey Team has reached the Semi-final to date, so it is hoped that good fortune accompanies them in the ensuing matches.

HOSPITAL CUP—SEMI-FINAL

St. Bartholomew's—8 pts. St. Thomas's—Nil

This match, played on 26th February, had been eagerly awaited by the Bart's team and its supporters, as it was generally felt that at last the Hospital possessed a team capable of reaching the Final for the first time in 24 years. This confidence was entirely justified, as Bart's won the match on their merits and never really looked like being beaten by St. Thomas's, and indeed gave the impression of having reserve powers on which to call at crucial moments. Right from the start Bart's controlled the tempo of the game and gained an ascendency which lasted, except for two short-lived periods of inspiration by St. Thomas's, throughout the game. But may it be hasitly added, this ascendency was slight, as St. Thomas's gave very little away in defence and were prepared to attack up until the last minutes of the game. Undoubtedly Bart's had the edge in two fairly evenly matched teams, and surely the outstanding contributing factor to success was Mackenzie's inspiring leadership and he it was who scored both tries by always being in the right place at the right time.

Percy's head was again present at this match and before the game commenced it rested on the centre spot viewing the assembled gathering with distinctly aquiline features. In view of the undignified daubing he had received at the hands of Guy's supporters in the previous round he was guarded closely throughout the game.

St. Thomas's kicked off, and there followed a series of high punts between the teams obviously intended as touch-finders but not achieving that object until eventually M. J. A. Davies did so. A Bart's three-quarter movement saw the ball reach Mike Phillips on the right wing. He beat his man but then finding his path blocked cross-kicked to the centre and Carr following up fast just failed to gather the ball cleanly when a score would have been likely. This seemed an auspicious start but St. Thomas's were awarded a penalty and cleared their line. The Bart's pack then produced a controlled dribble and when stopped, heeled beautifully for the ball to reach M. J. A. Davies who elected to try a fruitless drop-kick instead of passing to the man outside him. Yet another good passing movement ended about 8 yards from the St. Thomas's line, and all this in the first 5 minutes. St. Thomas's were then awarded a penalty and they found a good touch, and just afterwards another was given to Bart's. Making use of the new rule, Mackenzie short kicked to Mike Phillips who burst through and kicked ahead. Only a good mark saved the St. Thomas's line.

Good fielding and kicking by Howard Thomas and Badley kept Bart's on the offensive. Then Carr was prominent in the van of a forward rush and following a good heel the ball reached Lammiman on the left wing who made a good run before cross-kicking. The pack was there and heeled again for R. R Davies to miss an attempted drop goal. The first real break of the game came after 18 minutes play when R. R. Davies cut through beautifully, only to find no one up to take a pass and he was stopped by the cover defence. The ball was then heeled on the Bart's side but M. J. A. Davies again failed with a drop kick. St. Thomas's then started a handling movement but good tackling thwarted the effort, and another good kick by Howard Thomas kept the opponents well in their own half.

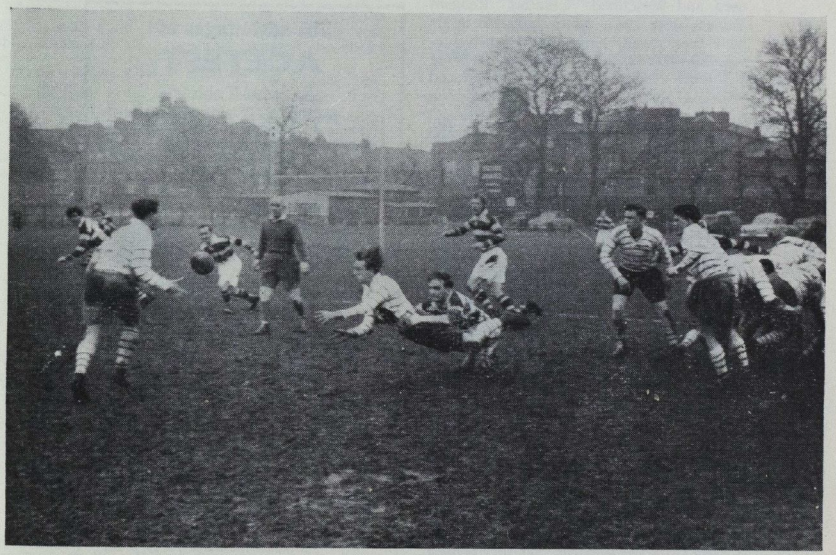
After 27 minutes the Bart's backs were given the ball following good line-out work by Roche and Tallack, who were both playing brilliantly. M. J. A. Davies placed a judicious grub-kick, and St. Thomas's only managed to save on the line. Following this St. Thomas's were awarded a penalty and they came away in force to push Bart's back into their own half for about 5 minutes. This was their first really sustained effort, but the Bart's defence was equal to the demand and retaliated by a good attacking movement down the left wing when Mackenzie and Halls burst through to within 5 yards of the try-line. This was the prelude to the first Bart's try when the ball came back from the loose to Brian Richards. He passed to Howard Thomas and Mackenzie took his pass to burst through to score. M. J. A. Davies failed with the conversion then the whistle blew for half-time.

The commencement of the second half produced some scrappy play, and also after 5 minutes an unfortunate injury to a St. Thomas's player which caused them to be a man short for the rest of the game. Paradoxically this setback seemed to infuse new life into the St. Thomas's team and they set up a series of sustained attacks for the next quarter of an hour, and prominent in defence during this time were Carr, Badley and Halls.

However Bart's broke this spell with a good movement by Halls and Mackenzie which ended in touch in the opponents' half. From then until the end of the game Bart's were the masters of the situation.

M. J. A. Davies cut through beautifully in the centre on one occasion but support was not at hand. Then came the Bart's second try after half an hour's play. Brian Richards broke away brilliantly from a scrum and caught the St. Thomas's defence on the wrong foot. Backing him up was Mackenzie who after taking his pass still had about 20 yards to run and three defenders to beat. But score he did with a magnificent weaving run ending up under the posts, so that M. J. A. Davies had no difficulty in converting.

Subsequently St. Thomas's did launch one isolated attack which ended up near the Bart's line but R. R. Davies cleared with a good touch.



Brian Richards gets in his pass to Mike Phillips

A short penalty taken by St. Thomas's was neatly intercepted by Laurie Thomas, an incident which caused the crowd some amusement. Continuing to attack from all quarters, Mike Phillips ran round from the blind-side wing to the open and made ground before passing to David Richards, who in turn transferred to Lammiman. The left wing crossed the line but was adjudged to have put a foot in touch on the way. The excitement was kept up until the final minutes when M. J. A. Davies again burst through the centre with a magnificent turn of speed, before passing to Halls, who in turn handed on to Phillips. The right wing rounded many would-be tacklers and when confronted with the full-back passed inside to Mackenzie, who did well to be up there, but the movement was held just on the line. The final whistle blew soon afterwards and Bart's were indeed worthy winners.

Team: B. W. D. Badley, R. M. Phillips, G. J. Halls, M. J. A. Davies, D. A. Lammiman, R. R. Davies, B. Richards. D. A. Richards, C. J. Carr, J. C. Dobson, D. W. Roche, J. S. Tallack, A. H. Thomas, L. R. Thomas. J. C. Mackenzie, *(Capt.)*

HOSPITAL "A" CUP

Bart's "A" v. The Royal Free Lost 3—5

A very confident "A" team took the field against the first team to represent the Royal Free in a Hospitals Cup Tie. This confidence grew when Bart's found themselves 3 points up within three minutes of the kick-off. But from then on the Royal Free, backed up by the most high-pitched vocal support ever heard at Chislehurst, gradually became masters of the situation and proceeded to out-play Bart's in every aspect of the game.

The Royal Free kicked off with the wind behind them and almost immediately a kick ahead by Britz was picked up by Alder, who, beating the full back scored in the corner. The try was not converted.

The Royal Free fought back well, and their small but lively pack was soon out-playing the

Bart's forwards. Bart's failed to use their advantage in height in the line-outs and were not helped by some unintelligent throwing by the two wings. In the loose they played better, Bench and Jones putting in some hard work, but all the time the ball was coming back slowly and in consequence the backs were having little opportunity.

A missed penalty from a relatively easy position was a bad blow to Bart's for shortly afterwards the Royal Free scored under the posts from a forward rush. This try converted, they were now 5-3 up looking a more compact and definitely a fitter side.

In the second half, with the wind now behind them, one hoped the greater experience of Bart's would tell, but it was not to be. The backs were seeing even less of the ball and when they did handle there was a noticeable lack of thrust and penetration in the centre, while the wings, Alder and Stevens were given little opportunity to show their speed.

Play was now mainly in the Bart's half but the defence was good, Britz especially tackling well, while Ross, who at scrum-half handled the sticky ball well, was notable with his covering.

There was no further score in the second half, although Britz came very near with a drop at goal. So the Royal Free ran out worthy winners.

Team :—D. F. Rowlands ; D. Alder, J. Neely, J. Stevens, J. Plant ; M. Britz, A. P. Ross *(Capt.)*; J. Harvey, W. Costley, P. Boladz ; J. T. Bench, J. Q. Creightmore ; J. K. Brown, R. Jones, G. Randle.

EXAMINATION RESULTS

UNIVERSITY OF LONDON

January 1957

The following candidate has passed the M.D. examination :

Connell, P. H.

CONJOINT BOARD

Final Examination, January 1957

PATHOLOGY

Abraham, P. — Yip, S. Y.
Batterham, E. J. — Mather, B. S.
Godrich, J. E. — Bower, H. P. H.

MEDICINE

Abraham, P. — Morgan, D. R.

SURGERY

Abraham, P. — Cochrane, T. D.
Parker, J. D. J.

MIDWIFERY

Morgan, D. R. — Graham-Evans, J. N.
Burles, P. G. — Cochrane, T. D.

The following have completed the examination for the Diplomas M.R.C.S., L.R.C.P.:—

Morgan, D. R. — Parker, J. D. J.

BOOK REVIEWS

TREVES' STUDENTS' HANDBOOK OF SURGICAL OPERATIONS. 10th ed. *revised by* Sir Cecil Wakely. Cassell. 21s.

The sixty-five years' career of this book proves its popularity among students. It serves a very real purpose in explaining to the undergraduate medical student procedures he is likely to see and be asked about. The explanations are sufficient for this purpose and are not overburdened with detail.

It is the commoner operations about which the students need to know most and it is pleasing to see that in this edition there are new sections dealing with operations on the submandibular gland and duct, direct inguinal hernia, hydrocele, spermatocele, and haemorrhoids.

A book well worth having.

J. T. S.

THE PRACTICE OF MEDICINE J. & A. Churchill Ltd. Edited by John S. Richardson. Pp. 1076. 40s.

When a textbook on such a broad subject as medicine is produced by fourteen contributors, the writer of a short review is faced with a difficult task. Although written primarily for the undergraduate medical student, the editor hopes that the subject matter will also provide a suitable basis for entry into general practice or training for a special branch of medicine. This is certainly true of most of the book and especially so of the chapters on the respiratory system, diabetes mellitus, neurology and psychiatry, while the introduction of a section dealing with the management of terminal disease is a welcome innovation. A few chapters are, however, aimed very much at the medical student, and insofar as they do not fulfil the editor's additional aims, they are of limited value. Gastro-intestinal diseases, for instance, are dealt with in the brief space of fifteen pages and there seem to be too many headings and too little detail.

Certain specific comments are, I think, justified. It is a pity that percussion is not described in the section on examination of the heart. Although in the majority of cases this yields no useful information, it may, in a minority, be a most helpful diagnostic sign. Indeed the author of this chapter later states that in the diagnosis of aneurysm of the ascending aorta one of the principal physical findings may be dullness to the right of the sternum. No mention is made of the management of acute left ventricular failure—a condition which may constitute a very real medical emergency in general practice, and which often responds dramatically to intravenous mersalyl and aminophylline and the application of venous tourniquets in addition to the more conservative methods of treatment. The therapeutic approach to peptic ulceration is pessimistic and rather unhelpful. The use of antispasmodics and sedatives in the management of ulcer patients is not mentioned, while the continued use of sodium bicarbonate as an antacid may result in renal damage. The dose of cortisone advocated in the treatment of acute ulcerative colitis is too small—up to 300 mgs. a day may be safely given

—and not all patients subjected to a colectomy are left with a permanent ileostomy, as ileosigmoidostomy or ileorectal anastomosis may be possible. The basic fluid allowance in acute renal failure is not stated and the importance of infection in increasing catabolism and its prevention by penicillin and barrier nursing is not mentioned. No reference is made to the value of intravenous glucose in the treatment of Addisonian crisis—cortisone given by any route may not act quickly enough to prevent a fatal hypoglycaemia occurring.

These are minor criticisms which do not detract in any way from the excellence of this work as an undergraduate textbook of medicine, while it will undoubtedly be of value to workers in various medical fields, especially general practice.

R. C. KING.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXI **APRIL 1957** **No. 4**

EDITORIAL

LAST MONTH we discussed the pros and cons of literary ability in the physician, and in the course of a somewhat disconnected diatribe managed to manoeuvre our position close to that of Schopenhauer, who once expressed the opinion that "if a man knows no Latin he belongs to the vulgar, even though he be a great virtuoso on the electric machine and have the base of hydrofluoric acid in his crucible". We also put forward the view, probably deviating a little from Schopenhauer, that Medicine might make just as fitting a preparation for the more human professions as Latin is reputed to do for Medicine. In support of this superficially fanciful proposition, we decided to investigate the potentialities of the electric machine virtuoso.

A random sample of medical students was used for the survey, students who themselves represent a fairly random sample of the student population of the country. The survey was approached from the point of view that the subjects would shortly obtain a medical degree and then enter the fields of law, commerce, politics or industry. In the pilot study some difficulty was encountered from subjects who failed to grasp the purpose of the interview, and suspected that we were adopting a roundabout way of telling them that we considered that they had no conceivable prospects in Medicine and had better start thinking about something else. When friendly relations had been reëstablished, we got down to the substance of the interrogation. This consisted of an enquiry into recent knowledge that they had acquired on the state of world affairs and their opinions about the same.

Things went badly from the start. The first subject, on being questioned about international finance, thought for a long time and then said that he remembered reading recently that the income from slot-machines in the United States amounted to slightly more than the British defence budget. When pressed as to the significance of this fact, he said that it must require an awful lot of small change; which reminded him that he had also read somewhere that 350 lorries were in continual use taking small change from New York into the surrounding towns, or it might have been the other way round.

The second subject was questioned about the place of air travel in modern life. He said that he liked travelling by air, and really it wasn't so dangerous as people made out. He pointed out that figures had been published recently showing that more people are kicked to death every year by wild donkeys than die in air accidents. When asked to generalise from the data, he said that it might get dangerous if people started taking wild donkeys with them in aeroplanes.

The third, and what turned out to be the final subject, was asked about his views on industrial production. He replied that he had read the day before that the annual production of aspirin was enough to relieve two billion headaches. He deduced from this that since he had had only five headaches in the past year, he must get less headaches than other people.

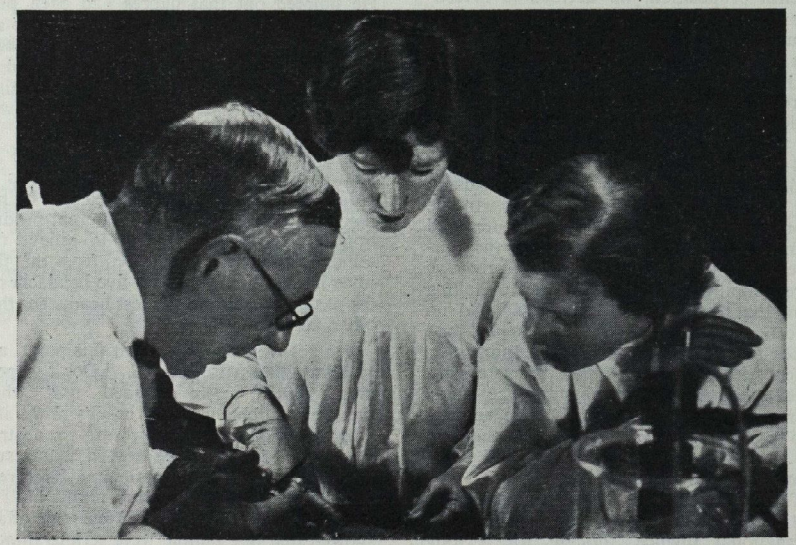
We got rather depressed at this point, and recalling that wise advice, "Don't experiment, *think!*", we decided that where the obversational method breaks down it is always sound policy to resort to abstract reasoning. After all, we argued, our results were open to a more optimistic interpretation than we had at first realised. This accent on the *minutiae* of current affairs showed that our sample were serious minded men who perused only the more sober

periodicals; for in the crowded round of a medical student's life, there is only time to read the shorter items in the daily papers, and whereas a sober journal devotes long columns to the important aspects of world affairs and slips the vagiaries of events into odd corners, the less reputable newspapers put serious matter into snippet form and devote their leaders to the boy who falls from a six-storey building and is rushed to hospital with only a broken toe.

Somewhat consoled by these thoughts, we reflected that the medical student is probably rather better equipped to analyse current phenomena than the student of *Litterae Humaniores*. There are several aspects of scientific training which ought to transfer well to political thinking, and as an example we will take the approach which the medical man adopts with regard to evidence. In medical thought, in distinction to the pure sciences, decisions have to be taken and acted upon in the absence of sufficient evidence to give even an approximation of certainty. This is also unfortunately true of government. So that in a question such as that of a pay increase for doctors (which, incidentally, has been viewed with strange apathy by Bart's students) the trained medical man is likely to take the view that there are so many factors influencing the Government and the B.M.A. about which he knows nothing, that any opinion that he gives on the rights and wrongs of the case is bound to be purely tentative. He might even compare it to the position of a layman giving an opinion on the role of smoking in the aetiology of carcinoma of the bronchus; and, to make it more comparable, a layman who has not read the articles by Doll and Hill, for in matters of current affairs many of the relevant documents are not available to the public.

One hears the medical mind decried on so many occasions that one is inclined to forget that it does in fact have the odd advantage. If one has the base of hydrofluoric acid in one's crucible it may make one a little vulgar, but it's probably better than having nothing in one's crucible at all.

CANDID CAMERA



Pathological concentration . . .

College Governors

The Rt. Hon. Lord Moynihan, O.B.E., and Sir Miles Thomas, D.F.C., have been elected College Governors. The College Governors, of whom there are about 80, meet every January to determine the policy of the Medical College. They are mainly distinguished old Bart's men, but include a few eminent men from other spheres and also the Masters of one or two of the City Livery Companies.

Preclinical Staff

Dr. M. J. Blunt has been appointed Reader in Anatomy.

Mr. J. M. Simister has resigned from the post of Demonstrator of Anatomy.

Mr. C. J. Porteous has been promoted to Second Lecturer in Anatomy.

Messrs. J. E. A. Wickham, T. A. Evans and G. I. Small have been appointed Demonstrators of Anatomy.

Dr. D. H. Bergel has been appointed Demonstrator of Physiology.

The Gondoliers

Our operatic correspondent writes:

On Friday, March 1st, the newly-formed Amateur Operatic Society gave a concert performance of *The Gondoliers*, by Gilbert and Sullivan, in Gresham Hall. The conductor was Brian Richards.

The soloists, all but one of whom are at Bart's, were admirably suited to their parts. Gianetta and Tessa, sung by Jacqueline Denton and Wendy Donaldson, charmed us through their joys and sorrows, while Peter Beale as Marco and George Hobday as Guiseppe, were suitably *galante* as the principal gondoliers, all four providing us with some fine music. Shirley Boughton made a winning Casilda and Nat Davies a cheerful Luiz. Nancy Watts and David Wells were superbly pompous as the Duke and Duchess of Plaza-Toro, and Christopher Hood made a sinister Grand Inquisitor.

Of the other solo parts, Fiametta was sung by Marion Bennet, Vittoria by Sheila Heap, Giulia by Margaret Groves, Inez by Sheila Philpott, Antonio by Patrick Kingsley, Francesco by Francis Boston and Georgio by John Dawson. All of these sang their parts well.

The chorus obviously enjoyed themselves. Their attack was excellent and the singing polished and lively. They made the most of the finale to Act I and the Cachucha, but showed themselves capable of quiet, controlled singing, especially effective during Tessa's solo, "When a Merry Maiden Marries". Two things could have been improved, however. The first was the audibility of the words, which play such a very important part in Gilbert and Sullivan operas, and the second, the noisy turning over of pages which was very noticeable in the Hall, especially during the solo parts. Apart from these rather minor points, the chorus did their parts full justice.

In a complicated opera such as The Gondoliers, it is essential to have some form of narration, and this was provided very adequately and amusingly by Trevor Robinson. The orchestra, consisting mostly of the conductor's friends, was most ably led by Dr. Alan Richards, himself a Bart's man.

The programme described this concert as "an experiment". It is to be hoped that this excellent performance will inspire others in the future; and could it not also encourage the revival of the traditional Smoking Concerts which used to be part of the Bart's Life? We are greatly indebted to Brian Richards for this enterprising venture, produced in only five weeks, for which he was entirely responsible, and there is no doubt at all that he brought great pleasure to many people, performers and audience alike, by all his hard work.

Women only?

Since the turn of the century and since suffrage for women in this country was granted, thanks to the machinations of Mrs. Parkhurst and women chain-gangs, the fairer sex has gradually threatened to oust men from various occupations which have been traditionally and exclusively masculine. One has learnt to accept these encroachments with alarm at first, later with stoical tolerance and finally with amused resignation. However, when a man decides to embark upon a career traditionally held by women, the alarm and amusement which greet his decision may prove overpowering enough to deter him from such a course. The stoical tolerance is usually absent. He is considered to be an eccentric genius bent on showing up the insufficiencies of his sisters or just a plain eccentric.

In the case of a traditionally feminine profession—nursing—the number of males in a population who have the dedicated devotion and courage strong enough to withstand gibes and to explode the myth of eccentricity attributed to male nurses is unfortunately small.

Probably the first male S.R.N. ever to come to Bart's is L. H. Walker, aged 24. He is to be seen busily at work either in the Special Treatment Centre or in one of the several 'boxes' in the Out-Patients Department. During his National Service in the R.A.M.C. he found an interest in nursing. He was in Japan for about a year and upon his discharge he went to St. Charles' Hospital, Ladbroke Grove, for his training.

We wish him every success in his unique position.

French Valentine.

"Comment se joue ce sport étrange que s'appelle 'le hockey'?"

"Ah, Mademoiselle, ne refléchez pas du hockey, mais venez faire le bercer et rouler avec moi."

Yes, indeed, people were even heard *speaking* French in the Parisian atmosphere of the dance which the Combined Hockey Clubs held on February 14. The French theme was admirably suited to the day, and with a full moon to add brightness to whiteness even François Penet's Lovers would have found themselves strangely at home in College Hall.

The fascinating posters, notices and decorations (décor by Mike Hall-Smith) which appeared earlier in the day were a most compelling advertisement, and determined many a lone heart to abandon his bachelor ways for just one evening. The attendance was good in face of strong competition, which included such attractive functions as the Valentine dance of the Bedford Biological Society.

The bar did a roaring trade with gin at "75 francs", and many travellers' cheques were seen to change hands. Others danced to the band of Derek Pyke. In the recreation room a most un-English lighting system mellowed the faces of the dancers and varied their hues. There was no cabaret, and a dancing competition was cancelled at the last moment when it was found that in the excitement the Combined Committee had eaten the box of chocolates which was to have been the prize.

But this dance had no need of cabarets or prizes to give it excitement and gaiety — it was a success from the moment the first couple walked through the turnstile. Equally original and successful was the buffet, which kept to the spirit if not the letter of the theme with French bread, Dutch cheeses and Spanish Burgundy. But the most important thing about the wine was pleasantly French; namely, its price. It was a master-stroke of psychological planning to sell the bottles for 150 francs. Free wine is a relatively insipid indulgence, but wine at 3/- a bottle is really an exquisitely rare experience — it even compels one to excuse the organisers for the rather left-wing flavour of the subsidy.

The Men's and Ladies' Committees were delighted to entertain two of their respective vice-presidents and their wives; namely, Mr. and Mrs. P. H. Jayes and Dr. and Mrs. Michael Blunt.

The dance was generally agreed to have been the best of the season, and it was no fault of the organisers that it made the staggering loss of 15,750 francs (roughly 15 guineas). Several members of the ski club forgot that they weren't still at the Zürserhof and one of them even said he thought it was as good as a whoopee-bag party; which, incidentally, is deceptively mild praise. The Combined Clubs are to be very warmly congratulated on the originality and excellent organisation of the evening.

View Day Ball.

We hope that by now everyone has sent in their applications for tickets for the ball. Some people are a bit apprehensive about dancing space in view of the night club shuffle which was required of them last year. But we can reassure them that this year the floor will be larger, as the tables at the end of the floor opposite the band are to be removed. So this year the "don't fence me in" types will have their wide open spaces. But night-club types, don't be put off!

Journal Staff

Mr. D. F. Rowlands has resigned from the post of sports editor. Mr. R. J. Mitchell has been elected sports editor in his place.

It was Mr. Rowlands, who, in co-operation with the previous Editor, introduced the custom of publishing a monthly sports editorial under the heading of *Viewpoint*. This has, we believe, been a universally popular feature, which gives cohesion to what would otherwise be a disconnected series of match reports.

Many readers will have seen Mr. Rowlands on his last public appearance as sports editor, watching the Cup Semi-Final in dignified luxury from the press box at Richmond.

NOTICES

Eleventh Decennial

The Annual Dinner of the Eleventh Decennial Club will be held at Simpson's in the Strand on May 10th, under the chairmanship of Dr. A. Barnsley. The usual notification is being sent by post, but any members who fail to receive the notice or those who are eligible for membership (i.e., qualified men who entered Bart's between the years 1915 and 1925) but have not yet joined the Club, are asked to communicate with the assistant honorary secretary, M. L. Maley, 15, Victoria Avenue, Southend-on-Sea, Essex.

Twelfth Decennial (1925-1935)

The Annual Dinner of the Twelfth Decennial Club is to be held at the Naval and Military Club, 94, Piccadilly, W.1, on Friday, the 17th May.

Will any Member who does not receive notification, or any eligible non-Member who would like to attend the Dinner, please get in touch with W. D. Coltart, at 58, Harley House, N.W.1.

G.P. Lecture

The G.P. Lecture this term will be given in the Clinical Lecture Theatre at 12.15 on Thursday, 16th May. Dr. Allen J. Whittaker will talk on "The Art and Science of General Practice."

National Association for the Prevention of Tuberculosis.

The NAPT Annual Services of Dedication for Doctors and Nurses are to be held this year on Sunday, May 5th, at 3.30 p.m., at the Church of St. Martin-in-the-Fields, and at the Church of Corpus Christi, Maiden Lane, Strand.

ANNOUNCEMENTS

Engagements.

FULLER - WILLIAMS. The engagement is announced between Alan P. Fuller and Marina (Nini) Williams.

GREEN - BIGNELL. The engagement is announced between Henry Edgar Green and Joy Doreen Bignell.

HARCOURT-SILK. The engagement is announced between Richard Brian Harcourt and Dorothy Margaret Silk.

RICE - WHITING. The engagement is announced between John Cracoft Rice and Julia Ruth Whiting.

PIGOTT-MALE. The engagement is announced between J. F. E. Pigott and Helen Maryella Male.

Marriages.

DIXEY-HUMPHREY. On February 9th, 1957, Dr. John Dixey to Christie Humphrey.

DOSSETOR-CONLAN. On February 9th, 1957, in New York, Dr. John Beamish Dossetor to Margaret Mary Conlan.

Births.

COOPER.—On February 8th, 1957, to Fay, wife of Dr. Barrie Cooper, a daughter.

MACADAM.—On February 1st, 1957, to Diana, wife of Dr. F. I. Macadam, a daughter (Catherine Mary).

Deaths.

BODY.—On January 28th, 1957, Thomas Munn Body, aged 80. Qual. 1902.

ELLIOTT.—On February 16th, 1957, Christopher Elliott. Qual. 1905.

FRANCE.—On February 22nd, 1957, Francis George France. Qual. 1924.

GARNER.—On February 12th, 1957, Faith Garner, for many years a Nurse at St. Bartholomew's Hospital.

GOODMAN.—On February 13th, 1957, Harold Goodman, aged 80. Qual. 1899.

HERINGTON.—On January 15th, 1957, Cecil Edward Herington, aged 63. Qual. 1918..

PEARCE.—On February 7th, 1957, Thomas Massey Pearce, aged 81. Qual. 1900.

SAVAGE.—On January 25th, 1957, Robert Wynn Savage. Qual. 1924.

THOMAS.—On February 22, 1957, John Llewellyn Thomas, aged 92. Qual. 1890.

OBITUARY

Francis France

Dr. Francis France died at his home in Bromley, Kent, on February 22nd, 1957.

He came to Bart's in 1919 after service with the Welsh Regiment. He was severely wounded and this handicapped him physically for the rest of his life.

He qualified in 1924 and did house jobs at the Brompton Hospital and Leicester Royal Infirmary. In 1926 he settled in general practice in Bromley and was in practice there until his death. He took over one of the oldest practices in Bromley and built this up into a very pleasant combination of health service medicine and private practice. He was much loved by his patients to whom he was the combination of doctor, confidant and family friend, which is the hallmark of general practice at its best. He read widely and enormously and this, together with chess and travel, made up his leisure. He initiated a series of matches between the Bart's and Bromley chess clubs, for which he gave a cup. The matches so far, which have been held at his house, have been one of the most pleasant of the Bart's fixtures.

Despite his increasing disability, he led a very full life and delighted in entertaining at his home, where the hospitality was of the highest order. His stimulating mind and sincere and sympathetic personality, made conversation with him memorable.

We extend our sympathy to his widow, who nursed him so devotedly and well through his long illness, and his family, two of which have followed him to Bart's.

P. S.

CALENDAR

Sat.	Apr.	6	Dr. G. Bourne and Mr. J. B. Hume on duty. Anaesthetist: Mr. F. T. Evans.
Thurs.	,,	11	Abernethian Society: papers by members.
Sat.	,,	13	Dr. A. W. Spence and Mr. C. Naunton Morgan on duty. Anaesthetist: Mr. R. A. Bowen.
Wed.	,,	17	Golf.: v. St. Mary's (S. Herts).
Sat.	,,	20	Dr. R. Bodley Scott and Mr. R. S Corbett on duty. Anaesthetist: Mr. R. W. Ballantine.
Sat.	,,	27	Dr. E. R. Cullinan and Mr. J. P. Hosford on duty. Anaesthetist: Mr. C. E. Langton Hewer.
Tues.	,,	30	Abernethian Society: *Recent Research at Bart's* by Dr. R. A. Shooter and Dr. R. W. E. Watts.
Wed.	May	1	Golf: University Championships at The Berkshire.
Sat.	,,	4	Medical and Surgical Professorial Units on duty. Anaesthetist: Mr. G. H. Ellis.
Tues.	,,	7	Abernethian Society: *Extraordinary Case* by Dr. R. Bodley Scott, Mr. A. H. Hunt and Mr. D. B. Fraser.
Wed.	,,	8	Golf: v. U.C.L. at Stanmore.

LETTER TO THE EDITOR

NAVAL EPIDEMIC

Sir—I read Dr. Knight's article *A Naval Epidemic* (Bart's *Journal* February 1957) with interest, and the following points occurred to me. I think (as I believe Dr. Knight himself thought rather diffidently) that this epidemic was probably of primary B.T. Malaria. My reasons:

1. His ship's company were exposed to heavily infected mosquitoes on 2.5.55. Three weeks later, for the next two weeks following, he had many cases of P.U.O. with headache, and several had jaundice or liver pain.. these latter findings are strongly suggestive of B.T. infection in view of the exoerythrocytic phase of the parasite in the liver.

One patient was found to have a positive slide. Dr. Knight does not tell us how often slides were taken or whether they used 'thick' or 'thin'—I suspect the latter as Leishman's stain was used. For the best chance of finding the parasite, thick films should be made 4 hourly for 48 hours at least.

2. Rigors and regular cycles of shivering, high fever and sweating occur more commonly in B.T. malarial relapse than in the primary attack—at least I found it so in the Army Base Hospital in Egypt 1953-4. The locally (Egypt) acquired disease behaved as Dr. Knight described, while the patients with the cold-hot sweating stages at 48 hour intervals were those who acquired their primary disease in Korea and had stopped suppressive treatment before arriving in the zone.

As far as curative treatment is concerned, had quinine or chloroquin been readily available, no doubt Dr. Knight would have used either of these in preference to the poorly schizontocidal Mepacrine or Paludrine, which are good suppressives but poor for B.T. curative action, (although Mepacrine is still, I believe, probably the best drug for a non-urgent case of M.T. malaria).

It would be of great interest to know if any patients of Dr. Knight's subsequently had a return of fever in after years, and if positive slides were obtained.

Yours faithfully,
P. G. CRONK.

Moffat's Close,
Romsey Road,
Winchester.

BY WAY OF THE THYROID

by J. H. MEANS *

FELLOW STUDENTS of St. Bartholomew's Hospital: I want to present to you today the thyroid, not merely as an important apparatus of the body, having interesting ailments which need to be diagnosed and treated, but more broadly as a system within, and intricately enmeshed with, other systems which become ever more extensive in their ramifications until they finally embrace, and indeed constitute, the entire living organism. The point is that the thyroid can lead to concepts transcending that of itself, and that is the reason for the title I have chosen for this lecture. To put it in another and less pretentious way, as is the guinea pig a useful research animal, helping to advance our knowledge in many biological areas, so too is the thyroid a useful research organ—a multi-armed guide post pointing many and varied pathways to the better understanding of life.

I first became interested in this organ over forty years ago. In retrospect it seems significant that whereas much of my attention has been directed toward the practical aspects of the diseases of the thyroid, nevertheless it was its most basic physiologic action, namely that upon the respiratory metabolism of the body, which first got me involved with it. And today I want to look again through the clinical phenomena to the basic processes which underlie them. Proceeding in this fashion, thyroidology, far from being a mere splinter speciality of endocrinology, becomes a pass key to medicine in the large.

Just after World War I we started at the Massachusetts General Hospital a thyroid clinic. The purpose was more than just to treat patients with thyroid gland diseases. It was in part to do just that, but in addition the weightier objective was to discover, the while we gave patients the best treatment we knew how, to learn also from their cases everything possible of the fundamental nature of their diseases, and more than that, to form concepts of the relevance of such knowledge to the economy of the body as a whole.

From the beginning the desire was to bring to a focus on a common problem minds of different experience and training, the understanding of each to enrich that of the others. At first we had only physicians, surgeons and radiologists—the latter because we sometimes used x-ray therapy. I was in the group as a physician, but I also was able to bring to it a special skill, namely, that of calorimetry. My original interest actually had been in the broad field of respiratory physiology and energy metabolism, and I came to the thyroid as a useful research organ because when diseased it may cause some of the greatest departures from normal in energy metabolism which we know. The surgeons in the thyroid group were drawn to thyroid problems because of their surgical challenge, and in similar fashion I was drawn to them because of their bearing on energy metabolism.

Of the several attributes of the thyroid clinic, the one I would like most greatly to stress is the blending which it accomplishes of practice and research, and incidentally of education as well. There are those who say that practice and research are as far apart as the poles, but I do not hold with such a view. Any practitioner caring for a patient has the opportunity to make, and sometimes does make, an observation which sets off a totally new train of basic scientific inquiry. For example, our knowledge of adrenal function began when Addison related a certain picture which he had observed in his patients to the destruction of their adrenals by disease which he found at post mortem. No notion whatever of the function of the so-called adrenal capsules was had until they became diseased and produced symptoms. But the scientific development of Addison's discovery has led us to cortisone and all that. Similarly the

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Physician, Massachusetts Institute of Technology.
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Honourary Perpetual Student, Medical College of St. Bartholomew's Hospital.

A lecture given at St. Bartholomew's Hospital, May 22, 1956.

function of the thyroid became clarified when physicians Murray and also McKenzie found that feeding thyroid removed the symptoms and signs of myxoedema which had previously been identified as a clinical syndrome resembling cretinism by Gull. I also like to recall that over one hundred years ago the French physician Niépce found at autopsy that the pituitary gland is enlarged in cretins. This paved the way to the modern concept of the pituitary-thyroid axis, a servo-mechanism, and this in turn slips into place in the general concept of homeostasis.

And now I would like to indicate very briefly the major steps by which our knowledge of the working of the thyroid apparatus has advanced in the last forty years. In the beginning, being essentially clinically minded, we contented ourselves with refining diagnosis and evaluating treatment, making use of the BMR as a quantitative index. The first attempt to get below the surface to the cause of things was when it became apparent that in Graves' disease iodine causes a specific reduction in thyrotoxicosis. Our studies indicated that the metabolic response to iodine in Graves' disease follows a curve which closely resembles the decay curve of thyroxine, that is to say, the curve followed when the supply of thyroid hormone to the body suddenly ceases. It is an expression of the rate of the using up of the amount of hormone present in the body at the time when delivery of hormone stops. We concluded that that in fact, is probably what happens when one exhibits iodine in Graves'. But what its mechanism might be we did not know, nor do we yet, nor is it clear why iodine does this in Graves' but not in persons not so afflicted. It is an important question and one which would never have come up but for the clinical identification of the syndrome. I am sure no basic scientist could ever have dreamed up so fantastic a subject for research as nature has given us in Graves'. That the malady far transcends the thyroid is obvious. The elucidation of its actiology and pathogenesis may cause revisions in some of our broad physiologic concepts. The question, 'What kind of a disease is Graves' disease?' is a challenge not only to clinicians but to basic scientists as well. The biologist, the biochemist, the physicist are already involved; the geneticist probably soon will be also.

The iodine response in Graves' got us interested directly in the nature of thyroid hormone, particularly since the late Henry S. Plummer of the Mayo Clinic had advanced the hypothesis that in Graves' the thyroid gland puts out an abnormal hormone. From vast clinical experience he reached the conclusion that the manifestations of Graves' disease cannot be due to simple hyperthyroidism alone. There must, he believed, be an element of dysthyroidism present also.

In the early thirties one of our colleagues, the late William T. Salter, spent a year in the laboratory of Sir Charles Harington at Hampstead. He brought back with him some synthetic thyroxine polypeptide which we proceeded to assay for hormonic activity, making use of patients with untreated myxedema as test objects. Work along that line has continued ever since. The objective from the beginning has been to find out precisely what is the thyroid hormone, and in what way is its chemical structure related to its physiological action.

You are familiar, of course, with the chemical structure of thyroxine. It is 3, 5 — 3′, 5′ tetraiodo thyronine. It possesses two phenol rings linked together by an oxygen coupling — a diphenyl ether linkage, as it is called, and it has attached to its rim four iodine atoms and it has an alanine side chain. We may concede at once that thyroxine is a unique and remarkable substance. In a chemcially pure state it will relieve all the manifestations of hypothyroidism, and continue to do so as long as it is exhibited in adequate dosage. Until very recently it has generally been assumed that thyroxine is the thyroid hormone, or at least the important or prosthetic part of its molecule, also that it is the only hormone the thyroid puts out. This concept now needs revision.

Harington has told us that thyroxine is the only known hormone which is an amino acid, also that it is the only known naturally occurring substance having a diphenyl ether linkage.

In the attempt to discover the why and wherefore of thyroxine's peculiar chemical anatomy, many studies have been made by many investigators upon the hormone activity of its molecule as well as with a great number of synthetic relatives or analogues. By comparing the structure of all these with their hormonic activity, if any, light is thrown on the hormonic contributions made by various parts of the hormone molecule.

After reviewing what I could find of such studies in 1951, I made the following comment: 'It appears that nature has discovered by process of evolution that in order for the thyroid gland to accomplish its function with the greatest efficiency, a diphenyl alanine is essential, and furthermore that this must bear two or more atoms of a halogen, preferably iodine. The substitution of sulphur for oxygen in the coupling of the rings causes relatively slight deterioration in physiologic activity, and the same is true of certain alterations in the side chain'. More recently Selenkow and Asper (1955) have collected a much larger series of thyroxine analogues, nearly a hundred in fact, and in relating structure to activity, have drawn similar conclusions.

Let us now pop back to the late thirties and take note of some important methodologic advances. The BMR which I began using as early as 1914, though not especially for thyroid problems, was an important implement in that it permitted quantitative measurement of thyroid function. Also the effect of iodine on the BMR proved to be of specific diagnostic value in Graves' disease, but the radioactive labelling of iodine which we began to use in 1937, opened up more widely than anything before new areas in thyroid physiology, biochemistry, diagnosis and treatment and facilitated the further exploration of old ones.

When the use of radioactive iodine was combined with other new methods, chromatography, tissue culture, enzyme chemistry and others, the soil was ripe for a great flowering of thyroid research comparable to that occurring in many other fields of medicine, and as soon as the war ended this flowering actually began.

If we take advantage of the knowledge of the thyroid which has accumulated to date, to what extent can we form a concept of its overall role in the total economy of the organism? We shall be obliged to view the matter from several angles. First it may be asked—what is the thyroid hormone, or are there several? Next, what role does the thyroid gland play in their production? I must remind you here that it is not necessary to have a thyroid gland to make thyroid hormone. If one lets any of several proteins, serum albumin, casein, or others lie around in vitro with elemental iodine at the right pH and temperature without even the mediation of added enzymes, iodinated proteins capable of relieving totally the athyreotic state will gradually be formed. Therefore the question of the role of the thyroid gland in thyroid hormone production is a reasonable one. We also must ask how thyroid hormones are stored, transported to targets and how they act upon targets.

The first clue to the function of the thyroid may lie in the peculiar avidity which the gland has for iodine. It possesses a mechanism for trapping and concentrating iodine which reaches it as iodide via the circulation, and also the power to oxidize such iodide to elemental iodine. The latter process is an enzyme promoted reaction requiring high energy. Inasmuch as we have seen that the rest of the biosynthesis of hormone can proceed in vitro without benefit of thyroid in a leisurely manner, it may turn out that the main function of the gland, the one for which nature has caused it to be evolved, is collection of iodide and its oxidation to iodine. The gland also probably greatly accelerates by means of enzymes the biosynthesis of hormonic molecules, which, however, can be produced slowly without such assistance.

The steps in the biosynthesis of thyroxine, according to Harington's classic work, consist first in the iodination of tyrosine to form the diiodotyrosine, then the coupling of two molecules of diiodotyrosine with the loss of one side chain to form thyroxine. It has further been believed that the thyroid parenchymal cells also elaborate a special protein — thyroglobulin — and that it is within the matrix of this protein that the steps in the biosynthesis of hormone take place.

According to Salter, thyroglobulin can be secreted even in the absence of iodine, and it will be laid down in the thyroid follicles as colloid. But if iodine is lacking, such colloid will possess no hormonic activity. This is what happens in iodine-want goiter. When iodine is exhibited under such circumstances, there may be rapid iodination of the colloid which thus acquires physiologic activity, and release in excess of hormone from the gland, so that the patient may become, temporarily, thyrotoxic.

There is now, however, much more to the story. The advent of radioactive labelling and separation by chromatography, discloses that there are other iodinated tyrosines and thyronines, than just diiodotyrosine and thyroxine (tetra iodo thyronine) in the thyroid. The list at present contains also

monoiodo tyrosine, triiodothyronine, and very recently diiodothyronine. There may be others, and the question arises what are the roles of all these? It could be that they are merely useless by-products which a profligate nature cannot help making along with making the proper substance she is really after. The fact that an enzyme or enzymes exist which can bring about their deiodination, thus permitting them to be katobolized and got rid of, gives support to such a theory. There are, however, objections to this also.

Until all this recent work it was generally accepted that thyroxine was the one and only thyroid hormone. All changes made in its molecule diminished or abolished its hormonic activity. In 1951, however, Pitt-Rivers found that triiodothyronine, which is naturally present in the thyroid, not only exerts all the physiologic actions of thyroxine, but does so more expeditiously. She properly, therefore, asked the question, 'What are the thyroid hormones?' Nor can this yet be finally answered. All that can be said is that both thyroxine and triiodothyronine are present in the thyroid gland and in the blood, and that both show the physiologic properties characteristic of thyroid function (relief of athyoreosis). It is possible that diiodothyronine does this also.

As to storage of thyroid hormone it seems clear now that it is in the form of iodinated thyroglobulin within the acini of the thyroid follicles. Presumably incorporated within the long filamentous molecule of this protein are numbers of all of the iodinated amino acids which I have enumerated. When there is an environmental shortage of iodine, some or all of these will be in short supply.

Release of hormone from the thyroid, it is believed, is accomplished by the action of proteolytic enzymes on the colloid or stored thyroglobulin which breaks it down into smaller molecules which can diffuse out of the gland into the blood stream, and in the blood stream it is known to be carried in loose combination with plasma proteins. How it is unloaded from such combination, or how it gets into the target cell and what it does when it gets there, is still in the realm of uncertainty. Indeed it is not even known whether thyroid hormone does enter the target cell. It is conceivable that it exerts its action solely at the level of the cell membrane, perhaps by altering its permeability.

The final fate of thyroid hormone in the body appears to be by deiodination, analagous to deamination, after which it can be finally katabolized. The iodide released is captured by the thyroid for re-use in hormone biosynthesis or excreted as iodide chiefly by the kidney.

Let us now get back on a more clinical beam, which, if we are physicians, is where we properly belong. Let us see how our physiological considerations help us with the understanding of disease, and conversely, how disease throws light on physiological processes.

I will speak first of iodine-want goiter. There are two kinds—extrinsic and intrinsic. Extrinsic iodine-want goiter is the familiar endemic goiter such as occurs in most mountainous regions, and in some others in which the environment is poor in iodine. This is perhaps the best understood of any of the diseases of the thyroid. It really is hardly a disease at all, but an adaptation to an inimical environment. Only when the adaptation reaches its limit, as when goiterous persons also become cretins, should we call it a disease.

Intrinsic iodine-want goiter presents, clinically, an identical picture. We used to call it sporadic colloid goiter, and wondered what produced it in regions where the environment had a plentiful supply of iodine. The newer methods of research have raised the curtain considerably on this problem. These goiters are also due to iodine want, but one which comes about through an internal defect in utilization of iodine, not to an external shortage of supply, or to the presence of an environmental goitrogen. Various recent studies have disclosed that in such cases of sporadic non-toxic goiter, defects can be found in the biochemical assembly line of hormone synthesis. It is believed that in each case there is a lack of some enzyme necessary to the complete fulfilment of hormone synthesis. In some cases the defect is at one step in the biosynthetic process; in others, at another, depending on which of several enzymes necessary to completion of the process is lacking in the particular case. In one variety that has been identified there is an inability to perform the iodide to iodine step. In another the difficulty is with the coupling of tyrosines to produce thyronines. A third group of goiterous patients were found to be unable to deiodinate diiodotyrosine so that great quantities of this substance were excreted in the urine. This constituted a great loss of iodine to the body and led to intrinsic iodine-want goiter.

All this sort of study permits great refinement in physiologic diagnosis—pathogenesis can be pin-pointed. Furthermore it can be carried beyond the individual. It is found that often these cases run in families, and that in any particular family the defect is the same, but in other families there may be a different one.

The suggestion is very strong then that there is a genetic factor in this type of thyroid disorder; that in fact we are dealing with what may be called a gene-enzyme disease due originally to a downward mutation. I am sure I cannot carry this interpretation further, but I would say emphatically that now is the time to bring the geneticist into the thyroid team, and I predict that very shortly our concepts of thyroid physiology in its entirety will not only require revision, but also will be greatly broadened by his contributions.

And now for a moment may we return to Graves' disease. It has been known for years that this malady also may run in families. It has been thought that there is a constitutional factor in its pathogenesis. The real import of these facts, however, has not heretofore been completely apparent. Now, however, several workers are searching at the biochemical level for evidence of abnormalities in thyroid hormone metabolism, not only in patients with Graves' disease, but in their siblings and forebears. Ingbar, for example, in Boston has found a markedly increased rate of degradation of thyroxine in Graves' which is perhaps what one would expect in thyrotoxic phases, but he finds it also in euthyroid phases. He also claims to have found this acceleration in certain relatives of patients with Graves' who themselves did not show clinical evidence of the disease.

While no final evaluation can be placed on such findings, they at least suggest that biochemical stigmata of Graves' may exist and be distinguishable in persons without manifest disease. If this proves to be so, then the way is open to the geneticist to attack this disease also, and find out for us whether in fact there is such a thing as the Graves' constitution—a term used twenty or more years ago by Warthin of the University of Michigan.

My own concept of the nature of Graves' disease, as it stands at present, is that the syndrome represents a special type of response which persons with a certain type of inherited constitution make when they encounter any non-specific stress, mental or physical, of sufficient magnitude. Thinking of Selye's alarm reaction and adaptation syndrome, I incline to regard Graves' disease as a sort of maladaptation syndrome made by preconditioned persons under stressing circumstances. I have the notion that there may be many examples of this sort of relationship in other diseases. The stress which causes Graves' in patient A may cause peptic ulcer in patient B, because he has a different constitutional make-up.

Now in closing I would like to say to those of you who are presently to qualify and embark upon your various careers in medicine—don't ever lose sight of either the forest or the trees. If you become specialists, particularly very sharply focussed specialists, don't forget the rest of medicine of which your specialty is but a fragment. Always relate your special work to medicine's broad background. And to those of you who go into general practice, I would say—cultivate also a special interest of your own within the wider field of your general practice. This I am sure will enhance your enjoyment of your professional work and give zest to all you do in it. I am told that it is possible under your National Health Service for general practitioners to do this sort of thing, especially when several get together in a group or partnership. They all can do their share of the general work, but each can have a special field in which he is especially well informed and competent—heart, psychiatric problems, cancer, or what you will. The members of such a group informally will consult one another; they will stimulate one another, and the skill of the group will be greater than that of the sum of its individual members.

And I would urge you also at all times to keep up some contact with your basic scientists. Fire questions at them which are prompted by your clinical experience; needle them to find answers to such questions as the pathogenesis of Graves' disease or the enzymic defect in some new picture of thyroid disorder that has turned up in your consulting room. All this will serve to promote synergistic action between you, and medicine will progress faster than if you both work alone.

DESCENT BY ASCENT

by HAROLD TENOID AND WILLIAM HARTSIA

The prognosis in conventional treatment of undescended objects is poor. We feel that there are three reasons for this. Children dislike taking pills, young boys do not take well to operation, and lastly the post-operative immobilisation of descended objects may lead to marked psychological trauma.

The efficacy of our new treatment depends on the utilisation of natural gravitational forces.

The treatment is carried out in a WEIGH-GUD-AUTIS CHAMBER (W.C.), a special lift designed to give continuous gradual acceleration up or down. The air temperature and pressure are maintained automatically at optimum level throughout.

Correct position of the patient in relation to the Force of Gravity is controlled by the *Projectile Rotary Ordinance* (P.R.O.) to which the patient is attached by means of the *Hartsian Rotary Platform* (H.R.P.) (see fig.).

The treatment is carried out in three stages.

STAGE I. *Preliminary Hormone Therapy.*

The widely preferred drug is 'SERTOLIN', an androgen derived from the cells of Sertoli of immature, male, myxomatosed rabbits. The recommended dosage is 5 micromicrograms, T.D.S. for 14 days. This renders the most intractable undescend perfectly amenable to treatment.

STAGE II. *Descent by Ascent.*

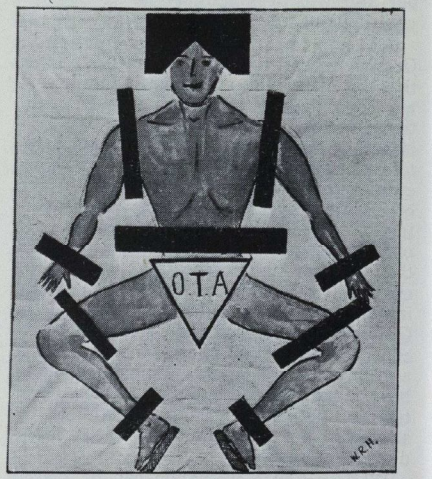
The patient is strapped on to the vertical HRP, as in figure. The W.C. accelerates continuously to a certain height (α-phase), previously set on the PRO to give the required degree of descent. The PRO now starts the deceleration (β-phase), simultaneously rotating the patient 180 degrees to an inverted position. As the machine stops (μ-phase) the patient is re-rotated to the starting position.

Increased cremasteric tone may give trouble during treatment. Muscle relaxants have proved useful, the best being MYOLAX, 15 minims by intra-arterial injection.

STAGE III. *Descent by Descent.*

Virtually a reversal of Stage II, the W.C. descending to its starting position. Thus the elemental force of gravity is simply augmented to give natural descent of undescended objects.

The descended object is now anchored with a Tenoid-Hartsia appliance. This consists of a circular, thin, band of elastic placed around the descent pathway for 24 hours.



View of patient on a Hartsian Rotary Platform. (O.T.A. = Operative Treatment Area.)

Professors Tenoid and Hartsia were friends in early childhood at the Great Outback school in Alberta, but on leaving school decided that their prospects were not very great in that Province and so went to Paris to study Dynamic Therapeutics, taking their long vacations with a circus troup in Vienna.

They encountered much criticism from so called "official medical circles" and so decided to take degrees in conventional medicine; but such is the nature of bigotry and tradition, that they were forced to adopt inconspicuous noms de plumes to disguise them throughout their studies at St. Bartholomew's.

There are two post-operative complications :—

Firstly, failure of treatment, a rare occurrence indicating maluse of the apparatus. Secondly, over-complete descent. This requires surgical intervention.

Our results have been assessed in terms of Total Descent Distance, measured in megatenoids (1 Tenoid = 0.16 microns) by means of a Tenoid Megatenoidometer.

A review of the results shows that in males up to 10 years 4 months there is a 90% cure rate. This drops to 70% up to 12 years 3 months. In male patients over this age treatment should not be considered. The results in girls up to 25 years have, with a few notable exceptions, been universally disappointing.

The advantages of this treatment are that no knowledge of the regional anatomy is required, there is no post-operative sepsis, and, clinically, patients appear to enjoy the treatment.

The cost of transportation of doctors and technicians to New York, where the only available apparatus is situated (Empire State Building) is at present a serious contra-indication, but negotiations are in hand for the transference of some disused coal mines to the Ministry of Health. The treatment should then become easily available to the N.H.S.

A modified W.C. has also, we believe, been used in Russia, under x-ray control, to displace ureteric calculi.

In conclusion, we should like to mention that this treatment has been received with great enthusiasm in the U.S.A., where reports state that it was a large factor in the strong voices heard at the last presidential election.

We would like to express our thanks to Dr. Cancrum T. Hammerfelt for permission to treat selected numbers of his patients.

BIBLIOGRAPHY

Minister of Health. Personal communication (July, 1946).

Tenoid, H., and Hartsia, W. R. Gubernacular Tales, Cairo Press (1956).

Platzia, Anna. Szongs of the Motherlandsk, Krontsh Press (1922).

LINES

(written in S.O.P's on learning that Y-front underwear is a major cause of sterility)

It's a dangerous thing for the man in the street
When the underwear companies turn on the heat;
For an extra degree
In that region you see
Is a little too much for the growing gamete.

Tell me, Oh tell me, My dear Mr. Cooper,
Did Malthus inspire you and did the insuperable problem of Birth Control drive you to warming
Our loins as a means of preventing us spawning?

And even conventional Mr. Meridian
Brought in a style at which many a kiddy can
Look on with awe, and thank God that his Pa
Spent a week in a sunsuit at Leamington Spa.

So we'd better go back to our old combinations
Which give no support but have good ventilation
You've got to be loose
If you want to produce;
Down with new-fangled pants and restore procreation!

J. AND M.

THE LIFE AND WORKS OF JOHN FREKE (1688-1756)

by JOHN CHALSTREY

PART II

In July 1736 Freke was nominated and soon afterwards admitted as a Governor of St. Bartholomew's Hopsital. A year later he became Senior Surgeon on the death of Mr. William Greene. It was during his time as a Governor (1736-1756) that much of the rebuilding of the Hospital occurred. At the beginning of the eighteenth century, the buildings were much the same as they had been at the Refoundation in 1547. Private buildings were interspersed with those of the Hospital and the wards were widely scattered. Some wards opened directly on to public thoroughfares, which made proper supervision of the patients very difficult. By 1702, when the Smithfield Gate was rebuilt, the Hospital had, in some measure, recovered from its impoverishment caused by the loss of City property in the Great Fire of 1666. In 1729 the Governors resolved to rebuild the Hospital and the architect James Gibbs, who had been elected a Governor in 1723, planned and executed this rebuilding. When Freke became a Governor, the first block, containing the Great Hall, had already been finished. It was to form the north side of a quadrangle, which at the time of Freke's death twenty years later, was almost completed. The south and west wings were in use and the foundation stone of the east wing had been laid. These buildings still form three sides of the square[1], and remain as a memorial to the energetic and far-seeing Governing Body of which Freke was a member. That he personally was interested, and played an active part in the furtherance of the rebuilding is shown by the following entries in the Hospital Journal :

"Thursday, 24th July 1740.

Mr. Freke, about a house for Matron.

The patients in the Old Ward adjoining to the Church being to be removed to the Wards in the new Building and those Old Wards to be pulled down Mr. Freke proposed that if the Governors would leave standing so much of those Old Wards as is within the Nook of the Church, that Mr. Freke would and did undertake for fourty pounds and being allowed as much of those Old Materials as will be necessary for that purpose, to make and fitt up, a house fitting for the Habitation of the Vicar or Matron, and a Vestry Room for the Parish, to which proposal the Committee agreed."

It seems that Freke himself directed these alterations :—

"Thursday, 26th February, 1740.

The Governors went to view the House now Building in the Nooke of the Church under the direction of Mr. Freke and being returned desired him to give Orders, that the Tyling be made good and the Window Lights boarded to keep out the Weather."

An entry in the Court Minute Book of the Barber Surgeons' Company states that on July 4th, 1740 John Freke was elected to the Court of Assistants and on the same day was chosen as an examiner. It seems that there may have been some jealousy at his sudden advancement, for at the next meeting two members of the Court protested against the confirmation of his appointment as an examiner. These men, who had been Assistants for a considerable time and had also applied for the position of examiner may have resented the election of Freke in preference to themselves. A vote was taken and Freke's appointment was confirmed by 17 to 8. From then on he regularly attended the Courts of Assistants and Examiners.

Following his first communication to the Royal Society in 1736, Freke did not submit anything further until 1743, when he read a description of an instrument which he had invented for reducing dislocations of the shoulder. The Philosophical Transactions of the Royal Society of that year contain drawings (fig. 1) and full details of the apparatus.

As can be seen from the figure, it consisted of a folding box (A) which, when opened and placed upright on the ground, formed a fulcrum for a lever (B) attached to its upper end by a roller (b). A leather bandage (F) was bound to the patient's arm and then attached by thongs to the windlass (G) on the lever (B). The patient was held steady as shown, by a shoulder strap (H) which was hooked to a large iron ring screwed into the floor. Then, by applying traction with the

[1] The South Wing was replaced by the King George V Block in 1935.

windlass and levering with the bar (B), we are assured by the inventor that : "Without the assistance of any operator, I may venture to affirm that a patient may be set down, the instrument applied and the shoulder reduced in one minute, ordinarily speaking."

Later, two other papers submitted by Freke were read at the Royal Society. Both consisted of works by other people, which he thought would be of interest to the Society. The first of these was a plan for a machine which would write down "Extempore Voluntaries or other pieces of music." and it indicates his fondness for "mechanical contrivances."

The paper was a description of a machine which could be attached to a harpsichord or

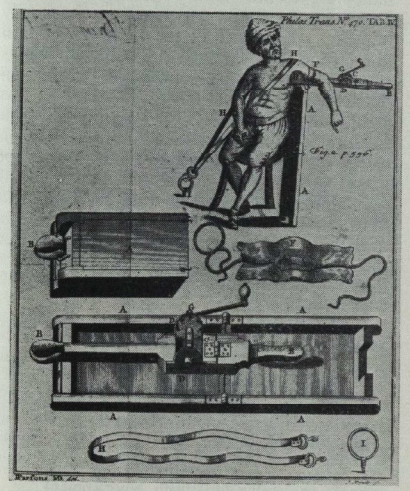


Figure 1

organ and would record whatever was played. Briefly, the idea was to have pens connected by levers to the back of each key, so that when the key was pressed, its pen drew a line on a slowly revolving roll of paper. The position of a line on the roll indicated which note had been played and the length of the line showed the duration of the note. It was stated that, by using this invention, composers would be relieved of having to pause to take down their work and would be able to check their extempore playing and transpose it from the roll.

Meanwhile, at the Barber-Surgeons' Company the long-slumbering animosity between the Surgeons and the Barbers had awakened and was reaching a climax. It is indeed surprising that a union which had become grotesque should have existed for as many years as it had. For nearly two centuries, the Barbers had been employed in an occupation foreign to, and independent of, the practice of surgery—and it is understandable that the surgeons, many of whom had attained great eminence, resented a system which required their diplomas to be signed by the Governors, two of whom were always Barbers. They disliked the presence of Barbers at their examinations and felt that the alliance was a restraint upon their advancement, and in no way conductive to the progress of Surgery. There is little in the Barber-Surgeons' Record as to their disagreements, for it was tacitly agreed that neither side should put their arguments and grievances in the books which were their joint property. However, at a meeting of the Court of Assistants in December 1744 ;

"the Surgeons made known their desire to become separated and that the Barbers and Surgeons should be made separate and distinct bodies, free and independent of each other and read a plea which they intended to read to the House of Commons."

John Freke was one of a committee consisting of five barbers and five surgeons, chosen by the Court to consider and report on this matter. The records state that "this committee was appointed to meet at the King's Arms Tavern in Saint Paul's Churchyard at one of the clock to receive the Proposals from the Gentlemen on the Surgeons' Side for such separation and that when they had so done, that the Gentlemen on the Barbers Side, Members of this Court, should lay the same before the Livery on their Side by a meeting to be made for that purpose and that a Court of Assistants should be held on the Tenth day of January next at which time the Gentlemen on the Barbers' side, Members of this Court, should then report their opinion and Assent or Dissent to such proposals made."

The Barbers dissented, but the Surgeons went ahead and presented their case to Parliament. A counter-petition by the Barbers against the proposed separation was of no avail, for the parliamentary committee, which had been appointed to investigate the matter, reported that the proposed separation was desirable. The Bill, after passing through

both Houses of Parliament, received Royal Assent and on 25th June, 1745, the Surgeons became a separate corporation.

(It was in this same year that Percivall Pott who also had been a member of the Barber-Surgeons' Company, was elected as an Assistant Surgeon at Saint Bartholomew's Hospital.)

Freke, who had been one of the leaders in procuring the separation, was naturally involved in the formation and organisation of the new Company of Surgeons. Its constitution was similar to that of the late Barber-Surgeons' Company, for they had a court of twenty-one Assistants, elected for life, from which they annually elected a Master and two Governors. At their first meeting, held on July 1st, 1745, John Ranby, Serjeant Surgeon to George II, became the first Master, and John Freke, together with others who had held administrative positions in the old company, automatically took their places in the Courts of Assistants and Examiners. It is recorded [1] that :

> "Thanks were given to the gentlemen who were of the Committee for managing this Company's Affairs in Parliament for their great care and trouble in attending that service and procuring the said late act."

The new Company was not prosperous, for in the Act of Separation the Barbers had been allowed to retain the whole of the corporate property, with the exception of the Arris Bequest and Gale's Annuity for Anatomy Lectures, which had been founded in 1646 and 1653 respectively. They also had to find a new home and while looking for suitable premises held their meetings in the Stationers' Hall, and various London Taverns. In 1746, suitable land was found in the Old Bailey and it was,

"Resolved unanimously that a Theatre be the first part of the new intended building and that the same be erected with all possible despatch." Freke was one of a committee of eight appointed "to manage and transact business relating to the treaty between this Corporation and the Committee of the City Lands for taking the Ground in the Old Bailey."

At a Court held on July 3rd, 1746 Cheselden was elected Master and Freke, a Warden of the Company, and a year later Freke became Master. Two important occurrences during his year of office were the beginning of the Theatre in the Old Bailey and the setting up of a committee to consider, "what medicines and instruments would be necessary for the future to be used by the Surgeons of the Men of Warr and Hospital Ships." On July 7th, 1748 a new Master was elected and the following is recorded in the Court Minute Book :

> "Then the thanks of this Court was unanimously voted to be given to the late Master for his great Care, Pains and Diligence in respect to the affairs of this Company."

In 1748 Freke's first book was published. He called it, "An Essay on the Art of Healing," and dedicated it to the Governors of the Hospital. It has the elaborate phrasing and rather rambling style characteristic of many eighteenth-century writings, but it is an interesting book, and parts are extremely amusing when read in the light of modern knowledge. For example, he believed rickets to be due to an insufficiency of "creta" in proportion to osteoid tissue. Thus far he was right, but the presence of swelling led him to suppose that there was in fact only an excess growth of the organic matrix and not a lack of calcium. From that he concluded that children so affected were receiving too luxurious a diet. This mistaken hypothesis must have been particularly unfortunate for the children who came under his care, for it determined his method of treatment, which was as follows :

> "To cure this Disease, Care should be taken to send this sort of Children into a sharp Air, and to feed them with more austere Diet than ordinary; rousing their Blood by shaking and tossing them often, giving them now and then a little red Wine, and dipping them every Morning in cold Water. This may be the best Means to set bounds to this Luxurancy in the Growth of the Bones; for, till the creta is separated to a certain Degree of Solidity, the Bones are liable to receive too much Nourishment".

In that he did not realize the relative values of experimental proof and hypothesis, he exemplifies the scientists of that age. It was a period poised in history between the entirely theoretical philosophies of the Ancients and the scientific method as we know it today. The importance of experimentation had been realized, or perhaps it would be truer to say that experimenting had become fashionable. The aim of the majority of experimenters was amusement rather than the pursuance of a definite line of research. Freke was not one of these people but, together with others who did attempt to find a reason for natural phenomena, his method was to make the experiments and observations fit preconceived hypotheses. Like the great majority of scientists of that time, he had not entirely broken away from the ancient scholastic attitude of Hippocrates and Galen. Thus in his book, truth and fiction are blended in an almost inextricable manner, observations often being correct and hypotheses partly or wholly incorrect. This is well illustrated by the following examples taken from the book. Freke supported the ancient theory that cancer was caused by an excess of one of the "humours" of the blood — the black Melancholy. However, he accurately observed that the axillary lymph nodes were frequently affected in cancer of the breast and remarked on the difficulty of obtaining a permanent cure following removal of the breast, because of these metastases.

The final chapter contains what is probably John Freke's most valuable contribution to surgery, namely, the first description of the correct treatment of an empyema. Authors of earlier works had suggested that the surgeon should apply the general principle that an abscess should not be opened until "some thin point offers itself to the touch". As a result of an observation made during a post-mortem examination, when he had discharged over a gallon of pus from one side of a chest, he recommended early paracentesis. He wrote : "For I have very often discharged not less than a Gallon of purulent Matter at once through an Incision betwixt the Ribs, when no Inflammation has appeared on the Part." He explained that although the signs of inflammation of the skin are absent, the affected side of the chest appears distended and breathing movements are reduced or absent.

In 1752, Freke published a book on the properties of fire, electricity and magnetism. This treatise began with an account of the properties of static electricity, which he had observed from some experiments. The remainder of the work consisted of a series of rather wild and exotic conjectures as to the causes and nature of fire, magnetism and electricity. For example, he claimed that electricity was the probable cause of acute rheumatism and also that the insects found on the leaves of blighted trees were carried there in currents of electricity!

As might be expected, this work met with considerable criticism, of which the most unrestrained and disparaging was that written by Benjamin Martin of Bath in a book which he published soon afterwards.

In his preface, Martin said that when he had heard that so notable a person as Mr. John Freke had published an essay on electricity he had become very despondent because he thought that his own work, then being printed, would be completely eclipsed. However, after reading a little of Freke's work, his spirits had soared, for it was plain to him that Freke's essay was absolute nonsense! He wrote

> "Upon reading a system of such wild reveries, I could not help having some commiseration for the author, who seems to have no more notion of the nature and cause of electricity than he has of modern philosophy".

Martin, at the end of his treatise (which is no nearer the truth than Freke's) further ridiculed his opponent in a short article called "Remarks on a Rhapsody of Adventures of a Modern Knight-errant in Philosophy."

In spite of, or perhaps because of, this controversy, Freke's book seems to have sold well, for a second edition was soon called for. In this edition there was an appendix in which he answered some of his critics. In the last part of this appendix the full force of Freke's displeasure was directed against Benjamin Martin. It is worth quoting part of this amusing piece of sustained sarcasm. He wrote :

> "I have met with a very unmannerly Abuse from a Country Showman, who published some Experiments, and owns he added the Preface to it, in order to write what I am sure no Gentleman would have written . . If this person be poor, and did it for Gain, I heartily pity him. I believe there are more Answers to Books written to pay a Landlady, or an Alehouse-Score, than from any other Cause; especially if their Authors think they answer one whose Character will call it into the World . . . I know nothing of my Adversary's Finances; but how rich soever he may have made himself by his Show, he seems to have the blessing of never being liable to the Headache from his thinking too intensely."

However, it must be admitted that much of what Freke wrote was little more than the product of a lively imagination. Even so, it may have been from the stimulating effects of works such as these that other ideas evolved which eventually led to the discovery of the real nature of electricity and to the evolution of our present ideas of the origin and conservation of energy.

John Freke long outlived his wife and daughter. The latter, who had married Mr.

(1) Manuscript Minute Book of the Court of Assistants of the Surgeons' Company, now in the library at the Royal College of Surgeons of England.

John Crane, a surgeon, lived in Buckingham until her death in 1745, when she was buried there, near her husband and his father.

By 1755, old age was well upon him and one can imagine with what bitter reluctance he capitulated to his infirmities and wrote the following letter:

"To the Worshipful the President, Treasurer and Governors of St. Bartholomew's Hospital.
Worthy Gentlemen,

Finding myself grown very Infirm by a longer unsettled Course of the Gout, than I ever did, and being willing to retire at times into the Country, for the Recovery of my Health, I humbly beg leave to make this my Resignation of my Place of Surgeon to the Hospital, till it may please God to restore me to a perfect and sound health; which, if it should, I may then have the power to reinstate myself into the same Rank and Degree I now am, during the continuance of my Perfect Health, if a Vacancy of either of the Surgeons should happen.

As I have been near thirty years past, Surgeon to this Hospital, which I have ever served to the utmost of my power, and had leave to bury my beloved Wife in the Church of the same, in a Grave which cost me a considerable expence, to prevent any Dispute about my burial with her, I humbly request that an Order may be given accordingly.

I am with thanks to this Honourable Court for all favours past

Gentlemen
Your obliged and devoted humble Servt.
J. Freke."

Thus, his reluctance to leave the Hospital was such that he could not bring himself to write an unconditional resignation—even though he must have known how slight was the possibility of his ever again being fit enough to return to work. The letter was delivered by the Treasurer at a meeting held on February 21st, 1755 and the following minute is recorded:

"The Committee having considered the said Letter and Resignation and the same appearing to be only Conditional, Resolved that this Committee cannot accept thereof, Ordered that the Clerk do write to him and acquaint him therewith."

On receiving their decision he sent a brief letter of unconditional resignation. This time he wrote from Bath, whence he retired in the hope that the waters would alleviate his gout.

After a retirement of less than two years, Freke died on November 7th, 1756. His death is listed in the Obituary columns of the London Magazine, and Gentleman's Magazine of that month, and his burial at the church of St. Bartholomew-the-less is recorded in the parish register.

In accordance with his wishes, he was buried beside his wife in the Poor's Chapel, a part which was pulled down in 1789 when Dance redesigned the Church. The entire tomb, including its medieval canopy was removed to its present site on the West wall of the Church either in 1789 or in 1823 when further rebuilding was carried out by Hardwick.

The arms above the tomb are those of Freke[1] impaling Blundell.

Despite the passage of time and the incompleteness of this life history, it is not difficult to form a picture of what sort of man Freke was. Everything we know about him indicates him to be a man of strong character, not afraid of stating his views and equally ready to defend them; that he possessed great ability, self-confidence and ambition is also certain. There is very little evidence regarding his sense of humour, though it seemed that, in general, he was a serious-minded man. For example, he greatly deplored the use of scientific experiments as tricks to amuse people. He was proud of his profession and jealous for its honour and dignity. One can imagine that, particularly in later life, he commanded great respect, even fear, from his subordinates and patients. The frequent references to an Almighty and Merciful God in his books suggest that he may have been a devout and religious man and this would be in keeping with the early training which he must have received at the Rectory.

Although Freke made no great scientific discoveries, his works were valuable in stimulating further thought and research.

Nearly 150 years later, the value of such work was well expressed in a presidential address to the Royal College of Surgeons:

"When we search the history of the development of scientific truth, we learn that no new fact or achievement ever stands by itself, no new discovery ever leaps forth in perfect panoply, as Minerva did from the brow of Jove.

Absolute originality does not exist, and a new discovery is largely the product of what has gone before."

It is fitting that this occurred at the Centenary Festival of the "direct descendant" of the Company which Freke helped to found.

If he were able to choose, perhaps John Freke would wish to be remembered for two things especially: firstly for his part in procuring a separate Company of Surgeons and then, above all, as one who loved his Hospital and served it well.

(1) Sable, two bars and in chief three mullets or.

TUBERCULOSIS AND INSANITY

Historical and Experimental Observations on the Strait-Waistcoat as Collapse Therapy

by RICHARD A. HUNTER

FOR CENTURIES it has been held that there is an intimate relation between disease of the lungs and the state of the patient's mind. Apart from the observation of Hippocrates that delirium or phrenitis developing in the course of lung disease carries a bad prognosis because it implies involvement of the central nervous system, views on the nature of this relation have varied with changing current pathological theories. Griggs (1955) concluded from his extensive historical survey that "As to the casual relationship between the two conditions, 2,500 years of sophistry have but paraphrased the factual Coan notion that tuberculosis may appear in a psychotic and a psychosis can develop in a phthisic." In the seventeenth century Morton (1689) reflected contemporary interest in the influence of mind on body when he gave "Grief, Fear, Cares, too much Thinking, and other such-like Passions of the Mind" signal importance in the development of what is now known as pulmonary tuberculosis. Robinson (1727) described both a characteristic mental state associated with pulmonary tuberculosis and *spes phthisica:* "As the Disorder gains more and more upon the Constitution, the Passions begin to be exasperated, which incline the Patient to a quick hasty Disposition, ever Fault-finding . . . always uneasy, complaining, and fretting at every light Disappointment," while "the Patient flatters himself with the Hopes of Recovery against all Possibility of Hopes, and when not the least Symptoms indicate any favourable Issue to the Disease." By contrast in a self-description of a consumptive published by Watt (1808), the patient recorded that "the predominant state of my mind was lowness of spirits, a gloomy imagination, and a dread of imaginary evils."

Here we are concerned with the clinical observations made in the late eighteenth and early nineteenth centuries which led some to believe that tuberculosis and insanity were to some extent incompatible and mutually exclusive. This view was held in England by "almost all writers on insanity, from Mead [1751] downwards" (Clouston, 1863), and persisted until the middle of the nineteenth century (Bucknill and Tuke, 1858). Thus Darwin (1794) described two patients "who towards the end of a violent peripneumony, in which they frequently lost blood, were at length cured by insanity supervening." And Burrows (1828) observed "an interchangeable relation between lunacy and phthisis pulmonalis; the latter being cured by the accession of the former, and recurring as soon as the brain resumes its natural functions," although he noted that according to French statistics "Phthisis kills more than half the lunatics in La Salpêtrière."

Young (1815) in his comprehensive *Practical and Historical Treatise on Consumptive Diseases* gave Mead (1751) the credit of being the first to have made this observation. Mead wrote: "a surprising circumstance in this distemper [madness] is, that it not only often preserves the patient from other diseases; but when it seizes him actually labouring under them, it lays such strong claim to the whole man, that it sometimes dispossesses the body of them. And this happens, not only in slight ailments, but also in great and dangerous illnesses." Thus "a beautiful young lady" developed "a true pulmonary consumption, and death seemed to be at the door" when she was "seized with religious madness. Night and day she saw the appearance of devils, sulphureous flames, and other horrible images of everlasting tortures of the damned. But from this time the symptoms of the original disease began to abate: the febrile heat decreased, the spitting stopped, the sweats grew less; and her whole habit was so much changed

Richard Alfred Hunter

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for the better, that the bodily strength seemed to become more adequate to performing the functions of life, in proportion as the mind grew less capable of governing the body . . . But alas ! toward the end of the third month, the hectic and ulceration of the lungs returning, this charming virgin died consumptive, who seemed worthy of a better fate" (Mead, 1754).

Although "many striking examples of consumption alternating with mania are upon record" (Southey, 1814), in most patients pulmonary consumption was relieved by the onset of insanity, and not vice versa. "It is remarkable," wrote Rush (1812), "that this disease [pulmonary consumption] does not so often suspend madness, as madness does pulmonary consumption," an observation also made by Cox (1806), G. Nesse Hill (1814), Burrows (1828), and Kolk (1863). Ellis (1838) picturesquely described a patient in whom "first one affection, and then the other, alternately predominated, until nature sank under the succesive attacks"; while as late as 1854 Thompson stated "That, as phthisis advances, hysteria usually retreats, so that the presence of hysterical symptoms may encourage a hopeful prognosis, pretty much in proportion to their severity; hysteria and phthisis, although not incompatible, being apparently uncongenial."

Clouston (1863) in his survey of the relation between tuberculosis and insanity noted that "when the one disease appears the other is abated, or disappears altogether, as if the body had no power to carry on two such diseases at the same time . . . In by far the majority of such cases, however, the phthisical symptoms are merely masked, while the deposition of tubercle goes on."

Bucknill and Tuke in their *Manual of Psychological Medicine* (1858) were the first to deny specifically that the advent of insanity had any effect in halting the progress of pulmonary consumption: "We have seen many patients in advanced stages of phthisis, who were never heard to cough so long as they were under the influence of maniacal excitement. When this underwent a temporary diminution, they were greatly troubled with cough, which was again arrested by the recurrence of excitement. The continuance of colliquative diarrhoea and perspiration, and of emaciation, proved that there was no halt in the progress of the disease, as the absence of cough has led authors erroneously to suppose."

Thereafter no more reference was made to this phenomenon, other than to note that it had formerly been observed, e.g. Munro (1926). Indeed, the relation of insanity and tuberculosis now came to be considered the reverse of what had previously been believed. Thus Clouston (1883), twenty years after his earlier paper, made no mention of any incompatibility between the two diseases. On the contrary, "It is surprising how often both diseases occur in different members of the same family. No physician in extensive practice but has met with very many such families. They are too frequent to be a mere coincidence. The constitutional weakness which tends to end in phthisis is, I have no doubt, akin in some degree, under some conditions, to that which tends to end in insanity." Further, whereas Clouston (1863) had previously mentioned that the advent of insanity might improve pulmonary tuberculosis, he now only described the reverse sequence, namely that pulmonary tuberculosis like any other inflammatory process might sometimes relieve insanity, the effect being non-specific and "only apparent . . . always transitory" (Clouston, 1883).

Subsequent investigations confirmed that in fact tuberculosis was more prevalent among the institutionalised insane than among the general population, and not only in France where this fact had been noted early in the nineteenth century, but also in England. This tended to strengthen the theory that a similar constitution predisposed both to tuberculosis and insanity. Like the earlier belief which postulated an inverse relation between tuberculosis and insanity, this view also persisted for about a hundred years. Only towards the middle of this century when it was realized that their apparent affinity depended on external hygienic and dietetic factors, was the theory of a constitutional or genetic link between tuberculosis and insanity relinquished.

The Supposed Incompatibility of Tuberculosis and Insanity

How did this belief originate, and what was the evidence for it? A possible explanation seemed to be contained in a case history reported by Southey (1814):

> "A case of hereditary consumption in its last stage was suddenly and perfectly suspended for some months by mental derangement. The patient was obliged to have a strait waistcoat, and a keeper from London. During this affection of the brain, the cough and all the pulmonary symptoms ceased; but upon removal of the maniacal, the phthisical symptoms returned, and the patient died about two months afterwards."

Another physician, G. Nesse Hill (1814), who believed that the strait waistcoat was "an admirable contrivance" and advocated its widespread use, published a similar history: "A young female . . . died of phthisis after being freed from insanity, which commenced upon the termination of the derangement, and twelve months after it was suspended by a new attack for a few months which ceasing the consumption carried her off." Was it perhaps the strait-waistcoat rather than the "mental derangement" which "suddenly and perfectly suspended for some months" the pulmonary consumption in Southey's patient? And did the removal of the strait-waistcoat after the "maniacal" symptoms had abated allow the "phthisical" symptoms to return?

Could in fact the introduction into psychiatric practice of the strait-waistcoat as a form of treatment and restraint* have caused the clinical improvement in patients with pulmonary tuberculosis, which was then wrongly ascribed to the advent of insanity? This hypothesis was tested (1) historically, by elucidating whether the life of the strait-waistcoat coincided with the belief that pulmonary tuberculosis and insanity were incompatible; and (2) experimentally, by ascertaining whether the strait-waistcoat by constricting the chest acted in effect as a form of collapse therapy of the lungs.

The History of the Strait-Waistcoat in the Treatment of Insanity

"Everybody has heard of a strait-waistcoat," wrote Conolly (1850), "but, familiar as the name is, perhaps nine people out of ten have never chanced to see one. It is, in fact, simply a jacket, formed of strong ticking or canvas, and made to tie behind with five or six strings. The sleeves are prolonged to the length of about twenty inches beyond the tips of the fingers; so that (the arms being crossed over the chest) they can be carried round the body, and secured behind by tapes which are threaded through the extremities" (see Plates).

Introduced in the first half of the eighteenth century as an improvement on restraining the insane by handcuffs, leg-locks and chains, the term strait-waistcoat was, according to the Oxford English Dictionary, first used by Richardson (1753) in his novel *The History of Sir Charles Grandison*: "She threatened her then with the Strait Waistcoat, a punishment at which the unhappy Lady was always greatly terrified." However, this was not the first use of either the article or the word: in 1739 Alexander Cruden, of *Concordance* fame, had published an account of his being "Chained, Handcuffed, Strait-Waistcoated and Imprisoned . . in Wright's Private Madhouse on Bethnal-Green." Perhaps the earliest mention of a strait-waistcoat in medical literature was made by Macauley "Uncommon Nervous Symptoms in a Girl of thirteen Years of Age": "She was even mischievous, and endeavoured to strike and bite everybody near her; Though naturally of a sweet and affectionate disposition. In order to prevent her hurting herself or others, we were obliged to have a waistcoat for her, such as is used for mad people, without which it would have been impossible to have managed her." But strait-waistcoats did not come into general use until the latter part of the eighteenth century: they were not mentioned in the psychiatric writings of Robinson (1729) and Battie (1758), nor in contemporary records of Bethlem or St. Luke's Hospitals where patients continued to be confined by other means. In 1792 Pargeter pleaded for the employment of "A strait-waist-coat, which is the best expedient that was ever invented" in those "very bad cases" in which "keepers have recourse to *chains* and *cords*"; and Darwin (1796) also extolled its virtues: "Where maniacs are outrageous, there can be no doubt but coercion is necessary; which may be done by means of a straight waistcoat; which disarms them without hurting them." As late as 1803 Percival wrote of the strait-waistcoat as one of the "improvements in modern practice."

Kraepelin (1918) following Esquirol (1838) mistakenly attributed the invention of the

* The history of psychiatry teaches that there is a very fine dividing line between treatment of patients and their restraint or subjugation, whether this was achieved by mechanical means as formerly, or by drugs, electricity or leucotomy. Frequently procedures considered treatment by one generation have been abandoned because they were subsequently recognized as harmful and unnecessary restraint.

strait-waistcoat to Macbride (1772), who wrote: "No small share of the management of mad people consists in hindering them to hurt themselves, or do mischief to other persons. It has sometimes been usual to chain and to beat them, but this is both cruel and absurd; since the contrivance called the Strait Waistcoat, answers every purpose of restraining the patients, without hurting them." George III was thus restrained in 1788, and Cullen (1790) lent his authority to its use: "restraint . . . is useful, and ought to be complete . . . the strait waistcoat answers every purpose better than any other that has yet been thought of." By 1792 strait-waistcoats were widely if not universally used for difficult psychiatric patients: in that year Arnold ordered twenty for the twenty patients to be admitted into Leicester's new lunatic asylum.

With the introduction of the principle of non-restraint into the management of the insane, the belief that tuberculosis and insanity were rarely found at the same time in the same patient disappeared, to be replaced by the opposite view, namely that they were frequently associated. Mechanical restraint of the insane was abolished at the suggestion of R. Gardiner Hill (1837) and carried out in practice by John Conolly (1847; 1856), so that by the 1860s the strait-waistcoat had fallen into disuse in mental hospitals. Therefore it is not surprising that Conolly (1848) himself never observed pulmonary tuberculosis arrested by insanity, and only noted their association: "The general characters of insanity are seen to be modified by association with some disorders of the body . . . There seems to be an intimate connexion in some cases, and in some families, between mental excitement or impairment, and the phthisical constitution; several of the members of the family being subject, for successive generations, to one or the other of these two forms of malady. Cases of inertness and apathy in young persons . . . not unfrequently end in phthisis."

Thus the period of time during which the strait-waistcoat was generally employed for the insane coincided with the period of about one hundred years during which the belief was current that tuberculosis and insanity were somehow mutually exclusive.

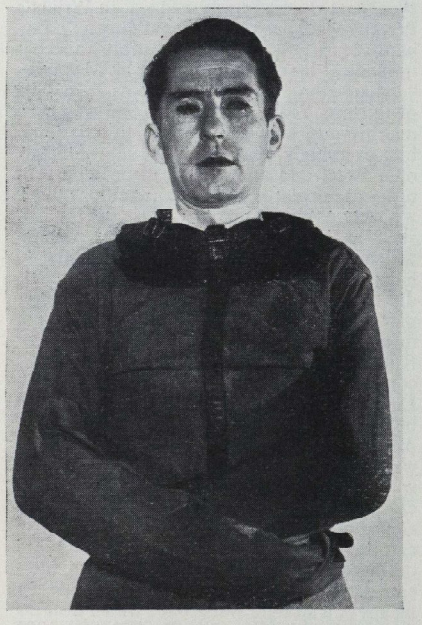

PLATE I. *A strait-waistcoat of the early 19th century, as worn by patients at Hanwell Asylum. The three buckles allow for the attachment of a head-piece to restrain the patient further.*

Experimental Observations on the Effect of the Strait-Waistcoat on Lung Volume

Three healthy male subjects were selected, and their respiratory volumes measured by spirometry. Vital capacity, expiratory reserve and inspiratory capacity were measured in the sitting position with and without the strait-waistcoat on, and in one subject also in the supine position: results are shown in the Table.

In all subjects the vital capacity was reduced by approximately 10% and the expiratory reserve by 13-43%. In two subjects the inspiratory capacity was slightly reduced while in one the inspiratory capacity was increased, though by only half the reduction in expiratory reserve. Thus in all subjects respiration was shifted to the expiratory side. Functional residual capacity was measured by a modified nitrogen wash-out method. In all subjects it was reduced by 530-800 ml. (21-33%), which is considerably greater than the decrease in expiratory reserve found on spirometry. This suggests that the residual air also is considerably decreased. On all subjects the respiratory rate rose on application of the strait-waistcoat by 24-40% of the control value over the period of measurement of 5-7 minutes.

PLATE 2. *Strait-waistcoat with head-piece in position.*

These results show that in the three subjects tested the wearing of a strait-waistcoat produced a collapse of the lungs of 530-800 ml., with a somewhat smaller reduction in vital capacity.

Subjectively these effects seemed to result partly from restricted expansion of the chest proper, and partly from compression of the epigastric region by the folded position of the arms (see Plates).

Comparison with Artificial Pneumoperitoneum

Measurements of lung volumes in patients with pneumoperitoneum have been carried out by Wright *et al.* (1949), who found that functional residual capacity was reduced by a mean of 30% in 17 subjects in the standing position, with a smaller and less consistent reduction in the recumbent position. They also observed that the application of an abdominal binder in patients with artificial pneumoperitoneum caused a further reduction in functional residual capacity of 0-200 ml. in 3 subjects. Our results show that wearing a strait-waistcoat reduced functional residual capacity to a comparable extent.

Thus the collapsing effect on the lungs of the strait-waistcoat is similar to that of an artificial pneumoperitoneum.

A Digression Concerning Observations on the Effect of Pregnancy on Pulmonary Tuberculosis in the Eighteenth Century

At the same time as the effect of insanity and the strait-waistcoat was being observed by "mad-doctors," two eminent physicians

TABLE

CHANGE IN VOLUME

(*ml., with percentage of normal values*)

SUBJECT	*Vital Capacity*[1]	*Expiratory Reserve*[2]	*Inspiratory Capacity*[3]	*Functional Residual Capacity*[4]
A (sitting)	–390 (–10%)	–360 (–23%)	–30 (–1%)	–800 (–24%)
A (recumbent)	–420 (–10%)	–100 (–13%)	–320 (–10%)	
B (sitting)	–390 (–11%)	–290 (–17%)	–100 (–4%)	–740 (–33%)
C (sitting)	–340 (–8%)	–690 (–43%)	+350 (+12%)	–530 (–21%)

1. The maximal volume of gas which can be expired following a maximal inspiration.
2. The maximal volume of gas which can be expired from the end-expiratory position.
3. The maximal volume of gas which can be inspired from the end-expiratory position.
4. The volume of air in the lungs at the end-expiratory position.

described patients with pulmonary tuberculosis in whom pregnancy had the same temporary beneficial effect, also without appreciating that the therapeutic factor was probably a similar reduction in functional residual capacity. Hoffman (1719) reported that a female patient who suffered from recurrent haemoptyses remained well during pregnancy when " haemoptysis failed to recur, returning however soon after childbirth." Unfortunately he interpreted her haemoptyses as a manifestation of vicarious menstruation and so missed the possible therapeutic application of the observation. Beddoes (1793) in a remarkable passage attempted to find the link between reduction of lung volume due to pregnancy and the occasional improvement in pulmonary tuberculosis which he had observed :—

" . . . the only circumstance in phthisis, from which, in our present state of ignorance, we hope to reason to any purpose, has always appeared to me to be the *occasional* effect at least of pregnancy in suspending the progress of phthisis ; for if we could once discover how pregnancy produces this singular effect, we might be led to discover also a method of superinducing and prolonging the same change of the system at pleasure.

" I had repeatedly attempted to proceed through the obscurity by the help of this clue, but in vain. I have lately had a very favourable opportunity of observing this effect of pregnancy, but could fix on no plausible supposition, with which I might compare the phenomena. At last, when it was too late, the disease having returned and destroyed the patient, the following supposition occurred : The foetus has its blood oxygenated by the blood of the mother through the placenta. During pregnancy there seems to be no provision for the reception of an unusual quantity of oxygene. On the contrary, in consequence of the impeded action of the diaphragm, less and less should be continually taken in by the lungs."

Unfortunately, he was preoccupied with the effects of oxygen on the system and so missed the purely mechanical effect of a partial collapse of the lungs :

" If therefore a somewhat diminished proportion of oxygene be the effect of pregnancy, may not this be the way in which it arrests the progress of phthisis ; and if so, is there not an excess of oxygene in the system of consumptive persons? and may we not, by pursuing this idea, discover a cure for this fatal disorder?"

Conclusion

Review of the history of the use of the strait-waistcoat in psychiatric practice, and experimental observations on its effect on lung volume, suggest that the belief that insanity and tuberculosis were incompatible may have arisen in the eighteenth century in part from the then unrecognized therapeutic effect of collapse therapy in pulmonary tuberculosis. This also could explain why insanity was reported more often to halt the progress of pulmonary tuberculosis than pulmonary tuberculosis the progress of insanity.

Although it may be argued that the element of comparative rest enforced by the strait-waistcoat may itself have had a beneficial effect on pulmonary tuberculosis, the cases reported seem to have improved and relapsed too strikingly and too rapidly for this alone to have been responsible. It is suggested that the strait-waistcoat had a direct though unrecognized effect on the disease by collapsing the lungs in the same way as an artificial pneumoperitoneum, which according to Livingstone (1952) " has definite value, greater than bed-rest alone in acute exudative disease, in varying types of disease unsuitable at the time for artificial pneumothorax treatment or for surgical collapse measures, and possibly in a proportion of far advanced cases."

Thus valid clinical observations gave rise to faulty beliefs because they were evaluated in terms of current faulty theories of pathology. The possible beneficial effect of the strait-waistcoat in pulmonary tuberculosis was explained in terms of " conversion " or " metastasis of diseases ", or " exchanges of diseased action " (Jenner, 1882), and so lost. Had physicians been content to observe and to record this phenomenon instead of missing its significance by strait-waistcoating it into preconceived humoral theories of disease, collapse therapy of pulmonary tuberculosis might have been anticipated by more than a century. As it was, Forlanini (1894), commencing in 1882, developed artificial pneumothorax treatment independently of earlier observations such as those of Carson (1882), while Banyai (1933) accidentally stumbled on the therapeutic effect of artificial pneumoperitoneum in 1931.

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REFERENCES

Arnold, T. (1792) MS. *Sketch of the Preparations necessary for a Lunatic Asylum.* Leicester County Archives.
Banyai, A. L. (1933). *Amer. J. Med. Sci., 186,* 513.
Battie, W. (1758). *A Treatise on Madness.* London.
Beddoes, T. (1793). *Observations on the Nature and Cure of Calculus, Sea Scurvy, Consumption, Catarrh, and Fever.* London.
Bucknill, Sir John C., and Tuke, D. H. (1858). *A Manual of Psychological Medicine.* London.
Burrows, G. M. (1828). *Commentaries on the Causes, Forms, Symptoms, and Treatment, Moral and Medical, of Insanity.* London.
Carson, J. (1822). *Essays. Physiological and Practical.* Liverpool.
Clouston, Sir Thomas S. (1863) *J. Ment. Sci., 9,* 36.
—— (1883). *Clinical Lectures on Mental Diseases.* London.
Conolly, J. (1847). *The Construction and Government of Lunatic Asylums and Hospitals for the Insane.* London.
—— (1848). *On some of the Forms of Insanity.* London.
[——] (1850). *Familiar Views of Lunacy and Lunatic Life.* London.
—— (1856). *The Treatment of the Insane without Mechanical Restraints.* London.
Cox, J. M. (1806). *Practical Observations on Insanity.* 2nd edition. London.
Cruden, A. (1739). *The London-Citizen Exceedingly Injured.* London.
Cullen, W. (1790). *First Lines of the Practice of Physic.* Vol. 4. Edinburgh.
Darwin, E. (1794-96). *Zoonomia ; or the Laws of Organic Life.* 2 vols. London.
Ellis, Sir William C. (1838). *A Treatise on the Nature, Symptoms, Causes, and Treatment of Insanity.* London.
Esquirol, E. (1838) Des Maisons d' Aliénés. In: *Des Maladies Mentales.* Vol. 2. Paris.
Forlanini, C. (1894). *Gazz. med., Turin, 45,* 381.
Grigg, E. R. N. (1955). *J. Hist. Med., 10.* 58.
Hill, G. Nesse (1814). *An Essay on the Prevention and Cure of Insanity.* London.
Hill, R. Gardiner (1837). In: *State of the Lincoln Lunatic Asylum,* by W. M. Pierce. Lincoln.
Hippocrates: The Genuine Works, translated by F. Adams. 2 vols. London. 1849.
Hoffmann, F. (1719). In: *Opera Omnia.* Geneva. Quoted by W. Pagel (1955). *Bull. Hist. Med., 29,* 299.
Jenner, E. (1822). *A Letter to Charles Henry Parry . . . on the Influence of Artificial Eruptions.* London.
Kolk, J. L. C. S. van der (1863). *The Pathology and Therapeutics of Mental Diseases,* translated by J. T. Rudall. London, 1870.
Kraepelin, E. (1918). *Hundert Jahre Psychiatrie.* Berlin.
Livingstone, J. L. (1952). The use of Artificial Pneumothorax, Phrenic Paralysis, Pneumoperitoneum and Oleothorax. In: *Modern Practice in Tuberculosis,* edited by T. H. Sellors and J. L. Livingstone. Vol. 2. London.
Macauley, G. (1756). Uncommon Nervous Symptoms in a Girl of Thirteen Years of Age. In: *Medical Observations and Inquiries, London, 1757, 1,* 230.
Mead, R. (1751). *Monita et Praecepta Medica.* London.
Macbride, D. (1772). *A Methodical Introduction to the Theory and Practice of Physic.* London.
Morton, R. (1689). *Phthisiologia: or, a Treatise of Consumptions.* London, 1694.
Munro, D. G. M. (1926). *The Psychopathology of Tuberculosis.* Oxford.
Pargeter, W. (1792). *Observations on Maniacal Disorders.* Reading.
Percival, T. (1803). *Medical Ethics.* Manchester.
Richardson, S. (1753-54). *The History of Sir Charles Grandison.* Vol. 3. London.
Robinson, N. (1727). *A New Method of Treating Consumptions.* London.
—— (1729). *A New System of the Spleen, Vapours, and Hypochondriack Melancholy.* London.
Rush, B. (1812). *Medical Inquiries and Observations, upon the Diseases of the Mind.* Philadelphia.
Southey, H. H. (1814). *Observations on Pulmonary Consumption.* London.
Thompson, T. (1854). *Clinical Lectures on Pulmonary Consumption.* London.
Watt, R. (1808). *Cases of Diabetes, Consumption, &c.* Paisley.
Wright, G. W., Place, R., Princi, F. (1949). *Amer. Rev. Tuberc., 60,* 706.
Young, T. (1815). *A Practical and Historical Treatise on Consumptive Diseases.* London.

RECENT PAPERS BY BART'S MEN

ANDREW, JOHN. The colpoxopic diagnosis of early cervical carcinoma. *Postgrad. med. J.*, 32, 1956, pp. 560-563.

BADENOCH, A. W. Urology. *Brit. J. clin. Pract.*, 10, 1956, p. 880.

BATES, D. V. *See* McILROY, M. B., and——.

*BEATTIE, J. Stress incontinence. *Postgrad. med. J.*, 32, 1956, pp. 527-531.

*BETT, W. R. Alfred Swaine Taylor (1806-80), pioneer medical jurist and toxicologist. *Alchemist*, 20, 1956, p. 667.

*——. Andrew Ure, F.R.S., M.D. (1778-1857). *Med. Press*, 237, 1957, p. 21.

*——. Carl Friedrich Mohr : pharmacist, physician, inventor and writer. *Alchemist*, 20, 1956, pp. 607-8.

*——. Casey Albert Wood (1856-1942), ophthalmologist, ornithologist and bibliophil. *Med. Press*, 236, 1956, p. 504.

*——. E. F. F. Chladni (1756-1827). *Nature*, 178, 1956, p. 1150.

*——. Fifty years of vitamins. *Chem. & Drugg.*, 166, 1956, pp. 517-518.

*——. Isaac Ray (1807-81) of Ray's mania ; Vladimir Michailovich Bechterev (1857-1927) ; Eugene Gley (1857-1930), physiologist and endocrinologist. *Med. Press*, 27, 1957, pp. 62-63.

*——. Luther Vose Bell (1806-1862) of Bell's mania. *Med. Press*, 236, 1956, p. 595.

*——. Onwards from Galen. A current causerie. *Chem. & Drugg.*, 166, 1956, p. 525.

——. Osteitis deformans before and after Paget. *Ann. roy. Coll. Surg. Engl.*, 19, 1956, pp. 390-393.

*——. Pharmaceutical eponyms. Daffy's elixir. *Alchemist*, 21, 1957, p. 25.

*——. Pharmaceutical eponyms. 6. Glauber's salt. *Alchemist*, 20, 1956, p. 620.

*——. Physicians and physic in fiction. III. Novels written by medical men. *Med. Dig.*, 1, 1956, pp. 352-354.

*——. Sigmamycin : a major advance in antibiotic medicine. *Nurs. Mirror*, 104, 1956, p. 772.

*——. Sir Arbuthnot Lane (1856-1943) : pioneer surgeon and evangelist of positive health. *Health Horizon*, Winter, 1957, pp. 38-41.

——. Sir Joseph John Thomson. *Pharmaceut. J.*, 177, 1956, p. 456.

*——. Surface antiseptics, past and present. *Med. J. Malaya*, 10, 1956, pp. 336-340.

*BLACKLOCK, J. W. S. Injury as an etiological factor in tuberculosis. President's address, Sect. Path., *Proc. roy. Soc. Med.*, 50, 1957, pp. 61-68.

*BLUNT, M. J. The possible role of vascular changes in the aetiology of Bell's palsy. *J. Laryng.*, 70, 1956, pp. 701-713.

*BORRIE, P. Acne vulgaris. *Practitioner*, 176, 1956, pp. 475-483.

——. Eczema of the eyelids. *Brit. J. Ophthal.*, 40, 1956, pp. 742-750.

*BROOKE, B. N. Cortisone and ulcerative colitis. *Lancet*, II, 1956, pp. 1175-1177.

*——. Ileostomy. *Proc. roy Soc. Med.*, 49, 1956, pp. 949-952.

*COHEN, E. LIPMAN. Eruptions caused by some of the newer drugs. *Brit. Ency. Med. Pract.*, Int. Suppl. 163, April, 1956, pp. 2-4.

*——. The mechanism of comedo formation in acne vulgaris. *Brit. J. Derm.*, 68, 1956, pp. 362-367.

DANGERFIELD, W. G. Lipid electrophoresis patterns in xanthomatosis. *Proc. roy. Soc. Med.*, 49, 1956, pp. 1065-1068.

DARMADY, E. M., (and STRANACK, F.). Microdissection of the nephron in disease. *Brit. med. Bull.*, 15, 1957, pp. 21-25.

*DICKS, H. V. The prevention of divorce. *Med. Press*, 236, 1956, pp. 558-562.

*DOLPHIN, G. W., and INNES, G. S. A calorimetric method used in the dosimetry of x-ray beams from a million-volt generator. *Physics in med. and biol.*, Oct., 1956, pp. 1-14.

*DUFF, R. S. Diagnosis and treatment of Raynaud's disease. *Brit. J. clin. Pract.*, 10, 1956, pp. 855-867.

*——. Adrenaline sensitivity of peripheral blood vessels in human hypertension. *Brit. Heart J.*, 19, 1957, pp. 45-52.

*EVANS, *Sir* C. LOVATT. The relation between sweating and the innervation of sweat glands in the horse. *J. Physiol.*, 134, 1956, pp. 421-426.

*FISON, T. N. Acute glomerulonephritis in infancy. *Arch. Dis. Childh.*, 31, 1956, pp. 101-109.

*——. Herpes ophthalmicus. *Lancet*, 1956, II, pp. 819-820.

FRANCIS, G. E. *See*, TAYLOR, G. W., and others.

*GARROD, L. P. Les mérites de certains antibiotiques nouveaux pour le traitement des infections bactériennes non spécifiques. *Brux. Med.*, 36, 1956, pp. 2081-2088.

*GARROD, O., (and others). The significance of the assay of aldosterone in human urine and blood. *Proc. roy. Soc. Med.*, 49, 1956, pp. 885-887.

*——, (and others). Some factors affecting aldosterone secretion. *Proc. roy. Soc. Med.*, 49, 1956 pp. 888-889.

*GREGORY, J. C. Histoplasmosis and toxoplasmosis. *Price : Textbook of the practice of medicine*, 9th ed., 1956, pp. I-XIV.

*GRIFFITHS, E. Tuberculoma of striated muscle. *J. Bone Jt. Surg.*, 38B, 1956, pp. 855-861.

*HANKEY, G. T., (and others). Affections of the temporomandibular joint. *Proc. roy. Soc. Med.*, 49, 1956, pp. 983-999.

*HARRIES, E. H. L. The effect of noradrenaline on the gastric secretory response to histamine in a dog. *J. Physiol.*, 133, 1956, pp. 498-505.

HELPS, E. P. W. Senile confusion and the blood-sugar level. *Lancet*, 1957, 1. pp. 138-139.

*HUNTER, R. A., (and H. PHILLIP GREENBERG). Sir William Gull and psychiatry. *Guy's Hosp. Repts.*, 105, 1956, pp. 361-375.

*HOWKINS, JOHN. The place of surgery in the treatment of carcinoma of the cervix. *Postgrad. med. J.*, 32, 1956, pp. 522-525.

*HURT, R. L. Surgical treatment of ischaemic heart disease. *Med. World*, 85, 1956, p. 217.

*——, (and others). The technic of heart-lung by-pass with a pump oxygenator. *Amer. J. Surg.*, 92, 1956, pp. 287-291.

*——, (and others). Neutralization of heparin in vivo with protomine ; a simple method of estimating the required dose. *J. lab. clin. Med.*, 48, 1956, pp. 223-226.

INNES, G. S., *see* DOLPHIN, G. W., and ——.

JENKINS, J. S., *see* SPENCE, A. W., and others.

JOEKES, A. M. Renal tubular defects. *Med. Press*, 236, 1956, pp. 476-479.

*JOPLING, W. H. Borderline (dimorphous) leprosy maintaining a polyneuritic form for 8 years : a case report. *Trans. roy. Soc. trop. Med. and Hyg.*, 50, 1956, pp. 478-480.

*——. The clinical features of leprosy in the European. *Central African J. Med.*, 2, 1956, pp. 390-393.

KAZANTIS, G., (and BUXTON, R. St. J.). An appraisal of the Holger-Nielsen method of artificial respiration. *Med. Press*, 236, 1956, pp. 611-614.

*KEYNES, W. MILO. Richter's hernia. *Surg. Gynec. Obstet.*, 103, 1956, pp. 496-500.

*——, (and B. McN. TRUSCOTT). Large solitary cysts of the parathyroid gland. *Brit. J. Surg.*, 44, 1956, pp. 23-4.

*——, (and J. N. HARCOURT-WEBSTER). Recovery from peritonitis four years after bilateral transplantation of ureters. *Brit. med. J.*, 1956, II, pp. 1463-1465.

KING, R. C. The control of diabetes mellitus in surgical parients. *Anaesthesia*, 12, 1957, pp. 30-41.

——, (and ROBINSON, J. O.). Rupture of intra-abdominal aneurysm simulating renal colic. *Lancet*, 1956, I, pp. 1047-1048.

——. Polyarteritis nodosa. *Proc. roy. Soc. Med.*, 49, 1956, pp. 934-935.

KINMONTH, J. B., *see* TAYLOR, G. W., and others.

*LEHMANN, H., (and R. BHAGWAN SINGH). Haemoglobin E in Malaya. *Nature*, 178, 1956, pp. 695-696.

*LUMB, G., (and PROTHERO, R. B. H.). Mucosal inflammatory spread in diverticulitis and ulcerative colitis. *A.M.A. Arch. Path.*, 62, 1956, pp. 185-193.

McILROY, M. B., and BATES, D. V. Respiratory function after pneumonectomy. *Thorax*, 11, 1956, pp. 303-311.

McINYTRE, J. W. R. Endotracheal tubes for children. *Anaesthesia*, 12, 1957, pp. 94-100.

*MAINGOT, R. Cholecystostomy, cholecystectomy, exploration of the bile ducts, repair of severed or strictured bile ducts. *From : Rob, Charles, and Smith, Rodney, Eds. Operative surgery*, Vol. 2, 1956, pp. 375-419.

*MARSHALL, R., (and DUBOIS, A. B.). The viscous resistance of lung tissue in patients with pulmonary disease. *Clin. Sci.*, 15, 1956, pp. 473-483.

*——, (and others). Resistance to breathing in normal subjects during simulated dives. *J. app. Physiol.*, 9, 1956, pp. 5-10.

*NAPIER, J. R. The prehensile movements of the human hand. *J. Bone Jt. Surg.*, 38B, 1956, pp. 902-913.

*NASH, D. F. ELLISON. Congenital spinal palsy. *Brit. med. J.*, 1956, II, pp. 1333-1337.

——. Ileal loop bladder in congenital spinal palsy. *Brit. J. Urol.*, 28, 1956, pp. 387-393.

*PERKINS, E. S., (and others). Treatment of uveitis with pyrimethamine (daraprim). *Brit. J. Ophthal.*, 40, 1956, pp. 577-586.

PRANKERD, T. A. J., (and others). Isotope investigations of red cell production and destruction in chronic renal disease. *Clin. Sci.*, 15, 1956, pp. 511-522.

*ROBB-SMITH, A. H. T. Discussion on sarcoidosis. *Proc. roy. Soc. Med.*, 49, 1956, pp. 1041-1043.

ROBINSON, A. M., *see* SPENCE, A. W., (and others).

*RODEN, A. T. Infection of volunteers by a virus (A.P.C. Type 1) isolated from human adenoid tissue. *Lancet*, 1956, II, pp. 592-596.

*——. (ISAACS, A. and), Administration of live influenza virus to volunteers. *Lancet*, 1956, II, pp. 697-699.

ROLLINSON, E., *see* TAYLOR, G. W., and others.

ROTBLAT, J., *see* TAYLOR, G. W., and others.

RUSSELL, BRIAN. Elephantiasis nostras. *Proc. roy. Soc. Med.*, 50, 1957, pp. 18-19.

SARMA, VISHNU. Hydatidiform mole and chorionepithelioma. *J. Indian med. Prof.*, 3, 1956, pp. 1354-1368.

*SPENCE, A. W., (and others). Adrenal virilism treated with steroids. *Brit. med. J.*, 1956, II, pp. 1348-1350.

TAYLOR, G. W., (and others). Lymphatic circulation studied with radioactive plasma protein. *Brit. med. J.*, 1957, I, pp. 133-137.

*THEOBALD, G. W. Pain in gynaecological conditions. *In*, BOWES. *Mod. Trends in obstet. & gynaec.*, 1956. pp. 129-148.

WEBER, F. PARKES. Forgotten nosographs of rare diseases and syndromes. *Med. Press*, 237, 1957, pp. 79-81.

*WICKES, I. G. Sclerema neonatarum : recovery with cortisone. *Arch. Dis. Childh.*, 31, 1956, pp. 419-421.

*WORMALL, A., (and others). Effects of ionizing radiations on serum complement and enzymes. *Nature*, 178, 1956, p. 307.

**Reprint received and herewith gratefully acknowledged. Please address this material to the Librarian.*

RECENT SAYINGS BY BART'S MEN . . . .

Mr. F . . . . r : *(on infertility)*
"Curettage is like changing the wallpaper in a boarding-house bedroom to attract new lodgers."

Mr. H . . . . t: *(having punctured a lump in the breast and drawn off a brown fluid)*
"You can't expect the contents of a lactation cyst to look like milk ; it becomes a little, shall we say, condensed."

ABERNETHIAN SOCIETY

Medicine in Russia

On the 22nd January Mr. George Armitage, M.C., M.D., M.Ch., F.R.C.S., addressed the Society on the subject of his recent visit to Soviet Russia. He went there by air with 3 other surgeons under the auspices of the Royal College of Surgeons who had earlier sponsored a visit by some Russian Surgeons to England.

Mr. Armitage's gifts as an interesting and amusing speaker were soon apparent and the Meeting learned much of Russian Medicine against a background of some of the more sinister aspects of a communist state. Doctors in Russia owed allegiance to the State rather than to their patients and derived much benefit from the great centralisation of the Medical Services in poly clinics, where all the sorting of patients for one or other of the Specialties or for treatment at the Clinic took place. There were 310,000 Doctors in the country of whom 70% were women—the figure being 80% at the end of the War. This meant that there was one doctor to every 750 patients and doctors worked six hours every 24 or worked for one day and then had 3 days of holiday.

Applause greeted the news that the Russian Medical Student was kept by the state from which he also received a small stipend. Medical teaching was a State responsibility and no general practitioner was permitted to practice either Obstetrics or Paediatrics. He saw very little of pre-clinical education but such students as he had spoken to had expressed great interest in our own National Health Service and in particular wanted to know how private clinics were restrained.

Mr. Armitage continued by saying that the visiting party formed a very high regard for Russian Medicine although the Hospital Buildings themselves were very old and of the equipment all was very modern but that rubber gloves were rather thick and cumbersome. He had seen many excellent operations notably for the repair of corrosive strictures of the oesophagus and on congenitally malformed hearts—one ward he visited was filled with blue babies awaiting operation.

Mr. Armitage showed some excellent coloured transparencies of typical Moscow scenes such as the Kremlin, Red Square, the Supreme Soviet (the old palace of the Tzars) and of the vast reconstructions completed since the War; amongst these was the Olympic stadium which holds 130,000 people. A short film was shown of some physiology experiments on head transplants on dogs and scenes from the celebrations of the Anniversary of the Revolution in Leningrad. In all outdoor scenes the figure of Lenin was much in evidence.

Hypnosis

On February 5th Dr. Jonathan Gould, M.R.C.P., D.P.M., introduced the subject "Hypnosis and states of Altered Awareness." Dr. Gould started his talk by giving us the responsibility of blending psychiatry into Medicine, in our generation, and then with rare eloquence put the subject of Hypnosis delicately into perspective by considering its influence on Normal Awareness.

He described Hypnosis as a state of Altered Awareness invoked by chosen sensory stimuli; as a result of these there was reduction of awareness to Background influences.

Dr. Gould then demonstrated Hypnosis on Miss Patricia Farren, inducing the state by the Maternal Method of invitation in contrast to the more forceful Paternal Method of imperative phrases. Miss Farren went into a trance and during this exhibited—in response to invitation—flaccidity of one arm and concurrent Iron Bar rigidity of the other, holding it upwards in a manner very tiring to people in normal awareness—for about five minutes. Having returned the Muscle tone to normal Dr. Gould recalled his subject to normal and she opened her eyes to the count of three.

Dr. Gould then showed a film in which the Paternal compelling method was used and in which needles were pushed through the subjects forearms while in deep trance.

SPORTS NEWS

VIEWPOINT

Recently a fully representative London University Rugby XV played the Combined South African Universities touring side, and this game highlighted a curious anomaly which is unique in so far that it exists in London University rugby only. Although the various Medical Schools are part of the University, as far as rugby is concerned they dissociate themselves completely and owe their allegiance to the United Hospitals Committee. This is regarded by many rugger-playing medical students as a tremendous piece of 'one-upmanship', but whatever the real reason may be for this state of affairs, it does put the awarding of University Rugby 'Purples' entirely out of perspective. One has only to glance at the team fielded against the Sables to see that 14 of the players were provided by the Hospitals, R. M. Phillips from Bart's being one of them. Therefore it seems obvious that the majority of 'Purples' are not awarded to the best available players in the University, as Hospital players are never included.

Surely this state of affairs is to be deprecated, as the objective of University sportsmen should be, first and foremost, to represent their University. The competition to be overcome in order to gain a Blue at the older Universities is tremendous, and the awarding of Blues represents the best the University can produce. So it is at the Provincial Universities in awarding whatever colour they happen to favour.

At the moment no one seems inclined to straighten this question out. On the one hand, medical students attach more prestige to the wearing of a United Hospital tie than the University 'Purple', while the impression is gained, perhaps wrongly, that the University remains content to award colours to the second best. It therefore seems that this state of affairs will continue in its unsatisfactory trend until the committees concerned put their heads together and clarify the situation; but in the meantime it is rather a shame that the best Hospital players cannot, or will not, accept the honour of repreenting their University.

As a result, the standard of London University rugby is far lower than it ought to be.

RUGGER

1st XV v. Oxford University Greyhounds

Drawn 3—3

For this game at Chislehurst the forwards were weakened by the absence of three of the Cup pack, and Tallack had to move up to the strange position of prop forward. Phillips took over the captaincy for the first time.

In the first half the Greyhounds had the wind behind them, and were on top most of the time. They got an early lead with an easy penalty goal after a Bart's forward had got offside in front of his own posts, and they pressed continuously through most of the period, apart from a few dangerous breaks by Phillips.

In the second half Bart's were attacking most of the time. Once Phillips seemed to send Halls over, but his pass was adjudged to be forward. Later Lammiman was forced into touch a yard from the line, after a determined run. Finally M. J. Davies cleverly changed the direction of an attack after a heel from the tight, and then passed to Jones, who galloped over from 15 yards out. M. J. Davies' good kick fell just short. Jones was unfortunately injured in scoring this try, and in the last eight minutes the remaining fourteen Bart's men did well to hold their own.

Team:—B. W. D. Badley; R. M. Phillips *(Capt.)*, G. J. Halls, M. J. A. Davies, D. A. Lammiman; R. R. Davies, B. Richards; J. C. Dobson, C. J. Carr, J. S. T. Tallack; J. W. B. Palmer, J. Creightman; R. Jones, L. R. Thomas, A. H. Thomas.

1st XV v. O.M.T.'s Lost 3—11

This was a mud-bath from the start with a lively O.M.T. pack adapting themselves to the conditions more intelligently than the Hospital.

The Scottish tactics of kick and rush amid cries of 'Feet, feet' from the Old Boys' supporters soon gave the O.M.T.s two rather untidy but useful tries one of which was converted.

For Bart's Palmer was jumping well and Boladz woke up to do some good work in the loose. Carr leading the pack well was outhooking his opposite number and also doing hard work in the loose.

Our backs always looked dangerous on a day when they shouldn't really have been getting the ball, and on many occasions they were brought down just short of the O.M.T.'s line.

Good runs by Lammiman, Davies, Halls and Phillips were the highlights of the game.

After trailing 0-11 at half-time, Bart's scored a good try through H. Thomas just before the final whistle and came off the field a little wiser.

Team: B. W. D. Badley; R. M. Phillips (*Capt.*), G. J. Halls, M. J. A. Davies, D. A. Lammi-

man ; M. Britz, B. Richards ; J. C. Dobson, C. J. Carr, D. A. Richards ; J. W. B. Palmer, W. P. Boladz ; P. D. Moynagh, L. R. Thomas, H. Thomas.

1st XV v. Old Haberdashers. Won 12—3.

This match had to be transferred from Elstree to the "A" pitch at Chislehurst, and even here the heavy rain made play doubtful until the last minute. The pitch was very muddy in patches, although surprisingly firm in other parts. Bart's played with the slope in the first half and were right on top, but could only manage a 6-0 interval lead. First Mackenzie scored in the corner after Howard Thomas had charged down an opposition kick, and then Thomas himself scored in the opposite corner. Neither try was converted.

In the second half Halls scored an unconverted try after a brilliant 40 yard dribble, and shortly afterwards the same player kicked a good penalty goal from outside the "25." Later on another penalty kick hit the cross-bar, and after this Bart's rather relaxed, with the result that the Haberdashers scrum-half stole a blind-side try after a loose scrum near the Bart's line a few minutes from the end.

The game was somewhat frustrating in that none of the scores came from constructive moves, but the forwards, aided especially by the experience and leadership of Tallack, adapted themselves well to the conditions, whilst the backs tried several enterprising moves. In the tight scrums Boladz had a good game, helping Bart's win the Haberdashers ball on numerous occasions.

Team : B. W. D. Badley ; D. A. Lammiman, M. J. A. Davies, G. J. Halls, R. M. Phillips ; M. Britz, B. Richards ; J. C. Dobson, C. J. Carr, W. P. Boladz ; K. E. A. Norbury, J. S. T. Tallack ; A. H. Thomas, L. R. Thomas, J. C. Mackenzie.

1st XV v. U.S. Chatham at Chislehurst. Won 8-0.

Owing to the afternoon International this game was played in the morning. Amazingly everyone managed to drag themselves from their beds so that a prompt kick-off was obtained. Bart's dominated the first half when the wind was at their backs, but could only score once, when M. J. A. Davies rounded off a movement in which Phillips had joined the line, and then converted his own try.

In the second half the Services side seemed to have shaken off their breakfasts, and play was more even. The Bart's defence however stood firm and five minutes from the end Mackenzie increased the lead with a very good try. Bart's had tried numerous unsuccessful short free kicks, but on this occasion Mackenzie kicked the ball to Phillips who ran hard for the corner but slipped the ball back to Mackenzie for a very neat scissors which completely wrong-footed the defence.

This was the last game before the Hospitals Cup semi-final, and it is to be hoped that it will prove a happy augury, although the forwards will need to go much harder against St. Thomas's.

Team : B. W. D. Badley ; R. M. Phillips, G. J. Halls, M. J. A. Davies, D. A. Lammiman ; M. Britz, B. Richards ; J. C. Dobson, C. J. Carr, W. P. Boladz ; K. E. A. Norbury, J. S. T. Tallack ; A. H. Thomas, L. R. Thomas, J. C. Mackenzie.

LADIES HOCKEY

CUP FINAL

St. Bartholomew's 11 — Guy's 3.

The Ladies' Hockey team duly continued their almost indecent monopoly of the Cup at the expense of Guy's, by the convincing margin of 11 goals to 3. Played on the Middlesex ground on March 6th under wet and slippery conditions, the Bart's side won as they pleased in a game in which they never had to produce their utmost.

Guy's attacked at once and forced a penalty outside the Bart's circle. This was well cleared by Miss Tresidder, and play swept into the Guy's half where it was to remain, except for isolated breakaways, for the rest of the game. The first score came after 5 minutes when Miss Hartley picked up a loose ball on the halfway line, and dribbled through only to see her shot blocked by the goalkeeper. Miss Chambers coolly hit in the rebound. Continued pressure on the Guy's goal following centres from both wings produced two more scores after 8 mins. and 10 mins., the first by Miss Chambers and the second by Miss Hartley with a very fierce shot following a short corner.

Three goals up and the game only ten minutes old was a more than encouraging start. The forwards had shown remarkable thrust, ably supported by the half backs who picked up any loose clearances and who were not afraid to push the ball through for the wings to run on to. It was from one of these that Miss Swallow flitted neatly down the left wing to score with a flick shot from an improbable angle.

The backs had meanwhile been contemplating the view, but soon had a chance to prove their value when Miss Tufft broke up the first dangerous Guy's attack with a splendid tackle. After a period of pressure in which the Guy's goalkeeper distinguished herself, play came back to the Bart's half where the Guy's inside left bustled through and scored two good goals inside two minutes. This stung the forwards into life again but after repeated melées half time arrived with no further score. Centres from Miss Wilson, square passes from the insides, even No. 8 iron shots from Miss Swallow and casual juggling acts from Miss Barnard all ended by the ball passing the wrong side of the post or being saved by a rather harassed and flushed Guy's keeper.

In the second half Guy's had the advantage of the slope, but three goals in the first ten minutes, two to Miss Hartley and one to Miss Chambers proved the end of them. Apart from another good individual goal by their inside-right, their resistance was purely nominal, except for some sterling defence by the goalkeeper who must have prevented the Bart's score from reaching cricket proportions. Two further goals from Miss Chambers and one right on time from Miss Hartley clinched the issue.

Throughout the game Bart's had shown convincing superiority over Guy's in all departments. It was refreshing to see square and through passing all so meticulously precise, and admirable ball control under depressing conditions. It would be invidious to single out any individual for especial praise, but Miss Chambers led her side with enthusiasm as well as collecting five goals.

After Dr. Lehmann had presented the shield, she was chaired off the field by vociferous members of the rugby club. Let us hope she will be able to return the compliment after the final of the rugby Cuppers.

Team : I. TOMPKINS ; J. TUFFT, A. TRESIDDER ; J. HALL, B. BARNARD, M. CHILDE ; J. SWALLOW, J. CHAMBERS (Capt.), S. JAMES, J. HARTLEY, J. WILSON.

SOCCER

1st XI v. Guy's. Home. Lost 2—5.

This was the first game played by the Bart's team for at least five weeks and this was indeed evident from the play of the home team. The ground was soft on the surface from the recent rain but otherwise was in perfect condition.

From the start it was clear that our opponents were out to snatch a quick goal which in fact they did approximately five minutes after the kick off. This early goal seemed to instil panic in the Bart's defenders and before half-time Guy's were allowed to score three more goals. However it was becoming obvious that towards the end of the first half the Bart's defence was settling down again after its period of inactivity. Our only success during this period was a goal scored by Gould after Whitworth had dribbled round the full back and goalkeeper and crossed the ball for Gould to tap into the net, despite a last despairing dive by the opposing goalkeeper.

Play was more even during the second half, each side scoring one goal. Again Gould was our scorer, chipping the ball over the goalkeeper's head from 10 yards out.

Team : J. Mercer ; R. Kennedy, D. Prosser ; P. Watkinson, C. Juniper, R. Smith ; A. Andan, A. Whitworth, T. Johnson, R. Pilkington, A. Gould.

1st XI v. Caledonians. Won 3—2.

This game was played in the absence of A. Whitworth, the captain, who has had to go into

WINNERS OF THE INTER-HOSPITAL HOCKEY TOURNAMENT, 1957

Back Row L. to R.: JENNIFER HALL, BARBARA BARNARD, ANGELA TRESIDDER, ISOBEL TOMKINS, JUDY WILSON, SHIELA JAMES.

Front Row L. to R. : JANICE SWALLOW, JENNIFER HARTLEY, JANE CHAMBERS *(Capt.)*, MARGARET CHILDE, JILL TUFFT.

Hospital for an operation on his knee. We wish him a speedy and uneventful recovery.

We started this game in a torrential downpour and with four reserves in the team. The rain, however, soon ceased and the ground was not too treacherous considering the amount of rain that had fallen.

The game was scarcely five minutes old before the home side opened the scoring through one of the four reserves. A long through ball found Davies unmarked in the inside right position and he raced through to score with a low shot past the opposition goalkeeper.

The Caledonians were not to be denied an equaliser in spite of the sound defensive play of Juniper at centre-half and Prosser at left-back. Their equaliser came about ten minutes before half time and the half time score was 1—1.

On the resumption with Bart's attacking strongly and with repeated Caledonian counter-attacks Gould scored our second goal by steering a loose ball past the goalkeeper from close range. This reversal made the Caledonians attack even more strongly and sterling work by the defence kept them at bay. Suddenly the Caledonians goal was in jeopardy again from the Bart's forwards and Davies again scored with a hard drive which the goalkeeper could only partially save and which then rolled into the goal much to the delight of the Bart's team and to the chagrin of the Caledonians.

From the kick-off Caledonians attacked strongly and from a defensive misunderstanding between centre-half and goalkeeper the opposition had the easiest of chances with which to notch their second goal.

The final whistle went soon after this with the score 3—2 in favour of Bart's.

1st XI v. London Hospital. Lost 2—3.

The game started in pleasant conditions — a dry ball, firm ground and sunshine — everything conducive to good football which was produced by the London Hospital only in the first 20 minutes. However a rather depleted and re-arranged Bart's side settled down after this initial period of inept and effortless play and were soon on the attack. A few minutes before half-time Neely scored his first goal ever and also Bart's first goal with a shot into the roof of the net from 10 yards out following a right wing movement. Half-time came with the London pressing strongly for an equaliser.

On the resumption the London again pressed for the equaliser which they eventually obtained. Their lead was short-lived and Bart's regained the initiative by a goal from Iregbulam after he had been put through by Davies. This time the Bart's lead was short-lived an equalising goal being scored by an opposition forward who headed a centre out of our goalkeeper's hands.

Following this reversal play swung from one goal to the other and after narrow escapes by both goals the winning goal was scored by the London. A low, hard cross from the right evaded three of the Bart's defenders and the London inside-right had the easiest of chances to score the deciding goal. An unfortunate ending to an enjoyable game.

Team: J. Mercer; R. Kennedy, D. Prosser; B. Badley, A. Gould, R. Smith; J. Neely, R. Davies, T. Johnson, L. Iregbulam, R. Pilkington.

THE BOAT CLUB

In view of the fact that no report has been made by the Boat Club to the *Journal* for some time, I think that I should make some mention of the United Hospitals' Regatta which took place on the 21st November of last year.

Training for this event began on the first Wednesday in October, with a Junior VIII at Chiswick and a Light IV at Putney, and in addition to this a number of novices were given preliminary training with a view to putting them in an VIII a little later in the year. The Regatta itself took place at Putney and the following crews were entered:—

LIGHT IV.

Bow-steers C. C. H. Dale.
2. F. A. Strang.
3. E. M. C. Ernst.
Stroke. J. C. Currie.

JUNIOR VIII.

Bow. B. Gill.
2. G. Martinez.
3. R. B. Harcourt.
4. S. Khedleri.
5. L. K. H. Therkildsen.
6. H. Francis.
7. A. I. Wilson.
Stroke. R. S. Edmondson.
Cox. J. U. Watson.

PAIR.

Bow-steers. C. C. H. Dale
DOUBLE-SCULLS.
Stroke. F. Pigott.

JUNIOR IV.

This boat was composed of the stern four and cox of the Junior VIII.

E. M. C. Ernst and F. Pigott rowed nobly as substitutes for R. France who fell ill on the day of the race and we are extremely grateful to them.

The best performance of the day by a Bart's boat was put up by the Junior IV, who won the cup for their event, beating St. Mary's and St. Thomas's A. by 1½ lengths in the final. I think that the Light IV against U.C.H. and the Double-sculls against St. Thomas's, the eventual winners, did very well in the circumstances to lose by only 1½ lengths in either case.

Training recommenced early in January for both a provisional crew for the Head of the River Race and last year's novices, who were to row against Guy's in February. In spite of a number of set-backs due to illness both crews are, at the time of going to press, showing reasonable promise and are both being entered, together with a scratch crew of gentlemen, for the Head of the River Race which will have been rowed by the time that this copy of the *Journal* has been published.

The novices crew has by now won its race against Guy's and the only other event worthy of mention is the weekend which the 1st VIII spent as guests of Queen's College, Cambridge, on the 23rd and 24th February. The crew paddled with the First Lent boat on the Saturday afternoon in particularly unpleasant weather conditions and were thawed with a magnificent tea in Queen's afterwards. There has long been a bond between Queen's and Bart's, especially in the sphere of rowing, and I trust that this occasion will have strengthened it—I believe that the next visitors to the college from this Hospital may well be the Ladies' Hockey team.

Looking into the future, beyond the Head of the River Race; training for the crews for the Summer will begin about the middle of April with a number of events in view, the first of which is the Hospital Bumping Races which take place on May the 8th, 9th, and 10th at low-water between Richmond and Chiswick. Bart's 1st VIII is at present 2nd on the river with St. Thomas's head.

J. R. S.

CRICKET CLUB

At the Anual General Meeting of the Club, the following officers were elected:

President: Mr. J. E. A. O'Connell.
Vice-Presidents: Prof. Sir James Paterson Ross,
Pro. A. Wormall.
Dr. E. F. Scowen.
Dr. N. C. Oswald.
Mr. J. Howkins.

Captain: A Whitworth.
Hon. Secretary: R. J. Mitchell.
Captain 2nd XI: R. B. Harcourt.
Hon. Treasurer: A. Garrod.
Pre-Clinical Representative: W. Pagan.

Colours were awarded to:

A Whitworth.
J. Stark.
R. J. Mitchell.

After a successful season last year it is encouraging to note that virtually the same side, albeit at the pleasure of the examiners, can be fielded again this season. However there is still room for great improvement especially in slow bowling, and anyone who has had any experience of cricket and who relishes the thought of an idle day spent in a mildly alcoholic haze at Chislehurst should contact the Secretary. All new members will be most welcome.

The Club must congratulate Alan Whitworth on his appointment to the Captaincy of the United Hospitals and hope that the efforts of the orthopaedic surgeons will allow him to continue his success of last season.

GOLF CLUB

The Golf Club is now at the beginning of a season of fixtures, which include matches against most other hospitals and many clubs. The highlights of the season are the staff match at Denham and an all-day match at Tandridge where we are entertained by Mr. Hartley and his friends. There is also a match against the City Police, but they tell us that it cannot be allowed to lower the price of unwise parking in Smithfield.

The South Herts Club has been very generous in allowing a limited number of our members to play there at weekends.

Some of our more accomplished performers are now lost to the Club and there is a need for new supporters. Anyone who would like to join the Club's activities is cordially invited to contact the Hon. Secretary, care of the Abernethian Room.

BOOK REVEIWS

AIDS TO BIOLOGY *by* W. H. Neville, B.Sc., 4th Edition. Baillière, Tindall and Cox Ltd., Pp. 292. 8s. 6d.

The present volume is the latest edition of a standard work written primarily for students at ordinary and advanced levels of the General Certificate of Education. It offers compelling support for the argument that medical students should devote most of their school days to education in the humanities and defer their principal training in the pre-medical sciences until they reach a university. The book, while containing much valuable and concisely-presented information, embodies a deplorable number of half-truths and elementary errors. Thus, selecting at random, one reads that "the liver has three functions to perform." Again, it is asserted that except for a few opossums in South America, marsupials occur nowhere outside Australasia. In fact, the most thoroughly studied of all marsupials is a Virginian animal which was described as early as 1608; the very name "opossum" is North, not South, American. Equally misleading is the statement that placental mammals are absent from Australasia, countries of which support a rich indigenous fauna of rodents and bats. A statement that medical students will find surprising is that the clitoris, not containing the urethra, "has no apparent function."

A. J. MARSHALL.

INTRODUCTION TO DERMATOLOGY 12th ed. *by* G. H. Percival. E. & S. Livingstone. Pp. 374. 45s.

A new edition of this book is to be welcomed for it provides a compact introduction to a subject which has a great bearing on general medicine. The main virtue of this edition is the excellence of the many illustrations, the majority of which are in colour. These plates are of particular value to students who are unable to see all the commoner skin diseases during their attendances at the Department of Dermatology. Another good feature is the stress placed upon Histopathology, both in the text and in the illustrations.

However two criticisms remain. With the effort which is being made to introduce the metric system in British medical practice to the exclusion of other weights and measures, it is a pity that this book, intended primarily for students, should maintain the archaic system of dosology, without ever giving metric equivalents. The other criticism concerns the omission of any reference to the psychogenic aetiology of some skin diseases, or of any possibility of referring patients for psychotherapy. Although these factors may have been overstressed, there is no reason why they should not be mentioned.

In spite of these drawbacks the book is very useful to medical students, largely because of the illustrations.

J.T.S.