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Saint Bartholomew's Hospital JOURNAL

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CONTENTS

Editorial ... 324
Letters to the Editor ... 325
News ... 325
Stylytes ... 329
The teaching of Geriatrics to medical students by D. E. Hyams ... 330
Diagnosis by J. R. Griffiths ... 335
An experiment in the treatment of Cerebral Palsy by C. G. Fagg ... 336
More than meets the eye, No. 4: Medicine in Civil Aviation by Owen McGirr ... 340
The forces of fascism and revisionism will surely be overthrown by the popular masses for this is the thought of Chairman Mao-Tse-Tung by Peter Dady ... 346
Cartoon ... 347
Ars Longa ... 348
Book Reviews ... 349
Sports News: Boat Club ... 351
Cricket Club ... 356
Tennis Club ... 360
Golf Club ... 363
Answers to Diagnosis ... 363

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SCIENTIFIC FREEDOM

It appears that the Red Guards, who at present seem to be active enough to merit a *Times* leading article daily, are not too busy conquering reactionary elements to turn their attentions to less politically orientated spheres. The Chinese Medical Association has over the past years published the monthly "Chinese Medical Journal," containing in each issue some dozen articles on clinical and research topics. However the most recent edition, renamed "China's Medicine," is reported to have undergone a complete metamorphosis, with a drastic curtailment of clinical features and their banishment to the obscurity of the last few pages, leaving space for half a dozen rousing articles from the pens of loyal Maoists. The leading article is entitled "China successfully Conducts Guided Missile Nuclear Weapon Test." and is followed by a transcription of a speech made by Mao Tse-Tung in 1957.

It is natural to resent the intrusion of politics into a scientific journal, even though they may be aimed at a profession deemed touched by the Imperialist tar brush and in need of a pep talk. Methods vary, all walls may be considered meat for the poster pasters and the journal credited as one more organ with an established circulation. It could be construed as tedious to argue the rightness of the B.M.J.'s approach in publishing reports of B.M.A. negotiations and the like separated from the clinical matter by the classified advertisements. But more disturbing than the inclusion of Party exhortations are the statements of revised Editorial policy towards the establishment of: "Experience in Medical research and clinical practice guided by the invincible thought of Mao Tse-Tung," and "New people and new things on the medical front resulting from the Creative Study and Application of Mao Tse-Tung's thought."

Such statements smack uncomfortably of domination by dogma. The painful memory of political intrusion into the Russian biological scene by the Michurin-Lysenko camp provides warning enough against it, and serves to underline the paramount importance of scientific freedom.

Axiomatic to scientific research are the theories of individuals, and progress is most often born of the systematic testing of such hypotheses with individually chosen experiments. Any attempt to demarcate such theorizing, or make it serve some political maxim is bound to impoverish the progress made and prejudice the capabilities of those educated under such a distorted system.

It might well be argued that China's particular medical problems, with its vast peasant population, call for a special approach by doctors in the realm of mass persuasion to bring about an increase in the standard of personal hygeine and sanitation and concommitant improvement in the Nation's health. But surely any such approach would have the blessing of the doctors and not pre-require their "purification" to the Mao line.

It is to be hoped that this violation of the scientific realm is rather the reaction of a nervous regime, acutely suspicious of any opposition in a time of emergency, than a premeditated and insidious take over by politicians rather presumptively certain of their own total rectitude.

LETTERS TO THE EDITOR

HOT COURSE

Sir,—May I use your columns to express my sympathy for all those who lecture to the Pathology Class during the afternoons.

It must be most distressing for them to see so many heads nodding when the lecture is only half over.

But who can be expected to remain awake, let alone concentrate in a lecture theatre in which only one window opens, in which the air does not circulate and in which the temperature has not fallen below 80°F and has frequently been over 85°F?

It is to be hoped that others will also have complained about this and that future generations will not suffer in the same way.

Yours, etc.,
T. A. LISTER,
The Abernethian Room,
St. Bartholomew's Hospital,
23rd July. London, E.C.1.

FROM THE MUSIC SOCIETY

Sir,—The Music Society Committee wish to thank the Hospital for the wonderful support that it gave to the society's recent performance of the "Creation". We hope that all who came enjoyed our efforts to reproduce this stirring work.

We would also like to acknowledge with gratitude the anonymous donation of a sum of money, which, together with the proceeds of the "Creation" has put our finances back into order.

Signed,
C. P. ASHBY,
For the Committee.

LETTER FROM PROSPECT IN AMERICA

Deep in the heart of Ohio there is a hospital far removed from E.C.1 by more than just location. And it feels like being on location. As a moderate movie-goer my image of the Mid-west was a stereotyped polyglot assimilated from "Hud" and "Butterfield 8". Far from being misleading this impression has proved amazingly accurate. I am constantly surprised to find America quite so American.

Imagine canned music piped to all departments of the hospital, wards, elevators and refectory, interrupted repeatedly by a flat, southern loud-speaker voice. Chaperoned by his "beeper" the errant extern has no escape. Imagine a fulltime Public Relations department publicly relating a joke a day to cheer the doctors way. In the main lobby of the hospital various local wise-cracks are prominently displayed. Try this one for inspiration.... "The only man who ever got his work done by Friday was Robinson Crusoe." Picture ball-points and matchboxes conveying an imprint of the Barts crest into "your home" as souvenirs of your happy herniorraphy to persuade you that your custom is always welcome. With a gun-toting guard patrolling the building and non-stop T.V. competing with clinicians in every private room, it is difficult to realize that anyone is really ill.

Into this jovial atmosphere project a paleface in an English summer dress. It took just a short conducted tour and seven phone calls of protest before the said public relations department summoned the offender to arrange a uniform forthwith. Skirt lengths in Ohio are reminiscent of London in the 50's, although Bermuda shorts are more revealing if less

becoming. Women vehemently deny that European fashion will ever succeed in raising the American hemline, while the male reaction is internationally unanimous. There was a spontaneous round of applause from a beer garden in the German quarter as a courageous "teeny-bopper" strolled by. Here perhaps we see the spirit of matriarchy with its back against the wall. Will the puritan female defensiveness, nurtured in an environment of overpowering conformity, give way to her desire to please? Morality may be similar in both continents but the Church has a far more receptive audience in the old New World than the Old. Religious fervour is more powerful and more diverse which may partly explain the conservative attitudes to dress and behaviour. If shorter skirts and freer fashions should arrive it could be interpreted as an indication that the American male is less dominated than he at present seems.

E.A.M.

Engagements

GRAHAM-POLE—JONES.—The engagement is announced between Dr. John R. Graham-Pole and Miss Ruth Barkway Jones.

GRAY—ARMSTRONG.—The engagement is announced between Mr. Alan Gray and Miss Kathryn Armstrong.

MOSSOP — JOHNSON. — The engagement is announced between Mr. Richard V. Mossop and Miss Gwyrie W. E. J. Johnson.

WILLIAMSON—BULL.—The engagement is announced between Dr. Robin C. N. Williamson and Miss Judith M. Bull.

SUTCLIFF — HIGGINSON. — The engagement is announced between Dr. John Robert Harvey Sutcliff and Miss Rosemary Higginson.

ASHBY — MASSEY. — The engagement is announced between Mr. Peter A. Ashby and Miss Margaret Massey.

Marriage

COUPLAND—LYNE.—On 3rd June, Terence Graham Coupland to Susan Rosemary Lyne.

Births

BODLEY-SCOTT.—On July 23, to Mary (née Richards) and Dr. David Bodley Scott, a daughter (Jane), sister for Richard and John.

September Duty Calendar

Sat. & Sun. 2nd & 3rd
Dr. Oswald
Mr. Tuckwell
Mr. Aston
Dr. Bowen
Mr. Cope

Sat. & Sun. 9th & 10th.
Prof. Scowen
Prof. Taylor
Mr. Lettin
Mr. Ellis
Mr. McNab Jones

Sat. & Sun. 16th & 17th.
Sir Ronald Bodley Scott
Mr. Hunt
Mr. Lettin
Dr. Ballantine
Mr. Dowie

Sat. & Sun. 23rd & 24th.
Dr. Black
Mr. Ellison Nash
Mr. Manning
Dr. Jackson
Mr. Fuller

Sat. & Sun. 30th. 1st Oct.
Dr. Hayward
Mr. Badenoch
Mr. Manning
Dr. Boulton
Mr. Cope

Physician Accoucheur for September will be Mr. Howkins.

CRAGGS.—On July 12, to Jane (née Cooper) and Dr. David Craggs, a son.

WELCH.—On July 4, to Marilyn (née Mostyn-Phillips) and Dr. David Welch, a son (Alistair James Macpherson), a brother for Catherine.

Deaths

HUTT. On July 8, Dr. Charles Wayte Hutt, M.A., M.B., B.Chir. Qualified 1936.

MARSHALL.—Prof. A. J. Marshall. Aged 56.

WEST.—On July 2, Dr. John Frankland West, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P. Qualified 1914.

Appointment

Cambridge University

Dr. H. Lehmann has been pre-elected professor of clinical biochemistry from October 1.

Royal Society of Medicine.

H. B. Stallard, M.D., M.Chir., F.R.C.S., has been appointed President of the Section of Ophthalmology, Royal Society of Medicine 1967-68.

Awards

H. B. Stallard, M.D., M.Chir., F.R.C.S., has been awarded a Hunterian Professorship of the Royal College of Surgeons 1967-68.

Change of Address

Dr. J. A. Struthers to 30 Swallowfield Park, Swallowfield, Reading, Berks.

Lionel Danyers BAILEY
C.B., M.C., T.D., M.R.C.S., L.R.C.P., D.P.H.
1879-1967

It would be a pity to allow the passing of Dr. Bailey to go unrecorded in the Journal because he made many Bart's friends in the war, when he was physician in charge of the physiotherapy and rehabilitation departments under the E.M.S. at Hill End.

A St. George's man, he served in the first world war as a regimental medical officer and was awarded the M.C. and the Croix de Guerre with palm, later taking the D.P.H. and becoming medical director of the physiotherapy department of his own hospital and later of the electrotherapy department of the National Hospital, Queen Square. He remained an active territorial, retiring with the rank of Colonel in 1936. Perhaps his greatest contribution was the founding, at the Royal National Institute for the Blind, the first school devoted wholly to the training of blind physiotherapists, in which he was associated with a Bart's man of very like character and interests, Murray Levick. Bailey was Chairman of the Chartered Society of Physiotherapy, President of the Orthopaedic Section of the Royal Society of Medicine and a Member of the Council of the British Association of Physical Medicine.

In his younger days Bailey was a great cricketer and all-round athlete. He was the most charming of men, combining sincerity and kindness, and an exemplar of the English gentleman.

Art Exhibition

From PATRICIA OWEN

Whenever I mention in conversation that the nurses have painting classes every week, people who have been at the Hospital for more than three years allude to the Art Exhibitions held in the Great Hall from time to time. It seems that these exhibitions really do arouse a great deal of interest in the community. Upon analysis this is not at all surprising: to see an exhibition of paintings by one's colleagues cannot but be fascinating in the extreme, revealing as it must a side to the character of this sister, consultant, nurse, student, physiotherapist, caterer, liftman, porter or even governor, that is not shown in everyday working life. Looking at the last two catalogues, one is interested to see who exhibited then; many are just names, students and nurses, long since qualified—others are people one knows—what sort of pictures did they paint? I cannot wait to find out what this exhibition will bring.

The closing date for entries is October 11.

If you are entering, will you be so kind as to complete and return the form below to Mrs. P. J. Owen, Nurses' Home, before too long so that we may have some idea of the number of entries to expect?

NAME AND TITLE .....

ADDRESS .....

APPROXIMATE NUMBER OF ENTRIES .....

RESULTS

CONJOINT BOARD FINAL EXAMINATION JULY 1967

Pathology

Harker, P.	Kennedy, P. B.	Bradley-Watson, P. J.
Spira, M.	Richardson, J. C.	Rees, D. L. P.
Hobbs, J. H.	Davies, P. P.	Lamerton, R. C. C.

Medicine

Townsend, J. A.	Harker, P.	Ratsey, D. H. K.
Tatler, G. L. V.	Raine, P. A. M.	Spira, M.
Richardson, J. C.	Mumford, G. H.	Miller, R.
Freeth, M. O.	Dunn, G. O.	Barrington-Ward, E. J.
Bateman, A. M.	Setchell, M. E.	Bowen, M. M.
Anderson, J. K.	Cameron, D. J.	Darch, G. R.
Evans, C. W.	Fogarty, P. M.	Goss, W. H.
Greig, A. M. W.	Johnson, R. W.	Libby, G. W.

Surgery

Harker, P.	Raine, P. A. M.	Richardson, J. C.
Stallard, M. C.	Freeth, M. O.	Dunn, G. O.
Barrington-Ward, E. J.	Griffiths, M. J.	McCaldin, C. L.
Johnson, G. W. E. J.	Ireland, N. J.	Hobbs, J. H.
Miles, D. P. B.	Jack, B. A.	Gribble, R. J. N.
Davies, J. P. N.	Barker, M. J. N.	Spring, J. T.
Silverton, J. S.	Harker, N. F. M.	

Midwifery

Spira, M.	Cooper, D.	Scott, B. B.
Brown, A.	Johnson, S. M.	Noble, M. E. C.
Graham, F. M.	Griffiths, M. J.	Bolton, J. C.
Dudeney, T. P.	Danovitch, G. M.	Heyworth, S. P.
Sadler, J. C.	Smith, T. G. C.	Buckley, F. P.
Thew, R. J.	Evans, D. M. M.	Garrard, C. S.
Gordon, A. B.	Gawler, J.	Finch, D. R. A.
Lilleyman, J. S.	Jefferson, D.	Harris, S. J.
Hinds-Howell, C. M.	McGechie, D. B.	Thrush, R.
Spencer, M. A. P.	South, L. M.	South, P. J.
Metcalf, C. A.	Neech, E. M.	Kotting, S. C.
Morrison, J. C.	Thompson, G. D.	Davison, P. H.
Dorrett, S.	Coupland, T. G.	Chapman, A. H.
Cantrell, W. D. J.	Chase, P. N.	Barry, M.
Bostock, J. F.	Bowen, J.	Bell, G. D.
Watt, R. W.	Wright, D. J.	Whitelocke, R. A. F.
Williams, J. H.	Winter, R. D.	Tait, C. R. S.
Rowsell, A. R.	Reckless, J. P. D.	Roch-Berry, C. S. B.
Redfern, M.	Petty, G. L. F.	

The following candidates have completed the examination for the Diploma:—

Harker, P.	Richardson, J. C.	Raine, P. A. M.
Freeth, M. O.	Dunn, G. O.	Barrington-Ward, E. J.
Bateman, A. M.	Setchell, M. E.	Anderson, J. K.
Evans, C. W.	Goss, W. H.	Ireland, N. J.
Bolton, J. C.		

PSYCHOLOGICAL SOCIETY MEETING

26th JULY 1967

A Case of Agoraphobia

A case of agoraphobia in a lady of 29 was presented by Dr. David P. H. Yeung. Her illness started abruptly six years ago when she was separated from her husband. She was unable to travel on buses and had a fear of leaving her mother, together with depression and frequent attacks of panic. During the following six years her depression cleared up, the panic attacks became less frequent, but the agoraphobic symptoms persisted. Examination showed no signs of depression or general anxiety. She was treated by systematic desensitisation with Methohexitone Sodium (Brietal). After seven sessions of desensitisation she was able to travel on buses if accompanied and leave her house by herself for 10 minutes' walk.

During the discussion it was pointed out that in view of the chronicity of the symptoms her improvement could be considered encouraging. However, psychotherapeutic measures would certainly be necessary to enable her to work out her relationship with her mother.

D.P.H.Y.

Stylytes

Chastity next to Godliness

With the present perilous state of the Health Service presumably in the forefront of the minds of Hospital Governing Bodies, it seems difficult to realise that they do not understand the disenchantment that they are producing amongst Junior Hospital Staff. When over half the Houseman in Britain are married, it is a mystery as to why they should be expected to live in a situation of enforced chastity.

The problem of providing married quarters for those medical staff, who through the nature of their work are obliged to be resident in their Hospital, is often approached by those in power over Doctors and Nurses from an archaic and Victorian attitude to human relationships. In hospitals where an attempt of some sort has been made to cope with this problem, the situation is often ludicrously prohibitive.

Mr. Pavitt (Labour member for Willesden West), speaking about this problem in the House of Commons on July 26th, cited the case of a Hospital known to him, where wives and children were welcome in the residential quarters on Saturday and Sunday afternoons as long as no "guests" (my quotation marks) remained on the premises later than 11.30 p.m.; on no account could any visitor stay the night. Mr. Pavitt has received nearly one hundred letters of complaint about this and other similar cases. This sort of attitude on the part of those responsible detracts from any satisfaction which a man might gain from his work.

Situations exist where wives are sneaking in to see their husbands after the 11.30 p.m. curfew, and if maids do not report husbands and wives who are cohabiting they are dismissed. Hospitals with a more enlightened view, may go so far as to allow husband and wife to live under the same roof, albeit at opposite ends of the corridor, presumably to prevent them from meeting too often.

This sort of attitude creates the state of affairs where first rate doctors are obliged to seek second class posts, if they are either reluctant or unable to live away from their families. Can a houseman be expected to provide accommodation both for himself and his wife on £1,100 p.a.?

This hospital is not immune from these attitudes, although in practice if husband and wife are found together, further action rests upon the discretion of the maids. No wonder they emigrate.

The teaching of Geriatrics to medical students

by Dr. D. E. Hyams
Consultant Physician in Geriatrics, Chesterton Hospital, Cambridge

What is Geriatrics?

Geriatrics is the branch of general medicine concerned with the clinical, preventive, remedial and social aspects of illness in the elderly. In other words, it *is* general medicine in the elderly. Why then has it come to be a "speciality", apparently so abstruse that medical students are taught next to nothing about it? This paper attempts to answer this question, and to suggest a realistic approach to the teaching of geriatrics to medical students.

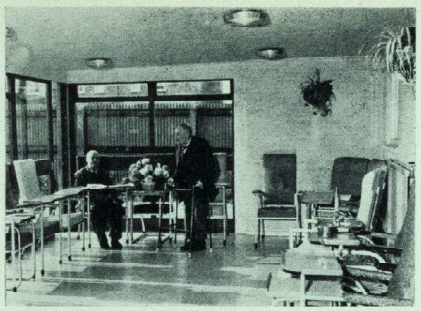
History of the Present Condition

In accordance with time-honoured medical teaching and practice, let us begin with the history. For over two centuries the teaching hospitals have selected their admissions on the basis of "acuteness" of disease—implying more rapid turnover of beds and more interesting illnesses. This resulted in all other illness or disability requiring inpatient care being housed elsewhere, and two centuries ago this meant the Workhouse for many aged sick and frail patients. Here only custodial care was given, and no attempt was made at active treatment. When, a hundred years ago, the sick were moved into Infirmary blocks, the same type of care was given. The result of this therapeutic nihilism was a "chronic sick" problem, and since medical students were taught nothing about managing the chronically ill these patients were automatically given a gloomy prognosis by doctors. They were placed in the worst accommodation, overcrowded and dismal, and left bedfast and often incontinent—out of sight, out of mind. No significant change was made in the medical approach to these patients until about 30 years ago.

It only required a physician without prejudice and with careful application to the matter in hand to realise that an active approach was the best way of dealing with the "chronic sick" problem. Dr. Marjory Warren, before the Second World War, pioneered this active approach and laid the foundation stone for the development of modern clinical geriatrics as practised today. Dr. Warren made a meticulous assessment of the physical, psychological and social needs and potentialities of each patient, and made assiduous efforts at rehabilitation. She found she could return many of the patients to the community in a functionally viable state. Her example fired the imaginations of many doctors and now there are many geriatric departments providing comprehensive care for the elderly sick in greater numbers than before and with fewer beds.

These geriatric departments were created by the National Health Service, which took under its wing many of the former Poor Law Institutions. Under this new administration, the staff situation was improved, and the old buildings were progressively upgraded or replaced. New purpose-built geriatric wards are now appearing in various centres. Our own is illustrated in the photographs.

Geriatric ward Chesterton Hospital



Geriatric Department, Chesterton Hospital

On Examination

We need to examine three main issues:

(A) The differences between geriatric medicine and general medicine—(in which is inherent an understanding of changing concepts of disease and its management).

(B) The organisation of a geriatrics department.

(C) The teaching of geriatrics at present.

(A) Geriatrics and general medicine:

We have seen the harm which has been wrought by classifying patients as "acute" or "chronic" and by regarding only the former group as treatable and interesting. The very terms "acute" and "chronic" have different meanings, according to the attitude of the user. At a recent Medical Staff Round two patients were presented—one was a young woman of 25 who had had ureteric reflux since childhood, with recurrent episodes of urinary infection and progressive development of pyelonephritis; another was an old man of 75 who had never been ill until he had recently developed tuberculosis, and who was successfully treated and cured. The former patient, from the general wards, was regarded as an "acute" patient, but clearly had had continuing urinary problems since childhood—with intermittent flare-up—developing into a state of chronic renal infection, which might well produce renal insufficiency and prove fatal. This patient clearly suffered from chronic disease of the urinary system. The old man from the geriatric department took several months to get well, but no longer than a similarly afflicted young man would have done; he had developed an illness which had been cured by modern treatment, and was a good example of what is NOT chronic disease. Thus the term "chronic sick" has no meaning if applied indiscriminately—as it so often is. This is also illustrated by the fact that rehabilitation from a stroke often takes no longer in the old than in the young. One of the most fundamental modern concepts in medicine is that health and disease are not opposite and discrete states, but rather different points in a single broad spectrum; the location of the points depends on the subject, his illness (with its physical and psychological components), and his total environment (with his adjustment to it). An episode of disease has to be seen, too, against the longer-term background of health and illness in the patient—just as in the case of the young woman with urinary-tract problems described earlier. In other words, patients need *continuity* of care, and nowhere is this more true than in the elderly. The general medical ward concentrates on getting the patient over an acute episode; less attention may be paid to aspects of continuing care. Out-patient follow-up and a report from the Medical Social Worker are very helpful, but what happens when the patient suddenly requires urgent readmission for domestic reasons, or when he simply cannot be left alone all day whilst his bread-winner son or daughter is out at work, or in the terminal case whose nursing is too great a burden for the domestic set-up? The geriatric unit exists to provide the fullest possible medical and social service to its patients throughout their later years, and it is geared to deal with all the matters raised above, as well as the acute medical aspects.

To this end, and with full acceptance of the "spectrum" concept of health and disease, the therapeutic effort is a team one, involving ancillary disciplines and social sciences, as described in more detail below. This co-operative approach is another characteristic feature of geriatric practice and calls for a certain submerging of the doctor's ego. Although his "prima donna" role diminishes, his function is not dissimilar to that of the business executive. It may not suit all doctors you know—but it pays off handsomely!

From the medical point of view, there are certain peculiarities about illness in the elderly which we might mention briefly—

(a) *Degenerative disease predominates*—affecting arteries (especially of brain and heart), joints, lungs and nervous system. Neoplastic disease is not unduly common in the elderly and is often of low malignancy.

(b) *Diagnosis is challengingly difficult* for various reasons—

(i) *Difficulties in communication* are common, due to deafness, blindness, speech problems or mental disturbances.

(ii) *Multiple pathological processes* are the rule. A full list of diagnoses in a single old individual might run to a dozen items. Clearly, only a few, possibly only one, will really matter in the first instance, either because a threat to life or because a major disability is evident. Nevertheless, a full assessment of each patient is mandatory, and inter-relationships and relative priorities can then be worked out, and a therapeutic programme embarked upon. Occam's razor has little place in geriatric practice.

(iii) *Textbook descriptions of disease may be unreliable in the elderly.* Multiple disabilities and diseases are likely to blur the "classical" outlines of text-book accounts. In addition, symptoms are often at variance with orthodox teaching, and signs may be absent or different in degree or quality from those expected.

(c) *Mental disturbances are common* and should always be considered to be due to underlying physical illness until proved other-wise, particularly if the onset is sudden in a previously well-adjusted personality. Mental confusion frequently develops in this way, due to a chest or urinary infection, or to intolerance to drugs, and will then clear when the under-lying cause is removed. As a relatively non-specific manifestation of organic illness, mental confusion in the elderly may be com-pared with convulsions in infancy and perhaps rigors in various infections in younger adult life. A word of advice here: remember that confusion and dementia are different entities. Dementia is a loss of intellectual function and judgment due to progressive loss of cells from the cerebral cortex. Its onset is usually insidious and its course progressive. Confused patients are out of touch with reality and, as indicated, the condition is often sudden in onset and reversible. It may supervene in an already demented person.

(d) *Loss of physiological reserve.*

Younger adults have larger reserves and can withstand greater stresses than old people. Although the elderly may appear normal, it takes much less to throw them off balance. This may be taken literally as well as meta-phorically; difficulty in balancing after a stroke may be a grave barrier to successful rehabilitation. Biochemical balance is easily upset in the elderly and such a disturbance will contribute to the complex patterns of morbidity seen in old age.

(e) *Aims of treatment.*

Wherever possible, the aim is to rehabilitate the patient and to return him to the com-munity in which he belongs. The term "rehabilitate" is used advisedly, in preference to "treat", for whatever the diagnosis on admission the aims are maximum restoration towards a full and active life, and resettlement in the community. Old people want to live at home, and, as far as possible, that is where they should be. However, a proportion of patients do not regain independence, or cannot return home for socio-domestic reasons; according to need, they may remain in a long-stay ward in the geriatric department, or be sent to Welfare Homes. Admission to the geriatric department, is, as we have stated earlier, just one facet of a broad service aimed at providing a continuous pattern of medical care for the elderly. Let us consider how this works.

(B) Organisation of a geriatric department.

(a) The *geriatric unit* should be in effect the geriatric department of a general hospital, analogous to any other special department, and should be physically a part of that general hospital. This applies particularly to the acute geriatric wards, which will cope with medical emergencies of all kinds, and will need to have facilities as good and as convenient as those of the acute wards of other departments. (Clearly, in the case of long-stay wards, these could well be situated elsewhere—and often are, in several localities throughout the area served.) The average rate of turnover of beds in acute geriatric wards differs little from that in general medical wards; if anything it is faster. If a patient needs further hospital care he is moved to a "slower-stream" ward—this may mean a fast or slow rehabilitation ward, or self-care ("halfway-house"—prior to dis-charge), or convalescent, or long-stay ward. This type of "progressive patient care" is an important concept in modern geriatric practice.

(b) *The team.* Consultant Physicians in geriatric medicine will have a junior medical staff, as with any other speciality; its nucleus will be registrars and senior house officers; there may also be a senior registrar and, in a few departments, a pre-registration house

officer. The doctors work with nursing staff, physiotherapists, occupational therapists, a speech therapist, medical social workers, possibly a geriatric health visitor seconded from the Public Health Department, a chiropo-dist, and various other workers including the medical and hospital secretaries. Everyone, in fact, who comes into contact with the patients is regarded as part of the therapeutic team. The relatives must also be made to feel involved, by early interview and full discussion.

Close liaison with the local authority is essential and will be maintained by the social workers and health visitors. Liaison with the patient's general practitioner is always important.

(c) *Facilities for continuing medical care.*

(i) *The Day Hospital* provides rehabilita-tion facilities on a day basis, the patient returning home for the evening and night. This has many beneficial effects: it relieves relatives, allowing bread-winners to continue their employment or affording valuable respite to those caring for the elderly at home; it often shortens the length of admission by permitting an immediate start to treat-ment, and/or by allowing earlier dis-charge from the wards; it may obviate the need for admission altogether; it maintains improvement achieved during admission; it prevents social break-down, so often due to loneliness and ensuing apathy. In short, the Day Hospital helps to preserve physical and social competence in the elderly, and affords real economy in the use of hospital beds.

(ii) *Immediate admissions.* The old person who needs help often needs it urgently. Small delays may mean unduly pro-longed morbidity. The waiting-list is anathema to the geriatrician. This is sometimes a counsel of perfection, but it is the aim of all who work in this field. Equally important is immediate re-admission if necessary, in case of relapse (medically or socially). To this extent the geriatric service is "guaranteed".

(iii) *Planned intermittent admissions.* To prevent unwarranted long-term hospitalisation, a system of planned intermittent admissions on guaranteed dates has proved very useful in relieving the burden from willing relatives who find it impossible to cope for long uninterrupted periods. For this system to work, dates of discharge must also be fixed and honoured by the relatives.

(iv) *Holiday admissions* are arranged to allow relatives to take a holiday during the summer. Again, admission and dis-charge dates are planned in advance and honoured on both sides.

(v) *Out-patient clinics* provide oppor-tunities for assessment and follow-up.

(C) Geriatrics in the undergraduate curriculum.

It is an old cry that the medical student's curriculum is too crowded; attempts are constantly being made to prune it, and much resistance is encountered to suggestions that additional material be introduced. As a com-promise, in some medical schools, geriatric instruction is organised as a period (say, one month) of attachment to a geriatric department in the final clinical year, often optional (in practice if not in intention), together perhaps with a lecture of two. This approach has long been used for many of the narrower or more erudite specialities, and may be appropriate for them, but it is quite wrong to apply it to geriatrics, which, far from being narrow or erudite, to be tasted tentatively by final-year students, is the very stuff of general medicine.

Geriatrics is an attitude of mind whereby medicine is seen and practised in the most comprehensive manner—the broad canvas of general medicine so often preached but less often practised. The only restriction is the age of the patient, and the reasons for this have been set out in the historical perspective offered above.

Treatment.

It must now be clear that geriatrics should be taught to medical students throughout the period of clinical instruction, and it should be taught by geriatricians in geriatric wards. It must permeate the teaching of medicine just as the elderly permeate the practice of medi-cine. Nearly all doctors in clinical practice find that many of their patients are over 60 or 65 years of age. How logical it would be if they had received a thorough grounding in geriatric medicine during their student days! Consider the implications of the fact that 13 per cent. of the population of Great Britain is aged 65 years or over, whereas 60 per cent. (or more) of patients in general medical wards are in that age-group. Since the elderly make such heavy demands on medical services, it is reasonable

to expect an appropriate degree of education in the care of the elderly amongst doctors. This cannot be achieved by an optional four-week course in the final year, with the student's mind on other things anyway.

Proposals.

It is suggested that geriatric teaching be fully integrated with all other instruction during the whole of medical education.

Premedical teaching: should include some gerontology—i.e. ageing in animals and plants should be considered during the teaching of zoology and botany.

Preclinical teaching: should always include accounts of the anatomy, physiology and biochemistry of the ageing human organism, with their implications for pharmacology and therapeutics stressed as an important practical matter.

Clinical teaching.

Introductory course: Most medical schools endeavour to introduce a brief study of applied preclinical sciences during a bridging period between the preclinical and clinical periods of teaching. Apart from learning how to take a history, how to examine a patient, the technique of cliciting and interpreting physical signs, and the art of appropriate investigation, the student has, during such a course, an unparalleled opportunity to gain a bird's-eye-view of medicine by considering the various systems and their diseases briefly but broadly. If he skims through monographs on the different systems as he meets their disorders during his earliest encounter with patients (rather than reading a general textbook of medicine from cover to cover), he will emerge from the course on to a peak, as it were, with the broad vista of medicine spread before him, and a sound foundation on which to build his real knowledge—a process which will continue throughout his professional life. It is simply ridiculous to omit a consideration of geriatrics during this bridging course, or at any rate at the start of the student's clinical experience. This is the time to read, however quickly, a good modern textbook of geriatrics* and to find out what it is really about, and also to apply the principles of geriatrics to all elderly people. This is when the geriatrician must begin to teach the student at the bedside.

Clinical course: Throughout the rest of the clinical teaching programme, geriatrics must find its place. Most systems and specialities have their geriatric aspects, and the geriatrician should teach students about them by lectures and at the bedside in his own wards and, indeed, in the wards of those of his colleagues who are enlightened enough to invite his opinion where relevant. It is not suggested that all the lectures be given in one block; much better, if systematic lectures are given in the medical school, for each system to have its geriatric aspects considered in a separate lecture at the appropriate time. It must be remembered, however, that systematic lectures are often mainly of value as hypnotics, and the greatest emphasis must be placed on the ward-round as a teaching medium. Adopting similar considerations of timing and placing of the geriatricians's ward-round in relation to the rounds of other consultants, it should be possible for geriatrics to be taught to clinical students *at all stages* throughout their training.

One objection which is sometimes thrown up is that it requires a senior student to make anything of geriatrics. It is true that geriatrics "breaks some of the rules" of medicine usually taught to junior students, and that in order to know when to break the rules it would seem necessary to learn them first! But this objection is not really valid. One can learn to modify dogma as one goes—indeed, it is easier to learn correctly *ab initio* than to learn rules and later learn to break them. Any first-year clinical student is capable of learning geriatrics—what he lacks so badly is the opportunity to do so.

Prognosis.

Most medical specialities developed because the profession realised the need for them; geriatrics evolved politically with the advent of the National Health Service and the need was produced by centuries of medical neglect. As a result, the emergence of geriatrics has not always been welcomed by doctors in other areas of medicine. Some, however, have embraced it as a useful contribution to the basic aim of good medical practice—the maximum relief of suffering on the largest possible scale; but whilst it is so poorly represented in the medical curriculum, medical education will remain unbalanced and will fail to train the doctor to cope adequately with his patients, and to ensure that—as Dr. William Evans always taught—the patient is never the worse for seeing his doctor.

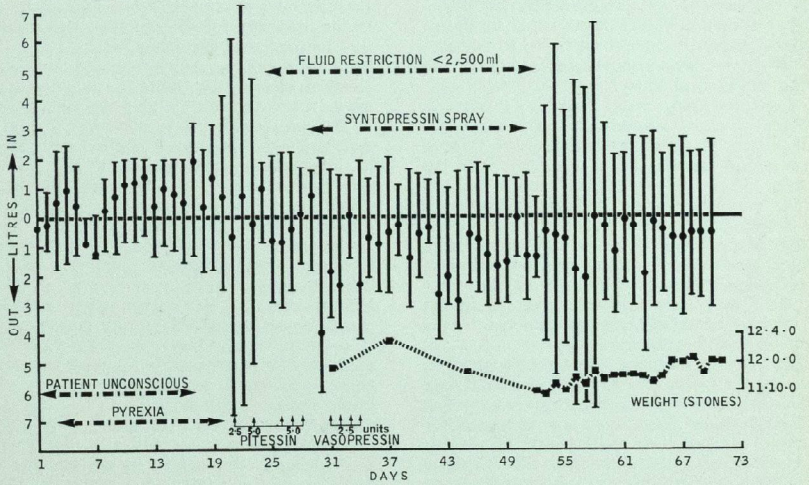
* Try "The Practice of Geriatrics" by Dr. John Agate.

Diagnosis by J. R. Griffiths.

An 18-year-old man was admitted, semi-conscious, from a car accident. He had bruises and contusions, fractures of the facial bones but no signs of neural damage except for a positive Kernig's sign. Later he was found to have a blood-stained but sterile cerebrospinal fluid. He remained in his semi-coma for two weeks, during which time his fractures were reduced and he developed a continuous fever which reached a maximum of 103°F. It was treated with antibiotics and resolved within a few days of his recovering consciousness. He then developed polydypsia and polyuria, drinking and passing up to 7 litres daily (but without glycosuria). 2.5 units pitressin reduced both input and output to within normal limits and his fluid was then restricted to below 2.5 litres per day, but within a few days urinary output began to rise again and was frequently between 2 and 4 litres daily in the next three weeks, despite various combinations of pitressin, vasopressin and syntopressin. He was then transferred to a medical ward where drugs and fluid restriction were stopped while the case was investigated.

Day 4 **Sodium** 140 mEq/litre
Potassium 4.0 mEq/litre
Chloride 98 mEq/litre
Urea 53 mg/100ml
Hb 86%
WBC 4,000
Urine S.G. 1028
Trace albumin, no blood
Day 26 **Hb** 80% **WBC** 3,700 **Urine** S.G. 1008
Day 33 **Sodium** 132 mEq/litre
Potassium 4.2 mEq/litre
Chloride 98 mEq/litre
17-Ketosteroids 6.0 mg/day
Cholesterol 245 mg/100ml
PBI 2.8 mg/100ml
Hb 88%
PCV 41%
MCHC 32%

The patient's fluid balance is shown on the chart. Fluid intake is shown above and output below the line for each day of the disease, while the circles indicate the imbalance between the two. The unbroken line indicates weight.



QUESTIONS

1. What was the provisional diagnosis?
2. What other diagnoses might be considered?
3. Which further tests should be performed?

Answers on Page 363.

An Experiment in the Treatment of Cerebral Palsy.

by C.G. Fagg.

Consultant Paediatrician to the Luton and Dunstable Hospital

The Lady Zia Wernher Centre for Spastic Children in Luton was opened in May 1965. Under the roof of the Centre are gathered together those services which are necessary in a day centre for children with cerebral palsy—physical treatment, day nursery care and education at the nursery school and infants school level. We assess the children and keep records of progress and also try to give as much support as is possible to the families who have to bear the burden of a handicapped child.

In recent months we have been carrying out an exciting experiment, using a different approach in the treatment of severe cases of cerebral palsy, particularly the so-called athetoid cases. I will describe this experiment later, but first it will be worth-while to discuss cerebral palsy in general and also to consider the principles underlying treatment.

What is Cerebral Palsy?

The term cerebral palsy includes a number of different kinds of abnormality of muscle tone and control of voluntary muscles, due to *non-progressive* lesions in the central nervous system.

The majority of cases follow brain damage in the perinatal period; this is the period just before, during and for a few days after birth. Some other cases, however, are the sequel of brain damage later in childhood and in others no cause may be recognised. In the perinatal period the common cause of damage to the brain is partial suffocation.

The brain damage is non-progressive, although the picture in any particular child may alter as he develops. For example, a young baby with a hemiplegia may appear normal for a month or two, but as he starts to use his hands, it will be noticed that one arm is spastic with the hand held clenched and not used. As the child grows and when the time comes for walking, the leg will become very much worse and it may become apparent that the whole of the trunk on that side is affected. Also he may develop contractures and permanent joint deformity. Thus, what is known to be a non-progressive brain injury may appear to give rise to progressive deterioration, especially in the child who is untreated or poorly treated.

Inhibition

It is always a help when thinking about neurological conditions to realise that some parts of the brain work in an inhibitory way on other parts, so that brain damage may not lead to loss of function, but to increased and unbalanced action due to uninhibited activity of other parts.

Prevention of Cerebral Palsy

The greatest sphere for prevention of cerebral palsy is naturally in obstetrics and in the care of the new-born infant—a joint attack by both the Obstetrician and the Paediatrician. The prevention of prematurity, the minimising of cerebral birth injury, and the skilled management of the neonate all play their part.

The very small premature baby is particularly prone to that form of cerebral palsy known as cerebral diplegia, in which the legs are spastic and usually suffer from adductor spasm. When the child is held up by the trunk the legs are held out straight and are crossed.

The most important form of prophylaxis, however, is any action which can prevent brain damage due to suffocation before, or during labour, and, for that matter, early and competent resuscitation of the asphyxiated newborn is a great help. There are some interesting methods now being used to diagnose true foetal anoxia and to bring about early delivery when brain damage is threatened.

Good neonatal care by minimising the attacks of apnoea and cyanosis will also play its part in reducing cerebral palsy. Severe jaundice can now be almost completely eliminated as a source of brain damage. More recently we have become aware of the importance of neonatal hypoglycaemia as a cause of brain damage and now are careful to minimise this risk. The modern treatment of "respiratory distress" due to hyaline membrane disease is also valuable in preventing brain damage. We now estimate blood pH and give glucose and alkalies intravenously.

Early Treatment

Although early treatment can hardly be counted as a means of prevention of cerebral palsy, there is no doubt that it does reduce the disability and, therefore, we should do our best to pick up and treat cases at the earliest possible moment.

Diagnosis

Coming now to the question of early diagnosis: this can be considered as one of the present growing points of paediatrics and many people are thinking about the assessment of the baby and small child. The so called developmental diagnosis is now becoming standard practice and all people dealing with small babies should always be thinking whether development is retarded or whether there are any specific signs suggesting cerebral palsy. It is hardly possible to go into this whole subject here, but from the point of view of hemiplegia, asymmetry of movement, or tone, with clenching of the fist on one side, is an important sign. In the cases of diplegia, lack of normal movement in the legs is suspicious and in the case of the ordinary spastic child, an increase of extensor tone so that the baby is unable to sit forwards or let the arms come forwards is an important sign. Strangely, despite the increase in extensor tone, these babies when laid on the tummy are unable to raise the head well. The athetoid children are hypotonic in the first year and this should alert one to the possibility of this form of cerebral palsy.

Assessment of Intelligence

The assessment of the child with cerebral palsy is a very difficult matter, particularly from the point of view of deciding basic intelligence. All methods of assessment of intelligence depend upon communication and cerebral palsy interferes with the child's ability to communicate. We also take into account the level of motor development, the development of speech and of patterns of play and all these are likely to be affected by cerebral palsy. On the other hand, much of what we consider to be intelligence is really only experience and a cerebral palsy child lacks the stimulus of simple experience such as sitting up at six months and surveying the world around; of crawling about the floor and all the other exploratory activities which come into the category of education in the young child. Added to this, many cases have difficulty in various forms of perception and to reach a true assessment of basic intelligence is difficult especially on the basis of one examination. In general cerebral palsy cases function at the normal or E.S.N. level—but some, of course, are of very low intelligence.

Treatment

What can we hope to attain by treatment of a case of cerebral palsy? On a very simple level and with unsophisticated methods of treatment, if started early, it is possible to prevent contractures to a large extent. Moving on to a higher level of treatment, the specialist physiotherapist concentrates on teaching proper patterns of muscular behaviour and in preventing the development of fixed habit patterns, which are not to the child's advantage. Two examples of bad management are the child who is kept sitting in a chair for considerable periods of the day with the tendency to develop contractures of hips and knees, and very often this same child, when allowed to move about, sits on the floor with hips and knees flexed and "bunny-hops", using simple symmetrical body movements instead of developing independent leg movements.

Results depend very largely upon proper motivation of the child and of the family. If a family is prepared to give up the time to kindly discipline and encouragement, much better results will be obtained than if they are either too permissive or are too hard on the child. The major problem, however, is to get the child motivated to do the right thing and this is a very much more difficult problem. At the heart of the experiment we are doing at Luton is this question, of motivation, though there are a number of other principles involved.

The Peto Experiment

We now come to the experiment which we are carrying out, but before actually describing what we are doing we must move across Europe and through the Iron Curtain to Budapest, where for the last twenty years Dr. Peto has been working out his approach to cerebral palsy and he has evolved his own method of training (training is a better word than treatment).

He has a residential centre to which he admits large numbers of severe cases of cerebral palsy and divides them into roughly matched groups, with about fourteen children in each group. About fourteen hours a day, six days a week is then devoted to teaching these children physical control, in the expectation that a fair number will be so much improved that they are able to return home and attend normal

schools and manage in open society.

Training is conducted by young women known as "Conductors", who are responsible for the total care and training of the children, from washing, dressing, feeding and potting to training in physical control and speech and to teaching of general knowledge and some basic ideas of the three "R's".

Dr. Peto, has a most competent and attractive team of young women mothering 150 handicapped children in a remarkable way. My visit would have been even more enjoyable if it were not for the unspeakable Hungarian language!

The form of training is a matter of daily repetition of exercises, which helps to develop muscle control. Exercises are classified for instance as pre-eating, pre-sitting, pre-walking and so on and the children naturally move on to eating, sitting, and walking in due course! The "Conductor" states what simple movement will be done, such as "I put my hands together on the table" or "I bring my hands up to my mouth". The group of children repeat the instructions to the best of their ability (and many of them are inarticulate) and then they perform the action while counting from 1 to 5. One or more trainee "Conductors" are in the room and give some guidance and encouragement to individual children. Exercises are, of course, modified as the children progress and there may be interchanging from one group to another if appropriate. There is great stress on individual independence and tremendous patience in waiting for each child to manage on his own. There is minimal assistance and very little "doing it for him". There are no wheel chairs in the whole building.

Does it work? There is no doubt that in many cases it does and especially does it appear to be an effective way of helping the severe athetoid cases. These children have gross lack of motor control with violent uncontrolled and purposeless movement.

The Luton Experiment

At the Lady Zia Wernher Centre we are trying out a modified Peto Method, with children who come in for the day from Monday to Friday and we have a small group of eight children with severe athetoid cerebral palsy.

The Physiotherapist and the Occupational Therapist who are mainly responsible for the experiment have been on a number of occasions to Bundapest and go back at intervals for fresh ideas.

They run a planned, but interesting, series of activities, starting with helping the children to walk into the Centre, to undress, to pot, and then to go through various groups of "pre"-exercises with the same method of stating the intention by the "Conductor", the children trying to repeat it and then trying to carry the action out. Later the children have their mid-morning elevenses and helping them to hold a cup and to drink is, of course, part of the training. After a further period of controlled muscular activity there is a mid-day meal, which is a messy business. In the afternoon more stress is put on education, with the help of our nursery school teacher. The Initial Training Alphabet is used for reading and many simple nursery school methods have been brought into the experiment. The children in our group are of varying ages, but are reasonably well matched for intellect and ability. Of course, to gain any scientific evidence, records must be kept and my main function in this respect is to take serial cine pictures.

The experiment started in earnest in June 1966 and our results to date have been most encouraging, though perhaps to the uninitiated the achievements of each individual child may seem small:—To be able to sit on a chair alone without falling off, to roll over from the back on to the tummy and to roll back again. To stand upright, to walk alone pushing a small chair and, of course, we must not forget speech. Several of the children, from being completely inarticulate, can now make noises which are recognised by parents and staff.

All those working at the Centre have learned a lot from this Group and the attitude towards all the children with cerebral palsy has changed. Our approach has become vital and progressive; each case being considered in a new light, every action is questioned and no-one is now sure that we have been doing the right thing in the past. We now really are alive and frequent visitors, themselves experts in cerebral palsy and curious to know what is going on, each add their contribution.

One beauty of the method is that it is based upon the simple belief that by constant repetition of activities graduated so as to be within the capability of the children, and leading on to further more elaborate and more useful actions, it is possible to teach the children fairly quickly to gain some independence. If, in fact, such progress is reasonably fast, then the children gain fresh hope themselves and show tremendous excitement and pleasure in their own progress.

It seems, therefore, that this method does give results and there appear to be a number of reasons for success. Firstly, by having a

number of children together, with two therapists looking after them, it is possible to give much more time each day to the children than could be given if each child were given individual therapy. This is only valid if the type of treatment or training in a group is effective and there is no doubt that Dr. Peto has worked out a series of activities which lead, through gradual progression, to the building up of the ability to master complex actions which otherwise might not be attained. Also the number of hours spent daily and the repetitive nature of the activities, does have the effect of impressing them upon the childrens' minds so that they become natural habit patterns. One might say that this constant repetition and conditioning is a truly Pavlovian approach and might be expected to come from behind the Iron Curtain. It can also be compared with certain efforts in this country to teach people of very low intelligence to do routine factory jobs, by breaking down the activity into its component parts and taking a long time over teaching each part.

Another great advantage of group therapy is that children, when they reach the age of four or five years tend to revolt against parental instructions and it is quite common to find that a child of this age will not really want to do what the therapist instructs, or certainly will not want to do so when he gets away from the treatment session. On the other hand, a well regulated group produces in children a passionate desire to conform and to continue to behave in the same way, even when they are separated from the group. If there is one thing which has been brought home to me forcibly in the last year, it is that it is as important for children of four or five years of age to move into a group situation with children of their own age, as it is for the baby and toddler to remain close to his mother with her always in reach to give security. The art of managing a group by a competent adult can be an extremely valuable tool in the hands of the educationalist (and we must look upon what we are doing with these severe athetoid cerebral palsy cases as education rather than therapy).

There are, of course, other facets to this method of helping the athetoid children. It does seem to be a help for them to be settled in one room with a limited number of therapists, who deal with them all day and see that the whole day's activity is integrated from the point of view of continuous thought processes.

There are still educationalists who take up arms for the formal education of physically handicapped children, feeling passionately that they should be taught the same academic subjects which ordinary children learn. To some extent, of course, they have a point, but it is quite useless expecting to teach a child to write, when he cannot control his muscular movements well enough even to be able to put his finger down on a table within an inch or two of a fixed point. We must keep a sense of proportion in education, and learning social independence, the ability for instance to dress and undress, to feed and to go to the toilet alone, are of paramount importance and I know that a severely handicapped person gets great pleasure out of mastering the control of his own body. These children have a burning desire to overcome their disability. If they get discouraged they sink into a state of apathy and bitter dissatisfaction, while the excitement and enthusiasm which accompanies their progressive mastering of their disabilities is proof enough of the value of a dynamic approach, such as the Peto approach, and is ample reward for the staff engaged upon this exacting form of therapy.

More than Meets the Eye

Some Less Frequently Encountered Aspects of Medicine

No. 4. MEDICINE IN CIVIL AVIATION

by Owen McGirr Principle Medical Officer (ground) B.E.A. and B.O.A.C.

An airline doctor is not quite so rare a bird as might be imagined. Nearly every major airline affiliated to I.A.T.A. (International Air Transport Association, which currently has 100 affiliated airlines) has some sort of medical department.

The doctors concerned may be a team of full-time experts or a group of part-time specialists. With the enormous gains in air travel, (more than 200 million passengers were carried by I.A.T.A. members' services in 1966) many doctors, whether in general practice, hospital or the public health service, have increasing contact with airline medical departments. In addition, a number of doctors in the armed services and the civil service have special responsibilities and duties concerned with civil aviation.

The cost of a medical service is generally born outright by the operating airline. For its proper functioning an international airline requires expert advice in the following areas:—

(A) *Aerospace medicine*
(B) *Occupational medicine*
(C) *Tropical medicine*
(D) *Public Health practice*

In addition to experienced practitioners with knowledge relevant to these particular disciplines, there may be a need for nursing staff, ancillary clinical personnel (e.g. in radiography, laboratory work, audiometry, physiotherapy, etc.), dentists, public health inspectors, and industrial hygienists together with clerical and administrative staff. An airline medical department, dependent on the size and scope of the operator, may therefore be a substantial and expensive organisation; the largest for example are comparable to quite big hospital out-patient departments, and contain some elements of a public health department's activities.

The senior or principal medical officer usually reports to the head of the airline or to some member of his Board of Management so that medical aspects of airline policy receive the attention due to them. That attention is usually both sympathetic and intelligent.

Generally, as in other industries and transport services, the doctor acts in an advisory capacity to the managers and members of other departments, although within his own department he has an obvious executive function. His advice may not always be readily accepted but it is usually given careful consideration.

The airline physician quickly learns that as a professional man, he is a member of a team of non-medical specialists and managers;—this is a rather different approach from hospital and general practice and one common throughout industry. It is a situation which imposes a special trust in his ethical integrity, since his clinical work and knowledge of individual employees can place him in difficult circumstances occasionally. As with all other physicians his prime duty is to his patient and confidential details cannot be given to an employer without the employee's specific consent. By and large employers are sympathetic to the doctors' dilemma; as professional men themselves they appreciate the need for complete integrity. In matters of public safety however, (for example, in the care and treatment of pilots) the airline doctor should evaluate the potential risk accurately; the employee's individual interests are always secondary when there is any appreciable risk to the travelling public.

Aerospace medicine, occupational medicine, tropical medicine and public health practice, will be considered next in the setting of a large international airline.

A AEROSPACE MEDICINE

1. The Environment

The public has come to think of flying in modern jet aircraft as a simple and speedy means of transportation and has little or no idea of the complex and totally artificial environment in which it is propelled. A modern aircraft cabin at altitude is a metal envelope of ground environment carried up into a hostile

atmosphere.

At increasing altitudes the earth's atmosphere becomes much thinner, (reduced atmospheric pressure), intensly cold and very dry.

Altitude above sea level	*Air Temperature* (°F)	*Atmospheric Pressure* (*lbs./ft.²*)	*Relative Humidity* (%)
Sea level	59.00	2116.2	50
8,000 ft.	30.47	1572	27.6
10,000 ft.	23.34	1455	20.4
20,000 ft.	−12.32	972.6	3.96
30,000 ft.	−47.99	628.6	0.545
40,000 ft.	−69.70	140.7	0.085
50,000 ft.	−69.70	87.02	0.05

Fig. 1

The above table covers the range of current subsonic aircraft. Supersonic aircraft will be capable of operating at altitudes of 65,000 ft. and above.

Above the earth's immediate atmosphere aircraft are increasingly subject to radiation, both galactic and from solar flares; furthermore as a byproduct of the sun's activities (oxygen being modified to ozone), significant levels of ozone—a toxic gas, are encountered at altitudes of between 60,000 and 80,000 feet.

While it has been demonstrated that the higher intellectual functions may be impaired at altitudes of 5,000 feet, the physiological effects of hypoxia are generally undetectable below 8,000 feet (blood oxygenation at 8,000 is 92%). Appreciable handicap is detectable at blood oxygenation of 82% (15,000 feet), serious handicap at 71% (19,000 feet) and imminent collapse at 66% (23,000 feet).

Decompression sickness ("the bends" or "aviators bends") is due to the formation of nitrogen bubbles in the blood stream which are detectable at 25,000 feet and are of very serious implication.

2. The Machine

Pressurisation of the aircraft fuselage allows the engineer to overcome these totally unacceptable altitude effects so that crew and passengers are maintained at a cabin or relative altitude of between 6,000 and 8,000 feet when in reality they may be at altitudes of up to 60,000 feet. Air is compressed from the engine intake, heated up to about 65°F, sometimes humidified and supplied at pressures of up to 10 pounds per square inch. The rates of increase (and decrease for descent) for cabin pressure are automatically controlled although they can also be operated manually. A catalytic agent at the compressor heating stage is designed to render harmless the intake of ozone gas at the critical altitudes of supersonic travel (60,000 to 80,000 feet).

The background radiation (galactic) at aircraft operating altitudes is not sufficient to have any short or long term effect on crew or passengers. Intense solar activity occurring in 11-year cycles however, can produce significant levels of solar radiation. During such sun-spot activity, supersonic aircraft which will be fitted with automatic warning systems will descend to safer altitudes. It should also be possible to predict solar sun-spot activity by satellite monitoring with greater meteriological accuracy in the supersonic age.

Apart from the sophisticated engineering which is required to produce the highly artificial environment outlined above, a modern aircraft is tailored to produce safe and comfortable seating which will withstand required forces of impact deceleration, the ingestion of safe food and fluids, and the hygienic disposal of human waste, together with a supplementary supply of automatically presented emergency oxygen to counter any partial loss in cabin pressure. In addition life cots, life jackets and survival equipment of proven performance must be carried, tested during maintenance and demonstrated to passengers over water. First aid supplies are carried and special medical equipment can be embarked for the invalid and the disabled.

3. The Personnel

A high standard of physical fitness, both short and long-term is demanded of pilots. In aircrew licensing medical examinations particular attention is paid to the following considerations:

i Perceptual acuity (hearing and vision);
ii The cardiovascular system;
iii Air-conditioning bodily cavities (middle ear, sinuses, lungs and abdomen);
iv Genito-urinary system;
v Central nervous system;
vi Locomotor aptitude and integrity;
vii Psychological stability.

Any condition which might lead to sudden loss or diminution of consciousness or any reduction in performance, or which minimises or could reduce perceptual acuity below defined standards is a bar, as are any of the grosser forms of psychosis and neurosis.

Medical examinations by the aircrew licensing authority (in the U.K. the Board of Trade), are conducted at frequent intervals (6 months in the U.K.). The airline doctor, however, will also carry out pre-employment and routine medical examination on pilot recruits since the airline is interested in the applicant's long-term physical fitness and mental stability. An airline will invest large amounts in the future training of pilots, and seeks an economic return

for its very substantial investment.

Cabin staff and non-pilot operating crew members are usually examined to related standards but cabin staff are not examined by the licencing authority, however, they do receive pre-employment medical examinations from the airline and particular attention is paid to freedom from communicable disease because such staff are food handlers. Freedom from disabling menstrual disorders is also important in air hostesses.

With the advent of jet speeds a newer problem has been demonstrated—the physiological difficulties which can occur in adaptation to rapid transit through several time zones in East/West and West/East flights (the difference between local times in London and New York is 5 hours). Such difficulties do not, of course, occur on North/South and South/North flights. Each 15° of meridian represents a time zone of one hour. The physiological changes involved may be reflected in sleeping difficulties, reduced alertness and in the processes of ingestion and elimination. When supersonic speeds are achieved it will at least theoretically be possible and perhaps desirable that aircrew return to their time zone of origin in the same duty spell, e.g. London-New York and return will be between 7 and 8 hours flying time.

The airline doctor is also much concerned with the carriage of invalids and disabled passengers and his advice is constantly sought by hospitals and general practitioners and indeed by passengers themselves with regard to their fitness to fly.

Only about 2% of pathological conditions make the carriage by air of invalids impractical or dangerous, and these are mainly determined by unacceptability to other fare paying passengers (e.g. emotionally disturbed persons, psychotics and passengers whose condition is unsightly or objectionable, or who are suffering from an infectious or communicable disease). The airline medical department however, should always be consulted with regard to fitness to fly. Once alerted to an invalid's special needs most airlines will go to considerable trouble to supply them.

B. OCCUPATIONAL MEDICINE

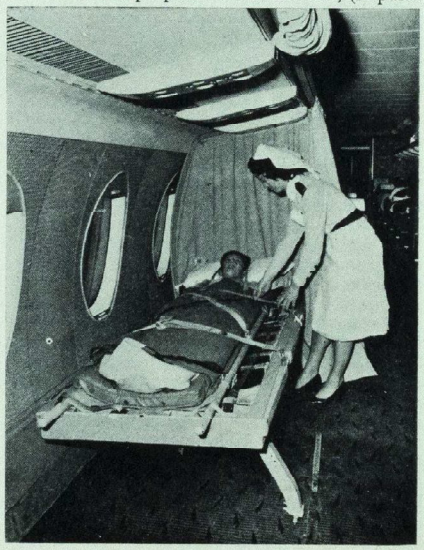
For each employee in the air as a member of flying staff, a large airline will have between 9 and 10 employees whose work is in supporting ground tasks. The range of trades and skills is astonishing. The principal activities cover:

a. Central administrative and management;
b. Finance, accounting, budgeting, payments and receipts;
c. Sales, reservations, ticketing and promotion, for passengers, freight and airmail;
d. Engineering maintenance of aircraft and their components;
e. Ground transportation systems;
f. Passenger, baggage and cargo handling;
g. Flight and ground catering;
h. Buildings and supporting ground equipment.
i. Communications and information handling;
j. Specialist departments such as legal, security, safety, fire protection, personnel, selection, training and medical.

1. The Environment

Detailed consideration of the many aspects of ground working environments cannot be given here but some current problems can be outlined briefly:

i. **Noise:** Airports and processes involved in aircraft maintenance and engine testing are very noisy. Jet engine noise is often termed 'white noise',—the intensities of sound pressure are more or less equally spread through the audible frequencies. The intensities are of course, very high but usually intermittent in nature rather than continuous, thereby allowing periods of recovery for the electro-chemical synapses at the hair cells in the cochlea. Furthermore, jet noise has no impulse characteristics such as are found in rivetting, drop forging, sheet metal work and propeller driven aircraft, (impulse noise is particularly damaging to the cochlea's hair cell synapses). Apart from the noise of jet intake and efflux there is a good number of other noise sources in aircraft work from such equipment as ground power units, test beds, hydraulic rigs and rivetting machines.



Aircraft stretcher in a B.E.A. Vanguard

In order to protect the hearing acuity of those in noise exposed occupations, a hearing conservation programme is usual. This consists of

(a) noise evaluation, (overall sound pressure levels, octave band analyses, durations of exposure in minutes and hours, and the intermittency of exposures);
(b) pre-placement and routing audiometric testing with clinical ENT assessment and,
(c) fitting of suitable and acceptable hearing protection, (ear plugs, ear muffs or—rarely—tailored plastic helmets).

In order to make work, telephone communications and day-to-day speech possible in such buildings as passenger terminals and airport administrative offices, much attention is paid and expense involved in noise attenuation in the design and construction so that sound is reduced to acceptable limits.

ii. **Heating & Ventilation:** Because so many newer buildings on airports have sealed heavy glazed windows or fixed double glazing to prevent the ingress of noise, full air-conditioning becomes essential apart from any climatic requirements. In the U.K. such expensive treatment is usually confined to administrative areas and passenger terminals. Engineering workshops and the vast hangars associated with modern aircraft are not usually treated but do have to be adequately heated in winter and ventilated at all times. Certain dust free engineering workshops and computer installations require full air-conditioning.

Levels of human thermal comfort and acceptability have to be formulated at the environmental planning stage of such structures and medical advice is sought as a mattter of routine.

iii. **Lighting:** Artificial lighting is extensively used throughout the 24 hours in many areas. Medical advice is frequently requested and surveys undertaken. The importance of the correct use of colours and furnishing materials is of relevance since they should be appropriate to function.

iv. **Ionising Radiations:** There are a number of sources of such radiation in airline practice—industrial radiography, medical radiography, radioactive air cargoes, and the control of radioactive debris from experi-

Loading an invalid by fork lift truck into a B.O.A.C. V.C.10

Chemical washdown of a Jet Aircraft to remove Radioactive Fallout Debris

mental nuclear fallout which continuously contaminates the outer skin and air breathing components of high flying aircraft. Routine sample monitoring is the basis of control for the latter problem, combined with periodic chemical washing. There are a number of other minor sources of ionising radiations, and some of the newer isotope techniques are encountered in engineering processes. The control of these radioactive hazards is a medical responsibility.

v. **Toxicology:** Over 100 toxic or potentially toxic agents are employed in aircraft maintenance. New products are constantly formulated and employed so that the physician requires a good understanding of industrial toxicology. The agents concerned are metals, acids, alkalis, gases and a large number of organic solvents, plasticisers, emulsifiers, extinguishants and fuels. Gaseous exhausts from such fuels as kerosene, petroleum, diesel oil and propane gas present problems of air pollution on crowded aircraft stands, and in enclosed spaces.

A control system operated by planners, standards officers, purchasers, production managers, doctors and hygienists is required so that chemical formulas and methods of working are kept under continued surveillance.

vi. **Accident Prevention:** The airline doctor has a part to play here also. Safety officers and fire protection staff frequently ask for his assistance; he himself as a result of his clinical work and his knowledge of the working environment, can often draw attention to unsafe procedures.

2. The Machines

Despite their great size modern airliners under maintenance and overhaul present many hazardous areas difficult of safe access. Falls from wings and tailplanes and through open hatches are common, and there is always a fire risk. The speedy turn-round of a large passenger aircraft, (in 20 or 30 minutes) represents a highly co-ordinated and intense effort by many different trades and skills and accidents are then more likely to occur.

The integrity of the cabin at ground level is tested routinely by pressurising it. Pressures achieved do not currently reach or exceed 10 pounds per square inch so that the regulations governing work in compressed air do not apply. Nevertheless, when an aircraft is to be pressurised to its maximum, non-essential staff are not permitted aboard and only those medically approved are allowed to carry out such tests. Particular attention must be paid to the rate at which decompression is carried out.

3. The Personnel

Airlines have different policies about recruitment medical examinations. Some examine all ground staff recruits, others a cross-section of hazardous trades or occupations demanding particular attributes such as those for hearing, vision, physical fitness, freedom from dermatitis and psychological stability. Due to labour turnover, this represents a continuous demand on medical officer time but such examinations are not time wasted if well carried out. Job placement is the ideal rather than mere acceptance or rejection. Particular attention is paid to young persons, (usually apprentices), and the disabled, whether registered or not.

Apart from pre-employment examinations certain groups of employees will receive periodic medical examinations at determined intervals. Referals to and from ancillary clinical departments such as radiography, rehabilitation and physiotherapy, audiometry and clinical laboratories impose a further workload.

C. TROPICAL MEDICINE

Tropical airline service by staff born in and acclimatised to temperate climates is common and such employees are usually at managerial and supervisory levels. Appointments are for varying lengths, usually about 3 years. During his appointment the resident staff member will have with him his wife and children and their health is regarded as of equal importance to his own.

While executive life in a tropical climate can be both pleasant and rewarding, considerable care is taken in selection; medical fitness of the employee and his family are evaluated carefully. Ex-patriate staff, as they are usually known, spend a great part of their working lives outside the U.K. although they are required to return to this country at intervals.

Psychological stability and social ease are essential both for the employee and the wife. The risk of invalidism due to mental breakdown in one or more members of the family must be given careful consideration. It is not hard to imagine the additional stresses which are placed on a manager or his wife when living in an unfamiliar environment. Difficulties of language, food, housing conditions, education, medical services and local political upheavals may all add considerably to the stress content of an already responsible and demanding post. Social adequacy is particularly important—such staff are the airlines ambassadors in foreign sales markets.

Malaria remains the commonest endemic disease of the tropics and sensible prophylaxis is essential for staff and their families when at risk. The prevention of mosquito bites combined with suppression of mosquito breeding grounds and the use of anti-malarial tablets is mandatory at certain stations.

The more exotic tropical diseases are not commonly seen in ex-patriate staff although they may exist among locally engaged employees.

Freedom from skin disorders and active chest disease combined with good general health and normal obstetric histories are all desirable attributes among potential contract staff. Prophylaxis against tetanus, poliomyelitis and the enteric fevers when destined for tropical countries should be routine. General advice regarding the avoidance of the multiple gastro-intestinal infections and infestations which can be contracted overseas should be given, in particular against bacillary and amoebic dysentery and worm infestation.

D. PUBLIC HEALTH PRACTICE

From what has been said it can be understood that great importance has to be given to those aspects of the environment in the air, on the ground at the operating base, and at overseas territories, to public health in its widest aspects. In the case of an international airline the "local authority area" for which a public health inspector might be responsible, is vastly extended.

CONCLUSION

This is an attempt to outline in the most general fashion the place and function of "medicine" in civil aviation. It will be understood that "medicine" in such a setting is itself an inadequate word; apart from clinical evaluation and therapeutic work, detailed and informed advice on anatomy, physiology, and disease prevention are required.

The many responsibilities and duties of a doctor in airline practice make his career a fascinating one; his "practice" is worldwide; his "patients" interesting and generally healthy people who are well motivated to the aims of the organisation of which he himself is an integral and valuable member.

THE FORCES OF FASCISM AND REVISIONISM WILL SURELY BE OVERTHROWN BY THE POPULAR MASSES FOR THIS IS THE THOUGHT OF CHAIRMAN MAO—TSE—TUNG

One of the more readily observed phenomena about Barts is the weekday lunch-time gathering of the faithful in the Abernethian Room, assidiously digesting revolting refrectory luncheon and out of date periodicals. During the summer months when most students absent themselves on official and unofficial holidays this is probably the most significant social gathering. Ever seeking to enrich student social life I bring to your attention a sparkling little Journal, a must for the connoisseurs of the ridiculous, the Public Bar Sinologist and those trendies who move in circles where the thoughts of Mao are the current rage, "The Peking Review".

The Peking Review reaches this country several weeks out of date (which should not bother the true Abernethian Room officianado who will relish any antique "Punch" which he may happen upon). To the casual glance this hilarious little magazine presents an unprepossessing appearance. But do not be deceived, for careful perusal provides a rich fund of amusement.

Just one of the features which will surely make the Peking Review the most talked about publication of the year is the vigour of the headlines. "It is Blossom Time for a Hundred Proletarian Flowers", "The Nation Denounces The Anti-Chinese Atrocities of The Reactionary Burmese Government which can only Hasten Their Own Inevitable Doom". This is the stuff of journalism, how decadent and effete the banners of Fleet Street appear in comparison.

Nowhere else in the English language press can there be found a comparable authority on the thoughts of Mao Tse Tung. Posterity will be indebted to Chairman Mao for such profound cogitation as "A man who picks up a stone only to drop it on his foot is a fool". Some scribe has obviously devoted much time committing the thoughts of Mao to paper, for this example of profound wisdom is by no means isolated, there are many, many more. Neither is Comrade Mao any stranger to the pretty turn of phrase, to quote "What a foul and festering abcess has developed within the revisionist parties and what an unbelievably putrid stench comes from some source".

The thought of Mao, which "illuminates the Whole World", like all great truths is not immediately lucid, and to help the aspiring Mao-thinker to appreciate the meaning of what he reads here is a short glossary of some of the more frequently recurring terms, with their Reactionary-press meanings.

The Great Helsman: *Comrade/Chairman Mao Tse Tung.*

The Great Marxist-Leninist: *Chairman/Comrade Mao Tse Tung.*

Mao's Closest Comrade in Arms: *Current Blue-eyed Boy.*

Filthy Revisionist: *A man/men with troubles.*

Atrocity: *Police have arrested another heroic freedom-fighter.*

Heroic Freedom Fighter: *Terrorist.*

Fascist Beasts: *You, me and Mr. Kosygin.*

Chairman Mao will live a thousand years: *A medical improbability prompted by enthusiasm.*

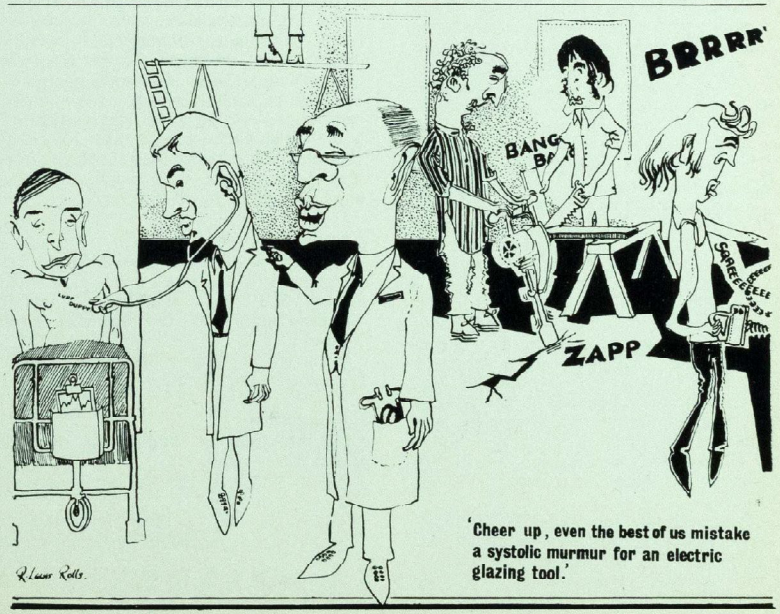
The Thoughts of Chairman Mao will live for ever: *An optimistic and dubious premise also engendered by enthusiasm.*

The William Hicky addict (if such a man still exists) may be a trifle disappointed by the social coverage of Swinging Peking, no hippy Politibureaucrat raves until the small hours in the newest discotheque, however all work and no play makes top revolutionaries dull boys. Fortunately news hounds always seem to be present with very primitive cameras, to record the joyful orgies on various Peking balconies, as parties of accredited non-revisionists, drunk on the heady Thoughts of Mao, wave the source of their joy (the ubiquitous little red book) at the revolutionary masses below. All seem to favour a uniform toothy grin.

The action packed journal also reveals that the fun loving Pekinese can take themselves to the theatre. Rave notices are given for the current sensation, the first Proletarian Opera, "Taking the Bandits' Stronghold". Guaranteed ideologically pure, there is litle scope for any Chinese Lord Chamberlain here, the Peking Review likes ideological purity, a stern reminder to our own decadent critics who have too often failed to condemn plays critical of our own beloved Premier.

No discerning reader will wish to be without this scintillating little Journal and obviously will want to know how to obtain a copy. The Propaganda and Publications Department of the British Communist Party is situated on the fourth floor of the "Morning Star" in Farringdon Street. Unfortunately as with all the best things in life, this little gem does not come easily, not least of the obstacles in the path of the diligent seeker after the truth is the delinquent "Morning Star" lift, which having enclosed the unsuspecting innocent in its bowel, sets off on a voyage of exploration taking all floors of the building in a random movement. It is obvious that the revisionist British Communists have not applied adequate Mao-think to the trappings of imperialist life.

P.J.D.



'Cheer up, even the best of us mistake a systolic murmur for an electric glazing tool.'

Ars Longa . . .

MUSIC

Feeling that a month of Festival Ballet is insufficient for one and all, from the 4th-16th September inclusive, the Festival Hall provides a load of Iberian Choreography, with Jose Greco, the well-known Spanish person, and his dancers. OLÉ!

After that, the arrival of Leopold Stokowski to conduct Beethoven's "Choral" symphony with the L.S.O.—(19th)—is of great interest. Stokowski has a habit of tampering with scores, to the refined horror of purists, and his approach may seem more suited to "Fantasia" than some care for, but he is one of the last of a generation of musical giants whose line extends back to Mahler, and hence this concert is COMPULSORY.

PROMS

To say that most modern music is rubbish is not unreasonable. It tends to represent a complete reversal of the admirable philosophy that great art comes from a struggle for expression that reaches out and finds some kindred chord in the soul of man. Now the effort must apparently come entirely from the wretched listener, and with such meagre rewards available, it is often just not worth the bother. Karlheinz Stockhausen is a perfect example of this. The fixation that has somehow gripped people over his sounds—the musical equivalents of computerised chimpanzee paintings—probably stems from bewilderment rather than appreciation. It may be that he is so far advanced that to mere mortals he is something which passeth all understanding, but I personally feel that he has nothing to offer towards the betterment of humanity, and should join the swans in the lake at the first opportunity. His work "Gruppen" can be heard on 5th, conducted by himself. However, this concert is very highly recommended, for it gives us "The Rite of Spring" by Stravinsky, and Pierre Boulez, one of the greatest living interpreters of contemporary music, directs two compositions by Berg, who writes GOOD STUFF.

The Concertgbouw (pronounced Conchairtgerboo) Orchestra of Amsterdam is giving four concerts on 6th, 7th, 8th and 10th September. All are splendid programmes, and are OBLIGATORY.

THEATRE

The Man in the Glass Booth. St. Martin's

This superbly rich play by Robert Shaw is mined at every step. The biggest and deepest pitfall is to assume melodrama (see Irving Wardle of the "Times" fall into it). Arthur Goldman, an American millionaire German Jew reads of the Pope's 1964 absolution of the killing of Christ by the Jews. He assumes the identity of/reverts back to Adolf Dorf, an S.S. Colonel responsible for thousands of Jewish deaths during the War, allows himself to be kidnapped by Israeli agents and appears in Tel Aviv to be tried in Eichmann's glass booth.

Goldman/Dorf's obsession is with the question; given the Papal absolution of the Jews for Christ's death, should not the Germans likewise be absolved for the millions of Jewish deaths. His answer is neccessarily No, and he sets about the eternal damnation of those responsible, those who followed their desires, worshipping Hitler—a Hitler capable of enormous love and worthy of enormous devotion. Would not the Jew's have followed Hitler if he had been Jewish?

Goldman/Dorf is a remarkable creature and gives Donald Pleasance the opportunity to realise an almost unbelievably breathtaking performance. With a heavy Bronx-Jewish accent that becomes essentially Germanic, he croons and sneers his way to a yapping and rasping frenzy that holds the audience spellbound. The direction is perfect, Harold Pinter skillfully holding it short of overcollapse, but approaching same to produce two or three moments of dyspnoeic brilliance.

Recently started:

"Macbeth" at Stratford-upon-Avon.

Peter Hall's postponed production with Paul Scofield and Vivien Merchant.

"Zigger-Zagger" at the Jeanetta Cochrane Theatre.

A new play by Peter Terson with the National Youth Theatre.

Coming shortly:

"The Merchant of Venice" at the Theatre Royal, Haymarket.

Ralph Richardson as Shylock in Glyn Byam Shaw's production.

"Nathan the wise" at The Mermaid.

A play about Jerusalem during the Crusades.

Contributors: Richard Thompson, and Nick Wagner.

BOOK REVIEWS

GYNAECOLOGY

A Short Textbook of Gynaecology and Obstetrics, by G. D. Pinker and D. W. T. Roberts. 1st edition. Published by English Universities Press. Price 16s.

This paperback costs 16s. and comes into the "Disposable Text Book" class. There are 187 pages to cover the twin specialities of Obstetrics and Gynaecology. It must be more difficult to write a concise text book than a long one and the authors are to be congratulated on the measure of success they have achieved. It is refreshing to read an account of the third stage of labour as practised in this day and age, and a proper description of Assisted Breech Delivery, even though delivery of the after coming head could have been amplified. Inevitably in a book of this size there will be a few omissions, and these include genital tuberculosis, gas gangrene and retraction rings. One can find a few points to quibble about such as rather late testing for Rhesus Antibodies and the misspelling of "cystocele" in the text but not on the illustrations. More seriously, the advice to use an oxytoxic drip on a scarred uterus would be better omitted from an undergraduate text book, and so also perhaps should be the "axis traction" forceps.

This book will be deservedly popular and could with advantage be read before the Clinical Course.

C. N. Hudson

PATHOLOGY

A Primer of Pathology by F. A. Ward. Published by Butterworths. Price 22s. 6d.

Dr. Ward's avowed intention was to write a short readable textbook of pathology, at one hundred and sixteen pages of large clear type he has kept it short. One might most charitably describe his style as folksy. The basic explanations are liberally illustrated with parables peopled by such characters as "Miss Lovemore" with a lump in her breast, her general practitioner Dr. Hackenshaw, surgeon Mr. Rip van Cord and finally "the microbe hunting-knight Sir William Rubin." The use of short case histories to show how the various pathological lesions might have arisen could be a most useful guide to those just beginning clinical work. It is all the more regrettable that this sound idea should have been spoilt by facetious fictional plots more suitable to detective stories than to case histories. The space taken up by these flights of literary fancy should have been used to clothe the very bare bones of this outline of pathology. The treatment of many of the topics is not adequate even for a primer. For example the description of the cellular aspect of the acute and chronic inflamatory process is ridiculously brief. The nature of antibodies, the site of their formation, and the antibody antigen reactions are not sufficiently discussed.

The book suffers from a total absence of diagrams, illustrations and photographs, which could have been included to aid the understanding of many of the over-short descriptions. The lack of an index and bibliography preclude using it for quick reference or as a source for finding further reading. It is not concisely written, not particularly readable in no way a comprehensive text, and at 22s. 6d. not even cheap. Dr. Ward's Primer has several features of potential value. The book could be an indispensible possession if it was rewritten in an expanded form with illustrations, and the Fiction banished to his first thriller.

Sean McCarthy

PAEDIATRICS

Play in Hospital, a report by the U.K. National Committee of The World Organisation for Early Childhood Education (O.M.E.P.). Price 7s. 6d.

This beautifully photographed booklet has been compiled by a working party of people actively engaged with the well-being of children in hospital (including the author of the first book) and in a briefer, perhaps more effective, condensed form, attempts to explain the same necessity for more play facilities in hospitals. Although in this booklet there is less detailed study of particular cases and less stress on present unsatisfactory conditions, I think it is the more useful of the two in that it does at least suggest and provide some workable solutions. More time is spent on the value and role of qualified play leaders and their position in the hospital in relations to other staff, and its summing up and recommendations are of a refreshingly practical nature.

Both books, however, will be of great interest to doctors, nurses, psychologists, hospital administrators, as well as teachers and parents.

Sara Herbert

Play and the Sick Child, by Eva Noble. 1st Edition. Published by Faber & Faber. Price 22s. 6d.

An ambitious attempt to deal with a much neglected problem. In describing the contribution which skilfully supervised play can make to the psychological well-being of young children in hospitals, Miss Noble explains that it is not enough to give the child something to play with. From a sample of twenty hospitals with child patients, the author sets out to show that constructive play organised by an experienced adult is absolutely essential in children's wards, not only to supply "on demand" attention, but, more important, to help relieve the inevitable emotional problems and mental stress of his circumstances.

Miss Noble perhaps overdoes her detailed observations (56 pages of very similar individual cases), but the findings of her "doll-play projective tests" (psychological interpretation of hospital doll-play) are quite fascinating—e.g. why does little Mary, after five minutes feverish hospital doll-play, abandon the test, and insists on spending the rest of the alloted time drawing circular squiggles? In conclusion, Miss Noble appeals for more "preventive play therapy", provides an excellent reading list, but is sadly lacking in adequate alternative solutions to the problem.

SOCIOLOGY

The Young Offender, by D. J. West. Price 6s. Pelican Original.

This book is a compact, detailed and well documented account of what is known about young offenders. It is a timely publication, at a period of our history when many members of the Press and the Bench are denouncing young people as violent, aggressive and uncontrolled. Dr. West, with a wealth of evidence, points to "the youthful crime situation to-day as being "neither unique nor so serious as commonly supposed". The highest proportion of crimes of violence are not committed by young people, and it is the exception for a juvenile offender to become a persistent recidivist. These are conclusions incidentally which the reviewer also would draw from 20 years of working with young people.

It would be misleading however to suggest that this book gives a series of impressions. Dr. West's book is made up of a series of chapters reporting wide numbers of investigations and drawing tentative conclusions on the position of young offenders to-day. The list of references indicates the thoroughness of his knowledge. The book is valuable for the picture it gives as a whole, and also as a compact reference book for specific subjects.

He summarises what juvenile crime consists of, its causes, the main types of crime, and the provisions for reform and help.

On causes, his summary is that there is not *one* cause, social or psychological, but in general a familiar conglomeration of handicaps, any of which may have lead or be leading to delinquency. In addition to these causes, Dr. West stresses the element of "social defiance", the sense in which a certain amount of delinquent misconduct is a normal feature of young people, who are still arriving at maturity. He also stresses the effect of the values of the non-criminal but still "moderately dishonest" public.

The vast majority of crime committed by young people is connected with theft, much of it the breaking open of next door's gas meters rather than the planning of major thefts. There are comparatively few cases of violence, and those usually "a punching attack in a low class neighbourhood against a person known to them."

There is a special chapter on Girls, Sex, Drugs and Violence. The chapter on drugs gives a useful summing-up, in language that can be understood by the layman. The public "have a curious double standard in regard to alcohol compared with other intoxicants."

The book concludes with a account of the provisions made for helping the young offender. A useful criterion in judging any such provision is the extent to which it prevents, or helps to prevent, the young offender from turning into the persistent recidivist.

This book is written by a man who acknowledges the existence of "monstrous and dangerous deformities of character" and can also rejoice in "the rich variation of delinquent character encountered in real life." It is a book we recommend to any serious observer.

I. Y. Tester

SPORTS NEWS

BOAT CLUB

1st VIII at Henley.

Walton Regatta. 3rd June. J/Sen VIII.

As a result of a breakdown we only just reached the start in time with a rather unfit Tim O'Carroll substituting at four, but even with the full complement we would not have much reduced the 1½ length lead that the reputedly fastest ever Radley VIII had over us at the finish. They were beaten by our former rivals, Sandhurst, in the final.

Horseferry Regatta. 10th June. J/Sen. VIII. Won.

We decided not to try to retain our Reading title but, instead to go to the Barbecue Ball and enjoy a comparatively small regatta the following day. The first race was the semi-final in which we beat Kensington Auriol by 2 lengths. The final was rowed in the worst top-of-the-tide conditions, and the crew that managed to keep most strokes covered won—this was Bart's, by a canvas.

Marlowe Regatta. 17 June. J/Sen. VIII.

In the first round we again picked the winners. This was all the more disappointing as we had had a very good outing the evening before, going over the course twice, and our hopes were high. However, we were given the Berkshire station which starts in dead water and were slipped at the start by Kingston

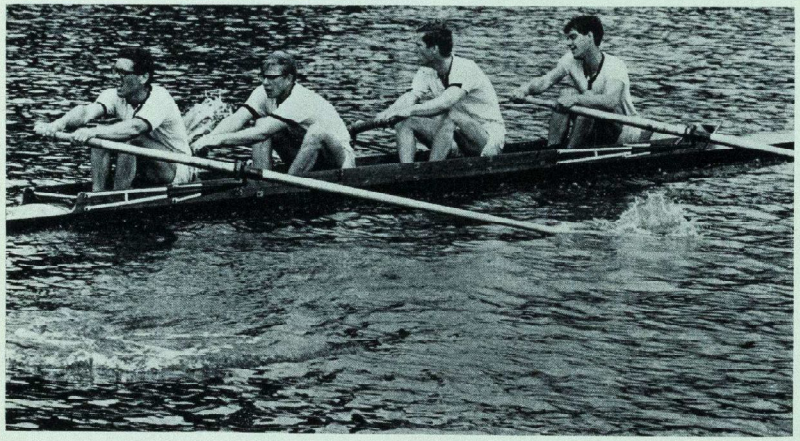
Grammar School who won by 1½ lengths. We had the satisfaction of leaving Reading University 2nd VIII some ten lengths behind.

Henley Royal Regatta. 29th June-1st July.

Dr. Joe Bailey once again coached us, and under his direction and with the general Henley conditions we improved considerably throughout the ten days spent in training. In practice rows we soundly beat Caius and Imperial College.

With our usual good fortune we were allotted Nottingham and Union in **The Thames Cup.** We knew them to be a powerful crew and this turned out to be true for they reached the final to be beaten by Cornell University. After an all-important outing at 9 a.m. we paddled down for the 10.30 start, where we were greatly encouraged by the number of Bart's supporters. The race was inevitably a procession, but it took them to the barrier to get clear water. After as good a row as we have done the gap was 3½ lengths and to judge from relative times our position in the Thames Cup class would lie about halfway—which is creditable.

The IV in training had showed real promise and could go very fast indeed in good conditions. In the Visitor's Cup the headwind that chose to blow during our race had the effect of aggravating our steering and on one occasion we had to stop to extricate ourselves from the booms. We also let our opposition slip us at the start when we should have held them within striking distance. True to form, Magdelene, Cambridge, proved themselves worthy of defeating us by going on to win the event.



The Henley IV

Kingston Regatta. 8th July. J/Sen IV.

We only managed one outing in the week, but with our first race in the afternoon were able to go over the course in the morning. Steering a IV is difficult at the best of times and both ourselves and our opponents were guilty of bad steering. In the first two races this did not matter and we came through to win by margins of 6 and 4 feet respectively over Thames Tradesman and Burway. But in our finishing spurt against Thames in the semi-final the blades clashed and we had to give way to lose by ½ length.

Molesey Regatta. 15th July. J/Sen IV.

In the first race against Lensbury we had some difficulty in turning the long bend that constitutes half the course and, in fact, stroke side had to paddle light. In the final straight we were able to pull away to ½ length when Lensbury were disqualified for steering a few strokes from the finish. The rudder adjusted, we had a good race against Staines to win by a length. In the semi-final a IV from the London Thames Cup crew were leading with clear

It took about five minutes, three pounds and a handshake to open an account with Barclays

✳

The five minutes were mainly spent in writing a couple of specimen signatures and in giving the name of a suitable reference. The three pounds—all I could bank at the time—were received with a cordial handshake and I was made to feel really welcome. Nothing stuffy about Barclays. You don't believe me? Try 'em.

BARCLAYS BANK

Money is our business

SCENES AT THE BART'S REGATTA

Thursday 20th July

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water until the final straight when we crept up to ½ length only to clash; both crews out of their station. After being started level again we gained ½ length before they struck the bank. We won by 2 lengths. In an exciting final we lost by ¼ length to Thames, but gave the spectators a thrilling finish, being a full length down at the beginning of the enclosures.

Staines Regatta. 22nd July. J/Sen IV.

The last regatta of the season provided strong opposition, no fewer than four crews, including Bart's, breaking the record. Against Thames Tradesmen we twice had a length lead but being in their water had to give way and they came through each time. In the the last minute we had the outside of the bend and finished ¼ length down but 2 seconds inside the record. A repechage system instituted this year meant we were still in the regatta, but in the quarter-final we were beaten by Staines. Over the majority of the course we remained a ¼ length down as a result of the staggered start, but the water was so rough that cohesive spurts were difficult and the bend at the finish proved rather too much for our steering system. Consequently we could not keep to our own water and found the Staines IV in our way as we tried to come through.

Review of the Season.

On the home front we remained at the head of Hospital rowing, retaining the Headship together with the highest, 2nd, 3rd, 4th, and 5th boats. We retained the May and Baker Trophy, and had not Imperial College reinforced their VIII with half the University crew we would probably have won the much coveted Allom Cup.

At no less than 5 out of 7 of the major regattas it was our bad luck to meet either the winners or the runners up in the first round, instead of in the semi-finals, as last year. Of course this means we were not as fast as the winning crews but it prevented us from gaining racing experience, did nothing to help the morale, and, quite simply, detracted from the enjoyment of the regattas—all of which factors are so important in any racing sport. Nevertheless we won at Horseferry, and reached the final at Chiswick. The IV proved to be fast, reaching the semi-finals at Kingston after only two outings, being runners-up at Molesey, and breaking a record—albeit as a losing crew at Staines. The second VIII suffered from not having a settled crew and with only six regular members could not hope to have the sort of success that their number of winter outings merited.

Only two out of five novices survived the winter but with this experience behind them they will be of great value to the club in years to come.

The outside competition is becoming greater each year. School crews can return Henley times that would have obtained for them the Grand record at Henley as recently as 1952. Bart's has produced two faster-than-average crews in the last two years, but a winning crew can only come from a stronger club—this means not eight, but sixteen or even twenty-four oarsmen rowing all the season—but this is probably wishful thinking.

Crews:—

Henley VIII. Bow C. M. Castleden, 2. R. E. Franks, 3. N. J. C. Snell, 4. J. D. C. Martin, 5. P. I. Featherstone, 6. P. A. B. Cheetham, 7. B. D. Cutler, Stroke, P. C. Cobb, Cox, J. Brooker.

Henley IV: Bow B. D. Cutler, 2. P. A. B. Cheetham, 3. J. D. C. Martin, Str. and St., P. C. Cobb, P. I. Featherstone replaced Brian Cutler after Henley.

J. D. C. Martin

CRICKET CLUB

Saturday 1st July saw the return of the **Jesters** to Chislehurst. Batting first on the predictably fine wicket, the visitors were able to declare at 204 for 7 wickets. Graham Purcell and David Grieve gave the Bart's innings a good start with an opening stand of 63, before the former was dismissed for 40. The remainder of the Bart's side, however, proved themselves incapable of playing spin bowling on this placid wicket, with the notable exception of Nick Griffiths who made an undefeated 42 out of 153 for 7 at the close of play.

On Sunday 2nd, Bart's were at home to the **Old Roans,** and batting first made 175 all out, of which Bob Jones, one of the preclinical finds of the season scored 39. The Old Roans in reply made a very shaky start, thanks mainly to some very fine bowling by Peter Rhys-Evans, and slumped to 33 for 4, but Bart's were unable to maintain the pressure, and Old Roans scraped home by 2 wickets in the last over of the game.

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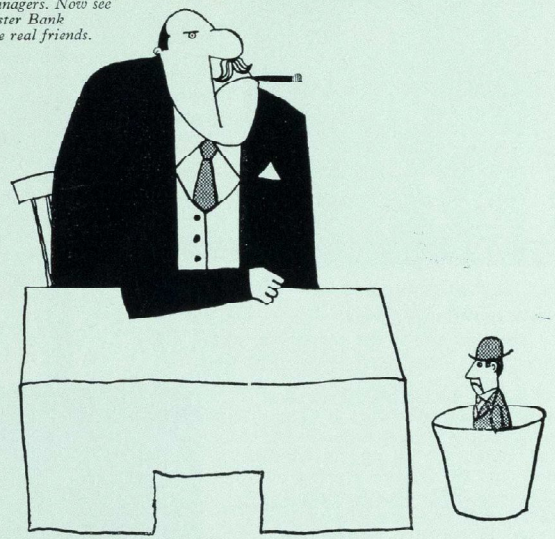

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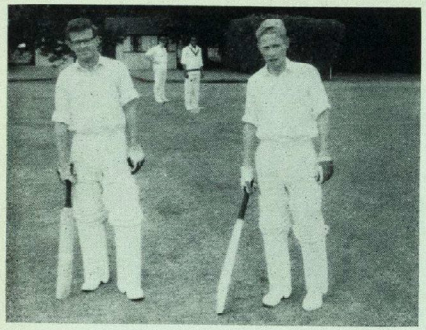
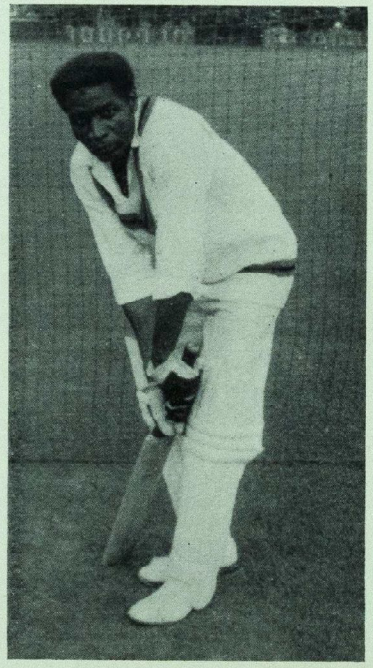


Bart's Opening Pair. Graham Hopkins and Graham Purcell.

The popular annual match against the **Past** was played on the following Sunday at Chislehurst. An unfortunately depleted Bart's side batted first and scored 165 all out, of which Stuart Davidson, an all rounder making his debut, made 25 not out. The Past bowling was of a high standard, and runs were always hard to come by, even though the fielding was a little less agile than it might have been if a few limbs had been exercised more regularly. The total of 165 held no terrors for this impressive side, Padfield making 45, and Delany an excellent 57. At 99 for 3, however, the hopes of the Present side were momentarily raised at the sight of Vartan coming in at number 5. All, it appeared, was not yet lost. How misguided these hopes proved to be! Playing with the professional ease of one born at the crease, Vartan scored an immaculate 32 not out, and steered the Past to a 5 wicket victory.

The following Saturday brought the **Incogniti** to Chislehurst, and provided one of the most exciting games of the season. The Incogs batted first and made 232 for 9 declared, Doyle Husband (pictured in this issue without his shocking pink cap) claiming 6 wickets for 81. Left only 160 minutes in which to reply, and losing Graham Purcell when the total was only 3, Bart's apparently had little hope of making an impression on the game. The fall of the first wicket, however, brought together Steve Thomas and Mark Britton who soon showed that they did not share this view. Between them, they put on 148 runs in quick time before Thomas was out for 78. The target now appeared to be almost attainable, and the position was made even more hopeful by a very rapid 37 from Doyle Husband which included two sizeable sixes. Britton was eventually dismissed for 86 (after what was incidentally his first innings of the season) and Elwyn Lloyd replaced him, and hit a couple of boundaries, but unfortunately made the mistake of hitting them too hard and losing precious time while the ball was being recovered. The position in the final over was therefore one in which four runs were required off the final ball for victory. Unfortunately the excitement proved too much for Doyle who was bowled whilst attempting to dispatch the ball to the Middlesex Hospital ground. So Bart's ended the day at 229 for 6



Doyle Husband

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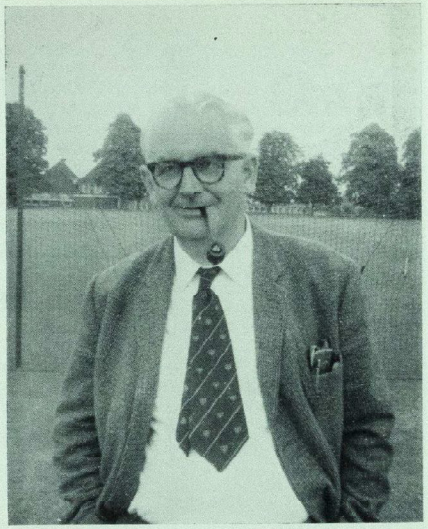
wickets, just 3 runs behind but several pints in front.

On Sunday Bart's were brought back to earth with rather a large and unpleasant bump by Hampstead. Batting first, Bart's gave the impression that they were still reminiscing the previous day's glories rather than concentrating on the matter in hand. Luck was certainly not on their side. but this was scarcely excuse enough for their dismissal for a dismal 83, which Hampstead achieved with little trouble for the loss of only one wicket.

The game against **Nomads** on the following Saturday was the first of the season which rain curtailed at Chislehurst. Few tears were shed however, as Nomads had taken a long time to reach 158 for 9 declared, and Bart's had made only 40 for 3 in reply in a game devoid of interest.

On Sunday 23rd, Bart's visited **Dartford,** a fixture which had produced several exciting results in previous years. This year Bart's failed to provide this, making only 105 in reply to Dartford's 231 for 6 declared.

All that remains now is to introduce our resident umpire, known to all the club as Bert, whose photo is featured. The Club is very lucky to have the services of Bert, a most reliable umpire who loves his cricket and his beer in the best Bart's tradition. Our best wishes to him at the end of yet another trying season for him.



Bert

P. J. Furness

TENNIS CLUB

Since the last report there have been no club matches because of cancellations by our opponents. However, practice matches for the first and second VI's were arranged at Chislehurst and these proved to be very popular and well attended.

Hospital Singles Competition.

This was held on 22nd July at Chislehurst and was played in the form of an American Tournament, the competitors being divided into two groups.

Group I	Group II
C. S. Garrard	J. Wenger
C. Hunt	S. C. Kohli
A. Burke	M. Kellett
C. Davidson	M. Setchell
R. Whitelocke	T. Smith

Each competitor played the other members of his group and the two with the highest total score went on to play in the semi-finals.

Semi-finalists.

Group I	Group II
C. S. Garrard	S. C. Kohli
C. Hunt	M. Setchell

At this point of the competition, play was interrupted by rain and abandoned for the day. It was arranged to play the semi-finals on 14th August at Chislehurst and a report will appear in the next *Journal.*

C. S. Garrard

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GOLF CLUB

June 28th; **v. St. Mary's Hospital** (Moor Park), **Halved 2—2.**

Moor Park was playing very short and the greens as always were in superb condition so that scoring in this match was quite good.

D. Grieve and M. Bowen in the top match played a four ball and in a game of the highest quality lost 3—2. Stuart Davison, not yet fully recovered from his broken collar-bone, lost by 3—2. Richard Begent gained revenge for his cup defeat of two years ago at the hands of man-beating Margaret Lee, beating her by two holes. John Sadler, six up after six holes, cruised in by 7—5.

Team: M. Bowen, D. Grieve, S. Davison, R. Begent, R. Sadler.

July 12th; **v. Middlesex Hospital** (Hendon), **Lost 3—2.**

On this very hot day, Bruce Neu showed us how it is done in America with a display of power golf to celebrate his first match for Bart's with a win by 4 2. Although starting rather shakily, Dave Grieve's opponent was round in 75, winning by 3—2. John Sadler staged a come-back to win the last three holes, and the match by one hole. John Gower, in a very social game was four down after six, so his opponent conceded three of the next six holes. Having lost two of the next three, and the match, John returned post-haste to the bar. The match, therefore, depended on Dave Wright; however, on this occasion he could not quite find the brilliance needed for victory.

Team: D. Grieve, J. Sadler, B. Neu, D. Wright, J. Gower.

July 18th; **v. Chislehurst Golf Club** (Chislehurst). **Lost 5½—4½.**

This important evening fixture was one of the most enjoyable of the year. It was a lovely evening, the golf was good and we were royally entertained.

The captains, playing together, had an excellent match, John Sadler losing on the 17th, when his 30ft. putt just failed to drop. Mike Bowen, round in 68 won by 5—4. Tony Lipscombe, playing for Bart's, instead of against us as he did last year, had an excellent win by 5—4 over Dr. McNab-Jones. Other winners were N. Packer and Richard Begent. Chris Booth and his opponent, Dr. Kelsey Fry were both round in 71, Chris Booth squaring the match on the last hole.

It is to be hoped that the match re-affirmed to at least ten Chislehurst members the opinion that we are not a bad crowd.

Team: J. Sadler, M. Bowen, R. Begent, D. Grieve, C. Booth, N. Packer, B. Neu, A. Lipscombe, W. Tingey, A. Lister.

J. Sadler

answers to diagnosis

In summary, this is a case of polyuria in a patient with severe head injury which resisted pitressin replacement.

1. The most obvious provisional diagnosis was of pan-hypopituitism with diabetes insipidus following a traumatic lesion of the pituitary or hypothalamus. This was suggested by the polyuria and polydypsia and apparently confirmed by the low PBI and low-normal 17-ketosteroids which suggested secondary hypothyroidism and loss of adrenal function. As the patient remained polyuric despite replacement therapy with pitressin the diagnosis was called into question.

2. Polyuria of this magnitude and duration may be due to renal, hormonal or psychogenic causes. A renal disease exacerbated by the injury would account for the polyuria, although the absence of proteinuria makes this unlikely. Diabetes melitus is improbable since glycosuria was never found (nor, in a subsequent test, was hyperglycaemia). If, however, the fluid balance chart is examined critically a diagnosis of psychogenic polydypsia seems plausible. The patient had a high serum sodium and low urinary output while unconscious. On awakening he began to drink and to pass urine in large quantities (Days 20-23), but during the period when his fluid intake was restricted his urinary output frequently exceeded it by two or even four litres daily (Days 23-52). Since his weight fell by less than two pounds between Days 31 and 52 it seems possible that he surreptitiously maintained his excessive fluid intake and that his polyuria was the effect rather than the cause of his polydypsia.

3. A lesion of the hypothalamic-pituitary axis could manifest itself as a hypofunction of any of the gland's target organs, the most easily

tested of which are the thyroid (TSH), the kidney (ADH), or the adrenal cortex (ACTH). Thyroid function may be measured by ^{131}I uptake and T_3 resin uptake tests, urinary concentrating power by the Urinary Concentration Test and adrenal function by the level of circulating adrenal hormones and their response to hypoglycaemic stress. ^{131}I uptake was 30% at 48 hr. and T_3 resin uptake 31.5%, both indicating normal thyroid function. The Urine Concentration Test involves withholding fluid for 12 hours and measuring the resulting urinary osmolarity in relation to that of plasma. The two osmolalities were 557.2 and 291.6 mOsmoles/Kg respectively, and while the ration of 1.91 is not high it indicates a far greater power of concentration of urine that could be achieved without ADH secretion or in renal failure with polyuria. Corticosteroid secretion was measured:

Day 53 17 Ketosteroids 10.6 mg/day
17 Ketogenic steroids 14.4 mg/day
17 Hydroxycorticosteroids 15.0 mg/day

and found to be normal. The integrity of the hypophyseal-pituitary axis was tested by measuring it response to controlled stress. The patient was made hypoglycaemic (18 mg glucose/100 ml serum) by injection of insulin and plasma 11-hydroxycorticosteroids estimated. They rose from a resting value of 11.5 to 26.5 g/100 ml, again a normal result which excludes hypopituitism.

The patient was weighed daily at the end of his stay in hospital, and it is clear that the heavy access of urine voided over fluid intake for Days 56-63 is not reflected by a corresponding fall in weight, confirming that his polyuria was a consequence of clandestine polydypsia. The case illustrates the difficulty of maintaining a fluid balance on an ambulant patient in a general ward.

Although the final diagnosis would appear to be psychogenic polydypsia one cannot exclude the possibility that a transistory episode of diabetes insipidus occurred, and it may be that such an attack established a habit of heavy drinking in the patient which he subsequently found difficult to break. Episodes of diabetes insipidus are fairly common after operations in the region of the pituitary but relatively uncommon after head injuries.

I am indebted to Dr. Besser for advice on this case and to Professor Scowen for permission to publish.

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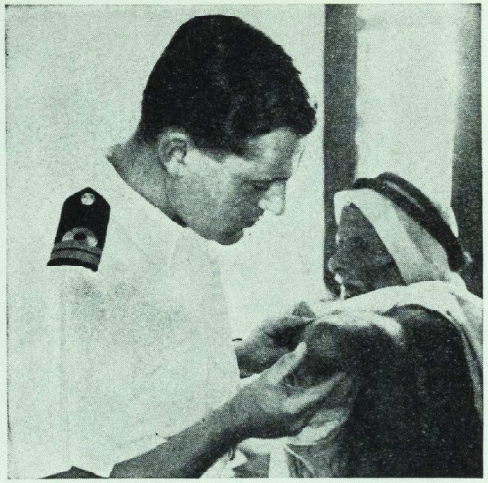

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References
1. *Arch. Derm.* (1962) **86**, 608.
2. *Lancet* (1964) **i**, 1177.

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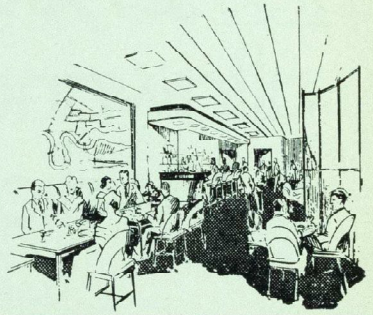

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For further information about Medical Cadetships, or to arrange a meeting with an RAMC Officer to answer any questions you may have, write to: Colonel E. L. O. Hood MB, Ministry of Defence (AMD2), Dept. O34, Lansdowne House, Berkeley Sq., London W1

Saint Bartholomew's Hospital

JOURNAL

Vol. LXXI No. 10 — 1st October 1967

CONTENTS

Editorial ... 366
Letters to the Editor ... 367
News ... 367
Retirement: Professor A. J. E. Cave ... 369
The New Clinical Curriculum for October, 1967, by The Dean ... 371
The New Pathology Curriculum by Professor W. G. Spector ... 373
New Consultants ... 375
An Alternative Form of Clinical Tuition by Dr. Gavin Haig ... 378
Stylytes! Similia Similibus Currentur ... 379
Charterhouse Forum: Blood Alcohol and Performance After the Consumption of Alcoholic Drinks. Compiled by N. H. Brooks and K. G. Taylor ... 381
Addendum on Visual Flicker and Auditory Flutter Testing by Dr. A. D. L. Guest et alia ... 387
Diagnosis by J. R. Griffiths ... 389
Penguin Reviews ... 390
Cartoon by Cull ... 391
Sports: Sussex Cricket Tour ... 392
Rifle Club at Bisley ... 394
Rugby Club ... 396
Golf Club ... 396
Fencing Club ... 398
Tennis Club ... 398
Badminton Club ... 398
Ladies Squash Club ... 398
Athletics Club and Cross Country Club ... 400
Soccer Club ... 400
Answers to Diagnosis ... 400

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LEARNING FROM ARISTOTLE

"What education is, and how the young should be educated are subjects that require discussion. And the question is brought no nearer solution by reference to the actual practice of contemporary education . . ." Aristotle in his 'Politics' underlines just how difficult it is for those embroiled in working system to take two paces backwards and take a "cool, clear look" at their objectives and methods. Medical Education provides a classic and current example of this difficulty.

The *status quo* in many teaching hospitals to-day in their approach to medical education is one of domination by the examinations. Such an orientation can so easily force both teachers and students to turn pale and set about a mutual scramble for the facts necessary to satisfy the examiners. Teachers who would like to do more in the way of 'educating' their pupils transfer the blame to the demands of the syllabus and derive temporary peace of mind from having dispensed their quota. Furthermore much of the thinking of those in control of the system seems to be aimed at finding new methods of communicating such information to the students, an excellent intention, but one which perhaps does not fully appreciate the limitations of such knowledge, however efficiently delivered. Medicine is now well and truly part of the technological revolution. Knowledge of disease is expanding at such a phenomenal rate that the barrage of fact which the ideal student has gleaned from his course may prove heretical in ten years time. Surely the medical schools should be examining very carefully the sort of Doctor they ought to be producing for the future. More and more he must be capable of constantly re-educating himself to the changing concepts of disease during his working life-time.

Above all the Doctor must be taught to be his own monitor, to be capable of dealing with new problems and refining and adjusting his present approach in the light of the new concepts of disease which the future is bound to bring. The assimilation of a vast amount of factual and traditional information is hardly going to equip him with this capacity. Those who feel that this quality is essential to Doctors are unanimous in asserting that it is a pattern of thought which has to be actively and patiently taught to become established and that it will not be miraculously acquired by spending three years in the presence of even the best of practitioners. In a most disquieting paper Chance and Humphries recently assessed medical students' power of observation when confronted with the problem of assessing the behaviour of drugged rats. They concluded "This report draws attention to the fact that the medical curriculum does not seem designed to enhance the students' power of observation. . . . Thus it is important that he should be taught how to look *at* his material, and understand the rules by which the observed evidence may be marshalled into new or existing forms . . . the medical curriculum is deficient unless it includes training in this fundamental skill." The application of imagination to the solution of accurately observed facts can only be fostered by constant practice, and it is the opinion of many that a tutorial system which leans heavily on 'audience participation' is an excellent method of achieving this aim. Badenoch (J.) in a recent assessment of the tutorial system in action at the United Oxford Hospitals since 1948 states "I believe the secret (of what makes the tutorial system so successful) lies in the fact that at its best the tutorial provides a means whereby student and teacher explore new fields together . . . and . . . because it is concerned less with the impermanent froth of knowledge that we teach as facts, but rather with the fundamentals of learning and an attitude of mind." Dr. Gavin Haig examines in this issue the feasibility of establishing such a system at this hospital.

Indeed we may still learn from Aristotle.

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LETTERS TO THE EDITOR

PATHOLOGICAL INADEQUACY

Sir,

The Regulations of the University of London state the following requirements for the Part 1 Examination in Pathology:—

1 Instruction in General Pathology, Morbid Anatomy, Bacteriology, Chemical Pathology and Haematology, including practical work throughout the clinical course.
2 Attendance in the pathology laboratories, including the performance of the duties of Post-mortem clerks, for not less than three months.
3 Instruction in Hygiene and Forensic Medicine.

There are forty London students at present taking the Senior Pathology course, the majority of whom required extra time to pass 2nd M.B. It seems unlikely that they form a suitable group, with a background of only six weeks introductory pathology, to fulfill the University requirements in a three month course; half the usual time and one third the recommended time.

Yours faithfully,
Jean M. Kay.

August 25th, 1967.

Abernethian Room,
St. Bartholomew's Hospital,
London, E.C.1.

POSTGRADUATE PATHOLOGY

Sir,

I would like to draw your attention to opportunities in Cambridge for graduates in medicine to be trained in Pathology. Training has so far invariably led either to a good Consultant's post in the National Health Service, or to something equivalent. It is perhaps not widely known that these openings are available for graduates from any University. Since I have come to Cambridge we have had here Orrell, Gandy, Phaure and Bishop, in case you remember any of them personally.

The first year the trainee is paid on the scale of a Senior House Officer, and the second and third year on the level of a first and second year Registrar. The appointment is for three and a half years. After the first six months of residency the second six months the candidate is working in Bacteriology. The first half of the second half in Clinical Biochemistry. The the second half in Clinical Biachemistry. The whole of the third year is devoted to Morbid Anatomy and then the last six months of the three and a half years' course are optional and the candidate can choose in which section he would like to specialise.

Yours faithfully,
H. Lehmann,
University Biochemist

Biochemical Section,
The John Bonnett Clinical Laboratories,
Addenbrooke's Hospital,
Cambridge.

Births

COOK.—On 6th August, to Ann (née Watford) and Richard Cook, F.R.C.S., a daughter (Rachel Jane), sister for John and Nicholas.

GILMORE.—On 28th August, to Hilary (née McCrudden) and Dr. Owen Jeremy Gilmore, a daughter.

MACKENZIE.—On 14th July to Elizabeth (née Rowswell) and Campbell Mackenzie, a daughter (Elizabeth Jane), sister for Hamish and Fiona.

Engagements

BALL — FIKENSCHER. The engagement is announced between Dr. Mark H. Ball and Fraulein Dorothea M. L. Fikenscher.

CROCKER — NORTON. — The engagement is announced between Simon Geoffrey Crocker and Elizabeth Ann Norton.

PETTY — BARNET. — The engagement is announced between Dr. Hugh Richard Petty and Miss Joanna Mary Barnett.

WRIGLEY — WALKER. — The engagement is announced between Dr. Peter F. M. Wrigley and Miss Sally Walker.

Marriage

DIXON—DUCKWORTH. — The marriage took place on 22nd July of Mr. Peter J. B. Dixon and Miss Judith A. Duckworth.

Deaths

BANKS.—An 9th August, Dr. William Eric Hallamore Banks, J.P.M.D. (Cantab.), aged 72. Qualified 1920.

FORD.—On 12th August, Dr. Frank David Chubb Ford, M.A., B.M., B.Ch., D.Obst., F.R.C.O.G. Qualified 1954.

KITCAT.—On 4th July, Dr. Cecil de Winton Kitcat, M.R.C.S., L.R.C.P., aged 67. Qualified 1923.

MALKIN. — On 6th August, Dr. Godfrey Reginald Malkin, M.R.C.S., L.R.C.P., aged 67. Qualified 1930.

SIMMONS.—On 22nd July, Dr. Harry Simmons, M.R.C.S., L.R.C.P., aged 60. Qualified 1931.

Honours

Royal College of Physicians of London

The following have been admitted members: R. L. Brown, Patrick Collins, Judith M. Darmady, P. C. Edmondson, R. P. Knill-Jones, D. G. Shand, D. S. Tunstall-Pedoe.

Royal College of Surgeons

The following have been granted Diplomas of Fellowship: Richard M. Simons, Michael J. K. Hudson, Margaret W. Childe, Derek P. Kingsley, Anthony J. B. Missen, John E. L. Sales, Paul D. Moynagh, John Spivey.

October Duty Calendar

Sat. & Sun. 7th & 8th.
Dr. Oswald
Mr. Tuckwell
Mr. Aston
Dr. Cole
Mr. McNab Jones

Sat. & Sun. 14th & 15th.
Prof. Scowen
Prof. Taylor
Mr. Lettin
Dr. Gillett
Mr. Dowie

Sat. & Sun. 21st & 22nd.
Sir Ronald Bodley Scott
Mr. Hunt
Mr. Lettin
Dr. Bowen
Mr. Fuller

Sat. & Sun. 28th & 29th.
Dr. Black
Mr. Ellison Nash
Mr. Manning
Mr. Ellis
Mr. Cope

Physician Accoucheur for October is

GENERAL SURGICAL FIRMS

Following upon the change-over of Firms between Mr. James Robinson and Mr. Ian Todd (already notified in May this year) the Operating Days of the two Surgeons concerned will be as under:

Mr. Robinson, as from September, will operate in Theatre D on the first floor of the Surgical Block—on Thursdays: his first operating day on the new Firm will therefore be **Thursday, 7th September, 1967.**

Mr. Todd, during September only, will operate in Theatre F on the third floor of the Surgical Block—on Mondays: his first operating day on the new Firm (redecoration permitting) will therefore be **Monday, 4th September, 1967**

As from October Mr. Todd will operate in Theatre F on Thursdays—that is to say, he will do a list on 25th September and not again until **Thursday, 5th October, 1967:** which arrangement will be the permanent one.

J. W. GOODDY,
Clerk to the Governors

MONTHLY DEPARTMENTAL MEETINGS DEPARTMENT OF ANAESTHESIA

The Department meets each month except in July, August, September and December to consider a topic of general interest. There is usually an outside speaker and a feature of the meeting is the time devoted to discussion.

The meetings usually take place on the fourth Thursday of the month at 6.15 p.m. in the Clinical Lecture Theatre under the chairmanship of one or other of the Consultants of the Department.

The first two meetings of this session are as follows:—

Thursday, 26th October, at 6.15 p.m. Clinical Lecture Theatre

Films on Dental Anaesthesia produced in the Hospital.

"A visit to Canada" — Dr. R. D. Marshall.

"A visit to Scandinavia" — Dr. F. S. Plumpton.

Thursday, 23rd November, at 6.15 p.m. Clinical Lecture Theatre

"The ethics of intensive care — 'What is Death?'"

Dr. G. T. Spencer (Director of the Intensive Care Unit—St. Thomas's Hospital) will lead the discussion and speakers will include a pathologist and an Anglican and a Roman Catholic priest.

Weekly Tutorials

A weekly tutorial is held in the Department or in the Small Lecture Theatre adjacent to it each Monday at 9.15 a.m. The talks are designed specifically for those doing their month of Anaesthesia but other students are welcome.

The talk on the second Monday each month is usually devoted to Emergency Resuscitation including the Treatment of Cardiac Arrest.

An additional tutorial devoted to Intensive Care is normally held at 10.15 a.m. on the last Wednesday of each month.

Retirement:

Professor A. J. E. Cave, M.D., D.Sc. (Manch.), D.Sc. (Lond.), F.R.C.S.

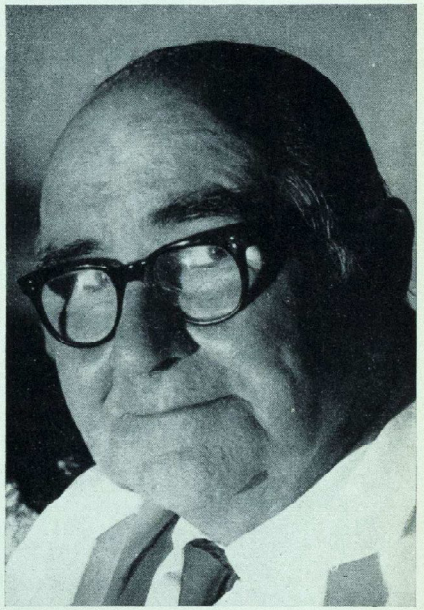
The Medical College and especially the Department of Anatomy, have just said goodbye to Professor Alec Cave who has been Head of the department for 21 years, and retires as Professor Emeritus.

It is not easy to write about Cave in a way which will neither bring a blush to his cheek nor an outburst of wrath down on the head of the writer, but perhaps the personality and career of an interesting man can be left to speak for themselves.

Having qualified at the University of Manchester he went as assistant to a general practitioner in the West Riding of Yorkshire. He enjoyed both the professional and the human interest, but was frustrated by the lack of adequate treatment and still more by the absence of a scientific basis to early twentieth century medicine.

This may have turned his attention to a basic science, and his choice was a Demonstratorship of Anatomy under Professor J. K. Jamieson at Leeds. Jamieson was a man forward-looking in research, and fully aware of the wealth of uninvestigated material in anatomy. It was a tough post to start in, since the students were a little like Rugby League players and the new demonstrator had to learn both his craft and his control.

Craft is still something worthwhile; the handling of tissues and their display is more readily learnt in the dissecting room than anywhere else. As his proficiency grew, Cave widened his field and became a member of the Anatomical Society of G.B., later becoming its secretary.



After ten profitable years at Leeds he moved to University College, London, where he later filled the post of Special Lecturer in Comparative Anatomy. This was really his particular interest and far more than a mere research project. His field included such diverse mammals as the whale and the rhinoceros. The

white rhino in particular affected him emotionally and he was anxious about its survival. Some will have seen and heard him on Television this year, describing the plight of the few hundred surviving specimens.

After a short stay at University College he moved to Lincoln's Inn Fields to take charge of the Human and Comparative Anatomy collection of the R.C.S. Museum, receiving the title of Professor in 1941. Tragically the greater part of the Hunterian Collection was destroyed by enemy action, including many precious specimens made by John Hunter himself which had been placed in a vaulted part of the basement for safety. The next few years were perforce spent in restoring and reconstructing, with practically no teaching and little research. Cave came to know the great figures of the surgical world, and under suitable circumstances could talk by the hour of Hugh Lett, Moynihan, Waring, Grey Turner, Webb-Johnson and many more.

His appointment to the Chair of Anatomy at Bart's in 1946 came at the time of the re-opening of the department after the years of war, during which the students had worked at Cambridge. The dissecting room was his main focus of activity, and he was often to be found there with a large group around him listening to his descriptions and explanations, and watching his skilful dissection. He frequently deplored the students' lack of classical knowledge, which he rightly said made the understanding of anatomical terms more difficult. He loved eponyms (now out of fashion) and enlivened the work by historical references to the man concerned.

Professor Cave examined for many years in the Primary Fellowship, and quite unjustifiably had the reputation of being a severe examiner. Both at Bart's and at the Examination Hall in Queen's Square he almost invariably wore his little black skull cap, and an ill-prepared and unsure candidate, seeing his black cap, was liable to be afraid. In point of fact, Cave was both kind and fair and always succeeded in bringing out the best in a reasonable candidate. He was perhaps caustic to his own demonstrators having a trial viva with him in their last term before exam, but this he held to be for their good. It is pleasant to recall that he has had many demonstrators of distinction: Mr. Aston, Mr. Griffiths and Mr. Bedford are present members of the Hospital Consultant staff who come to mind. He would take endless trouble over students in any sort of difficulty, advising and helping them provided he had satisfied himself that their work and attendance were up to standard. For the slacker he had no time, and he was not readily deceived.

Cave has never spared himself, and until his recent operation did not know what idleness was. The morning lecture over and its theme entered in his log book, he tackled the correspondence, using evil words about some superfluous communications from the University, or even more when some "return" was called for by the College Office. Once the correspondence was settled he turned to his beloved research. The comparative anatomy of the epipharynx kept him happy for several years. The Zoo provided a good deal of material, while some came from friends as widely dispersed as Africa and Scandinavia, and a little he had collected himself. A sure way to his heart was a present of mammalial material. The sight of a half grown rhinoceros (from Whipsnade) being dismembered on the dissecting floor one Saturday morning will not readily be forgotten by those who saw it.

Anatomy has been Cave's life. Well read and deeply religious (in spite of his electrifying language) he has had and has needed no other interests or hobbies. Conversation he has always enjoyed either at the homes of friends or on Friday evenings at the Athenaeum, and it is the sincere wish of all his friends at Bart's, that his retirement will give him facilities and opportunity to continue these interests for a long time to come.

J.B.H.

Classified Advertisements

Eat at The Newgate Restaurant, 87 Newgate Street. Three course meal for 5/-. Just round the corner from Bart's.

Wanted: One small refrigerator. Apply Journal Office.

The New Clinical Curriculum for October 1967

by The Dean

The advent of the six term Second M.B. taken in July has made possible the introduction of a single clinical entry in October after a very necessary long vacation. The single clinical entry necessitated a revision of the curriculum and lecture programme, but in view of the awaited Report of the Royal Commission on Medical Education radical changes were deemed to be unwise.

In accordance with the requirements of London University the clinical course is spread over 36 months. These three 12 month periods are each self-contained, and each is divided into interchangeable quarters, and in the second and third years the order in which the quarterly appointments are held is immaterial.

The accompanying Tables set out the details of the clinical curriculum to be introduced in October of this year and are self explanatory, but the following notes may assist in their interpretation :—

(1) The changes affect mainly the first and third years. The whole of the first year will be spent on the wards. The M.O.P. and S.O.P. periods as we now know them will disappear and the clerks and dressers will attend their own Firm's outpatients, and man the Casualty Department when their Firm is on duty throughout the 12 months. This will have the advantage that many patients seen in Outpatients will be admitted to the wards while their clerk or dresser is still attached to the Firm.

(2) The Introductory Course, as it is at present, will go, and the introduction to clinical medicine will be the responsibility of the Firms and largely carried out by the Chief Assistants. There will also be an introductory course of lectures arranged by the Professors of Medicine and Surgery.

(3) A student starting off as a surgical dresser will, at the end of the quarter, move to a medical firm as clerk. At the end of the next quarter he returns to a further period of surgical dressing—this time on two surgical firms—for periods of six weeks each. He will thus have a fair knowledge of the work of three surgical firms. The second period of medical clerking, however, will be spent

LECTURE SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
Oct.-Dec.					
9-10	Surg. Lect.	PRAC. MED.	Surg. Lect.	PRAC. MED.	
12-1	Med. Lect.	Path. Lect.*	Med. Lect. ¾ *Surg. Topic* ¼	Path. Lect.* *M. & G.*	Path. Lect.* *M. & G.*
4-5	SPEC. SURG.	A * Path. Prac.		B * Path. Prac.	PATH. TUTORIAL*
Jan.-Mar.					
9-10	Surg. Lect.	PRAC. MED.	Surg. Lect.	PRAC. MED.	PAEDI-ATRICS (12) *M. & G.*
12-1	Med. Lect.	Path. Lect.*	Med. Lect. ¾ *Surg. Topic* ¼	Path. Lect.* *M. & G.*	
4-5	SPEC. SURG. LECT.	A * Path. Prac. FOR. MED.		B * Path. Prac. FOR. MED.	
April-June					
9-10	Surg. Lect.	PRAC. MED.	Surg. Lect.	PRAC. MED.	SURG. REV.
12-1	Med. Lect.	Path. Lect.* *Therap.*	Med. Lect. ¾ *Surg. Topic* ¼	Path. Lect.*	*M. & G.*
4-5		A *		B *	
July-Sept.					
12-1		Path. Prac.	Surg. Topic ¼	Path. Prac.	SURG. REV.

* Path. Lect. Theatre

Italics = 2nd Yr. Teaching
Capitals = 3rd Yr. Teaching
Other = 1st Yr. Teaching

Paediatrics = 10 Medical, 2 Surgical

Spec. Surg. includes Eyes

entirely on one firm.

(4) During the whole of the 12 month period on the wards there will be instruction in Elementary Psychiatry, visits to medical and surgical special departments for instruction in methods of examination and diagnosis, and the main bulk of the Pathology teaching which has been considerably revised.

(5) The periods set aside for lectures are: 9 a.m. to 10 a.m.; 12 noon to 1 p.m.. and 4 p.m. to 5 p.m. The first clinical year is thus quite clearly a heavy year, and under the new arrangements, and with the number of students involved, there will be no opportunity subsequently of picking up any lectures which have been missed in the first year.

(6) In the second year, however, the pressure lessens. The principal subjects are Obstetrics and Gynaecology, Psychiatry and Paediatrics. As many students will be away from Bart's for varying periods during this year there is no formal pathological teaching, but throughout the year clinico-pathological demonstrations,

FIRST YEAR

Oct.—Dec.	Jan.—March	April—June	July—Sept.
Surgical Dressing (1)	Surgical Dressing (1)	Surg. Dress. (2) 6/52 / Surg. Dress. (3) 6/52	Surg. Dress. (2) 6/52 / Surg. Dress. (3) 6/52
S.O.P. Fract. Clinic Casualty	S.O.P. Fract. Clinic Casualty	S.O.P. Eyes E.N.T. Fract. Clinic Casualty	S.O.P. Eyes E.N.T. Fract. Clinic Casualty
Medical Clerking (1)	Medical Clerking (1)	Medical Clerking (2)	Medical Clerking (2)
M.O.P. Cardiology Neurology	M.O.P. Cardiology Neurology	M.O.P. Cardiology Neurology Skins	M.O.P. Cardiology Neurology Skins
PATHOLOGY			
ELEMENTARY PSYCHIATRY			

SECOND YEAR

Oct. - Dec.	Jan. - March	April - June	July - Sept.
Midwifery	Gynaecology (2/12) Anaesthetics (1/12)	Paediatrics	Psychiatry

THIRD YEAR

Oct.—Dec.	Jan.—March.		April—June	July—Sept.
St. Leonard's	Elective period 6/52	Orthopaedic Dept. 6/52	E.N.T./Eyes	Skins V.D. Dental
(Medicine and Surgery) Fevers			Neurology/ Neurosurgery & Neurophysiology	Urology
R.B.H. (Resident)			Cardiology/ Thoracic Surgery	Community Health Geriatrics
PATHOLOGY REVISION				
THERAPEUTICS				
GENERAL REVISION				

symposia, and tutorials will be arranged.

(7) The major changes to the curriculum affect the third year, as this involves much greater use of the clinical material in the special department wards, e.g..

There will be a period of whole-time attachment to the Orthopaedic Department with duties in Outpatients, the Fracture Clinics, the wards and in the operating theatre.

There is also the opportunity to introduce an Elective Period, which may be spent in or away from the Hospital. Professor Spector will be very willing to arrange a programme for any who elect to spend this period in the Department of Pathology.

(8) At the beginning of the third year a three months revision course in Pathology will be arranged, followed after Christmas by a course in Clinical Pharmacology and Therapeutics.

The third year is not considered to be a heavy year and there will be ample opportunity for general revision throughout the year.

At the time of writing we do not yet know whether the Minister will be designating certain Regional Board Hospitals to the Board of Governors of St. Bartholomew's. If additional clinical facilities should become available by October 1969, some re-arrangement of the third clinical year will be possible with considerable advantage.

Inevitably, with changes such as these, there is a difficult period of overlap before the new curriculum has replaced the old, and undoubtedly there will be some inconvenience, but it is hoped to minimise this as much as possible and to ensure that the sandwich group are adequately catered for.

The New Pathology Curriculum

by Professor W. G. Spector
Professor of Pathology
St. Batholowmew's Hospital

Introductory Remarks

The ideal pathology course would run throughout the clinical years, would consist entirely of small-group teaching and would be highly integrated with the other clinical subjects. Unfortunately there are not enough beds at West Smithfield for all the students to be available all the time for tuition on the island site. Nor are there enough teachers to enable lectures to be abandoned entirely for tutorials or enough staff generally for a fully integrated course.

Lectures however have their use. They were originally employed as a substitute for textbooks and it is important for students as well as teachers to realise that this is no longer their function. A working knowledge of the various aspects of pathology can only be acquired by intelligent reading. It is vitally important that students of medicine develop the ability to extract and assess the information they need and any course of lectures that attempts to replace this activity is harmful to education. It is of course desirable that questions arising from the student's reading be put to his teachers at the earliest possible moment and this is why a tutorial is much more valuable if the student has read up on the subject in advance.

To return to the usefulness of lectures, it is obvious that while these may not be the best way of imparting factual detail, they are suitable for teaching principles, mechanisms and concepts that might be misunderstood if read without preparation. They also serve to provide information that is not available in suitable form in standard text books, but is nevertheless important.

The present view of the curriculum for the final M.B. is that it should represent a course in basic medical science. It certainly does not aim to produce semi-trained histopathologists or bacteriologists. It follows therefore that a student need not aspire to much detailed histological knowledge of particular diseases or much toxonomic detail of particular bacteria. In the case of the pathology of a particular disease or disease group, he needs to know something of the incidence, current views on aetiology and pathogenesis, the basic facts of macroscopic and microscopic pathology and (very important) the contribution of the various clinico-pathological tests to the diagnosis and treatment of the disease. For the benefit of the Mundane it may be added that these views have been implemented in the London Final M.B. for some time. Before tackling individual diseases, the student must of course have a working knowledge of general pathology, i.e.

the basic pathological processes such as inflammation, neoplasia, etc.

The student has of course every right to expect full guidance from his teachers as to how best to employ his reading time. In return the teacher has the right to expect from the student a serious interest in learning, an appreciation of the need for reading and intellectual effort and of the inevitable inadequacy of any lecture-course to replace intelligent reading. Finally, most days in the Post-Mortem room there is presented for the student an informal unrehearsed and sometimes lively clinico-pathological discussion of a particular patient. Any undergraduate who makes a habit of attending these demonstrations regularly, will have cause to be grateful for the rest of his professional career.

The Pathology Curriculum as from October 3rd, 1967

Plans for formal teaching are at present confined to the first clinical year since most students will spend part of the second year away from West Smithfield. There will however be provision for revision in some form or another in the six months before taking the Final pathology examination. In addition, it is hoped that combined clinico-pathological topic teaching, especially in haematology, bacteriology and chemical pathology will continue in the 2nd and 3rd years for those students who are available. In the first year, the first term (October 3rd—December 21st) will consist of lectures on Tuesday, Thursday and Friday 12—1 p.m., devoted to general pathology, haematology and chemical pathology. There will also be practicals and tutorials on the same days from 4—5 p.m. For these the students will be divided into two groups, each student having at least one practical session a week and one period given to private study. Each student will be allotted a tutor and tutorials will be held on Fridays at 4—5 p.m. During this term, practical classes will be devoted to bacteriology, haematology and chemical pathology, the emphasis being on assisting the student to understand the significance of the tests he sees requested on the wards. A course in pathological histology will also commence, its usefulness augmented by a new form of class-sheet on which pertinent clinical details are given and relevant questions put to the student to aid him in his reading for tutorials.

The second term (January 9th—March 28th) will be largely devoted to medical microbiology, but there will be an attempt to integrate appropriate lectures in special pathology and also "topic teaching" with the aid of clinicians. Teaching of haematology and chemical pathology will continue.

The third term (April 16th—July 4th) will be given over to selected topics in all four branches of pathology. In addition the course in morbid histology will be completed and tutorials will resume and continue throughout the term.

Because of the large size of the single entry intake, it will not be practicable for 2nd or 3rd year students to "sit in" on this course. It is therefore important that first year clinical students should attend as they will not have another opportunity. Some of the earlier lectures might be missed by Oxford or Cambridge students without harm. Closed circuit television is being installed in the pathology lecture theatre so that revision lectures etc., can be recorded on video tape for subsequent showing to more senior students.

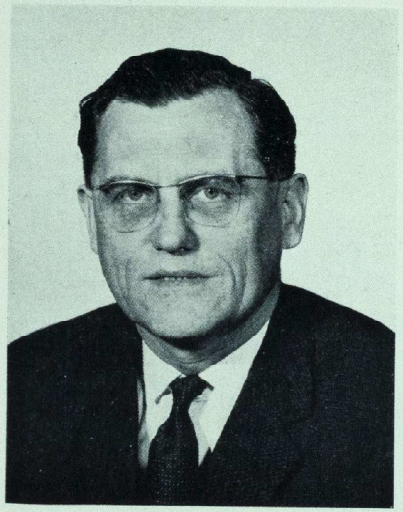
If made necessary by overcrowding in the theatre, lectures will be televised live and shown in the adjacent practical classroom. To those who prefer the live performance it can be said that we hope the ventilation of the lecture theatre will be improved by next summer.

PATHOLOGY

October — December	January — March	April — June
Tu. 12-1 (1st yr.) 4-5 (1st yr.) Th. 12-1 (1st yr.) 4-5 (1st yr.) F. 12-1 (1st yr.) 4-5 (3rd yr. tutorial)	Tu. 12-1 (1st yr.) 4-5 (1st yr.) Th. 12-1(1st yr.) 4-5 (1st yr.) F. 4-5 (3rd yr. tutorial)	Tu. 12-1 (1st yr.) 4-5 (1st yr.) Th. 12-1 (1st yr.) 4-5 (1st yr.) F. 4-5 (1st yr. tutorial)

New Consultants

R. W. E. Watts



Richard William Ernest Watts, M.D., Ph.D., F.R.C.P., is Reader in Human Metabolism in the University of London and Honorary Consultant Physician to the Hospital, where he runs the Metabolic Unit. It was in one of the labs of this unit that he was finally tracked down; high up on the fifth floor with a splendid view of St. Paul's and the Post Office chimney.

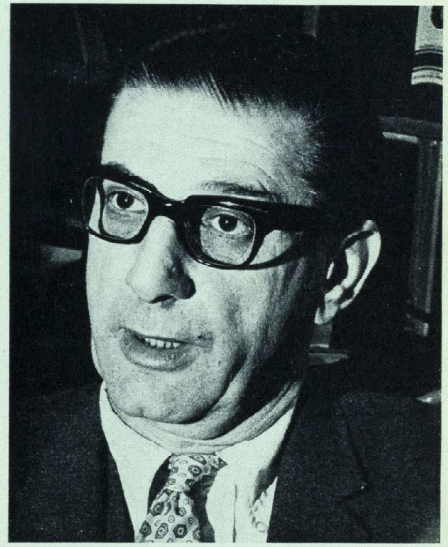
He qualified from Bart's in 1945 and did jobs on the Medical Professorial and Neurosurgical Units before being claimed by the Army. Having gained the M.R.C.P. in 1949 he returned to Charterhouse, where he taught Physiology as demonstrator and then lecturer for the next five years. He also did some research under the aegis of the late Professor Wormall and was awarded the Ph.D. degree in 1953 for a thesis on the metabolism of Zinc.

After a year in the United States as a British Postgraduate Medical Federation Travelling Fellow he returned to the hospital as Senior Lecturer in Medicine and has remained here ever since, except for a period of nine months in 1963 spent across the Atlantic, this time as Visiting Associate at the National Institutes of Health, Bethesda, Maryland.

Dr. Watts has wide ranging interests in the field of human intermediary metabolism and metabolic diseases. These include particularly renal calculus disease, gout, cystinuria and xanthinuria as well as other inborn errors of metabolism; and his contributions to the clinical and scientific literature reflect these interests. He was awarded the M.D. degree in 1960 for his thesis on the metabolic error in Primary Hyperoxaluria, and he was elected F.R.C.P. earlier this year.

Dr. Watts is married, has one son, and gives 'music particularly playing the piano' as a 'relaxation.'

D. L. Mollin



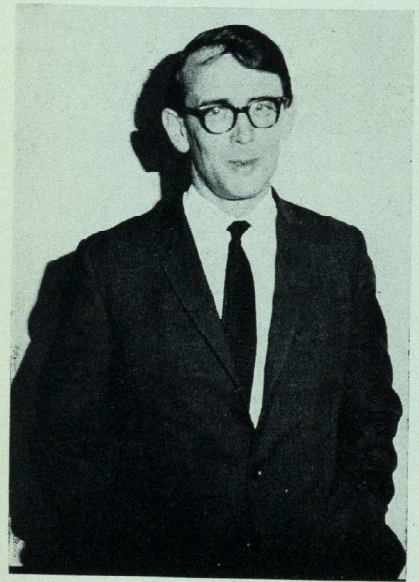
David Lee Mollin, B.Sc., M.C.Path., M.R.C.P., the first Professor of Haematology at the Medical College comes to Bart's from the Hammersmith Hospital where he was on the staff of the British Postgraduate Medical Federation, and is the Honorary Director of the Medical Research Council Group for the study of Megaloblastic and Sideroblastic Anaemias,

which has moved with him to Bart's. Professor Mollin qualified from Cardiff during the war and after passing the Primary F.R.C.S. went into the Army for two years serving in Normandy and India. After demobilisation he went to the Hammersmith Hospital, and there his assciation with J. V. Dacie led to his interest in Haematology. He was a member of the team which developed the Laboratory assay technique for vitamin B_{12}.

The Professor is particularly interested in the megaloblastic anaemias due to nutritional disorders and was at one time Scientific Secretary of the Wellcome Trust Nutritional Anaemias Project, which was a part of the W.H.O. Reference centre for folic acid and B_{12} estimations.

In his private life he likes watching rugby (he was a contemporary of Jack Matthews at Cardiff), and listening to opera. He, his wife and their two teenage daughters and two younger sons live in Northwood.

W. R. Cattell



William Ross Cattell, M.D., M.R.C.P., M.R.C.P.(Ed.), is Consultant Physician to St. Leonard's Hospital, and Senior Lecturer in Medicine and Honorary Consultant Physician at Bart's, where he runs the Renal Unit. A Highlander from Inverness he qualified at Edinburgh in 1951 and did both Medical (under Sir Stanley Davidson) and Surgical Professorial House jobs at the Royal Infirmary before going to Egypt with the Army for two years. At first he was interested in Chest Diseases and he worked for a while in this field in Edinburgh before coming south to the Brompton Hospital in 1956 where he worked with Paul Wood and T. G. Scadding. He then moved to U.C.H. as Chief assistant to Professor Rosenheim and in 1959 came to Bart's with Dr. A. G. Spencer to help to set up the Renal Unit. He was appointed Senior Lecturer in 1963, and in this year spent some time at the Massachusetts General Hospital in the Renal Research Laboratory as a Rockefeller Fellow.

His main interest is naturally enough in Renal Physiology, in particular acid-base balance and Dialysis techniques and due to his celtic training he has some strong ideas about medical education in the Capital.

A keen theatregoer and amateur gardener, he, his wife and three children live in Hampstead.

J. D. Griffiths.

John Daniel Griffiths, M.S., F.R.C.S., the Junior Consultant on Mr. Ellison Nash's firm returns to Bart's after an absence of three years. During this time he has been on the Staff of The Royal Marsden Hospital and the Institute of Cancer Research, and the Metropolitan Hospital. He qualified at Bart's in 1949 and became House Surgeon to Professor Sir James Paterson Ross on the Professorial Surgical Unit, and subsequently with Mr. O. S. Tubbs and Mr. Ian Hill on the Thoracic Unit. He then went to Charterhouse Square where he demonstrated anatomy for two years before coming back to become Junior Registrar to Sir Clifford Naunton Morgan and Mr. Ellison Nash on the pink firm. He later became Chief Assistant on the Professorial Surgical Unit before becoming Senior Registrar on the pink firm.

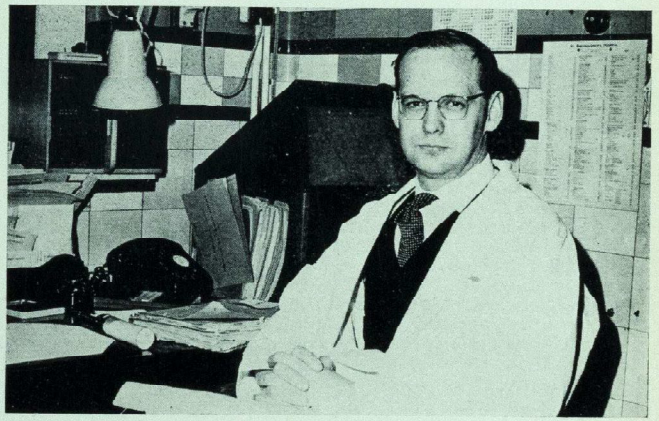
He was awarded the Eli Lilly Scholarship in 1958 and visited the University of Illinois in Chicago to work with Dr. Warren Cole. His particular interest is in gastro-enterology and especially in surgery of the large bowel, and his research work has been directed towards cancer, in particular in relationship to dissemination of malignant cells during operation.

He played rugger for Bart's whilst a student and continues to have a keen interest in the sport. His present relaxations are horse riding and breeding Welsh ponies.

He recently toured the Middle East examining for the Primary Fellowship of the Royal College of Surgeons of England. During this time he visited many Bart's people in Cairo, Khartoum and East Africa, and had very many interesting experiences visiting Bart's Missionaries in remote places in Uganda.

He and his wife have five children and live in Barnet.

M. A. Bedford



Michael Alison Bedford, M.B., B.S., F.R.C.S., Consultant Surgeon to the Eye Department, has spent all his medical career in and around the City; after qualifying in 1956 he did H.P., H.S., and the Eye H.S. jobs before moving across to Charterhouse to demonstrate anatomy. He found teaching so interesting that he stayed on for an extra year as Lecturer. Having gained his 'primary' he moved along London Wall to Moorfields Eye Hospital and returned to Bart's as Chief Assistant to the Eye Department in 1964 and was appointed Consultant in 1966.

His pet subject is tumours of the eye and this April he spent a month in New York on study leave discussing Retinoblastoma with American experts. He still has a great interest in teaching and enjoys its challenge; at present he is trying to devise new ways of covering Ophthalmology in six out-patient sessions. In particular he uses photographs of the commoner eye conditions and this interest in photography extends outside the clinic for he carries a 'Minox' camera secreted about his person in case any 'candid camera' situations should arise.

He is married with one daughter and lives in Harlesden, which he claims is within twenty minutes of the Hospital.

An Alternative Form of Clinical Tuition

by Dr. Gavin Haig

It is often said that the period of house appointments is the first *real* opportunity for practising medicine. This would suggest that there is something at fault with the teaching and practical experience provided by most Teaching Hospitals during the clinical three-year training.

Much of the fault lies with the student himself. There is no doubt that the vast majority of clinical students put little effort into the two years following Second M.B. I feel sure that students of medicine, although university students, need a great deal of guidance, or better still formal teaching, since few of them are mature enough to do sufficient work on their own initiative. The many students I have asked about this problem have been disappointed that they were not provided with more chance to work at the various subjects in small groups with a tutor, this thereby giving them the opportunity to discuss any problems in full. Housemen who admit that they are inadequately trained stress the fact that dynamic teaching by competent teaching staff is essential. Many recently qualified Housemen are alarmed at the minimum knowledge with which they have gained qualification, and put forward a strong case as examples of insufficient teaching.

Any suggestions about how to teach clinical medicine, and indeed what to teach, are always wide open to criticism, but as a result of the many past investigations into the students' requirements, and as to what constitutes the best system of teaching, one is left with only one apparent solution.

This seems to be a system comprising several clinical tutors who would be prepared to teach students every aspect of medicine and surgery using the material available at Teaching Hospitals and other specialist Hospitals such as those dealing with Tropical or Mental diseases. Many students and doctors claim that the only satisfactory way to deal with the clinical course is to have as clinical teachers men and women trained specifically to teach; it is hardly necessary to point out that the quality of teaching is the single most important factor in training medical students.

It is an exceptional post-graduate student who does not take the opportunity of gaining knowledge from experienced teachers to pass higher degrees. How much more vital that a clinical student should be comprehensively trained to enable him to practise on a sound foundation.

When challenged about the question of practical experience, the majority of students admit that their contribution has been dismally inadequate towards their training. As with the Nursing staff at most Hospitals, practical experience should be provided under the expert eyes of tutors or clinical instructors who make sure that important procedures are carried out to the best of each individual's ability in the full interest of the patient.

Tutorial groups should never exceed six students, so that not only would the student be able to see and hear all that is being discussed, but the tutor, on the other hand, would be able to form an accurate assessment of each individual student's ability. As a result, the tutor would have a much more positive opportunity for correcting faults. At the moment groups of students at formal teaching vary in number from one to 40, which is more than frustrating for the unfortunate teacher who is also expected to provide a varied teaching programme with whatever material the ward or clinic has to offer!

The other essential of tutorial groups is that every student must examine the patients being studied.

Tutorials could take the form of a condensed ward round where the tutor demonstrates to his group either the relevant system, or conducts a full examination of a patient followed by a brief discussion of the pathology. Each student would then be allocated a patient in the Hospital suffering from the same or a similar condition. After each student had examined a subject, he would be called upon in turn to present his case and explain the pathology, decide on a diagnosis and suggest treatment. The tutor and the group would then be given the opportunity to discuss the presentation of the case, and any points about the examination, followed by the most suitable form of management and treatment.

Alternatively the tutor could allow each student to examine a patient over a given period of time, together with the special investigation results and X-rays. The student would again present his case to the whole group with the tutor correcting faults or omissions. Finally after presentation of cases, the tutor would discuss each case with X-rays and results of all investigations emphasising important details and drawing up a concise summary, followed by a visit to the laboratory and museum to see both micro and macroscopic pathology of the cases discussed.

This form of repetitive tutorial work is undoubtedly the best to drive home clinical detail.

I would very much like to see close co-operation between tutors and clinical staff, with consultants and registrars giving frequent clinical demonstrations to large groups of students.

Study at general peripheral hospitals for resident periods should be encouraged, and the students should be accompanied by a tutor for guidance and advice rather than for formal teaching. These Students should be allowed considerable freedom to study and attend clinics. At the end of the day the tutor should be free to question each student on the subject he had been studying for that day.

In addition to peripheral hospital attendance the tutor would be responsible for organising students to attend a group practice for a week or two: long enough for the student to appreciate the immense problems and responsibility involved in general practice.

I feel that many students and newly-qualified doctors would agree that the period of clinical training has a most profound influence on their ability to practice medicine well, and in retrospect most believe the years slip past too easily without sufficient gain in knowledge over a relatively long time.

Is there an alternative form of tuition whereby the teaching staff are less burdened with Hospital duties but are more able to concentrate on the student population and their work within the curriculum?

This system would allow the medical staff a chance to concentrate on patients and research, and tutors the opportunity to give their full attention to genuine, organised teaching.

Should anyone suggest that the introduction of tutors would involve unnecessary expense, I would point out that the tutorial system has always been the basis of successful University education.

It is in the interest of the community that nothing should be allowed to stand in the way of the most efficient teaching possible for the medical student.

Stylytes

Similia Similibus Curentur

Whilst it does not necessarily imply criticism to state that the majority of Medical Students are ignorant of the aims and successes of what Brian Inglis has termed "Fringe Medicine," it is important that they should not be too eager to discard as quackery what they do not in fact understand. Faith-healing, osteopathy, accupuncture, homeopathy all pose problems for the Medical Practitioner, primarily through innate prejudice on his part, and also through the extravagant claims often made by the adherants of these causes.

Too often in the past, medical progress has been delayed by doctrinaire and partisan lobbying. Are we not sometimes too concerned with the practice of OUR art of healing and not with considering any path that may produce a cure?

Of this collection of so-called quackery, HOMEOPATHY is the most successful, in that it has to a considerable extent been accepted as a viable alternative to allopathic medicine not only by many establishment figures, but also by many members of the medical profession. The Royal Homeopathic Hospital and its availability on the National Health bear witness to this.

In many ways Homeopathy is very similar to allopathic medicine, the diagnosis, nomenclature and pathology of disease are held in common by both, and whilst many homeopathic practitioners are fully prepared should the occasion warrant, to use "ordinary" allopathic therapy, the essential difference between the two schools is in therapeutics.

"Apart from what is common to both schools of medicine, homeopathy concerns itself solely with Materia Medica; with the discovery of

medicines, the testing or 'proving' of medicines, the preparation of medicines, the exhibition of medicines; and in all these is entirely heterodox."

The basic tenet of homeopathy, "drugs are sick-making and sick-curing, and the sickness is the same," was given its full exploitation by the founder of the homeopathic system of medicine, a Saxon doctor called Hahnemann over 180 years ago, with the Latin tag, "similia similibus curentur,"—(like cures like).

If a patient presents with symptoms A, B, C, the homeopath searches for the medicine, which in the healthy individual could produce symptoms most exactly equating with those demonstrated by the particular patient, and then administers that same medicine, after it has been "transformed" by the homeopathic practice of succussion (for soluble substances), or trituration (for insoluble substances).

In her book, "Homeopathic Drug Pictures," Dr. M. L. Tyler, M.D.Brux., L.R.C.P., L.R.C.S., Cam., L.R.F.P.S. Glas., states "the medicine of the school (i.e. US.) has been mainly based on *Physiological* action (her italics), therefore its dosage is material. So much of this hypnotic will compel sleep and not prove lethal. Homeopathy is the medicine of vital stimulation, its aim is not physiological action, but *Vital Reaction*, and the amount of stimulus required to provoke reaction, in an organism rendered hypersensitive by disease, is seldom material."

Homeopaths believe that the above mentioned processes of succussion and trituration (a form of continued shaking) enable a medicinal substance to become "potentized." In Hahnemann's writing on potentization he says, "I was apparently the first who made this great, this extraordinary discovery, that the properties of crude medicinal substances gain, when they are fluid, by repeated succussion with unmedicinal substances, and when they are dry, by frequent continued trituration with unmedicinal powders, such an increase of medicinal power, that when these processes are carried very far, even substances in which for centuries no medicinal power has been observed in their crude state, display under this manipulation the power of acting on the health of man that is quite astonishing."

This property of potentization enables homeopaths to use the minutest dosages. (No chance of Iatrogenic diseases). From the mother liquor (a very concentrated solution of the drug) one drop is taken, to this is added 99 drops of solvent, this produces a drug of the first potency. One drop of this drug, to which is added a further 99 drops of solvent, produces a drug of the second potency. Often drugs of the three hundredth potency are used which are claimed efficacious.

It is easy to scoff, but is not the practice of vaccination, or the treating of shell-shock with the continued playing of gramophone records of battle noises until "familiarity breeds contempt" a pure application of homeopathic principles?

Perhaps the most startling successes for homeopathy were in the treatment of Cholera with potentized Camphor during the last century. (Camphor poisoning resembles the early stages of Cholera). In Russia during the period 1830—31 the allopathic mortality to Cholera was 60—70 per cent., of 70 cases treated homeopathically all were cured, and of a further sample of 1,270 cases, 1,162 were cured and 108 died. In Vienna allopathic mortality to this disease was 66 per cent., homeopathic treatment secured a 66 per cent. survival rate, which led to the repeal of the law forbidding the practice of homeopathy. Bradford in his book, "Logic of Figures," states, "The aggregate statistics of results of allopathic treatment of Cholera in Europe and America show a mortality of over 40%, the statistics of homeopathic treatment, a mortality of less than 9 per cent."

When the returns for the 1854 Cholera epidemic in London were presented to Parliament, those from the London Homeopathic Hospital were deliberately suppressed when demanded, the excuses of the medical body concerned were included in the following resolution.

"Resolved that by introducing the return of homeopathic practitioners, they would not only compromise the value and utility of their average of cure, as deduced from the operation of known remedies, but would give an unjustifiable sanction to an empirical practice, alike opposed to the maintenance of truth and to the progress of science."

The Homeopathic Hospital's Record: 25 beds devoted to Cholera and Choleric diarrhoea; 61 cases Cholera, 10 deaths; 341 cases Choleric dysentery, 1 death: 1,200 bottles camphor given to crowds of poor who flocked to get them.

Charterhouse Forum

Blood Alcohol and Performance After the Consumption of Alcoholic Drinks.

Compiled by:— N. H. Brooks and K. G. Taylor
Preclinical Students at St. Bartholomew's Hospital Medical School

Introduction

One of the most controversial issues of the Government's new Road Safety Act which is shortly to become law is that which specifies a maximum alcohol concentration of 80 mg./100 ml. in the blood of the driver of a motor vehicle. This has come under considerable criticism, particularly as there is no reliable guide to the general public as to what precisely are the implications of this figure. Many questions remain largely unanswered and one of the most fundamental is how much alcohol can be taken, and in what form, before this value is exceeded, and moreover to what extent does this vary from one individual to another? How fair is the measurement of blood alcohol as an assessment of a driver's capability, and perhaps most important of all how reliable is the Breathalyser Test?

It was with the hope of answering some of these questions that a short project was carried out by the second year 2nd M.B. students in the Department of Biochemistry at Charterhouse (Spring, 1967).

Method

Twelve groups, each of ten students took part in the investigation, this both giving a wide range of experiments, and where overlaps existed, serving to confirm the results obtained and to give an indication of their reliability.

Two volunteer subjects from each group imbibed known quantities of alcohol, and at regular intervals gave samples of blood and urine for analysis.

The method for the determination of alcohol in the different drinks, the blood, and the urine was based on the action of the enzyme Alcohol Dehydrogenase which catalyses the reaction.

$$C_2H_5OH + NAD^+ \rightarrow CH_3CHO + NADH + H^+$$

Ethyl Alcohol Acetaldehyde

The amount of reduced pyridine nucleotide (NADH) produced therefore gives an indication of the amount of alcohol initially present. This may be estimated spectrophotometrically

During the course of the experiment certain tests were performed by the subjects. These included tests of manual dexterity and those requiring co-ordination between eye and hand. In addition, one group measured reaction times, and Dr. Guest in the Pharmacology Department conducted tests of sensory perception by means of the Auditory Flutter Fusion Test and the Visual Flicker Fusion Test.

Alcohol Content of Different Drinks

The alcohol content of a number of drinks was determined by the method described and the results are shown below—

BEER	4%
WINE (Red Burgundy)	16%
SHERRY (Medium Sweet)	17%
VODKA	44%

These figures give the number of grams of absolute alcohol in 100 ml. of the drink.

The official measure for the spirits vodka, whisky and gin is the tot, which is one sixth of a gill or approximately 24 ml. There are approximately thirty tots per bottle. The official measure for sherry is one third of a gill or 48 ml. In most public houses the spirits are carefully dispensed by the tot, while sherry is served with rather more abandon by the glass, and as we have been assured by many publicans a glass is a container and not a measure.

Wine is normally purchased either by the bottle, or by the half bottle. A wine bottle usually has a capacity of about three-quarters of a litre.

Beer of course is sold by the pint and this is equivalent to 572 ml.

Using these figures we can calculate the actual alcohol intake for each standard measure of a particular drink consumed and some figures are shown below:

Drink	Quantity	Amount of Alcohol
Beer	1 pint	23 gm. = 29 ml.
Wine (Red Burgundy)	half-bot.	60 gm. = 75 ml.

Sherry (Medium Sweet)	1 measure	8 gm. = 10 ml.
Vodka	1 tot	10.5 gm. = 13 ml.

Relationship between Blood Alcohol and Type of Drink

Fig. 1 presents results for wine, vodka and absolute alcohol. The same subject was used on all three occasions and before each experiment he fasted for three hours. The equivalent of 40 ml. of pure alcohol was consumed in each case in approximately the same time. The absolute alcohol was diluted with very small quantities of lime cordial.

The graph shows that the peak blood alcohol level attained was highest after consumption of absolute alcohol followed by vodka and wine in that order. Alcohol is lipid soluble and is therefore readily absorbed by the gastro-intestinal tract commencing in the stomach. Absorption therefore depends on the concentration gradient across the mucosol cells, and thus the higher the concentration of alcohol in the drink, the more rapid the absorption and consequently blood alcohol levels will be relatively higher.

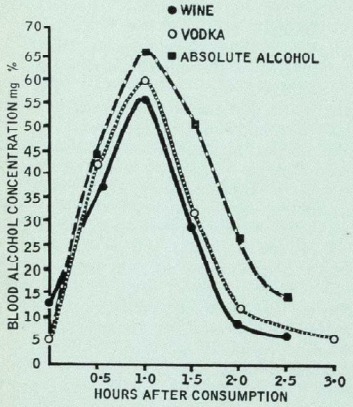


Fig. 1.

Individual Variation and the Relation of the Quantity of Alcohol Consumed to Blood Alcohol Levels

Fig. 2 shows the blood alcohol levels of two subjects over a period of three hours following the consumption of alcohol. Both subjects had fasted for three hours and then consumed 250 ml. of wine equivalent to 50 ml. of pure alcohol. The wine was consumed over a period of fifteen minutes.

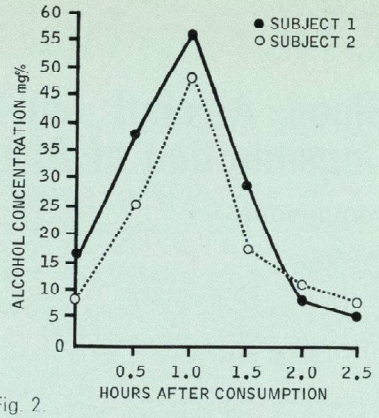


Fig. 2.

Blood samples were taken a few minutes after consumption and this accounts for the raised values shown at the commencement of the experiments. The peak blood alcohol levels are reached one hour after the consumption of alcohol. There is a difference of 8 mg.% in the two peak concentrations, and if this is considered as a percentage of the maximum level attained it is approximately 14%. This may indicate individual differences but experimental errors must not be overlooked. For both subjects the blood alcohol levels had decreased to below 10mg.% after two and a half hours.

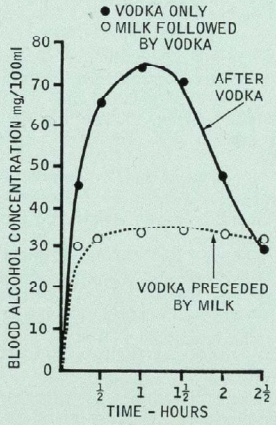


Fig. 3.

The Effect of Food

In order to discover the effects of food on blood alcohol, a standard meal (of 300-400 gm. of mashed potato or a pint of milk) was taken before consumption of the alcohol. The results were then compared with those obtained from a previous experiment during which no food had been taken.

Fig. 3 shows the effect of drinking one pint of milk prior to 56 ml. of alcohol in the form of vodka. Two main differences are manifested:—the peak blood alcohol level reached was less than half that attained when no milk was taken, but the raised level remained more constant and was maintained for a longer period of time.

The results may be explained by suggesting that the milk exerts its effects by delaying the absorption of the alcohol. This could be caused either by dilution of the alcohol or by delay in gastric emptying.

It is unlikely that the delay in gastric emptying alone is responsible for the slower absorption because, as has already been mentioned, a very significant amount of alcohol is absorbed through the gastric mucosa under normal circumstances. If appreciable amounts of ethanol are dissolved in the milk lipid this would not be available for absorption until it reached the proximal part of the jejenum where fats themselves are absorbed, and this may be an important factor.

Other subjects were given a standard meal of mashed potato and the effects observed were similar, but less dramatic, the curve tending to be parallel to but lower than the fasting. (The ethanol concentration was not maintained as it was with the subject who took milk). These results help to confirm the concept that the effect of milk is more than could be attributed merely to its diluting action. A non-fatty meal probably exerts its effect largely through this diluting action.

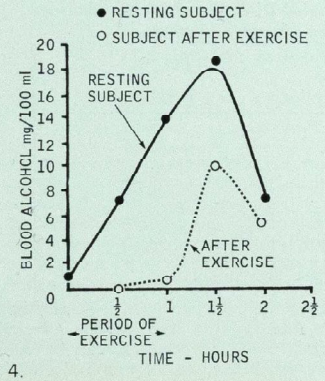


Fig. 4.

The Effect of Exercise

One enterprising subject followed his consumption of 40 ml. of vodka on an empty stomach by an hour's strenuous exercise (a game of squash). Fig. 4 shows that the maximum level of blood alcohol reached was about half that attained under the same condition but with no exercise. In addition to this there was a considerable delay before the blood alcohol level began to rise.

The effect is probably due to the splanchnic vasoconstriction which would have been produced by the sympathetic discharge during the period of exercise (in order that the blood flow to skeletal muscle could be increased). An increased rate of oxidation of the alcohol may also be important.

Relationship between Blood Alcohol Level and Urine Alcohol Level

The urine alcohol levels were determined in exactly the same manner as the blood alcohol levels. A subject fasted for three hours and then consumed 250 ml. of wine (Red Burgundy) equivalent to 50 ml. of pure alcohol. Urine samples were collected after each blood sample had been taken.

Fig. 5 shows the blood and urine alcohol levels for this subject over a period of two and a half hours following the consumption of the wine. The peak blood alcohol level is attained at the same time as the peak urine alcohol level namely one hour after consumption of the wine. However, there is a considerable difference

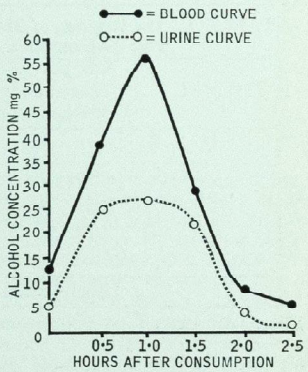


Fig. 5.

between the two peak levels; the peak blood level is 56 mg.% and the peak urine level 26 mg.% Several experiments were performed to compare blood and urine alcohol levels and this result is fairly typical. The alcohol concentrations in the urine were always lower than those in the blood, and the limits were normally between the peak blood level and half the peak blood level. The peak urine level did not always occur at the same time as the peak blood level. In fact the peak urine level occurred anywhere between thirty and ninety minutes following consumption of the alcohol. These experiments indicate that analysis of a urine sample for alcohol is not a satisfactory test of the blood alcohol level. This is unfortunate as a sample of urine is rather more readily obtained than a sample of blood.

The Diuretic Action of Alcohol

Two experiments were performed and the subjects fasted for three hours before each experiment. On the first occasion the subject consumed 125 mls. of sherry equivalent to 27 mls. of pure alcohol, and on the second occasion he consumed 250 mls. of sherry equivalent to 54 mls. of pure alcohol. Urine samples were collected immediately following the consumption of alcohol and then at half hour intervals for three hours. The volume of each urine sample was measured.

A much larger volume of urine is excreted at one and a half hours after consuming the larger quantity of alcohol. By this time the bladder must have been emptied of any urine formed before consumption of the alcohol and the blood alcohol level has usually reached its peak. The total volume of urine excreted after 27 mls. of alcohol in the form of sherry had been consumed, was 318 mls. in three hours. After 54 mls. of alcohol in the form of sherry, 474 mls. of urine were excreted in three hours. The normal volume of urine excreted in three hours is within the range of 162 mls. to 250 mls.

This evidence supports the theory that alcohol suppresses secretion of Anti-diuretic Hormone and this diuretic action of alcohol will reduce the actual concentration of alcohol in the urine.

The Accuracy of the Breathalyser Test

A subject fasted for three hours and then consumed 100 mls. of vodka equivalent to 56 mls. of pure alcohol. Blood samples were taken at thirty and ninety minutes after consumption and Breathalyser Tests were performed at the same times. The results are shown in Table I. The results in Table I show that the Breathalyser Test is not very accurate for determining the blood alcohol level but it does indicate the probable range in which the blood alcohol level lies. A number of experiments were performed to see if the Breathalyser values for blood alcohol could be varied using different breath samples from the same individual. An alveolar sample collected after a forced expiration yielded a higher blood alcohol level than a normal breath from the same subject under standard conditions. When the subject hyperventilated before taking the Breathalyser Test lower ranges for the blood alcohol levels were obtained both for a normal breath sample and an alveolar air sample, compared to values obtained from the same subject under standard conditions without hyperventilation.

TABLE 1—The Relation of Blood Alcohol Estimated Directly and by Breathalyser after Consumption of 100 mls. Vodka (56 mls. Alcohol).

Subject	Time after consumption of alcohol (mins.)	Blood alcohol (mg. %) Direct determination	Breathalyser
1	30	36	45-65
	90	72	45-65
2	30	66	50-70
	90	72	45-65
2*	30	32	50-70
	90	34	30-50

* 1 pint of milk consumed before the vodka.

The Effects of Alcohol on Performance

The assessment of changes in performance in tasks involving skill and manual dexterity, and changes in mood in the human subject is extremely difficult. However, it is very important in the light of the present government legislation that such changes can be detected reliably and related to the blood alcohol level.

Four performance tests were chosen to determine the skill and manual dexterity of a subject at any given time under fairly standard conditions.

1. **The Wiggly Wire Test**
   The subject has a loop of wire which he must pass along a length of wire that is very twisted. The loop and the twisted length of wire are connected to an electrical circuit and if the loop touches the wire the bell rings. The number of rings in one traverse of the twisted wire is counted. The best performance is achieved with the minimal number of rings.
2. **The Disc Dotting Test**
   The subject must put dots in as many discs as possible in a set period of time (thirty seconds). These discs are arranged on a revolving drum so that an increasing number of them are presented to the subject during the set period of time. The best performance is achieved by dotting the maximum number of discs in the set time.
3. **The Ball Bearing Test**
   The subject places small ball bearings into a test tube with a pair of forceps, the opening of the test tube being twice the diameter of the ball bearings. The best performance is achieved by putting the maximum number of ball bearings in the test tube in the set time.
4. **The Rod-in-the-Hole Test**
   The subject holds a straight, thin metal rod in a hole drilled in a plate of metal. This hole is just twice the diameter of the rod. The plate and the rod are wired into an electrical circuit so that when the rod touches the plate the bell rings. Thus a steady hand is required to hold the rod in the hole for a set period of say thirty seconds without the bell ringing. Clearly the best performance is achieved by the minimal number of rings.

These tests were performed on a large number of subjects under standard conditions without alcohol and then they consumed alcohol and the tests were repeated. Some of a large number of results are shown in Table 2.

TABLE 2—Performance Tests after Consumption of various Quantities of Alcohol.

Alcohol	Time after consumption of Alcohol	Rod-in-Hole (errors in 30 secs.)	Wiggly Wire (errors)	Ball Bearings (total in 30 secs.)	Disc Dotting (total in 30 secs.)
500 mls. Beer	Before Alcohol	0	0	28	15
	+¼ hr.	10	4	18	12
(25 mls.	+1 hr.	12	1	12	13
alcohol)	+3 hrs.	9	5	20	14
1500 mls. Beer	Before Alcohol	0	0	28	15
	+¼ hr.	3	13	26	12
(75 mls.	+1¼ hrs.	4	8	22	13
alcohol)	+2 hrs.	2	11	22	14
2000 mls. Beer	Before Alcohol	0	0	28	15
	+¼ hr.	4	13	16	14
(100 mls.	+1¼ hrs.	2	6	22	14
alcohol)	+2¼ hrs.	1	2	28	14

These indicate some deterioration in performance which can be reasonably attributed to the alcohol consumed. These results show that the Wiggly Wire and the Rod-in-the-Hole tests give some indication of a deterioration in performance, but the other two tests seem much less satisfactory in this respect. Some of the results obtained did not agree with those shown and some even indicated a slight improvement in the performance following the consumption of alcohol. An important factor significant in all these tests is that of learning. In order to overcome the improvements in performance due to learning the tests would have to be performed several times before the consumption of alcohol until a standard level of performance had been achieved. The subject would then consume alcohol and performance in these tests would be measured again and compared with standard performance. However, the object of the experiment described was to determine if spot tests were of value in estimat-

ing a deterioration in skill and manual dexterity following the consumption of alcohol. It would appear that such tests are of limited value and then only when considerable quantities of alcohol have been consumed.

Reaction Times

The time an individual takes to react to a situation is clearly of fundamental importance in the consideration of his ability to drive safely. Many factors may influence this—his health, state of mind, environment and the presence of distracting influences, and of course, drugs such as alcohol.

One group carried out experiments to investigate the extent to which alcohol had a deleterious effect on the reaction time of a subject. The apparatus employed incorporated principally a highly accurate Stop-clock, which was switched on at the same instant as a lamp bulb, those being under the control of the observer. On seeing the light, the subject was required as quickly as possible to press a button which turned off both the clock and the lamp; the time then registered on the clock being taken as his reaction time.

Results were rather erratic, but two trends were discernible: firstly that the reaction times of the subject deteriorated, and secondly that the effect was most pronounced when the blood alcohol level was rising rather than when the blood alcohol level was actually attained. This serves to emphasize the difficulty of assessing the state of a man from analysis of a single blood sample. At his worst the subject took almost half as long again to react as he did before drinking his Sherry.

The experiment was also carried out in a slightly modified way. In this two lamps flashed randomly on and off, the subject being required to react only when both appeared simultaneously. This is perhaps more comparable to driving than the first method as a greater degree of mental appreciation of the situation is required, and it is notable that under these circumstances the deterioration of reaction time was still more pronounced.

Many claims have been made to the effect that a small quantity of alcohol improves one's driving ability. Inasmuch as this may be true in the case of the highly nervous person whose self-confidence might benefit from the tranquillizing effects of alcohol, we have found no evidence whatever in support of this belief with regard to reaction time.

Discussion and Summary

The peak blood alcohol level is normally attained between an hour and an hour and a half after the consumption of alcohol. The peak levels reached with two of our subjects in this series of experiments were within the range of 45 mgs.% to 70 mgs.% (Figs. 1 and 2). The subjects were of average weight and size and they had fasted for about three hours before the consumption of the alcohol. They had consumed between 40 and 50 mls. of alcohol in the form of wine, vodka or as absolute alcohol. In terms of measures of the different drinks this is equivalent to approximately 1½ pints of beer, ⅓ of a bottle of Red Burgundy wine, four measures of sherry or 3 tots of vodka. Only relatively small additional quantities of alcohol would be required to raise the blood alcohol level to 80 mgs.% in the subjects. These figures give some indication of the relation of the legal blood alcohol limit to drinks consumed.

The peak blood alcohol level and the time at which it is attained depend on the rate of absorption, the rate of metabolism, and the rate of excretion of the alcohol. Variations in these factors could account for individuals having a different peak blood alcohol level after consumption of the same quantity of alcohol. The level of alcohol dehydrogenase may increase in individuals regularly consuming alcohol and in these individuals the rate of metabolism of alcohol would be relatively high.

The form in which the alcohol is consumed appears to be important. Thus potent drinks such as vodka, whisky and gin produce a higher peak blood alcohol level than the less potent drinks such as wine and beer, after equal amounts of alcohol have been consumed. This can be explained simply on the basis that the higher the concentration of alcohol in the drink, the more rapid its absorption.

The results show that food consumed before imbibing alcohol produced a lower peak blood alcohol level than that attained when the same subject imbibed alcohol after fasting. Milk appears to be very effective in keeping the blood alcohol level down. Undoubtedly the dilution of the alcohol is an important factor, as also is the partition of the alcohol between the lipid of the milk and the lipid of the mucosal cells. A two course meal might exert a similar effect to the milk, but it would probably not be as effective in keeping the blood alcohol level down. A normal meal has a high solid content limiting the actual dilution of the alcohol.

Exercise following the consumption of alcohol is an excellent method of delaying the rise in the blood alcohol level and also for generally keeping the blood alcohol level down. However, it is likely that a pint of milk is more acceptable before a sherry party than an hour of strenuous exercise afterwards.

Urine alcohol levels are not closely related to the blood alcohol levels, but are usually lower. A number of workers have found in the past that only a small percentage of the total amount consumed is excreted by the kidneys. Any correlation of urine alcohol levels with blood alcohol levels would assume that the degree of diuresis produced by alcohol would be the same in all individuals.

The Breathalyser Test is simple to perform and it gives an indication of the range in which the blood alcohol level lies. However, it is very important that the test should be taken not less than fifteen minutes after the consumption of alcohol. The most accurate results would be obtained by giving a mouthwash to the subject as part of the standard procedure to eliminate alcohol lingering in the mouth.

Doctor Guest has shown that perception measured by the Auditory Flutter Fusion Test and the Critical Flicker Fusion Test deteriorated after the consumption of alcohol. This is a particularly significant result as control subjects were tested in exactly the same manner as the subjects consuming alcohol.

Correlation of reaction times obtained using simple tests with blood alcohol level has shown some rather erratic results. Undoubtedly the mental attitude of the subject to these tests is very important. Determination of the subject to react quickly can influence the results. In the more complex tests requiring a little more thought on the part of the subject there is an increase in the reaction time as the blood alcohol level rises. It is perhaps worth mentioning at this point that a driver who has been drinking may still be able to react quickly, but unfortunately incorrectly.

A question that must be raised at this stage is tolerance of alcohol, one individual may be profoundly affected by a blood alcohol level that has little effect on another. Two factors could explain this state of affairs. Firstly, the actual dose of alcohol in terms of milligrams per kilogram of body weight. Thus a particular blood alcohol level of two individuals would only be providing the same dose if they were of comparable body weight. Secondly, tolerance by the central nervous system to alcohol may develop in a regular drinker as it can to many drugs.

The purpose of this article has been to shed some light on a number of the many facets of the problem of alcohol and its effects on man. We hope that it will now be appreciated just how difficult this problem is, and clearly the legislator is faced with a dilemma, but an attempt must be made to focus attention on the dangers of drinking and driving.

The authors wish to state that the project described is the result of a combined effort of the staff of the Biochemistry Department and the students of the 2nd M.B. (1967) class. In particular they would like to acknowledge the contributions of the following:

Dr. E. D. Wills for the design of the experiments and assistance with preparation of the manuscript.

Miss P. Skock for studies of the methods of ethanol determination.

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R. T. B. Rodgers for his investigations into reaction-time measurements.

The students who co-operated by acting as willing subjects for the test.

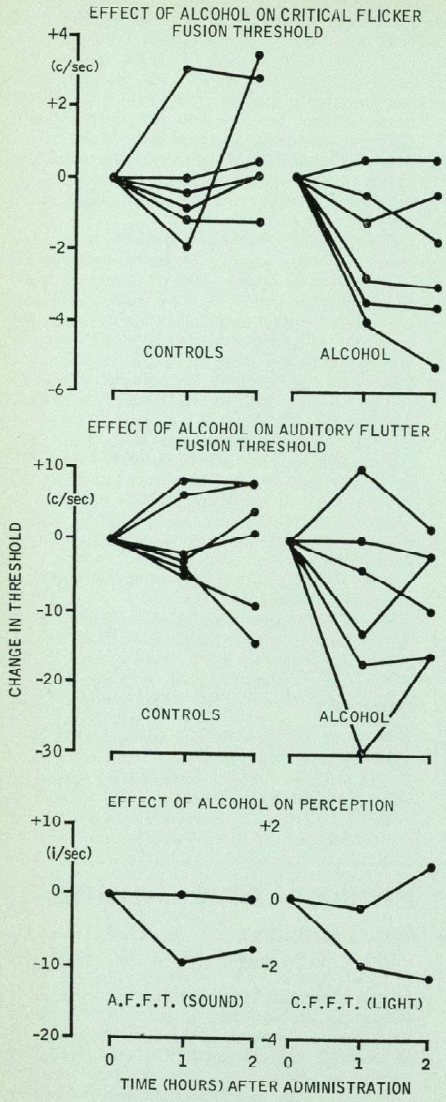
Dr. J. D. Hawkins for useful suggestions in the preparation of the manuscript.

Addendum on Visual Flicker and Auditory Flutter Testing

by Miss C. Duncan, Dr. A. D. L. Guest, and Prof. J. P. Quilliam

In the Department of Pharmacology, as part of a programme in psychopharmacological research we have used the visual flicker fusion threshold test (CFFT) and the auditory flutter fusion threshold test (AFFT) as a sensitive measure of the intensity and duration of the action of centrally active drugs in human beings. The principle of this method is the detection of the frequency of an interrupted stimulus (flickering light or interrupted sound) at which that stimulus appears to the subject to lose its interrupted nature and be perceived as continuous.[1 & 2]

It was with particular pleasure that we accepted the invitation of the Biochemistry Department to participate in this student



project so providing an opportunity to apply our CFFT and AFFT tests. Twelve student subjects were used, six taking an alcoholic beverage and six controls who abstained. Each subject had one measurement of his CFFT and AFFT in a sound reduced experimental booth at three one hourly intervals, the first prior to consuming the alcoholic beverage and the second and third, two and three hours after drinking.

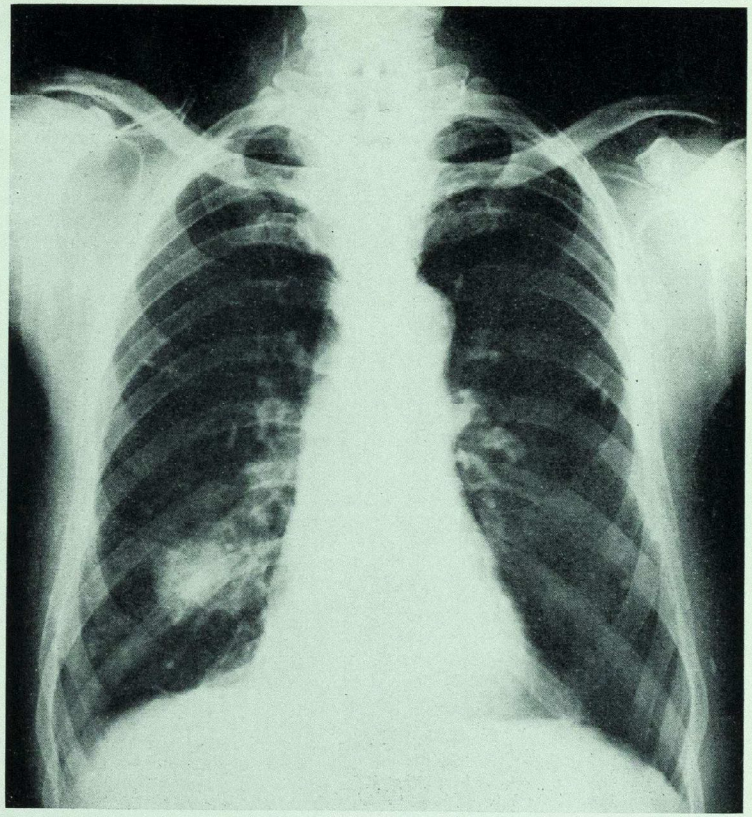
The threshold value taken prior to alcohol was plotted as zero interruptions per second at 0 hours, and the changes either above (+) or below (−) that value which occurred at one and two hours were plotted on the graph for each individual subject (Figs. 1a and b and 2a and b). These graphs show that the threshold values for the subjects who had consumed alcohol tended to fall below the pre-alcohol (zero) level as compared to the threshold of the control subjects which tended to fall around zero. When the individual values at each time were summed and the means plotted, the CFFT and AFFT of the subjects after alcohol (Fig. 3a and b) were lower than those of the control subjects.

Because of the limitation of time which imposes on a class project of this nature and because this experiment could not be conducted on the double blind clinical trial procedure, with a cross over technique,[3] the results must be interpreted with caution but the trends observed accord with the findings of previous workers with other tests. No statistical analysis was attempted because of the small number of subjects and varying quantities of ethanol consumed in different types of beverage (Table 1). The subjects were untrained in the test procedures.

References

1. Turner P. (1965) J. Pharm. Pharmacol. *17* 388-389
   Effects of a mixture of dexamphetamine and amylobarbitone on critical flicker fusion frequency.
2. Besser, G. M., Duncan, Catherine, and Quilliam, J. P. (1966)
   Nature *211* 751
   "Modification of the Auditory Flutter Fusion Threshold by centrally acting drugs in man."
3. Brownlee, G., and Quilliam, J. P. (1963)
   Experimental Pharmacology pp. 44-49
   "The Technique of the Double Blind Trial." Smethurst, London.

Diagnosis by J. R. Griffiths.



This case concerns a 61-year-old man who presented with a six week history of pain in the chest and right shoulder which had not been alleviated by a two week course of tetracycline. He had a long history of chronic bronchitis and smoked half an ounce of tobacco a day but was not clinically short of breath. Forty years previously he had served in the Army in India and twelve years after this he developed grand mal epileptic fits, as a consequence of which he was given a full disability pension by the Army. Nothing of consequence was discovered on physical examination; his chest X-ray is shown and the results of the investigations are given below.

Hb 88%; **WBC** 5,000/mm³, 5% eosinophils
ESR 16 mm/hr
Urine normal
Urea 32, Electrolytes normal
Sputum cytology: no malignant cells; culture n.a.d.
Barium swallow. Skull X-ray. **Bronchoscopy and biopsy:** n.a.d.

Does anything strike you as unusual about this history? What would your diagnosis be?

Answers on page 400

Penguin Reviews

The Honoured Society, by Norman Lewis. Penguin Press. Price 7s. 6d.

The Honoured Society is a Sicilian euphemism for the Mafia, which, not unlike the insidious spirochete, has spread from its primary focus in the poverty and squalor of Sicily to sow the seeds of corruption throughout the Western world. In America, murder, extortion, arson and organised prostitution are but some of the manifestations of "The Honoured Society" busily at work. Back at home in the Sicilian Head Office they have been far from idle, having machine-gunned peasants who were trying to claim land legally theirs, they have almost depopulated entire towns and shot children who are the oldest surviving males of families against whom blood feuds have been declared.

Suppressed to some effect by Mussolini (whose other achievement was to make the trains run on time), the fortunes of the Mafia were largely restored by the Americans, who, invading Sicily, thought to smooth their path up the East coast by enlisting the Mafia to subvert the defending forces. The Americans, who still know a champion of democracy when they see one, rewarded their new protégés with civic responsibility and thereby great opportunity for those dynamic enough to grasp opportunity with both hands. Recalcitrance and shyness have never characterised the Mafia, who utilised the situation to the full.

Mr. Lewis has obviously made a study of his subject, he also writes well, however an unrelieved catalogue of villainy must become rather depressing. Although a picture of Danilo Dolci is included in the illustrations no account is given of his work attacking the roots of the Mafia in the poverty of Sicily, possibly because the book was first published in 1964, too early for Mr. Lewis to make an assessment of this work.

P. J. Dady

The Fetish and Other Stories, by Alberto Moravia. Penguin Press. Price 5s.

None of the forty-one stories is more than seven pages long, yet each has an entirety which in itself makes Moravia's work satisfying to read. Conflict is the central core of each story, sometimes between man and machine, more usually between man and woman. The stories relate incidents at particular periods in time. In this way a sense of immediacy is created, giving the stories a spontaneity which is capable of producing a feeling of reality in what are otherwise oddities of behaviour.

Every remark is examined, every action contemplated and every thought analysed. Moravia has an extraordinary capacity to transform the most down to earth happenings in to events of the highest significance. Nothing is left undigested. Description is confined to a few carefully selected words rather than long passages. Even then it is sometimes overplayed as to be almost comical, as in a line which appears quite out of the blue at the end of one story: "At that moment he was walking past a green-painted municipal litter-bin fixed on a pole".

To my mind, the title story is not one of the best in the book and this leads me to wonder if sensationalism was a motive behind the choice of this title for a selection of stories which are far from titillating. Nevertheless these stories are imaginatively written and very readable, especially in bus queues and on the tube.

R. Lewis Rolls

Anna of the Five Towns, by Arnold Bennett. Penguin Press. Price 5s.

This book is being republished by Penguins to commemorate the centenary of the birth of Arnold Bennett.

Set in the potteries at the turn of the century in a small industrial town where success meant brass, and respectability meant being a pillar of the Chapel. This book reveals the possible narrowness and hypocrisy of a Wesleyan community.

Although the story is that of a father's influence on his daughter there is a strong underlying theme of the influence of the community on an individual who has never had the opportunity to escape from it and think for herself.

Having seen such situations himself, but having escaped, Bennett is able to view them from without and he describes them with particular vehemence.

In a style for which he has become famous, Arnold Bennett has described all the characters and their relationships with each other perfectly. Devoid of all humour, this tragic novel is the frightening revelation of how he saw the community from which he had escaped. This is an extremely well written book, and well worth reading.

T. A. Lister

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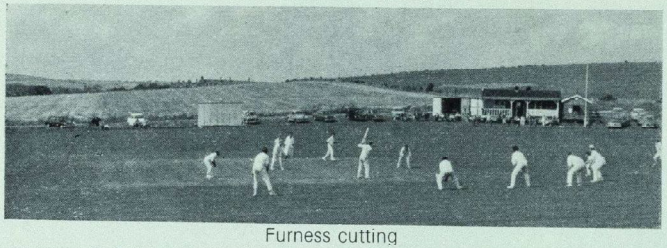
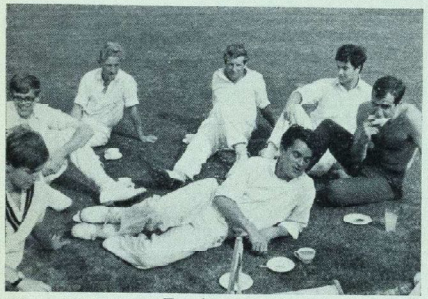


Furness cutting



Tea Interval

A Victory drink

July 29th **v. Old Chomeleians Won by 9 wickets**

A fine spell of fast bowling by Grafton was responsible for the undoing of the Old Chomeleians in the final game of the season at Chislehurst. Only one of their batsmen achieved double figures in a total of 79. Bart's knocked off the runs for the loss of one wicket, and retired to the pavilion to celebrate.

Old Chomeleians 79 (Grafton 5 for 23)
Bart's 83-1 (Purcell 41 not out)

Sussex Tour

August 6th **v. Ferring. Won by 77 runs.**

A veteran Bart's side proved too strong for Ferring in the first game of the tour. Batting first, Bart's were off to a good start, Hann (22) and Griffiths (43) putting on 62 for the first wicket. Furness (47) and Harrison (36) continued the good work and Bart's were all out for 188. The home side never looked like getting the runs and, thanks to the bowling of Griffiths (5 for 29) and Richards (3 for 22), were dismissed for 111.

August 7th **v. St. Andrews, Burgess Hill. Lost by 5 wickets.**

Bart's started disastrously, losing 3 wickets for 8 runs. Eventually a total of 80 was amassed after 2 hours batting. The St. Andrews' openers confidently put on 60 together but the subsequent batting collapsed before victory came by 5 wickets.

August 8th **v. Rottingdean. Lost by 3 wickets.**

After suitable lunchtime lubrication, Bart's scored 139 before Hopkins declared with 9 wickets down. Top scorer was Furness with a rapid 40. In a pulsating finish Rottingdean got home off the fifth ball of the last over. This defeat was to be avenged later at closing time, when, for the first time in living memory Bart's triumphed in the Relay race around the local pond.

August 9th **v. Midhurst Hospital. Lost by 9 runs.**

Midhurst Hospital 94. (Griffiths 4 for 29, Berstock 3 for 19). Bart's 85.

August 10th **v. Barcombe. Won by 98 runs.**

Highlight of the day was a superb 105 by Furness, who never looked in any sort of trouble (till later in the evening). The Bar-

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combe innings folded once the openers had gone; Berstock (4 for 22) and Griffiths (3 for 27) were again the most successful with the ball.

Bart's 217. Barcombe 119.

August 11th **v. Seaford Seagulls. Match Drawn.**

Purcell (43) and Hopkins (27) put on some quick runs at the beginning of the Bart's innings. Furness (40) continued in his majestic vein of the day before and the innings was declared closed at 197 for 7. Left 130 minutes in which to get the runs Seaford Seagulls almost reached their target, with Everton scoring a whirlwind 94.

Bart's 197 for 7 dec.

Seaford Seagulls 189 for 6.

G. R. G. Purcell

1967 Averages

Batting (Qualification—10 completed innings).

Batsman	Innings	Highest Score	Times Not Out	Total Runs	Average
N. Griffiths	17	79	2	393	26.2
G. Purcell	26	69	3	516	22.4
P. Furness	20	105	0	414	20.7
D. Berstock	11	56	1	178	17.8
D. Husband	10	64	0	166	16.6
G. Hopkins	22	37	4	283	15.7
E. Lloyd	11	24	1	96	9.6

Bowling (Qualified 50 overs or 10 wickets)

Bowler	Overs	Maidens	Runs	Wickets	Average
P. Savage	101	20	209	18	11.6
P. Rhys-Evans	117	28	277	22	12.6
D. Husband	130	37	353	26	13.6
D. Berstock	122	32	317	23	13.8
N. Griffiths	171	34	595	33	18.0
E. Lloyd	94	12	397	17	23.4

RIFLE CLUB AT BISLEY

Bart's full-bore shooting has but a small following; nevertheless the success of these few is notable. For the second year running we have won the United Hospitals' Cup. The Imperial meeting at Bisley is the main event of the year and considering it is a national competition our two entrants did very well.

17th July—**United Hospitals' Cup**

The Bart's team won this event, which is shot at 200, 500 and 600 yards, amid what can only be described as refined chaos. After grandiose preparations, half the team were directed to the wrong firing point and the other half failed to acquire ammunition. The shoot at 200 yards was mainly distinguished by the total collapse of our target—not from poor shooting, but from mere senility. The subsequent delay gave Ian Battye time only to fire three of his seven shots. Vigorous complaints were dismissed with insouciant gestures by the military person in charge, and we finished the range some twenty points down.

The fact that we managed to struggle from this position to win by one point may be largely ascribed to the Captain's ruling that nothing stronger than Coca-Cola be consumed during the match. Perhaps next year we can again retain the Cup and make it a hat-trick.

A word of thanks must go to Keith McIntyre who worked all afternoon for us as a butt-marker. We thought this was to get into training for the next season's rugger, but he later told us no, it was just for the money.

Team: I. R. Battye, C. I. V. Franklin, C. J. Sedergreen, R. S. Thompson.

Team scores: 1st Bart's, 361 ex 420; 2nd Westminster, 360 ex 420.

21st-29th July—**Imperial Meeting**

For the first time for several years two people from Bart's went in for the Meeting. The first three days were spent getting used to the conditions and overcoming apprehension about the skill of the other competitors.

On the first day's actual competing both Chris Sedergreen and Ian Franklin appeared in the prize list of "The Times". Ian had a very good second day and succeeded in getting into three prize lists: the "Wimbledon" with a 46 at

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The five minutes were mainly spent in writing a couple of specimen signatures and in giving the name of a suitable reference. The three pounds—all I could bank at the time—were received with a cordial handshake and I was made to feel really welcome. Nothing stuffy about Barclays. You don't believe me? Try 'em.

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600 yards, the "Stock Exchange Aggregate" with 140/150 and also the "Tuesday Aggregate" with 115/125.

The Queen's Prize which is the highest shooting prize for the Queen's subjects this year attracted 1,100 of the best shots so that there was very keen competition for the 300 places in the second stage. Ian was eliminated in the first round but Chris with 98/105 secured himself a place in the second round. Despite some very trying conditions Chris managed 142/150 and so had reached the final. In the 85 year history of full-bore shooting in the club only a dozen other people have done this. At the finish his aggregate was 266/300, only 18 points behind the winner, and he was given a provisional place of 70th.

C. I. V. Franklin

RUGBY CLUB

The Club extends a warm welcome to all the freshers. We cater for all tastes, serious and social and with three pitches at Chislehurst this year, the excellent facilities at our home ground should be experienced by all new members to the Club. As far as teams are concerned, we hope to field a minimum of six sides each Saturday. Selection for the 1st and 2nd XVs will be carried out by a committee of three (K. McIntyre, M. Britton and C. Grafton) and lower down the scale the selection committee will work in close liaison with the captains of the respective sides.

After our success last year in regaining the United Hospitals' Cup seven-a-side trophy and our good performance in the Middlesex Sevens, we intend to branch out in this field of the game. So far, teams have been entered for the Streatham, Askeans and Staines competitions.

The full season started on the 23rd September with games for the 1st and 2nd VXs against Trojans at Southampton. Training takes place at Charterhouse on Mondays and Thursdays at 5 p.m. and Wednesday afternoons at Chislehurst. Attendance at these sessions is vital for all since we normally concede age, weight and experience against our Club opponents and rely very much on our fitness.

K. R. McIntyre

GOLF CLUB

May 25th—28th, **Welsh Tour. Won 1; Lost 1.**

The tour was most successful, to the extent that we played some very good Golf and also were well entertained into the bargain. We travelled to Newport on the Thursday where we played Mr. Bowen's team, and then on to Porthcawl since our Cardiff match was cancelled.

On Saturday our opponents were a team of six Abergavenny doctors and we played fourballs. Mike Bowen and Richard Begent won by 6/5, Mike playing par golf to the turn. Dave Grieve and John Sadler won by 5/4 with Dave giving a good display of pitching and chipping. Nick Packer and John Bowen (Mike's brother) from Guy's, who was taking over from Tony O'Kane, lost by one hole. The evening was rounded off very well with a superb meal not to mention the drink.

Tour party:—J. C. Sadler, N. Pakcer, M. M. Bowen, R. Begent, D. Grieve, A. O'Kane, J. Bowen.

June 8th **v. Staff** (at Denham) **Won 10-5**

On a lovely sunny afternoon the students aided by Charles Vartan won for the third successive year. The best golf was played in the top match between Mike Bowen and Dr. Bevan-Jones who missed a 3 ft. putt on the last green, despite his prayers, to lose by one hole.

Dr. George Graham had a great victory over Tony O'Kane and Dick Atkinson had his first win for the staff. All the others were excellent games and we are most grateful to Dr. George Graham for his financial help to maintain this fixture.

Dr. Bevan Jones lost by 1 hole to M. M. Bowen.
Dr. Pare lost by 7/6 to D. K. Grieve.
Mr. Hankey lost by 5/3 to R. J. H. Begent.
Mr. Williams lost by 1 hole to H. Rutherford.
Dr. Kelsey-Fry lost by 1 hole to C. M. Booth.
Dr. George Graham won by 3/2 against A. O'Kane.
Dr. Kemp Harper lost by 3/2 to W. Tingey.
Dr. McNab Jones lost by 4/2 to C. P. Vartan.
Dr. Bowen lost by 2/1 to A. D. L. Hoppe.
Dr. Young lost by 7/6 to J. C. Sadler.
Dr. Harvey Ross won by 4/2 against D. Wright.
Mr. McKenzie won by 5/3 against N. Waterfall.
Dr. Thomas lost by 3/1 to N. Packer.
Dr. Atkinson won by 3/1 against T. Dudeney.
Dr. Nicholls won by 4/2 against P. Buckley.

June 12th **v. Mr. Hankeys Team** (at Tandridge) **lost 6-2.**

This is probably the most enjoyable fixture of the season. Tandridge is a beautiful course and an excellent test of golf, but most important of all Mr. Hankey and Tandridge Golf Club make us so very welcome.

In the morning N. Packer and R. Begent

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combined well as they had done at Northants, and were our only winners. In the afternoon, fortified by an excellent lunch, we again only managed one win. John Sadler and Angus Hoppe after being five up eventually made it by 2/1.

Mr. Hankey, as always, won both his games. In the afternoon he and his partner had a particularly good game and beat N. Packer and H. Rutherford on the home hole.

Results:—

M. Bowen and A. Hoppe lost 3/2.
J. Sadler and H. Rutherford lost 1 hole.
R. Begent and N. Packer won 4/2.
Dr. Kemp-Harper and Dr. Kelsey-Fry lost 4/3.
M. Bowen and R. Begent lost 1 hole.
J. Sadler and A. Hoppe won 2/1.
N. Packer and H. Rutherford lost 1 down.
Dr. Kemp-Harper and Dr. Kelsey-Fry lost 3/2.

30th August **v. Westminster** (at Dulwich) **won 3/1**

Although we had not played a match for six weeks Bart's had a comfortable victory. Dave Grieve won by 4/3 at number one without much difficulty and John Sadler was the victor by one hole in a wild match in which five balls were lost. Bruce Neu won again by 5/4 but John Gower went down rather heavily by 7/5.

J. C. Sadler

FENCING CLUB

1966-67 has seen the resurrection from the ashes of a Phoenix called the "Bart's Fencing Club" after two years of inactivity. The Students' Club has united with the nurses and, by kind permission of Matron, we fence on Monday evenings 8-10 p.m. on the top floor of Gloucester House.

We are now capable of producing a complete team, which we did for the match against The London Hospital. Although we lost both foil and épée, this was due mainly to lack of match experience than to lack of talent. In order to rectify this we are arranging to hold matches with the local office teams to fill in the summer gap when the rest of the University is down. The three I.H. cups are at present held by The London and since we feel they ought to reside closer to the A.R., inter-hospital contests have been organised.

The Club will hold an A.G.M. early in October when our instructor, Francis West, returns from Turkey where he has been training the Turkish Army how to use swords for the film "Charge of the Light Brigade." Fencers of all grades are welcome to join the club and as much support as possible is necessary in these early stages of the Club's resurrection.

C. P. Ashby

TENNIS CLUB

Hospital Singles Competition

The semi-finals and finals were held at Chislehurst on 14th August. First on court were Garrard and Kohli. It was evident by the number of double faults that neither player was in form and after a rather unexciting game Kohli finally won in three sets.

Setchell and Hunt had played their semi-final two weeks earlier, Setchell being the victor, again in three sets. He therefore met Kohli in the final. Setchell, short of practice, failed to produce his usual form, but he managed to even the match at one set each after a long battle. The steadier Kohli, however, prevailed and won the last set 6-4 to win the match and the competition.

The Slazenger Indoor Court is to be hired once a week for 1st VI practice and coaching throughout the winter months.

C. S. Garrard

BADMINTON CLUB

The badminton season has now started, the first match being played on 7th October. At the end of last season the Men's team was promoted to the First division of the University League and the mixed team were also well placed in their League. It is hoped that this standard will be maintained in the coming season.

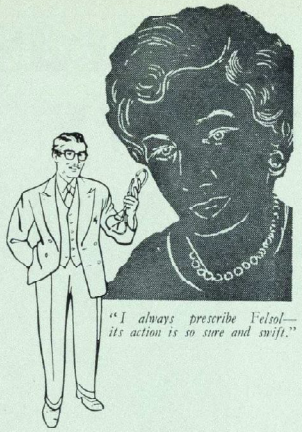
The Club meets every Tuesday evening, at 7 p.m., in the Gym at College Hall. All are most welcome.

M. Buckingham

LADIES' SQUASH CLUB

The Ladies' Squash Club meets on Wednesday afternoons throughout the winter months, and plays a large number of matches against other hospitals. We warmly welcome any Freshers, who wish to play. It is not necessary to have played before, as coaching is arranged. If you are interested, we shall be pleased to see you on any Wednesday.

M. D. O. John



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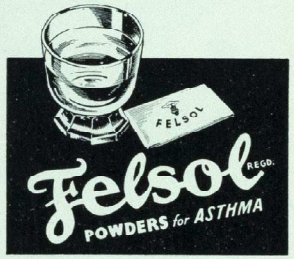

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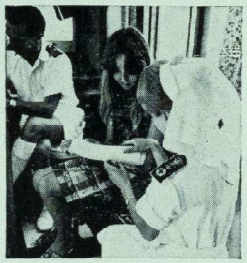

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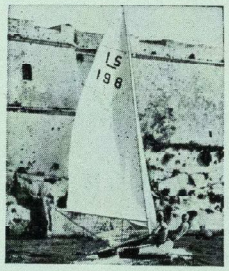

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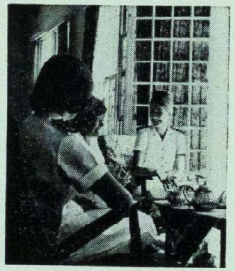

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Our final match against **St. George's Hospital** was held on a glorious afternoon in July at the Paddington track. The opposition numbered two, but our turnout was very good, and although they borrowed two other U.H. athletes to beat us by a narrow margin in some track races, there were no field events, so that we can claim the match by the *per capita* aggregate of 8—2.

Our season has been quite successful although we have had less matches than usual. Sports day was disappointing in that it rained again, and I should welcome suggestions from any reader as to how the occasion might be improved. The highlight of the summer was the tour to Dorset and it might be worthwhile to repeat this next year or the year after as a useful prelude to the season.

Any athlete, of whatever standard, who is interested in the Athletic or Cross Country clubs, should consult the secretary, R. J. Thompson.

R. J. Thompson

CROSS COUNTRY CLUB

We were relegated to the second division of the University League last season due to non-participation in two of the five matches, but with Graham Hesselden and Steve Williams from R.D.H. to help us, we should easily regain our position. However, we shall have to work much harder to regain the U.H. trophy which we lost last season after a reign of six years.

Evening training will be organised according to demand and we shall work out on Hampstead Heath again on free Wednesday afternoons.

At the A.G.M. of the United Hospitals Hare and Hounds, Mr. H. B. Lee was presented with an engraved silver pencil after his three year term of office as President of the Club. On the same occasion, Robert Thompson was elected secretary of U.H.

R. J. Thompson

SOCCER CLUB

After last season, in which we narrowly missed promotion in the University League on goal average and gained a reasonable position in the United Hospitals' League, we look forward optimistically to the coming season. An experienced core of players, Thew, Dorrett, Sutton and Farrow, are now entering their last season with the Club and will no doubt again turn in reliable performances.

However, we look forward to this year's intake for new talent and anyone who is interested in playing football this year is urged to contact either the Captain or Secretary.

P. Turner

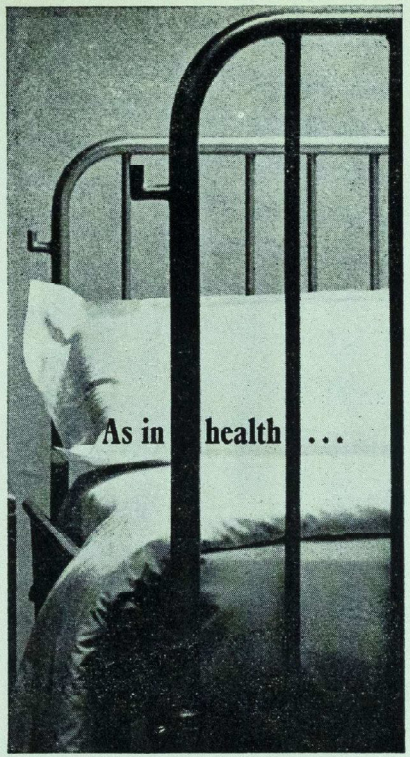
Answers to Diagnosis

The patient had two separate and probably unconnected diseases. The chest film shows a discrete oval capacity in the apex of the left lower lobe which, in a 61 year old smoker, very probably represents a neoplasm. There are two clues to the aetiology of his epilepsy. Since he received a full pension from the Army for a condition he developed twelve years after his period of service it seems likely that the epilepsy was secondary to a condition acquired during his residence in India. The probable nature of this condition can be inferred from a further examination of the chest film. It shows, in addition to the shadow of the neoplasm, a number of small, discrete opacities in the lung fields and in the shadows of the pectoral muscles. From their position and their generally fusiform appearance a tentative diagnosis of old infestation with T. solium can be made in a patient with epilepsy acquired during residence in the Far East.

The larvae of the tapeworm Taenia solium are eaten in "measly" pork and behave as normal parasites in the human bowel. Unfortunately when man swallows the eggs of T. solium they complete the second half of their life cycle in his tissues, burrowing through the intestinal mucosa into the blood stream and coming to rest in a number of characteristic sites where they encyst, die, and are finally calcified. The brain is one common site (hence the epilepsy) but most of the cysticerci form in muscle and connective tissue. Those seen in the lung fields are actually in the musculature of the chest wall, and if this fact can be established by study of oblique chest films the diagnosis may be made more firmly. It may be confirmed by biopsy of the nodules themselves.

In summary, this is a case of a 61 year old man with a carcinoma of the bronchus whose long-standing epilepsy is almost certainly secondary to cysticercosis acquired during residence in India 40 years ago.

I am indebted to Dr. Edwards for advice and to Professor Scowen for permission to publish this case.



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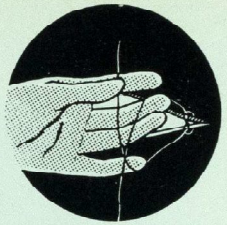

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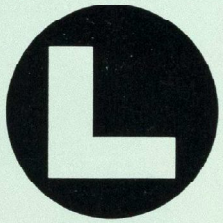

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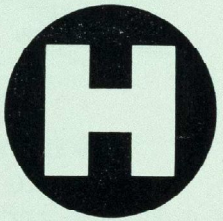

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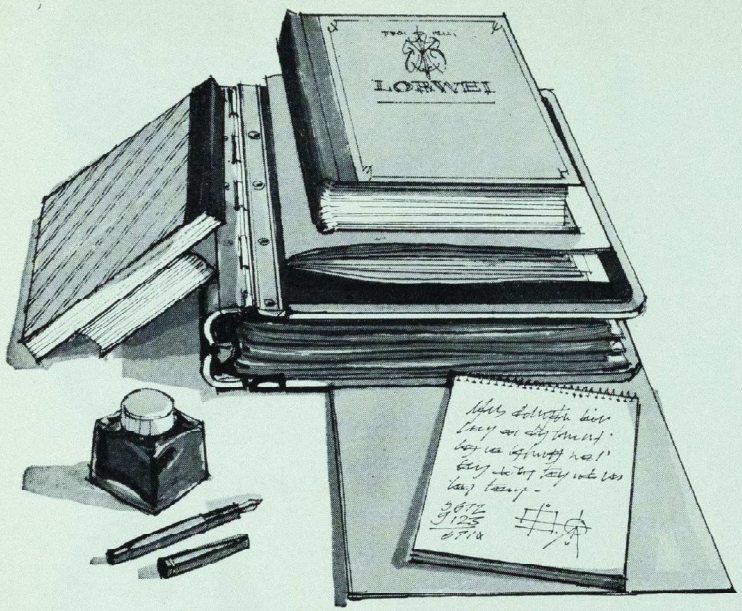

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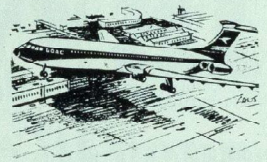

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(1) *B.M.J. No. 5529. Page* 158.

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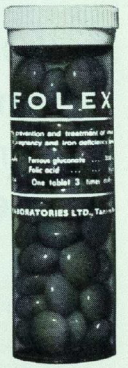

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Saint Bartholomew's Hospital JOURNAL

Vol. LXXI No. 11

1st November 1967

CONTENTS

Editorial ... 402
Letters to the Editor ... 403
News ... 404
Obituary: Sir George Aylwen, Bt. ... 405
Retirement: Dr. George Simon ... 406
Retirement: Dr. Thomas Banks ... 407
The Broad Spectrum of Diabetes, by John Lister ... 409
A Poem from a Depressed Boy of 12 (Interpreted age 16), from Dr. Louis Rose ... 414
Diagnosis, Part I, by J. R. Griffiths ... 416
Romance, by Peter Dady ... 418
Reflection, by Peter Dady ... 419
Wix Prize Essay: Robert Lawson Tait, "His Life and Work", 1845-1899, Part I, 1845-1879, by Peter R. Jordan ... 420
Diagnosis, Part II, by J. R. Griffiths ... 425
Ars Longa ... 426
Cartoon, by Cull ... 428
Record Review, by John Sills ... 429
BOOK REVIEWS:
Penguin Reviews ... 430
Paperback Fiction ... 431
Medical Book Reviews ... 431
SPORTS NEWS:
Rugby Club ... 438
Cross Country Club ... 439
Answers to Diagnosis, by J. R. Griffiths ... 441

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Psychosomatic Neglect

Lord Platt in his Harveian Oration to the Royal College of Physicians on October 18th said that if he was seriously trying to assess the debit side of clinical medicine, "unhesitatingly I would put among its failures the almost complete neglect of psychological factors". Strong words, which, it would appear, accuse clinicians of falling foul of the mechanistic approach to disease which served so well to give them the upper hand over the endemic conditions of the past. By recognising infectious agents and discovering specific cures, as well as introducing large scale preventive immunization, they have given their patients a good chance of reaching their 'three score years and ten' without falling earlier to their Father's birthright of tubercle, diptheroid or pneumococcus. What Lord Platt complains of is that after 20 years of revolutionizing the treatment of the soma, we are reluctant to change direction and assess more carefully the importance of the psyche.

It is unfair to accuse General Practitioners of failing to recognise the fact which their College has well publisized, that slightly more than one fifth of the patients who crowd their waiting rooms are suffering from ills that are, at least in part, occasioned by "stress". Moreover, valiant though their attempts are at appreciating their patients' problems, they cannot be blamed for occasionally treating them symptomatically with prolonged courses of tranquillizers when Research workers and Hospital Doctors fail to give a lead. Lord Platt went on to say that he felt the line taken in research was too often "the measurement of the trivial, the irrelevant, and the obvious", after all it is much easier for clinicians to attempt to elucidate measurable changes in blood chemistry than it is to apply imagination to the largely unknown (and unmeasurable?) field of psycho-somatic disease. Nor is it adequate for hospitals to treat anxious patients only when their ulcer perforates or their asthma becomes acute.

The great difficulty is, of course, that the physical manifestations of stress, whether these be high blood pressure, peptic ulcer, migraine, colitis or eczema, have so multiple and complex an aetiology. Undoubtedly a man's environment exposes him to many pressures, both fully and incompletely realized, although the Bishop of Manchester feels that "there is inherent in human nature a tension, stress, anxiety which no improvement of external conditions, individual or social, can cure." It can be argued that man's evolution prepared his physiological responses inadequately for the strains of modern life; that he was naturally selected in an age when his lot was to spear his pig daily, chase away the wolves at night and repel his neighbours' assaults on the morrow. His excellence, the argument runs, at successfully responding with 'fight or flight' would hardly equip him to deal with the largely social challenges of a liberal civilization. Moreover the laws and conventions of his society do not encourage him to give vent to his 'natural responses". Neither does it appear that acquisition of physical comfort and material benefits relieve his anxiety, even though Shakespeare tells us "For what thou hast not, still thou strivest to get. And what thou hast, forgetst." During the past 20 years wages have constantly risen, working hours shortened and living conditions improved, yet still the stress diseases soar.

Until more inquiry into the exact nature of the stressful situation reveals what must be avoided, and research demonstrates the physiological imbalances involved, we stand little chance of escaping from the yearly increasing demand for tranquillizing drugs. Whereas in the past the Church claimed to have an answer for all in the 'Peace of God which passeth all understanding' and the 'cool people' of 1967 opt for transcendential meditation, more and more the patients of the N.H.S. are hoping for an answer from their doctors to what are basically the pathological manifestations of their philosophical inadequacies.

Perhaps the esoteric measurements which Lord Platt finds often so trivial should indeed give way to a deeper examination of the conditions that the one fifth are suffering from.

Ref.: *The Times*, 19th October, 1967, page 2.

LETTERS TO THE EDITOR

Sir,—I doubt if statistics will appeal to Major-General Barnsley, but if he reads the published reports he will learn that there is overwhelming evidence that the dear old vicar with his pipe and the tycoon smoking his corona-corona are less likely to die of Lung Cancer than the people who smoke 15 to 20 cigarettes each day, of whom I suspect the Major-General is one.

There are two theories suggested for this difference. One that the temperature at the end of a burning cigarette is sufficient to turn the tar in the tobacco into a carcinogen, a small molecule that cannot be caught by a filter whereas in a pipe this temperature is not reached. The other that the "curing" of cigarette tobacco differs from that of pipe tobacco. There is some statistical evidence for this. The new process of "curing" cigarette tobacco started about 1900 when the mortality in this country was about 500 each year and has risen steadily to the 1956 figure of 26,000. It is true, however, that the curve indicating the average number of cigarettes smoked per year is almost parallel to that of the mortality.

My colleague gives a great many talks to school children and Youth Clubs to try and prevent them from starting to smoke cigarettes, and thus to prevent "The little bit of what you fancy doing harm".

Yours faithfully,
MALCOLM DONALDSON,
Honorary Director,
Cancer Information
Association,
6 Queen Street, Oxford.

5th September.

Sir,—I read Professor W. G. Spector's article "The New Pathology Curriculum" (*St. Bartholomew's Hospital Journal Vol. LXXI No. 10. October '67*) with interest, but it seems to me that despite the changes made, little that is new is being offered in practice. For example, the course remains, in terms of teaching hours, almost the same length as before, whilst the proportion of practical work has diminished. There is no mention of a system of essays which could be set to ensure that the student understands various important topics in pathology. For this purpose, too, the terminal examination should surely include a written component, as the present objective papers do not really assess understanding. This would, I realise, entail more work in a department which is already quite small, but if it leads to an increased understanding of pathology it is surely not too high a price to pay. A set of references, for those who wish to read further on specific topics, could be included with the lecture orientation notes.

There must be quite a strong case for giving a general pathology course as part of the Second M.B. examination, in place of some of the overlapping sections in physiology, biochemistry and pharmacology. This, with an examination in Second M.B., could serve as an introduction to clinical work, and provide increased contact between Charterhouse and West Smithfield. It would also leave the clinical pathology free for integration with ward and theoretical medicine and surgery, though it cannot be easy to integrate ward and theoretical teaching. Such a scheme would also remove the advantage the Cambridge people are thought to have, and incidentally some of their boredom at having to attend lectures on subjects with which they are already familiar.

Finally, as the student must be willing and interested to learn, so must the teacher be equally willing and interested to teach and to give guidance. While the student body has lacked interest in the past, some of the lecturers have also been lacking. One need look no further than the last three months pathology course for some rather uninterested teaching and lack of guidance to those who were more than willing to learn.

Yours faithfully,
V. F. LARCHER,
The Abernethian Room,
St. Bartholomew's Hospital,
London, E.C.1.

3rd October.

Engagements

MAW — WIMSHURST. — The engagement is announced between Dr. A. Richard Maw and Miss G. L. Ankeret Wimshurst.

VARTAN — GOODMAN. — The engagement is announced between Dr. Charles P. Vartan and Miss Anne R. Goodman.

TOLLEY — MCKEOWN. — The engagement is announced between Dr. Michael E. Tolley and Dr. Jane M. I. McKeown.

SOPER — BENNETT. — The engagement is announced between Richard Soper and Miss Susan Bennett.

Births

CHITHAM.—On August 31, to Heather and Dr. R. G. Chitham, a son.

KNILL-JONES.—On August 26, to Dr. Jennifer (née Sykes) and Dr. Robin Knill-Jones, a daughter (Phillipa Louise).

Deaths

BUCKLAND.—On August 30, Dr. Leslie Henry Buckland, M.R.C.S., L.R.C.P. Qualified 1935.

MAGNUS.—On September 12, Dr. Henry A. Magnus, M.D., F.R.C.P. Qualified 1932.

MEANS.—On September 3, Dr. James H. Means, aged 82.

RADLEY.—On September 13, Sidney Bertram Radley, F.R.C.S., aged 78. Qualified 1911.

VERNEY.—On August 19, Dr. E. B. Verney, M.A., M.D., F.R.C.P., F.R.S., aged 73. Qualified 1918.

WATERS.—On September 12, Kenneth Fraser Darrell Waters, F.R.C.S. Qualified 1918.

Marriage

SCOTT—TATE.—The marriage took place on August 26 between Brian Barry Scott and Miss Patricia Joy Tate.

Appointment

Dr. R. A. Kemp Harper has been appointed consulting Radiologist to the Royal Navy.

Duty Calendar for November, 1967

Sat. & Sun. 4th & 5th.
Dr. Hayward
Mr. Badenoch
Mr. Manning
Dr. Ballantine
Mr. McNab Jones

Sat. & Sun. 11th & 12th.
Dr. Oswald
Mr. Tuckwell
Mr. Aston
Dr. Jackson
Mr. Dowie

Sat. & Sun. 18th & 19th.
Prof. Scowen
Prof. Taylor
Mr. Lettin
Dr. Boulton
Mr. Fuller

Sat. & Sun. 25th & 26th.
Sir Ronald Bodley Scott
Mr. Hunt
Mr. Lettin
Dr. Cole
Mr. Cope

Physician Accoucheur for November is Mr. G. Bourne.

NURSING TRAINING AND DEGREE COURSE by Elizabeth Ferreira

The Ministry has recently agreed to an experimental form of Nurse Training to begin at Barts. In February 1968 the Hospital, in conjunction with the City University, will be offering four places to girls who will be able to take a combined course qualifying with an Honours degree in Social Science and State Registration as a Nurse. The course will take four years and four months. It will be open to people who primarily want to nurse and secondly have the necessary qualifications for University entrance.

There have been similar courses elsewhere, one at Edinburgh and one in London since 1960, but Bart's approach differs in that this course is to be fully integrated between the University and the Hospital. It is to be divided in the American manner into six Semesters.

Why is it now necessary for Nursing, surely the most practical of jobs to have a degree course. Nowadays more and more of the applicants for Nurse Training are also qualified for University entrance and from the academic view there is a considerable wastage as the majority of these students will have no further academic achievement. With the formation of a combined University course the graduates will be ideal to fill the higher jobs in Nursing Administration as well as giving a new and more academic outlook to Nursing.

The applicants will be required to have the usual qualifications for University entrance, including Maths at "O" level so that they can cope with a course on computers at the City University. As their selection will be first and foremost as Nurses, they will apply first to the Hospital, and those suitable then to the University, bypassing the University Clearing House.

The partnership between University and Hospital will not only be academic, but much more communication will be possible on a cultural and social basis. The University is expanding rapidly and hopes to have more places available for the Hospital in future years, if this experimental course is successful. Big changes are taking place in Nursing, it is now realised that it is not necessary for administrators to have vast practical experience as Nurses, a Social Science degree will prepare them for management work in a realistic manner.

Obituary:

Sir George Aylwen, Bt.

Sir George in his Mayoral robes.

Sir George Aylwen, Treasurer of the Hospital and President of the Medical College from 1937 to 1940 died at his home in London on 27th September, 1967, at the age of 86.

Sir George's pride in, and his great affection for the Hospital, made him outstanding among Barts Treasurers of the last half century.

He was the last of the Hospital's Treasurers to be appointed by the Court of Governors from amongst their own number. They knew him, for he had served as a Governor since 1932, and, knowing him, they recognized that he would bring to the office of Treasurer those qualities of courage, integrity, initiative and drive that had enabled him, after starting his working life as an office boy in the City, to rise to become a partner in J. and A. Scrimgeour, one of the City's oldest and most respected firms of stockbrokers, and, too, to become Lord Mayor of London in 1948-49.

The Governors had no reason to be disappointed. Immediately he became Treasurer he recognised the Hospital's need for new and up-to-date buildings and he started to raise money for the purpose. But the war came and any appeal for funds had to be abandoned. As soon as the war was over, in spite of the difficulties of permits and priorities, he was determined to make a start.

The results are a lasting memorial to his determination and include Gloucester House, the most up-to-date Nurses' Home of its time, and accommodation therein for a Nurse Training School in keeping with the high reputation which Barts Nurses have ever enjoyed and of which Sir George was so justly proud.

Also in Bartholomew Close was erected a new and fully equipped Department of Radiotherapy, together with a Block of Wards and Theatres for Special Department patients, which was opened by Her Majesty The Queen in May 1961, and named by her the Queen Elizabeth Block.

Sir George was an outstanding personality. But there was little of the diplomat about him. In hospital matters he said what he thought regardless of the audience he was addressing. But always one knew that he was honest and sincere, and that he would not say one thing to A and another thing to B. If he had strong views on any matter being discussed he too often gave the impression, both in Committee and outside, that he resented those whose views did not agree with his, and in such circumstances he was forthright almost to the point of rudness. Though he would always apologise later, this trait lost him many friends.

It was this tendency to assume that he was always right (and most often he was!) that kept bringing him into conflict with the Civil Servants at the Ministry. He took exception to implementing any Ministry directive which he was convinced would be detrimental to the Hospital, or its patients or would involve unnecessary expense. He thus gained the reputation of being a rebel, unwilling to co-operate with those whose task it was to organize and direct the service. Such a reputation was, in fact, undeserved. As Chairman of the London Voluntary Hospitals Committee he had been one of the few Teaching Hospital representatives to express himself in favour of the introduction of the Health Service. He would have been willing to help and co-operate in any way to secure its smooth running provided the standards of the Teaching Hospitals in general, and Barts in particular, were not to be lowered by an official tendency to demand more and more unnecessary and, he believed, undesirable over-regimentation.

That he was sadly disappointed when he learnt in February 1960 that the Minister did not intend to re-appoint him Treasurer, there can be no doubt. To a friend he said, "I have been Treasurer of Barts for 23 years. I have given all I could to it. Yet I'm sacked on one month's notice!"

If Sir George were ever to have a tablet to his memory in the Hospital Church, no inscription would be more appropriate than the words, "He loved the Hospital too much". For if his affection for and his pride in Barts had not prompted him to resist whatever in his view might reduce the efficiency of its service with the vigour and forthrightness inherent in him, he might still have been the Treasurer when Her Majesty opened the Queen Elizabeth Block which was only there because of his initiative and determination.

Retirement:

Dr George Simon M.D., F.R.C.P., F.F.R.

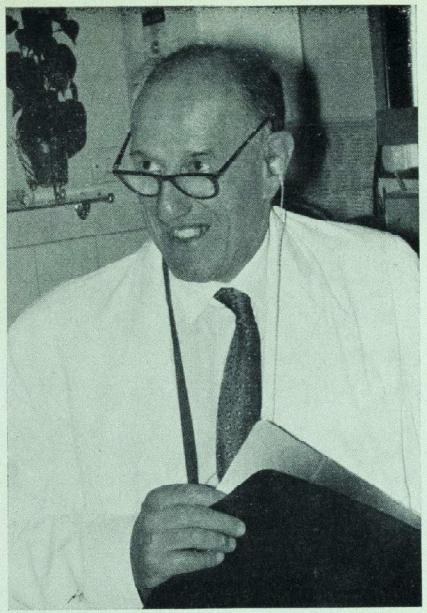
On September 4th, Dr. George Simon retired from the staff of Barts, thus terminating an association with the Radiology Department which lasted for 40 years.

His career in Medicine commenced as a student at Cambridge and then at Barts, qualifying in 1925 and taking the D.M.R. qualification in 1927, since when he had uninterrupted service on the staff of the Department until a few weeks ago. Whilst acting as a part-time Chief Assistant in his early days in this hospital, he also served on the staff of Woolwich Memorial Hospital and then on the staff of Edgware General Hospital from 1930 until 1946, in addition to holding appointments at Hillingdon and Surbiton Hospitals.

During the war years he worked mainly at Hillend Hospital, St. Albans, to which the major part of Barts had been evacuated and where he continued to work until the return of the Special Departments on the opening of the Queen Elizabeth Block in 1961.

In 1948, he was also appointed to the staff of the Brompton Hospital to which he gave equally valuable and unstinted service.

Having already contributed to radiological literature in pre-war years his interest centred in the main on bone and chest radiology to which he has many contributions, culminating in his books on Bone X-Ray Diagnosis and Chest X-Ray Diagnosis. More recently many illuminating articles have flowed from his pen on Chronic Bronchitis and Emphysema, but also on many other aspects of chest diseases.



Dr George Simon

In recent years his interests have extended to cardiac radiology on which he has written and given many talks and lectures.

As a very active member of the Thoracic Society he was frequently asked to take part in symposia and seminars where his characteristic forthright manner in discussion contributed greatly to enlivening the proceedings. Dr. Simon was awarded the M.D. in 1938 and the M.R.C.P. in 1958, being elected F.R.C.P. in 1964. In radiology he was elected F.F.R. in 1947 and in recognition of his great contributions to radiology in which he has a world reputation he was elected President of the Radiology Section of the Royal Society of Medicine in 1965 and Vice-President of the Faculty of Radiologists in 1966.

He has taken part in Seminars in the U.S.A. and was a visiting Professor in Los Angeles in 1967. These achievements do not however give any idea of the personality of George Simon. Imbued with indefatigible energy and single minded pursuit of radiology, all his time was most usefully and gainfully occupied and if there was a lull in the usual bustle of work in the department, he was engaged in teaching undergraduates, postgraduates or any junior staff who happened to be around at the time.

His flair and great capacity for teaching is reflected in the affection in which he is held by all who have come under his influence. Many overseas graduates have also benefitted from his teaching sessions at the Brompton Hospital of which they knew by hearsay and to which they flocked.

The regard which his colleagues and past and present staff have for him was shown when close on 60 colleagues and their wives attended the dinner held in his honour on September 8th in the Great Hall, at which he received parting gifts from colleagues and the governors of the hospital. Although George Simon has officially retired he will be as busy as ever as he has been asked to carry out work at the Brompton Hospital, the Heart Hospital and St. Leonard's Hospital.

He is greatly missed in the day-to-day work of the department and by his clinical colleagues. We all thank him for his devoted service to the hospital and wish him many years of health to continue the work in which he has been interested for so many years.

Retirement:

Dr Thomas Banks

At the end of September the College said goodbye to the longest serving member of any of the preclinical departments. Dr. Banks came to Barts from Birmingham, where he took his first degree and a Ph.D. in Physics, and joined the Physics department in 1930, six years before the college moved to Charterhouse Square! In those days the Department was housed in the old Harvey Labs opposite the out-patients' entrance in Giltspur Street. It consisted only of the late Professor F. Ll. Hopwood, Dr. Banks, and one laboratory technician! First M.B. classes were usually of the order of 80 to 100 strong, and this state of affairs continued until towards the end of the war, since when the size of the Department has grown, owing largely

Dr T E Banks

to the increase in its more advanced teaching commitments, and its 1st M.B. commitments have shrunk considerably.

No-one has seen greater changes in the College than Banks. Throughout his long career he has been closely concerned with the teaching of 1st M.B. students; between 1500 and 2000 must have passed through his hands. He has also been active in the Hospital Physics Department; together with Prof. Hopwood he had a large share in the design and construction of the first million volt X-ray plant. During the war years, when the preclinical departments were evacuated to Cambridge, he collaborated closely with the team of Biochemists working under the late Professor Arthur Wormall in their pioneer work on the use of artificial radioactive isotopes in biological investigations. His advice and assistance in the preparation of radioisotopes and the construction of suitable measuring equipment—none of which were available commercially at that time—were absolutely invaluable. He also worked in the Cavendish Laboratories, assisting in running the Cavendish cyclotron.

Banks will be remembered by very many students for very many things, but probably most for his cheerfulness, his unfailing kindliness, and unassuming modesty. He was pre-eminently a teacher, and many hundreds of his ex-students have reason to be grateful to him for the way he guided their steps through what was, to most of them, a very difficult subject! He retires at the age of sixty, largely because his health now makes travelling very difficult for him. He will be sadly missed; he is almost the last of the pre-war generation of preclinical teachers, and the sight of him making his way slowly across Charterhouse Square, aided by his rubber-tipped walking stick, is so much a part of the place that things will not seem the same without him.

His very many friends at Bart's unite in wishing him a long and happy retirement.

G.R.F.

The Broad Spectum of Diabetes

by John Lister M.D., F.R.C.P.,

Consultant Physician to the
King Edward VII Hospital Windsor.

The relationship between the pancreas and diabetes mellitus was established by Von Merring and Minkowski[1] (1890) who showed that pancreatectomy in dogs caused hyperglycaemia, glycosuria and death. The islet cells had already been noted by Langerhans[2] (1869) and Ssobelew[3] (1902) found that ligation of the excretory ducts of the pancreas resulted in atrophy of the acinous tissue leaving the islet cells intact. MacCallum[4] (1909) noted that if the islets escaped damage during the experimental procedure the animal did not become diabetic but if the islet cells were so damaged classical diabetic symptoms appeared. These were the vital steps which led to the isolation of insulin by Banting and Best[5] in 1922. For the severely insulin deficient diabetic this was a life-saving discovery but 45 years later there remain many unsolved conundrums which make the study of diabetes and the care of diabetic patients a fascinating and at times a frustrating exercise. Few conditions offer a greater clinical challenge and few conditions offer the investigator a wider field for research.

For the clinician the problems range from early diagnosis and treatment of the disease to the prevention of complications and their management when they occur. For the investigator the field is almost inexhaustible and includes studies of the prediabetic state and the earliest signs of carbohydrate intolerance, estimations of immunoresponsive insulin levels in various stages and types of diabetes, the detection of insulin antagonism and such histological studies as electron microscopy of the islet cells and of the basement membrane in various organs. Since diabetes can occur at any age from infancy to advanced old age the clinical management of diabetic patients should be understood by every practising physician, but for a variety of reasons it remains a condition which seems to baffle the average doctor and student and so remains a condition which is often rather indifferently treated.

An attempt will be made to answer four questions:

I. What is diabetes?
II. What is the aetiology?
III. What is the treatment?
IV. What are the complications?

I. What is Diabetes

At one time the diagnosis was reserved for those patients with classical diabetic symptoms asociated with glycosuria, hyperglycaemia and a characteristic oral glucose tolerance test. Minor degrees of carbohydrate intolerance especially in association with infections, during pregnancy and other periods of stress tended to be disregarded, while the concept of pre-diabetes was not recognised. Gradually it has become clear that some impairment of carbohydrate tolerance may be present for many years before the onset of frank diabetic symptoms and that certain well defined groups of persons are particularly liable to become diabetic

There is still no international agreement on nomenclature but it is now generally agreed that there are three stages in the development of the diabetic state (see Table I).

Stage I:

This is the phase described as prediabetes, potential diabetes or more recently diabetes premellitus. There are no symptoms and there is no abnormality of carbohydrate tolerance detectable by any of the tests routinely available. Persons suspected of being in this stage include the non-diabetic siblings of identical diabetic twins, women who have borne babies weighing more than 10 lbs. and the offspring of two diabetic parents—but not more than two-thirds of such children actually seem to become diabetic.

Stage II:

This phase is often subdivided into latent diabetes which can only be distinguished from diabetes pre-mellitus by cortisone glucose tolerance tests which induce abnormal blood sugar levels, and chemical or sub-clinical diabetes in which the standard and I-V glucose tolerance tests are abnormal, although the patient still remains symptom free.

Stage III:
This is the final stage when decompensation has occurred and the patient has overt or frank symptoms of diabetes with hyperglycaemia and glycosuria.

Diagnostic Criteria:
The oral glucose tolerance test (G.T.T.) remains the single test most frequently used, the usual glucose load after an overnight fast being 50 G in this country and 100 G in the U.S.A. Interpretation of the test varies amongst different workers but Fajans[6] (1960) regards the following glucose levels (mg. per 100 ml. venous blood) as diabetic:

Fasting: greater than 100 mg.
½hr.: „ „ 160 mg.
1½hr.: „ „ 140 mg.
2hr.: „ „ 120 mg.

In the cortisone-glucose test described by Fajans[7] (1963) 50 mgs. cortisone acetate is given 8½ hours and again 2 hours before a glucose load (7.75 Gm. glucose per Kg. ideal body weight in 25% solution).

The following blood glucose levels (mg. per 100 ml. venous blood) are regarded as indicating a positive response:

½hr.: 160 mg. or more
1½hr.: 150 mg. „ „
2hr.: 140 mg. „ „

THE SPECTRUM OF DIABETES

Stages	Stage I	Stage II		Stage III	
Synonyms	Pre-diabetes Potential diabetes Diabetes pre-mellitus	Latent Diabetes	Chemical or Subclinical Diabetes	Overt Frank Clinical	Diabetes
Symptoms	Absent	Absent	Absent	Present	
Oral and I-V G.T.T.	Normal	Normal	Abnormal	Abnormal	
Cortisone G.T.T.	Normal	Abnormal	Not necessary	Not necessary	
Abnormal Insulin Response	YES (Probably)	YES	YES	YES	
Excess Synalbumin Antagonist (Vallance-Owen)	YES (Probably)	YES	YES	YES	
	Years + "Environment"		Treatment		

TABLE I

II. What is the Aetiology
Because nearly all severe diabetics require more insulin to control them than patients subjected to total pancreatectomy it seems clear that diabetes is not a simple insulin deficiency. Is there then an increased demand for insulin? —or is insulin antagonism the cause? Evidence has been brought forward to support both suggestions and Vallance-Owen[8,9,10] claims that diabetics have an excess of the synalbumin insulin antagonist. Others believe that diabetics have a deficient islet cell reserve and that decompensation occurs when the deficient pancreas fails to produce the increased amount of insulin which may be required under the stress of such conditions as obesity, pregnancy, acromegaly, thyrotoxicosis and intercurrent infection.

Finally, assuming that there is some kind of diabetic "marker," the possession of which predisposes certain individuals to diabetes—how is this inherited and how can it be recognised?

Luft[11] in the concluding paper of the Sixth Internation Diabetes Federation meeting in Stockhalm in 1967 asked, "What is inherited? What is added?" He believes that whatever the mechanism there are certain persons who inherit a predisposition to diabetes—the actual genetics having a multifactorial basis. He has found that patients suspected of being pre-diabetic have a diminished insulin response to a glucose load. The added factors are those stressful situations already mentioned, obesity in a predisposed person probably constituting the greatest hazard.

Because juvenile diabetics survive into adult life and are capable of having children the incidence of persons with the inherited factor whatever this may be is increasing. Furthermore, because of the increasing longevity of the population these persons have a longer life span in which to be exposed to the "added" factors mentioned. Not surprisingly the incidence of diabetes is increasing and diabetes detection drives have revealed that for every known case there is another undiagnosed case.

Here then is a common disease with an uncertain aetiology and requiring life long supervision. Physicians and investigators must continue their efforts to unravel the many unsolved mysteries and meanwhile must offer existing patients the best treatment available in the light of present knowledge.

III. What is the Treatment?
If pre-diabetic patients could be recognised with certainty and patients with latent and chemical diabetes detected early enough it might be possible to prevent or delay the development of frank diabetes in these subjects by dietary advice, particularly designed to control their weight. In the overt or frank case the treatment must vary with the clinical features of the case. All diabetics who have become decompensated behave as though they are suffering from either an absolute or relative deficiency of insulin. Children and nearly all persons who develop diabetes before the age of 30 behave as though the deficiency is absolute. Thus they have considerable hyperglycaemia with thirst, polyuria and weight loss and they are liable to develop keto-acidosis. They are markedly sensitive to injected insulin and once stabilized are liable to hypoglycaemia if they take too large an insulin dose, are late with their meals or take unusual exercise.

This type of case has been variously described as insulin sensitive, insulin dependent or juvenile onset in type.

In older patients and especially the middle-aged obese group, the insulin deficiency appears only relative and although there is hyperglycaemia and glycosuria there is no tendency to keto-acidosis and often no significant thirst or polyuria, women commonly presenting with pruritus vulvae associated with monilial vulvitis and men being found to have glycosuria on routine urine examination or when they have developed balanitis. The term maturity onset is often applied to these patients who are not necessarily insulin dependent and are much less sensitive to injected insulin than the other group of patients.

Satisfactory treatment of any diabetic requires:
(i) The elimination of symptoms.
(ii) The avoidance of ketonuria.
(iii) The maintenance of blood sugar levels as nearly within the normoglycaemic range as possible.
(iv) The avoidance of hypoglycaemic reactions.
(v) The maintenance of the patient within his optimum weight range.
(vi) The restoration of the patient to a position of social and economic usefulness.

Three regimes are available:
(i) Diet alone.
(ii) Diet and oral therapy.
(iii) Diet and insulin.

Dietary treatment:
All diabetics must accept some dietary restriction and every doctor should be able to give appropriate dietary advice to his diabetic patients as dieticians are by no means always available.

Obese, middle-aged diabetics and many mild elderly diabetics may be controlled on diet alone. Every diabetic should aim at his optimum weight, but when obesity is not a problem, restriction of the daily carbohydrate intake with the range 150-200 Gm. with approximately equal allowances for three main meals is often all that is required. Protein and fat need not be weighed in these cases. When weight reduction is required the total carbohydrate intake is restricted to about 100 Gm. carbohydrate and the protein and fat content of the diet must also be controlled so that the total calories do not exceed 1,000-1,200 daily. In more severe forms of obesity even more rigid control is required.

Diet and oral therapy:
For patients not quite adequately controlled on diet alone the addition of hypoglycaemic drugs may obviate the need for insulin. Two main groups of oral hypoglycaemic agents are in common use.

I. *Sulphonyl-urea drugs*
These exert an insulin-like action—either by causing hypertrophy of the beta cells of the islets of Langerhans or by facilitating the release of insulin. Their action thus depends upon the presence of an intact pancreas still capable of some insulin production and release. Experimentally they are ineffective in pancre-

atectomized animals.

The two drugs in common use are:

(a) Tolbutamide (Rastinon), which is supplied as 0.5 Gm. tablets and should be administered either twice or three times daily—maximum dose 1.0 Gm. t.d.s. There is little danger of hypoglycaemia and these drugs are particularly suitable for elderly patients.

(b) Chlorpropamide (Diabinase), which is supplied in 100 mg. and 250 mg. tablets (both "scored"). Having a half life longer than tolbutamide, a once daily dose is adequate. It is inadvisable to exceed a maximum daily dose of 375 or 400 mgs. Hypoglycaemic symptoms can be induced by larger doses and when the drug is given more than once daily.

II. *Diguanide drugs*:

These exert their hypoglycaemic action independently of the pancrease and appear to increase peripheral glucose uptake.

The drugs commonly used are:

(a) Metformin (Glucophage), which is supplied as 0.5 Gm. tablets the usual daily dose being 0.5 Gm. t.d.s.

(b) Phenformin (Dibotin), which is supplied as 25 mg. tablets—the dose being 25 mg. b.d. or t.d.s.—and 50 mg. sustained action capsules which are effective when administered once daily.

An advantage of these drugs is their anorectic effect as opposed to the sulphonyl-ureas which may stimulate appetite and encourage weight gain by their insulinogenic effect. They are, therefore, sometimes used as the oral hypoglycaemic agents of choice in obese patients not controlled by diet alone, and are frequently used in combination with relatively small doses of the sulphonyl-urea drugs. Their side effects are chiefly on the alimentary tract.

Diet and insulin:

The insulin dependent juvenile onset type of diabetic requires injected insulin in addition to dietary restriction of carbohydrate. Seven insulin preparations are available (Table II), but Globin insulin is rarely used and Protamine zinc insulin much less frequently than in the past.

Soluble or crystalline insulin is unmodified and has a duration of action of 6-8 hours with maximum effect about 2 hours after injection. It must be injected at least twice daily—but it is the preparation most predictable in its action and should always be used in severe cases and in the presence of ketosis or to cover any complication such as an intercurrent infection or pregnancy. The other insulin preparations have

TABLE II SEVEN INSULIN PREPARATIONS

	NAME	ONSET
1	SOLUBLE (CRYSTALLINE, REGULAR OR UNMODIFIED INSULIN)	30 mins
2	PROTAMINE ZINC INSULIN	6-8 hrs
3	GLOBIN INSULIN	
4	INSULIN ZINC SUSPENSION AMORPHOUS (SEMILENTE)	1 hr
5	INSULIN ZINC SUSPENSION CRYSTALLINE (ULTRALENTE)	2 hrs
6	LENTE INSULIN (SEMILENTE:ULTRALENTE IN PROPORTIONS 3 : 7)	1 hr
7	ISOPHANE INSULIN (N.P.H)	2 hrs

all been modified to prolong the action of a single injection. It was hoped that the introduction of Lente insulin which is a mixture of Semilente insulin (duration of action 8 hours) and Ultralente insulin (duration of action 18 hours) in the proportion of 3 : 7 would provide most insulin dependent diabetics with a satisfactory single daily dose regime. When the dose required is not in excess of 40 units this is often the case but in larger dosage it has proved a disappointing preparation.

For many diabetics a better regime is a basic twice daily dose of soluble insulin with the addition of a small dose of Isophane insulin (duration of action 12-14 hours) to one or both doses—the two preparations being miscible in the same syringe without modification of the properties of either. This regime is particularly useful in children in whom the addition of a small dose of Isophane to the evening dose of soluble insulin will control nocturnal hyperglycaemia and nocturia.

Confidence in the choice of insulin preparation and dosage can only be gained by experience but it is important to understand the duration of activity of the preparations used so that the diet can be spaced to cover the period of maximum activity and the patients warned of the times when hypoglycaemic symptoms are most likely to occur.

IV What are the Complications?

I. Diabetic coma is the result of progressive uncorrected keto-acidosis. It occurs in three classical circumstances.

(1) As the presenting feature of the disease in severe insulin dependent patients.

(2) In insulin-dependent diabetics who abandon treatment.

(3) In normally well controlled patients who have developed an intercurrent infection, e.g. pneumonia, infective diarrhoea and vomiting, carbuncles, etc.

Responsible, well indoctrinated patients should be able to avoid serious keto-acidosis except when seriously ill, when they should seek immediate medical advice.

II. Hypoglycaemia is normally a complication of treatment with insulin and sometimes with oral drugs. It is the duty of the physician to ensure that his diabetic patients appreciate the circumstance which may lead to hypoglycaemia and are able to recognise warning symptoms and able to take appropriate action. Hypoglycaemia may occur if there is a natural remission of the diabetes and treatment is not modified. This often occurs in the early stages of the disease after initial stabilisation on insulin. Patients should be instructed about reducing their insulin dose if their urine remains sugar free and especially if they are experiencing minor hypoglycaemic symptoms before meals. They should also be warned of the importance of having their meals to time and of increasing their carbohydrate allowance or reducing their insulin dose before unusual exercise.

III. Distant complications.

Diabetics should very rarely die in diabetic coma and well run Diabetic Departments hope that they will rarely see one of their own clinic patients in coma. Similarly hypoglycaemia should rarely be a serious hazard—but nevertheless it sometimes is. Unfortunately, however, longstanding diabetic patients are particularly liable to vascular disease and this may be considered under two headings.

(i) Accelerated atherosclerosis which leads to a high incidence of coronary artery disease in diabetics at an unexpectedly early age in both sexes—pre-menopausal diabetic women having the same incidence of coronary artery disease as non-diabetic men of the same age, peripheral vascular disease especially affecting the small distal vessels also being common.

(ii) Diabetic vascular disease which specifically affects the retinal vessels and smaller renal vessels leading to retinopathy and nephropathy.

These two complications are the major limiting factors in the present treatment of diabetes as few insulin dependent diabetics of more than 25 years standing are free of some evidence of one or both of these conditions. Retinopathy can lead to blindness while nephropathy may advance to a state of irreversible uraemia. Good diabetic control is by no means certain to prevent their development—but no better prophylactic measure is known.

Diabetic neuropathy is another bewildering complication usually associated with a patchy demyelination of the nerve sheaths and having a pleomorphic clinical picture. Absent sensation in the feet may lead to trophic ulceration and when this is complicated by sepsis and vascular insufficiency the viability of the limb is threatened.

Many other complications occur in diabetic patients and many other conditions can adversely affect diabetic control. The management of the pregnant diabetic woman presents a particular problem. The care of the diabetic is, therefore, a continuous responsibility and although it is essential that the general prac-

titioner should be familiar with the problem of management the regular attendance at the Diabetic Clinic offers an "anchorage" which is invaluable to the patient and offers the clinician an unrivalled opportunity for studying the natural history of a fascinating and incompletely understood disease.

REFERENCES

1. Von Merring J., Minowski O., (1890) Arch. exp. path. Pharmak. *26*, 371.
2. Langerhans P., (1869) English translation in Bull. Hist. Medicine (1937) *5*, 259.
3. Ssobelow L., (1902) Virchows Arch *168*, 91.
4. MacCullum W. G., (1909) Johns Hopk. Hosp. Bull. Baltimore *20*, 265
5. Banting, F. G., and Best, C. H. (1921-2) J. Lab. chir. Med. *7*, 251.
6. Fajans, S. S., in Diabetes (edited by R. H. Williams) p. 397 New York: Paul B. Hobuer, Inc. 1960.
7. Fajans, S. S., J.A.M.A. (1963) *186*, 279.
8. Vallance-Owen, J., Diabetes (1964) *13*, 241
9. Vallance-Owen, J., Demes, E., and Campbell, P. N., Lancet (1958) *2*, 336.
10. Vallance-Owen, J., and Lilley, M. D., Lancet (1961) *1*, 806.
11. Luft, R., 6th I.D.F. Congress, Stockholm, 1967.

A Poem from a Depressed Boy of 12
(Interpreted Age 16)

from Dr. Louis Rose

Research Fellow in Psychological Medicine, St. Bartholomew's Hospital

P.S. was referred to me by his family doctor nine months ago when he was just 16. His doctor had "known him since he was born—he is quite a sensible and intelligent boy but when he is singled out for any special attention such as taking part in a play or attending an interview he completely dries up and cannot express himself properly and stutters—he is very worried about this".

My patient when he came added "I can't read or answer what I *know* to be right—I go mute" in contrast with conversations at home where he is able to "talk round" any word he baulks at. It was elicited that he had some philosophical pre-occupation with death "in the abstract", with the futility of earning a living, with marriage as a vehicle for sex and with wealth. With regard to sex he said "I hate girls I don't believe they are necessary" —which we agreed was related to his fear of rejection.

At the second interview P. brought me the poem printed below which he wrote when he was 12, and I asked him to interpret it for me, which he did. I saw him twice more, during which it became clear that he was a very moody youth who, according to his mother, was "completely unco-operative—not fitting into the family—walking out slamming the door if anyone disagreed with him—nearly always silent—spending hours alone in his room".

I found P. to be a pleasant, quiet, co-operative and intelligent witness with near-normal affective response—perhaps a little flat. After producing the paraphrase of his poem we talked about publishing it and I had in mind sending it to this Journal. About three weeks later he telephoned to ask if it had yet been published and was told by my secretary that this had not yet been arranged. The same evening he tried to kill himself with barbiturates and was in coma for several days; he was discharged after a week and when I last heard was back to his usual state and school work

I wrote at this stage to his doctor: "I have wondered whether my clinical judgement failed me, but I can see nothing in the recent history to indicate such a sudden dive into depression even though I have plenty of evidence that he has been severely depressed in the past. Indeed, I wondered last evening whether a schizophrenic element might be creeping in, since he told his father that he would not have tried to take his life if he had known that his poem was likely to be printed. I am sure you will agree that this is such a bizarre cause-and-effect relationship as to imply a degree of psychotic thinking".

It must be of interest that another boy of 13 recently referred to me for treatment of very severe stammer reveals such a wide range of disturbed thinking and feeling patterns that to deal with the stammer alone would not relieve the boy of the greater threat to his mental health.

1962 or '63, age 12.

Madness

I don't want
I won't carry
I can't bear it—
I'm sorry I'm mad

Won't save it
Won't give it
Won't live it—
I'm *mad.*

Can't make it
Can't pay it
Won't take it—
I'm going mad.

Mad—
Round in circles
Repeating—
Defeating—
Competing—with me.

I've lost at last
It's gone too fast
It's past—
But present—
I've gone—
—mad.

I'm jumping,
A step—
One more-to-hell—
I'm twisting,
A second seems an hour—
Death . . . is . . .

Author's comments aged 16½

I don't want to carry
I can't bear to carry
I'm sorry I'm mad

I can't bear the load of my responsibilities—
I've got to a stage where I just don't want to carry any more — I've gone over the border-line of rationability. I apologise. I just can't fulfil other peoples expectations.
I apologise for being abnormal—mad

Won't save it
Won't give it
Won't live it

I just can't go on any more.
I can't do normal things like saving or giving (my money)
and I haven't got any left to save anyway.
I am just unable to continue life.

I'm mad.

My excuse is that I'm mad.

Can't make it

I am unable to either continue my work—
and thus reach the goal of other people's ambitions:—

Can't pay it

to pay back what I owe—i.e. to do the work I have been

Won't take it

given to do—but I will not resort to un-lawful acts of theft to repay it.

Mad—round in circles
Repeating
Defeating

My responsibilities cannot be swept under the carpet —they present themselves continually with deafening and intimidating violence.

Competing—	*with me. And I must try to ward them off but I am running a race with them and I may not win.*
I've lost at last It's gone too fast	*My responsibilities have overtaken me. and drowned me in their quagmire.*
It's past but present	*I've gone mad (been driven round) but I must realise that this is not a thing of the past—*
I've gone—mad	*this my* present *state.*
I'm jumping—A step one-more-to-hell— my mind is made up— I'm twisting A second seems an hour	*I'm committing suicide—because I can no longer live in my mad state this is* the *act.* *I'm falling thro' the air*
Death—is	*I want to tell the world what death is—but I can't get it out—for I am—dead.*

The first five verses are what actually happened to me—what I actually felt—depressed, bogged down in a ceaseless belt of never-ending over-laden work.

The 4th verse is particularly potent, for it is in this verse that I describe what it feels like to be near a nervous breakdown. You find things too much, so you are forced to sweep something "under the carpet".

But in the end, it is the material that you swept under the carpet—and tried to forget about—that overpowers you.

Then comes the awful realisation, like that of an army, when you find you are defeated —all is lost!

The last verse is just a pseudo-poetic description of suicide. Note its clinical cleanliness —no blood—no bespattered brains and—mangled crushed cage.

Note: Round in circles
This thing/feeling is surrounding me—
drowning me.
& will be engulfing me.

Diagnosis by J. R. Griffiths.

This difficult case began when a 49 year old company director had a wisdom tooth extracted. In the next three days he developed pyrexia at night, and in the ensuing three weeks suffered an unvarying pain below the right costal margin. His symptoms led him to cut short a business trip on the Continent and to consult a number of doctors both in London and in the country where he had recently purchased a farm. Two months after the onset of symptoms he underwent a cholecystogram, which showed no abnormality. He then developed a pyrexia of 100°F. which lasted intermittently until his admission two months later. In the last 5-6 weeks of this period he lost 1 stone in weight.

He proved to be a fit, intelligent man who smoked 20 cigarettes a day, and at one time had spent some years in the Far East. Eight years previously he had undergone gastrectomy and thirty years before this, appendicectomy. His mucous membranes were of good colour, his chest normal, his blood pressure 110/70 and his pulse a regular 88. Palpation of the abdomen disclosed a tender mass overlying the right lower lobe of the liver but no guarding or rigidity. An IVP was normal and chest X-Ray showed only a limitation of movement of the diaphragm on the right side. A number of tests had been carried out 3 weeks before admission:

Serum bilirubin	0.5 mg/100 ml
Direct Van den Bergh reaction	negative
Serum alkaline phosphatase	26.0 units
Thymol turbidity	3 units
Zinc sulphate	4 units
SGOT	18 units
SGPT	16 units
Total protein	7.5 mg/100 ml
Serum electrophoresis	normal
Hb	90%
ESR	112 mm in first hour
WBC	11,000/mm³
Neutrophils	57%
Eosinophils	4%
Lymphocytes	29%
Monocytes	9%
Platelets	280 000/mm³
Film: "some rouleaux formation, otherwise normal"	
Serum calcium (Normal < 10.5)	10.8 mg/100 ml
Serum phosphorus	2.8 mg/100 ml
Br. abortus agglutination	1/20 (negative)
isoCitrate dehydrogenase (normal 50—180)	90 sigma units/ml
5 Nucleotidase (normal < 20)	31 i.u.
Serum B_{12} (normal 160—925)	620 μμg/ml

The liver scan is shown below.

What provisional diagnosis would you make at this stage and what investigations or treatment would you order?

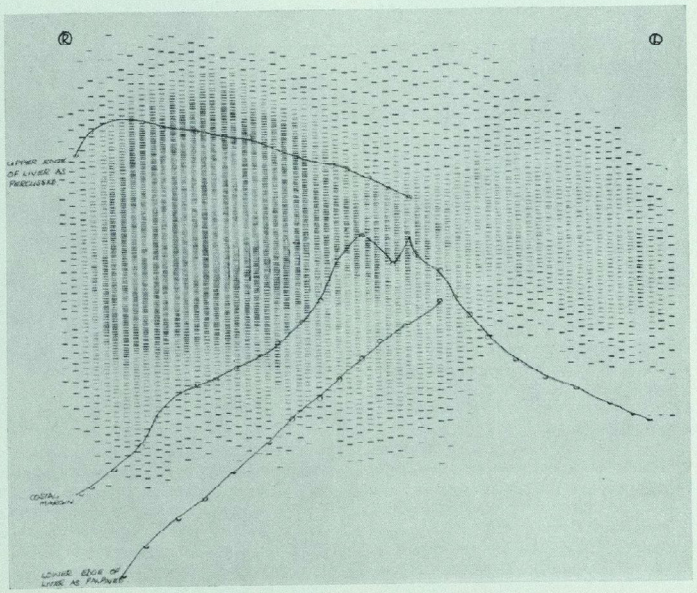


Photo of Liver Scan courtesy St. Bartholomew's Hospital Medical Illustration Department

ROMANCE

by Peter Dady

Recently Mr. John Betjeman filmed a television documentary in this our Royal and Ancient Hospital. Having assured himself and his viewers that all is perfectly splendid in the Hospital he fell to questioning an august member of the governing body. Mr. Betjeman wished to know whether or not there was an atmosphere of romance about the Hospital. his answer was an enthusiastic affirmative qualified by the observation that the students were largely responsible. An intriguing premise which warrants further investigation.

Generally speaking the basic ingredient for romance is the presence of two sexes, although this rule is frequently bent, especially in present day London. The male five foot ten of potent manhood, probably boasting a beer paunch and a mild case of dandruff, hair moderately long and probably dirty. fingernails to match. In his final year this Bird of Paradise may affect a three-piece suit of none but the finest cloth and cut that 18 gns. can buy at one of Monty Burton's various emporia. More beautiful than the peacock, irresistable as Male Cologne or a "Crunchy Bar" and more debonaire than the massed gigolos of St. Tropez, all bundled up in a grubby white coat, it is, of course a Barts student, by appointment, purveyor of romance to the nursing staff.

Nurses enjoy an enviable public image. they are the warm gentle little creatures, demure and pretty in prim starched uniforms, professional daughters of Florence Nightingale, who softly cool the fevered brow of the sick and suffering. This is the thought of fifty million Great Britains, and how can fifty million Great Britains be wrong? Years of carrying malodourous slop bowls brimming with those unspeakable goodies which so delight the pathologists, bless her with a quiet and submissive obedience, a spiritual beauty which cannot fail to commend her to the opposite sex. Trained up to a tolerable standard of cleanliness in personal habit and used to hard and heavy work the nurse is a most fitting consort for the student. In the ideal relationship the couple concerned should have similar interests a typical nurse's monologue on medicine, incorporating every medical abbreviation there is and some she has dreamed up herself is highly prized by the intellectual masochist. The idle and inept student will be familiar with the endearing way a shy little nurse will opine that she could have examined and diagnosed his current patient far better than he.

Given the two essential ingredients for romance all that is required is a catalyst, in this case the hospital itself. The Fountain is at the geographical centre of the hospital and has almost become a Barts trade mark. This erotic masterpiece is made up of two bowls, the upper supported by a number of unclothed Cupids. It is fortunate that the passage of time and much filthy water over the persons of the

Statuary to inflame passion

said Cupids has clad their shameless limbs in slimey green costumes, for this is the type of statuary that can cause passions of white heat. Even the pigeons seem to hurry about their lewd business with heightened intensity in the Square.

As every Biochemist knows, given the correct ingredients and a suitable catalyst a reaction is bound to occur, quite often the reaction is violent, romance at Barts is no exception. Every year, as winter is dying there occurs a night of unrestrained passion. Pleasure maddened students and nurses fall into each others arms and gyrate, casting inhibition aside, to the pulsation of primitive music. Feasting takes place and there is laughter and merrymaking. Strong drink is taken in quantity without thought of consequence, it is Matron's Ball, a fitting climax to a year of hard romance.

REFLECTION

by Peter Dady

For two thousand odd years the church has been chiefly notable for patronage of the arts, especially music, and a mulish resistance to change. Richard Spence (a Bart's student) and some of his friends feel that now is the time for the clerics to accept some change in order to restore to the faith those happily ensnared in Satan's toils. A two pronged musical assault is envisaged to drive us from the carnal delights of Television, Bar and Boudoir into the churches.

Firstly, Richard feels that there is room in the ritual of the church for modern music, to make religion more comprehensible to those whose powers of comprehension are limited to "Top of The Pops", and to this end he and his group, calling themselves "Reflection" have just produced their first record, "The Mass of Saints and Sinners."

Divine service has been set to popular music before, but it is doubtful if it has ever been

Performance

done as well as this. Mike Lehr, who with maestro Spence writes most of the music "Reflection" uses, has produced some exciting and vigorous melodies and the singing is of a very high standard. Commercially, this record will not sell well, the words effectively kill any chance, the "Agnus Dei" never was very strong on drugs, sex and flower power, although the churches, for whom this record is primarily intended, have been happy enough with the words for some time. This record should make an excellent buy, or present, for anybody who likes Pop and God.

Should the Church find a way to incorporate popular music into its act of worship, were the Archbishop of Canterbury to "freak out" in the pulpit, if the mini-cassock were to become standard or (most unlikely) congregations would arise from their slumbers and take some interest, there would still remain the wide open spaces in churches to fill. "Reflection" do not see why popular music, which seems to have done a good job for sex, drugs and flowers, should not be used to convince the people that religion is really rather nice. To this end they will shortly publish records intended for the

Reflection

"charts", which, if they are of the same quality as this first should really be quite successful. Any profits will be used to help other groups engaged in the same work.

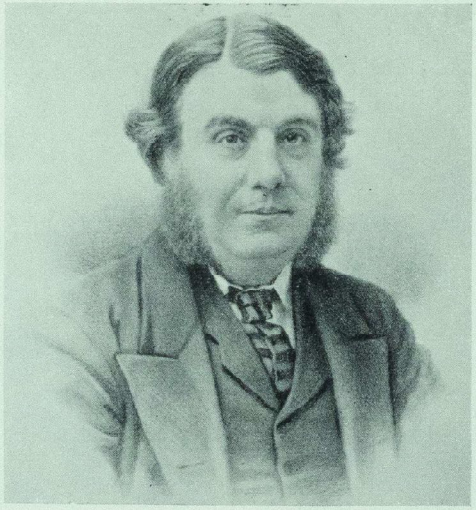
"Reflection" is the successor to a Cambridge group called "The Wayfarers" who have enjoyed considerable acclaim with their "Beat Services" which have been televised by I.T.V. and Flemish Television, following an extremely well received appearance at the Eglise in Brussels. It is a pity the I.T.V. showing was transmitted during the bleak hour and a half between "Sooty" and the Sunday night feature film, when the God fearing are at church and the Godless are cooking supper, it would have been worth seeing.

Wix Prize Essay 1967:

Robert Lawson Tait "His Life and Work" 1845-1899

by Peter R. Jordan

Part 1: 1845-1879



Robert Lawson Tait was born on 1st May, 1845 at 45 Frederick Street, Edinburgh. He was the second son of the three boys born to Isabella and Archibald Campbell Tait. Robert, however, was the only boy to survive, his two brothers dying in early childhood. His early education was at Heriot's Hospital School. He did well at his studies—the proof of which being his winning a scholarship at the University of Edinburgh in 1860 when aged only fifteen.

He embarked upon a four year Arts Course at the University, but after only one year transferred to the Medical Faculty.

The graph of surgical progress rose steeply during Tait's lifetime. Born and brought up in an era which saw the birth of antiseptic wound dressing and general anaesthesia, it is hardly surprising that Tait, so well endowed with intellect and manual dexterity, should do well in surgery; for all this he did much more than just "jump on the band-wagon".

Although he never took his M.B. degree at the University he read widely and to good effect. He also came into close contact with the illustrious Sir James Young Simpson. While still a medical student he became in turn pupil and assistant to the great surgeon. He eventually went to live in Simpson's house. It is from this period that the rumour (albeit erroneous) that Tait was Simpson's illegitimate son arose. There was a remarkable resemblance between the two men, both physically and in their mental capacities. It was therefore understandable that people should think them somehow related; Tait himself never denied the concept, but it does seem unlikely that a man of Simpson's calibre should flaunt a natural son to the world at large by taking him under his own roof and as a professional assistant. Nevertheless the rumour was so well established that Simpson's family wrote an indignant letter to the press denying the story after Tait's death.

Tait qualified after six years at the University by obtaining the diploma of L.R.C.S., L.R.C.P., (Edin.) in 1866. He was appointed House Surgeon at the Clayton Hospital, Wakefield, Yorkshire in 1867, a post he held for three years. He was given a free hand to operate in Wakefield and performed his first ovariotomy on 29th July, 1868. This was followed by four others in the following two years. Having witnessed thirty fatal attempts at this operation in Edinburgh one cannot but feel that what he lacked in experience he made up for in terms of courage. Nowhere could boast a lower mortality rate than 30 per cent, most of the operations being followed by sepsis and secondary haemorrhage. The abdomen was not opened without severe trepidation by even the most experienced surgeon. Although his first case died, the subsequent four made good recoveries. During his time in Wakefield he established a good local reputation for his surgical prowess—a prolific number of articles in the Lancet and other journals reflect his wide range of work. In spite of his surgical commitment Tait found time for other interests, writing archeological pamphlets for the Wakefield Express as well as zoological and anthropological items for various publications.

He also found time to meet, woo and propose marriage to Sibyl Stewart, the daughter of a Wakefield solicitor. They were married in 1871 and Sibyl became a devoted wife though never a mother. The marriage took place after Tait had moved to settle in Birmingham, the city to which the rest of his professional life was devoted. When asked later in life his reason for centering his activities provincially in preference to London or his homeland he replied logically:—"Because there was no pupil of Simpson's there, and it was the centre of England, and if a man became well known, he could be called in more quickly in consultation than if he lived in London".

It was in 1870 that Tait left Wakefield to start in General Practice in Lozells, Birmingham. He had acquired the practice and premises of Dr. Thomas Partridge. The humdrum life of a general practitioner did not suit the temperament of the ambitious Tait and by the end of 1870 he had abandoned the newly acquired practice—having passed the examination for the Fellowship of the Royal College of Surgeons, Edinburgh. He soon became well known in the City's medical and social circles—the latter being due to the influence of George Dawson, the editor of the Morning Post. He also enabled Tait to give vent to his literary ability by appointing him to the staff of the newspaper (incidentally augmenting his meagre income from medical sources at that time). Thus is was that in 1871, aged only twenty-six, Tait set up as a consulting surgeon in professional association with the fashionable practitioner, Dr. Bell Fletcher.

The Midland Institute, Birmingham, a leading educational centre, held classes for the "Instruction of Physiology for Ladies" Attendance at such classes was a fashionable occupation for ladies from prominent families. Tait was able to get himself appointed as "Lecturer on Physiology" through the influence of a friend, Dr. Heslop.

That this appointment proved beneficial to Tait's career may be judged from his own words in later years. "That class was really the means of giving me my first important lift in life, for all the members helped me".

The help consisted of gaining support for founding a special hospital for the diseases of women. Tait's supporters decided at a public meeting on 3rd March, 1871 to set up the specialist hospital. To this end a committee was formed, premises were rented and the consulting staff elected. This latter move proved a little embarrassing for Tait, for it was decided to set the qualification for the surgeons as the F.R.C.S. (Eng.) and he had only recently become a member. With characteristic resolve he started work and within three months had passed the examination to be admitted F.R.C.S. (Eng.) on 8th June, 1871. His friend and partner Bell Fletcher was appointed one of the consulting physicians.

The Birmingham Women's Hospital at 8 The Crescent had only been open six months when an event occurred within its walls which was a landmark in the history of medicine. The event was an operation for the removal of a diseased ovary—Tait performed this operation having diagnosed the ovary to be the seat of the trouble of a forty-two year old woman sent to him by Mr. Hallwright of Summer Hill, Birmingham. Tait predicted, correctly, that only the removal of the diseased organ would relieve

the distressingly painful symptoms. Tait writes of the event as being " . . . the first record in the history of surgery of the removal of a small ovary on account of pain".

Accounts of the removal of ovaries, for various other motives, go back even to ancient times, but it is likely that Tait set a precedent by his action in this case. Unfortunately, contrary to his usual actions, he did not establish his priority by publishing his case immediately (a full account of which did not appear until May 1879). In consequence Professor Hegar of Freiburg and Battey in America shared the credit, the latter's name being commemorated in the name of the operation.

Despite antipathy, largely of clerics, to his progressive teaching of Darwinism and evolution at the Midlands Institute, Tait continued to lecture, combining this position with his surgical practice.

At the annual meeting of the British Medical Association in August 1872 he was elected secretary of the section of Obstetric Medicine. In November of the same year he presented a short address at a meeting of the Royal Medico-Chirurgical Society in company with the famous Sir Spencer Wells, who himself presented the main paper. Tait was thus able, at this meeting, to describe his latest tool, a new trocar for ovariotomy and to discuss his views on treatment of the pedicle in ovariotomy with Spencer Wells. During 1872 Tait had begun to remove the uterine appendages in cases of chronic ovaritis, a procedure which became known in England and America as "Tait's operation". It was, however, in the following year that Tait became recognised by the whole medical profession. The 16th August, 1873 edition of the British Medical Journal describes the presentation of the Hastings Gold Medal to Mr. Lawson Tait for his essay on the "Pathology and Treatment of Ovarian Diseases". In presenting the medal, the President, Sir William Fergusson, referred to Tait's work in a highly complimentary way and thereby set the seal of success on his career.

Considering the operation of ovariotomy at the period shows how much controversy there was about treatment for securing the pedicle. As mentioned earlier, Tait discussed the problem with Spencer Wells in November 1872. A year later Tait clearly advocated his method of ligaturing and dropping the pedicle (in place of the clamp favoured by Wells). This marked a real advance in abdominal surgery. The previous methods of dealing with the pedicle included long and short ligatures, division by ecraseur, cautery, and inclusion in the clamp. Influenced by Spencer Wells, Tait employed "The calliper clamp of Mr. Wells" for preference in his earlier operations, but subsequently he regretted using this method and from 1873 ligated and dropped the pedicle. By so doing he reduced the mortality in ovariotomy from 25 per cent (in a series of 500 by Spencer Wells) to less than 3 per cent in several of his own larger series. By 1886 he was able to boast "139 consecutive ovariotomies without a death".

The bold surgical procedures advocated and practiced by Tait did not go without criticism from some quarters. When he contributed a paper, on a successful abdominal hysterectomy for the removal of a large fibro-myoma, to the Royal Medico-Chirurgical Society in 1874, the chairman, Mr. Timothy Holmes, and several members attacked the author. Since Tait was unable to attend the meeting he could not defend himself immediately. He rectified the situation later however, by lengthy exchanges in the correspondence columns of the Lancet.

The alacrity with which Tait rushed into print might be construed as a foolish foible or even a chink in his armour were it not for the skilful and eloquent way in which he conducted his campaigns.

An example of this can be seen in his relationship with Sir Spencer Wells. As mentioned previously Tait had several meetings with the eminent man and over the years their association ripened into a close friendship. The first edition of "Diseases of Women" published in 1877 Tait dedicated to Thomas Spencer Wells, in admiration of the brilliant work by which the Art of Surgery has been enabled materially to prolong human life." There follows on page 273 of this work a longer reference to Spencer Wells in equally glowing terms. On his part Wells made much of his friendship with Tait in these early days, mentioning and defending the work of the young up-and-coming surgeon. Whether it was professional jealousy or a clash of powerful personalities brought on by increasing familiarity one cannot tell, but in later years something turned the former close friends into direst enemies. The weapons of choice in their "war" were of course words, in lectures or discussions at professional society meetings and in the medical press each flung abuse at the other. The culminating round was undeniably Tait's, for Wells had made it known publicly that he resented the audacity which caused Tait to dedicate one of his books to him. This dedication, referred to above, was subsequently shown, from Tait's carefully filed correspondence, to have been composed by Wells himself. A letter relating this was published in the British Medical Journal much to Wells' discomfort.

In subsequent works Tait used Wells' name in his prefaces when he could compare his own operating mortality rates favourably with those (often performed many years previously) of the older surgeon.

Tait's published works show how much concerned he was with improving the standard of abdominal surgery. He published statistics on every series of operations with which he was connected. He even joined the Statistical Society—mentioning his Fellowship of this body on the title page of various of his works. Although it is naive to take the improvement in mortality rates which he shows for all his series of operations absolutely literally, it is probably true to say that Tait revolutionised abdominal surgery and set the "Birmingham School" of surgical technique as an example to the whole of the medical world. In 1877 Tait launched an attack on the parlous conditions which existed in the big hospitals. The attack took the form of a book, entitled "Hospital Mortality". This work was started by Tait's mentor, Sir James Y. Simpson. In his enlargement of the work, Tait described the conditions which existed in contemporary hospitals and analysed the mortality rates statistically. He was able to show that over a period of 15 years in all the large hospitals from which he managed to obtain figures the mortality rate was quite appalling. It showed that the mortality in general hospitals in London was often as high as that of fever hospitals, that well known hospitals such as St. Thomas's and Kings College Hospital had the worst records —over 12 per cent mortality (Bart's mortality at this period was 10.8 per cent). True as the figures were in "Hospital Mortality", the work did not make Tait many friends, for by decrying the hospitals the doctors that staffed them construed his facts as a slur on their professional abilities. The newspaper war that followed the publication was continued into the pages of the medical journals and achieved for Tait a degree of notoriety that even he had not anticipated!

The rejection of Joseph Lister's techniques by Tait in his work evolved over a period of years, in which time he experimented with the paraphernalia with which much of Lister's early recommendations were encumbered. In common with all his contemporaries Tait was troubled by post-operative sepsis. His work on hospital mortality, alluded to earlier, shows his concern and his desire to improve the situation.

Joseph Lister published his first paper on his antiseptic system in 1867. It was received with mixed feelings by the surgeons of the day—some soon became his ardent disciples, spreading the antiseptic "gospel" in a haze of carbolic vapour. While others viewed it sceptically and continued with their usual disregard for even normal cleanliness in their operating habits.

Lister's apprenticeship had been with James Syme in Edinburgh. Syme was the "personification of cleanliness" and was (in consequence) "regarded as the safest surgeon in Europe"—this is to quote Tait's opinion in "The Evolution of the Aseptic Method in Surgery" 1898. Louis Pasteur's work on fermentation and bacteria had also influenced Lister. It was therefore with sound theoretical evidence and practical experience in the desirability for sterility that Lister proposed his "Antiseptic System". Nevertheless by 1877 it had produced the first "growl" of disapproval from Tait in his "Diseases of Women". He says, "If the germ theory be true then the marvel is that any of us are alive, still more that any operation succeeds. Something more than germs must be looked after, and that is the nidus upon which they are engrafted. If the stories about the much-valued antiseptic treatment which we hear, but which are not published, be true, abdominal section under the carbolic spray is by no means either a simple or a safe proceeding; and when its advocates can perform fifty ovariotomies aided by its hindrances and have only six deaths, then will be the time to listen to them".

Perhaps if Lister had used the term aseptic instead of antiseptic and published more widely the principles with the results of his work he would not have been so misunderstood.

It is surprising to learn that Tait did not believe in the "germ theory of wound infection". He did believe that germs existed and that they could putrefy dead meat, broths and the like, but he would not accept that they caused sepsis in wounds in living beings. However, of certain things he was sure; dirt on hands, instruments, dressings or skin produced suppuration in operation wounds. Further that no matter how he washed his hands after they were contaminated by pus at an operation, he could not avoid infecting patients if he operated on them within a day or two of the contamination. With these principles in mind he had

evolved his own technique. This involved "scrupulous attention to cleanliness of every kind and in all directions". This aseptic technique preceded the German von Bergmann by over thirteen years.

In 1879, aged thirty-four, Tait had reached a point in his life where his capabilities and achievements were at their highest. His record of innovations in surgery for this year is phenomenal. He had in 1878 developed a new method for the treatment of chronic inversion of the uterus. His straight stemmed repositor exerted continuous elastic pressure upon the inverted fundus through a vulcanite cup. Incidentally Dr. James Aveling produced a slightly modified copy of the device and took all the credit for its invention.

Though concentrating his attention on gynaecological cases Tait encountered many other interesting maladies. When he was asked his opinion of an abdominal tumour in a forty-year-old woman patient referred to him by Dr. Colles of Bridgnorth, Tait admitted uncertainty, even after examination under ether and therefore decided to open the abdomen to ascertain the nature of the tumour. This was characteristic of Tait; he had to know. His attitude is shown in a lecture given by him in 1888 when he stated that " . . . exploration is a sound principle when there is doubt and (that) many ghastly blunders would be saved if the practice were extended into general surgery. Absolute accuracy of diagnosis in the abdomen is very far from being possible; only the ignorant assert that it is, and only fools wait for it".

His laparotomy on Dr. Colles' patient disclosed that the mass in the abdomen was a distended gall-bladder. Tait thereupon passed the needle of an aspirator into the apex and drew out ten ounces of fluid. He then opened the gall-bladder at the point of puncture so that he could admit his finger and came upon two large round stones—one loose in the cavity, the other impacted in the duct—this latter evidently being the cause of the distention. He removed the impacted stone by what he described as "very careful and protracted lithotrity," then sutured the wound in the gall-bladder to the abdominal wall and closed the abdomen. The patient made an excellent recovery.

When he read his report of the case to the Royal Medico-Chirurgical Society in November 1879, it was received rather coldly. Far from offering any encouragement, several other members went out of their way to point out that Tait was not unique in performing this operation (though he had not claimed to be) and named others who had preceded him. However, by performing cholecystotomies in the next five years, with but one death, Tait established this operation as a safe surgical procedure.

In the same month as his report on his first cholecystotomy Lawson Tait read two papers one on his "Apparatus for Dilating the Uterine Canal" and the second "On New Methods of Operation for Repair of the Female Perineum".

The principle of his apparatus for dilating the cervix arose out of the success that he had in driving back the inverted uterus, mentioned earlier.

Though his dilators have been forgotten, the essence of his operation for repairing the lacerated female perineum has a much more modern ring about it. The stages described in Tait's original paper have been little modified in current gynaecological texts. Basically the methods proposed were devised to deal with two classes of laceration.

1. Incomplete Laceration.
2. Complete Laceration.

The first method employed a "V" shaped incision and apposition of the two limbs by sutures. This operation subsequently proved to be of little use. The second operation for complete laceration, however, is still much used and is an operation of great ingenuity. However . . . it was probably in his surgery of the Fallopian tubes that the greatest of innovations were made in his "Annus Mirabilis". Although the priority of Fallopian tube surgery rests with Hegar (1876), Tait's work first established the surgery of inflammatory diseases of the Fallopian tubes and pelvic abscess.

In May of 1879 Tait undertook to operate on a cystic tumour on the right of the uterus in a twenty-eight year old patient. The tumour turned out to be the right uterine tube distended with clear fluid. He removed the tube and left the ovary, thus returning the woman to robust and perfect health. In October he recorded another success, this time in the case of a woman aged twenty-six. The uterine tube here was filled with pus. These two tubal operations, for hydrosalpinx and pyosalpinx, were not Tait's first ventures in this direction, for he had operated for a haematosalpinx in February of 1877, successfully draining the blood from a greatly distended left Fallopian tube. He had therefore seen and had the satisfaction of performing operations on some of the more serious forms of inflammatory conditions of the

Fallopian tubes. The resulting papers he presented and lectures he delivered placed surgery in these conditions firmly on the map of the British "medical world". (By 1882 he was able to show no less than 14 specimens of hydrosalpinx and pyosalpinx to the Pathological Society in London.)

As a finale, illustrating his versatility, it is worth mentioning the fact that towards the end of 1879 the Birmingham Natural History Society was being organised by Tait, who also contributed two extensive papers to their journal, "On the Structure of Pitcher Plants" and "Researches on the Digestive Principles of Plants".

Diagnosis Part 2

by J. R. Griffiths

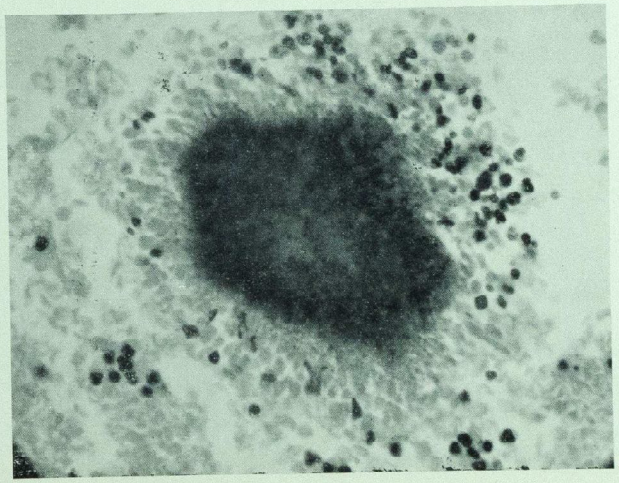
In summary, this is a case of pyrexia of unknown origin associated with right hypochondriac pain and a tender mass overlying the right lower lobe of the liver (which was "cold" on liver scan). The ESR was grossly raised, there was a leucocytosis and liver function tests were consistent with hepatocellular damage.

The cold area on liver scan could represent any lesion in which liver is replaced by tissue without a reticulo-endothelial system, though the localised "cold area" and lack of spleen uptake make cirrhosis unlikely. A tumour, a cyst or an abscess could give this picture, but in view of the prolonged pyrexia, raised ESR and leucocytosis an abscess is more likely than a tumour and a cyst is rather unlikely. A liver abscess in a patient who has lived in the Far East is frequently of amoebic origin (malaria can mimic these symptoms but is usually associated with a leucopenia rather than leucocytosis). A sigmoidoscopy was therefore performed in an attempt to discover amoebic ulcers in the bowel and the anti-amoebic Emetine was prescribed. No ulcers were found and the pyrexia was unaffected, so the drug was withdrawn and the patient submitted to laparotomy undiagnosed.

A large inflammatory mass, about 6 inches by four, was found adhering to the liver. It was attached to the peritoneum anteriorly and to the diaphragm above. Frozen section examination showed only inflammatory tissue on top of apparently normal liver; most of the mass was therefore removed and the wound closed, still without a diagnosis being made.

The patient made an uneventful recovery without antibiotic therapy, but was not diagnosed until a section of the inflammatory mass was examined four days after the operation. The structure in question is shown below at 600x magnification.

What is the diagnosis?



Ars Longa:

OPERA:

Performances of a new opera by Richard Rodney Bennet, called "A Penny For A Song", take place at Sadler's Wells from November 2nd. Bennet's first opera, "The Mines of Sulphur", has received considerable acclaim round the European opera houses, and it is hoped that the new opera will earn similar recognition. November 30th is the date of the first performance of "The Decision" by Thea Musgrave, based on the story of a mining disaster in the last century. Wagner's "The Mastersingers of Nuremberg", in a new English translation, is given ten performances at Sadler's Wells from January 31st and two companies will be fielded for this large production.

At Covent Garden, most seats for the current programme have already been sold, but attention is drawn to the date of commencement of the next booking period, November 15th for "Othello", "The Magic Flute", and "Madame Butterfly" performed between December 11th and January 20th; November 23rd for "The Nutcracker", "Swan Lake", "La Fille Mal Guardée" and "Coppelia".

MUSIC:

On the 14th and 16th of November, at the Festival Tall, the B.B.C. Chorus and the New Philharmonia Orchestra will give performances of the mass in B Minor by Bach. The Conductor is Otto Klemperer.

Of the now almost legendary group of great orchestral directors that included Furtwangler, Toscanini and Bruno Walter, Klemperer is the last survivor. Now, at 82, his gaunt and haggard appearance on the concert platform, seated precariously on a high chair, conducting with awkward, shaky gestures belies a grasp of musical structure and orchestral balance that is completely unrivalled.

He was plagued for years by physical disabilities, which began to afflict him soon after he was forced to leave Germany on Hitler's advent to power in 1931. A brain concussion was followed by a twice broken femur, and an operation for cerebral tumour left him hemiplegic. In 1958 he survived horrible burns in a fire accident that left others despairing for his life. And last year, after another fall, he underwent an operation for the insertion of a prosthetic hip joint.

Much of the character necessary to have survived such batterings is apparent in his music. It is uncompromising and eminently serious, with an emphasis not on incidental beauties, but on the overall conception of a work. These two concerts are probably two of the most important and significant ever given at the Festival Hall. Klemperer is not immortal, and nobody who can even dimly appreciate what a gap will be left without him, will wish to miss them.

Passing to slightly more run of the mill matters. David Oistrakh is giving one of his frequent performances of Beethoven's Violin Concerto on the 19th. Eugene Ormandy, boss of the Philadelphia Orchestra supports him with the L.S.O. and will endeavour to illuminate Bruckner's Fourth Symphony in the same programme.

Still with Oistrakh, pere et fils, on the 28th Igor plays Mozart's Violin concerto in A, with David conducting. After the interval David Oistrakh will conduct Brahm's "German Requiem".

And on the 29th Colin Davis will preside over a performance of "The Damnation of Faust" by Berlioz. This will also be broadcast.

THEATRE:

A Day in the Death of Joe Egg, by Peter Nichols. Comedy Theatre.

This play is the exemplar of contemporary truism: it is now television which influences theatre rather than the reverse. The extensive experience that Peter Nichols has for writing television makes a dangerously woolly generalisation unquestionably true in his case. The theme of the play is the effect wrought on the parents of a brain-damaged child that is severely spastic, grossly mentally retarded and epileptic. Such an audacious choice of subject matter relates strongly to the present television vogue for dramatised documentaries. So far all credit, but certain adverse influences show themselves in uncomfortable attempts to slip out of the action into cosy or caustic monologues addressed to the audience. Alienation à la Brecht cannot succeed at such an intimate, hearthside level.

One character in the play succeeds above all and that is Brian, the father (excellently played by Joe Melia) who is at least delineated with some insight and singularity. The other characters fail not for want of acting ability, for fine performances are given by the much underrated Zena Walker as the wife, and an amusing small scale sketch of the insensitive, smothering mother of Brian. But too much remains at the level of rather cardboard caricature. The production successfully maintains the pace necessary for the snappy satirical style to effect its comments at a totally non-sentimental level. For some it may prove rather too sick, particularly if any umbrage is taken at the pretty lambent swipes aimed at the beloved medical profession. Nonetheless, this is a fundamentally honest play, which though failing as drama to some serious extent, makes up in part by its bold treatment of an important problem.

"Romeo and Juliet" at Stratford-upon-Avon.

Karlos Koun's Verona is a crushing and sombre suspended animation in which the celebrated lovers ride a four day wave of passion, a wave which plunges them inexorably, lemming like, into death. In their rush, Romeo and Juliet are together only at night or in darkness, conditions in which possibilities are unlimited, and escape from reality is real. Daytime illuminates, separating them and reducing them to Montague and Capulet. Either way they lose.

Romeo from the very start accelerates his doom. His is a savage approach, a wildly impetuous lunge in which his reason is sent reeling by his love. His desperation, aroused early, "He jests at scars, that never felt a wound"—intoxicates him. As played by Ian Holm, Romeo is no great lover but a frustrated little man, caught up in a vortex. His is a beautiful performance, his "I defy you, stars" and "Thus with a kiss I die" indicating that he has the qualities of a great tragic actor. Out of place perhaps was the inclusion in his wardrobe of a green cardigan and a pair of grey hush puppies.

Estelle Kohler plays a beautiful and equally sexy Juliet, a Juliet who, throughout the play, seems about to be fulfilled. Whatever is "just around the corner" finally eludes her, in that it kills her before she can grasp it with more than one hand. This is a performance of great depth and precision.

Elizabeth Spriggs' Nurse is a timeless study —she would be as acceptable and effective in Coronation Street. Mercurio, played by Norman Rodway, is one of those characters whose death we resent. One tends to blame Shakespeare for writing him out. It is, however, because of his bawdiness and essentially masculine brand of social comment that endears him to us, that he is removed, lest his derision unbalance the beautifully calculated catastrophe. Besides, the nature and position of his wound would have resulted in a fate worse than death, had not death taken pity on him.

Although funereal, and, to my mind, rightly so, this play is bright and amusing, exciting and has, in parts, quite the most dirty script imaginable. Wasn't Shakespeare one of the Lord Chamberlain's company? Makes you think, doesn't it?

Recently opened:

"As You Like It," at the Old Vic.

This is the National Theatre's long-awaited all male version directed by Clifford Williams and including Robert Stevens, Ronald Pickup and Charles Kay.

"The Criminals," at The Aldwych.

The R.S.C. in the first play from Cuba to be staged in this country, by their leading playwright Jose Triana.

Coming shortly:

"Dingo", at The Royal Court.

The first London performance of Charles Wood's desert war satire.

"Staircase," at the Nottingham Playhouse.

John Neville directs and plays Charles Dyer, with Ronald Hagill as Harry C. Leeds.

"The Two Character Play," at The Hampstead Theatre Club.

Peter Wyngarde and Mary Ure in the premiere of Tennessee Williams' new play.

CINEMA:

Within five minutes walk of the hospital, the **Mermaid** theatre is presenting a further season of lunchtime films until December 1st. Although admission is sixpence more than last year, the programmes are worth every penny of one and six. New programmes are shown each week on Thursdays and Fridays, with performances at 12.10 and 13.10. Snacks and sandwiches are available in the foyer and may be taken into the auditorium providing they are not accompanied by fistfuls of crockery. But beware: munching sandwiches in the gloom is a hazardous business and can prove embarrassing for noisy eaters.

The films themselves are all shorts, provided by the *Short Film Service* who are concurrently distributing the same programme for presentation at the Fairfield Halls, Croydon. Although mostly having a lighthearted flavour, the films vary widely. Some, like **"The Penny-Whistle Boys"** and **"The Present"**, may be well known to cinema-goers, but the majority will be fresh

to most people. One or two deserve special mention. **"Calanda"**, directed by Luis Bunuel's son; "The Peaches", a tale of a girl both beautiful and abominably clever; and **"Help, My Snowman's Burning Down"**, a surrealist absurdity about a man sitting in a bath on the end of a pier on the Hudson River in New York!

Another celluloid happening at the **Mermaid** is being presented by the New Cinema Club who offer an all-night view-in of American Underground Movies—with breakfast available. Four main films are being shown. According to the programme the first film tells of the marriage between a gentle cynical termite exterminator and an innocently optimistic girl who refuses to recognise disaster! For the record the film is entitled **"The Crazy Quilt".** Other films to be shown are **"The Brig"**, by Jonas and Adolfus Mekas, which Tom Milne, of *Sight and Sound*, has described as "an all-out onslaught on one's senses", **"Zero in the Universe"** by George Moorse and **"Goldstein"** by Philip Kaufman and Ben Manaster. A selection of shorts complete the programme, which commences at midnight on three Fridays in the present quarter. Further details of this and other equally stimulating presentations including the Czech film **"Baron Munchausen"** may be had from The New Cinema Club, 122 Wardour St., London, W.1.

From avant-garde to nouvelle-vague. **The National Film Theatre** is presenting a run of films by Jean-Luc Godard, which include some of his shorts which have never been shown in this country. Also in the present season is a programme of Russian films made around the time of the Revolution and a selection of science-fiction films. Amongst these is the film **"Fantastic Voyage"** which has a particularly medical flavour, concerning the treatment of cerebral embolism by microminiaturising a submarine (plus occupants) and injecting it into a vein. After negotiating arterial-venous shunts and battling with hostile corpuscles and antibodies, the craft reaches the brain by a rather dubious anatomical pathway and is finally recovered from the eye seconds before the miniaturisation effect wears off. Quite what happens to one of the crew left behind in the patient we never know!

FOOTNOTE: **The National Film Theatre** is sited on the South Bank under Waterloo Bridge. Tickets are only available to members and associate members, although provision is made for guests. Full membership is available from: The British Film Institute, 81 Dean St., London, W.1. (The Hospital Film Society has an arrangement for Associate Membership.)

"Do buck up Constable—I'm sure the poor little man did not mean to Swallow your Breathyliser."

Record Review

by John Sills

One of the more or less consistent features of the hit parade today is the presence of sentimentality among the latest from the representatives of the modern, way-out, groovy, floral scene. For those who like to indulge in sentimentality one of the new Music for Pleasure releases AL BOWLLY—*the big swoon of the thirties* (MFP 1178) provides 12 tracks for less than the combined price of the latest singles from T. Jones and E. Humperdinck. Bowlly was the idol of the late thirties and the early days of the war, who finally became a legend when he was killed by an exploding mine in 1941. Since then the original 78s have been highly prized, and on listening to these tracks it is not difficult to understand his appeal to the troubled hearts of those days. This LP shows the craft of the crooner; the lazy relaxed delivery, the sliding drift from one note to another and the gentle hint of pathos in the voice are all condensed in his interpretation of "Love is the sweetest thing". Other songs of the period on this LP include "Bei mir bist du schoen", "Marie" and "Goodnight sweetheart". Two of the other songs however feature lyrics by W. Shakespeare; "Blow, blow thou winter wind" and "It was a lover and his lass", and apart from a slightly irritating Andrews sisters type chorus, these two tracks are perhaps the best on this LP, surprisingly it repays continued playing, and while one's first instinct is to buy it at the last minute as a nostalgic present for mothers nearly forgotten birthday, one may easily come to enjoy the music oneself!

THE GREAT DAYS OF MUSIC HALL (MFP 1146), boasts *"the greatest bill ever assembled"* in the persons of Florrie Forde, Ella Retford, Charles Coborn, Vesta Victoria, Billy Merson and Harry Champion. The recordings all date from around 1930, and while there is a great variety of songs on the record, the tunes following one another without a break, the record although historically important, does not give the pleasure one expects. The essence of the fun of Music Hall is in the audience participation, and the rapport of the artistes with the audience, and one has only to visit such last outposts as the Players Theatre, and the Watermans Arms (*q.v. East End Pubs*, St. B.H.J., November, 1965), to appreciate this oneself, and hearing these recordings outside the atmosphere of the Music Hall is just not the same.

However this record does give one the opportunity to catch the lyrics, and to find out for example what Harry Champion did with the end of his old cigar, why the spaniard blighted Billy Merson's life, why Vesta Victoria thinks it's all right in the summertime, and other questions that may have perplexed one after experiencing live music hall. It is also, of course, useful as an aid to learning the words in preparation for one's next visit.

The final record for review this month VENUTI, LANG, ROLLINI (MFP 1161), recorded in 1933, is another example of jazz from the immediate pre-swing era. The album is a showcase for the talents of Eddie Lang (guitar), Joe Venuti (violin) and Adrian Rollini the multi-instrumentalist of his day, who is featured on an assortment of saxophones, piano, vibraphone, and the hot fountain pen, which is we are told, a variety of clarinet.

The style of the music could be described as two-beat chamber jazz, it is essentially happy and freely-swinging, as the musicians are not attempting new concepts of improvisation, though the novelty of the instrumentation makes quite a contrast to the music played by King Oliver *et al.* some six or seven years previously. Venuti plays the violin so well that one never questions its validity as a jazz instrument, similarly Rollini on his various exotic instruments blends elegantly with the violin, and the more conventional saxophones and trumpets, which all goes to show I suppose that 't'aint what you play, it's the way that you play it!

As on all of these LPs from this era, part of the interest lies in listening to some of the more important men in jazz at a stage when they were just beginning to make the grade. Thus on this LP one can hear Benny Goodman and Bud Freeman prior to their hey-day, Freeman has even at this point in his career his characteristic riffing style, and it is interesting to hear Goodman playing alto saxophone, as well as clarinet.

A Fortunate Man, by John Berger, with photographs by Jean Mohr. Published by Allen Lane, The Penguin Press. Price 30s.

The cover carries under the title "The story of a country doctor" but anyone expecting to find anything along the line of A. J. Cronin's work will be sorely disappointed. This is not a simple tale of everyday life for a country doctor.

The author has studied the doctor, a real-life John Sassal, who is in practice by himself in the country. Sassal is a talented man who has worked hard to make his speciality of General Practice a success. We see him as a man who needs his patients as much as they need him as a doctor and counsellor. Berger gives no hint of professional frustration in Sassal, who admits that the happiest time of his life was as a Naval surgeon doing major surgery in the Dodecanese during the war. This doctor holds a unique position in the society he serves: why this is so and what it means to Sassal and his patients occupies most of the book.

As he proceeds with the essay, one feels that we are seeing less of Sassal and more of Berger. If it were not for the brilliant yet simple photographs of Jean Mohr we could, in places, forget that Sassal, the doctor, is the subject. The author seems at times to be using Sassal as a subject to express his own feelings. This is a man with the extra dimension of a doctor and one wonders if the view of life which Berger attributes to Sassal is the one which Sassal would put forward himself. In the analysis we see a great deal of Berger as well as the subject, Dr. Sassal.

This is a fine piece of writing embracing both abstract and descriptive styles. Text and photography by masters of their craft combine successfully to present the doctor as an artist his medium being the country and its people. If you would enjoy a story which shows a man working for more than material gain, then I can strongly recommend this book.

J. D. Fraser

I, Claud, by Claud Cockburn. Penguin Press. Price 7s. 6d.

Anybody familiar with *Private Eye* will know of Claud Cockburn as a witty radical who fortnightly contributes a scathing and always very readable thousand words. Fewer readers probably realise that in the twenties and thirties this same Cockburn was, in rapid succession Foreign Correspondent for *The Times,* Editor, Printer and Publisher of a scurrilous broadsheet, *The Week,* which rapidly gained international notice and notoriety, combatant with the Republicans in Spain and correspondent of the *Daily Worker.*

No autobiography, however well written can make anything but dreary reading should the subject be uninteresting, a point not too well observed by many of our gallant Generals and Field Marshals. Fortunately Claud Cockburn is far from being a bore.

Inscribed on the flyleaf of this volume is a lovely quotation to the effect that were God a person people would break his windows, setting a high standard of witty irreverence which Mr. Cockburn maintains to the end of the book. The author was in New York before and during the Slump, he was some time in Berlin as the Nazis came to power and during the war was acquainted with General de Gaulle, these and other important phenomena of the times he ras observed with an amazing objectivity.

Throughout the narrative the author describes his reasons, as like a litmus paper his political colouring changes from very pale blue to a deep red and back to a radical pink. A superb book, highly readable and to be recommended with confidence.

P. J. D.

PAPERBACK FICTION

"Malcolm", by James Purdy. Price 4s. 6d.

The greatest impression that this story conveyed to me was of unreality. It is difficult to believe in any of the characters although their motives were real enough.

Malcolm is a fourteen year old boy of "great physical beauty" who is discovered sitting on a bench— waiting for his father. (The way in which his father has abandoned Malcolm is never satisfactorily explained.) The boy's rapid downfall, both physical and moral, is wrought by an astrologer, Mr. Cox, who chances by and who introduces Malcolm, via a list of addresses, to a series of extraordinary people; a wealthy Negro undertaker, the oversexed wife of a millionaire who wants to buy Malcolm, a handsome midget and a nymphomaniac artist whose homosexual husband presumably seduces Malcolm.

Add to this savoury crew Melba, a young and famous singer, who marries Malcolm and it is hardly surprising that the adolescent innocent is thoroughly deflowered by the end of the story.

Two scenes are worthy of note:—a painful session in a Tattoo Palace (a nice sadistic touch here) and the rather grim overnight stay in a Turkish bath-cum-brothel. For the rest I found the descriptions tedious and the conversations both trivial and puerile. The heavily implied sexual overtones were distasteful and blurred what I felt the author intended as symbolism and simplicity. (Surely lust isn't the only vice?)

The obscene jacket was singularly appropriate and sums up my attitude to this grotesque little fantasy.

P. R. Jordan

MEDICAL BOOK REVIEWS

Lectures in Medicine, by Dr. G. W. H. Havard. Pp. 381. Price 63s. Staples Press.

This book is based on the lectures that Dr. Havard has given for some years as a revision course for final year students. Its particular merit is that it deals with a number of the growing points of medicine which though alluded to are apt to be incompletely explained in clinical teaching and not very well covered if at all by the standard textbooks. For instance no student having some experience of diseases brought about by drugs could fail to enjoy and benefit from reading the chapter on drug-induced disease. A similarly useful function is served by chapters devoted to auto-immunity, potassium depletion and psycho-somatic disorders. Such subjects as intestinal malabsorption, cardiac arrest and resuscitation, lung failure and tests of respiratory function are for obvious reasons treated more fully on some firms than on others and anyone who discovers a hiatus, as can easily happen under the existing system of clinical appointments, will find these subjects well covered in the book.

It is appropriate that a Medical Tutor of Bart's should devote his opening chapter to inborn errors of metabolism and this is followed by a lucid explanation of chromosome abnormalities and disease. Dr. Havard has written most of the text himself but there are useful contributions by Dr. J. E. Stark on viruses, Mr. M. P. Curwen on statistics and Dr. L. C. Payne on computers. Not only senior students but general practitioners and physicians too will find this book a great help in keeping up with new ideas on the nature of certain disorders and with recent advances in treatment.

Kenneth Black

Medicine, Essentials for Practitioners and Medical Students by G. E. Beaumont, M.A., D.M., F.R.C.P., D.P.H. Published by Churchill. Price 60s.

Apart from the problems of textual accuracy, what differentiates one text book from another from a Students point of view is the ease with which the material presented may be assimilated. Any judgement of style and presentation in this context becomes of necessity subjective.

In the new and ninth edition of Beaumonts Medicine, the type face is not the most easily legible, but this is probably a penalty of attempting to publish a book which aims to be adequate both for Students preparing for finals, and for Practitioners requiring a work of reference for only three pounds. One of the best features of this book is the emphasis which it places on Physical examination and Clinical Findings. This tends to produce rather an archaic style, but after a little reading it becomes a refreshing change from the terse automated prose of some American publications.

Beaumont is concerned with the Art as much as the science of Medicine, and whilst a probably minor point from a prospective readers point of view, it is very pleasant to read a book that considers disease from the patients point of view rather than the pathologists. How good to read that "The patient will feel . . . ." rather than "this condition is characterised by . . . ."

The book contains no sections on Dermatology or Psychological Medicine, the Author considering that these conditions are best left to specialist books. Each disease is dealt with comprehensively, with a useful section dealing with the complications that may arise with any condition. Perhaps the outstanding feature of the book are the sections dealing with treatment, several detailed diet sheets are given, such as those suitable for the treatment of pneumonia, typhoid fever, diabetes, nephritis, gastric ulcer, obesity and constipation. The appropriate dosages, prescriptions and methods of administration of drugs are included in each section, and over one hundred prescriptions are given in full.

Unfortunately recommendation of this book must be tempered by the lack of those chapters that ought to provide a general introduction to the diseases of each system. Whilst for example chest noises and E.C.G. results relevant to each condition are adequately detailed, the junior student may well feel lost for a thorough introductory discussion of the principles involved in these examinations.

A book that can well be recommended both on its own merits and as a very useful alternative to its competitors for those students who are a few months into their clinical course.

Brian Briggs

Calcium Metabolism and Bone Disease. By W. P. U. Jackson. Published by Edward Arnold Ltd. Price 30s.

The author was prompted to write this book by the observation made over many years of teaching, that calcium metabolism and the metabolic diseases of bone are considered "difficult" subjects by the student. His short book of 130 pages should go a long way to dispel this notion. The approach is essentially physiological and pathological changes are explained clearly by relating these to normal metabolic processes. Conditions involving defects of calcium metabolism are considered under the headings of clinical, biochemical, radiological and pathological features, and a short section on the treatment of each condition is included. The diagrams are excellent and are taken largely from the author's publications. References for further reading are given at the end of each chapter and the preface includes a useful list of text books and review articles. The author has wisely, in a book of this size, avoided discussion of some of the more controversial biochemical investigations such as calcium infusion tests and indices of phosphate excretion.

To summarise such a wide field in small space is to risk producing a catalogue of findings and symptoms. Dr. Jackson has avoided this pitfall and has produced a book which, although it contains much condensed information, is yet a pleasure to read.

G. P. Fraser

Basic Concepts of Anatomy and Physiology by Dean, Farrar and Zoldos. Published by Pitman Medical Publishing Co. Ltd. 1st Ed. 1967. 45s.

". . . useful for nurses, medical secretaries, hospital corpsmen (sic) etc."

It is difficult to find a niche for this sort of book. The authors recommend using the text in conjunction with a good teacher and a good textbook. Unfortunately, instead of occupying a definitive third position, it forces a soggy compromise between the two.

The programmed text presents information in simple units which contain blanks for the reader to fill viz:

The "pump" of the cardiovascular system is the - - - - .(check your answer as "heart" below)

This is a relatively painless way of acquiring or consolidating one's knowledge under ideal conditions. Would that this large, cosy, but rather expensive american paperback were ideal. Wide-eyed wonder, however, is no substitute for enthusiasm or contagious fascination. Too much space is devoted to revealing the first aprons of vocabulary compared with the provision of figures, quantities and the things of such ilk that really are hard to remember. The initiation rites concerning pronunciation provide occasional whimsy:

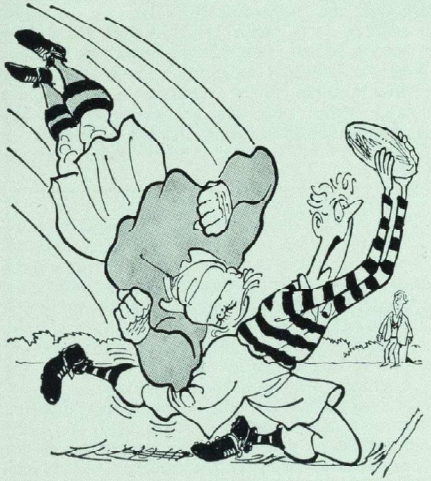
Pons (PONZ)
Ovaries (OH-va-reez)

but may be definitely misleading:

Lymphocytes (LIM-fo-sitz).

"You have finished the first part of this chapter.

SPORTING TYPES



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The quality of the information conveyed varies widely. The nervous system is presented in admirable detail and would be of use to nurses, whereas the digestive system is explored on monosyllabic foot in a progression that insults the intelligence. Learning from a text like this is only fun if challenging.

There is a niggling suspicion that gimmickry is the *eminence grise* behind the emergence of this erstwhile commercial training course (for the employees of a pharmaceutical company) into book form. The "units" do not contain equal amounts of information, nor do they demand responses of even approximate equality of effort. The diagrams are scrappy and contain misprints and bad typesetting. And what does "List the following in order of increased acidity . . ." mean? Did you get the answer wrong because you misunderstood the question or the concept? Like Michael de Freitas and like multiple choice examinations it's all black and white; only the answers supplied, and that doesn't grab me at all.

Peter Hill

A Summary of Medicine for Nurses and Medical Auxiliaries, by R. Gordon Cooke.

This slender volume of 150 pages by R. Gordon Cooke, is a book not intended to be read as a textbook of medicine, but to be used for revision and reference purposes. This must be made abundantly clear—its use and value must only be in conjunction with a full and explanatory textbook, as the preface suggests.

The layout of this book, with its alphabetical order of diseases, makes reference easy, and the subdivisions increase the clarity of the presentation. The note form in which it is written facilitates quick reading, but in some instances leads to ambiguity of expression, which can lead to misinterpretation.

The book is written specifically for nurses and medical auxiliaries. Basic and specific nursing in relation to the treatment of disease depends upon the understanding of the nature and development of the disease and the underlying anatomy and physiology thereof. Teaching and learning are carried out to this end. A book therefore, which minimises the importance of this to any degree at all, and encourages the crammer, I suggest is not constructive.

There is a remarkable amount of information contained in these few pages, and this book could be most useful in the limited sphere for which it is intended. But because understanding is essential to real learning, one questions the value and place of such a book amongst students.

J. Fisher

"It's Healthy to be Human" by F. R. C. Casson, M.B.B.S., D.P.M. Published by George Allen and Unwin. Price 20s.

The book outlines the part that instinct plays in our lives. Dr. Casson has divided his book into four parts. In the first he outlines the basic instincts, Hunger, Sex and Self-assertiveness, and shows how prevalent these still are in us, disguised only by our ethical or moral codes, and social upbringing; these instincts govern our lives, and satisfaction can be found in our relationships with other people.

The second part of the book is the most informative. Here the influences of instinct are traced through the seven ages of lives, from the infant to the aged. This part helps the married to understand the workings of the infant mind; it explains why the answer to the adolescent problem lies rather in discussion than the iron fist; it instructs us how to deal with the aged; it tells what each age groups motives and thoughts are.

The third and fourth parts are rather disappointing after the second. They tend to say at great length very little. The third section discusses more fully each of the three basic instincts, and the fourth tells how our instincts need other people for satisfaction—frustration can, in the author's opinion, lead to great damage to the brain resulting in nervous disorders and delinquency.

The book contains many facts in the care and management of people of all ages which would be invaluable for medical and lay personnel to know. Although a short book, it is perhaps too long for the amount said; but nevertheless the style is so flowing that the book takes very little time to read and retains one's interest to the end. It is, I think, a good book to have read, but not to have on the shelf.

C. M. Castleden

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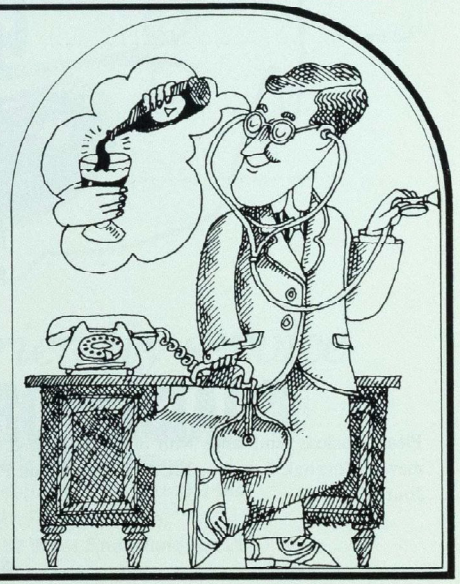
GUINNESS



St. Bartholomews Christmas Card 1967

The colour print of St. Bartholomews the Less—seen in the View Day supplement—is being used for this year's Christmas Card. Two types are being printed, one with the colour picture of the church on the outside and the other with Bart's crest on the outside and the picture inside. Both carry the greeting "With Christmas Greetings and all good wishes for the New Year." The cost is the same for either **6/- doz.**

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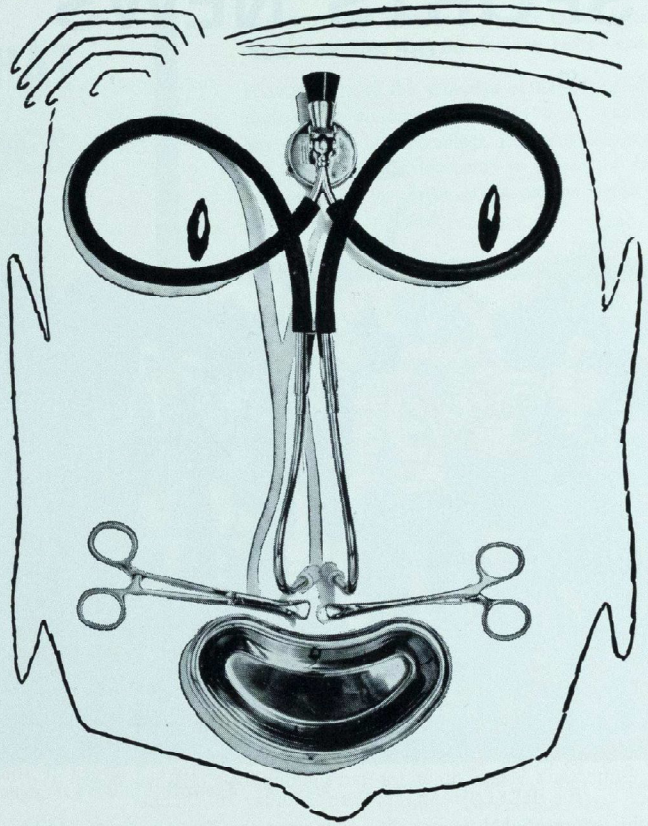

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SPORTS NEWS

THE RUGBY CLUB

Britton and Mason go up for Bart's during their 19-6 win over the BECKENHAM 1st XV on Saturday 7th October

Our strength this season should be in a fit and mobile pack, all of whom played together regularly last season. Our main losses to inevitable qualification have been behind the scrum where Pope, Griffiths and Savage, who have rendered sterling service in the past, will now only be available sporadically.

One of our greatest assets this season will be the additional Rugby pitch at Chislehurst. This will enable us to maintain six or seven sides every Saturday, and our thanks go to Mr. Morris and to Mr. White for making this possible.

23rd September v. Trojans. Drew 3—3.

The season began with a visit to Southampton to meet the Trojans, a side which so far this season has met with great success by winning 5 out of their first 6 matches.

There was a heavy drizzle as the teams took to the field, and this continued throughout the game. Initially Bart's made attempts to open the game up but this was made impossible by the conditions, and apart from a 30 yard sprint by Savage, following a half break by Griffiths, there was little to entertain the meagre crowd.

The pack fought well, with Lloyd providing Bart's with more than a fair share of the ball from the scrums. McIntyre led the pack in his usual tireless manner; he and Lloyd being the main driving force in the loose. In the backs there was little opportunity to shine, but Griffiths played a steady safe game with some impressive touch kicks.

Trojans took the lead just before half-time when Golding floated a rather easy penalty between the posts after two unsuccessful attempts. Bart's drew level early in the second half with a penalty by Griffiths.

Team: N. Packer, S. Smith, D. Jefferson, P. Savage, R. Lambert, N. Griffiths, C. Grafton, N. Fairhurst, E. Lloyd, P. Furness, A. Mason, P. Fairclough, T. Fenton, J. Rowe, K. McIntyre (Capt.).

Trojans "A" 13, *Bart's "A"* 0.

24th September Old Askean's Sevens.

Seven-a-side competitions at the beginning of the season are becoming more popular. It is true to say that the games are a tremendous asset towards early season fitness, but the rugby on Sunday seemed to be very slow and of doubtful interest to the spectator. Bart's went straight into the Second Round to meet Beckenham.

Bart's 15, *Beckenham* 5.

Mark Britton and Keith McIntyre scored the three tries and Nick Griffiths converted them in an easy game.

Third Round

Sidcup 13, *Bart's* 8.

The game started off at a very slow pace; Bart's took the lead with a penalty goal by Nick Griffiths. Two minutes later Griffiths received a leg injury and from that moment on Bart's lost any drive that they may have had. From this point Sidcup took control of the game, despite desperate attempts by Lloyd and McIntyre. A good run by Robin Lambert secured the other five points for Bart's.

M. Britton

CROSS COUNTRY CLUB

On Wednesday, 13th September, we were invited by **Lloyds Bank** to their inaugural Road Relay at Lower Sydenham. Unfortunately we only had a three man team so that we were short for the final leg. Graham Hesselden started us off well in fifth position (9 min. 10 sec.) but Will Field lost several places to finish fourteenth (11 min. 23 sec.). Robert Thompson was unable to catch up any places in his time of 10 min. 21 sec., so that we had to drop at the penultimate leg to fourteenth place out of twenty-one. The fastest lap was by an un-named

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Widening the scope of topical steroid therapy

In 1962 McKenzie and Stoughton[1] showed that application of anti-inflammatory steroids to the human skin produces vasoconstriction, easily recognisable as areas of pallor. This 'skin blanching' technique proved valuable as a guide to the clinical effect of new steroids for topical use. It greatly speeded up the slow process of development. Results were quickly obtainable and the synthesis of chemical modifications could be guided towards securing high therapeutic activity. Thus Glaxo workers were able to prepare and screen more than fifty new compounds before selecting Betnovate (betamethasone 17-valerate) as the most promising. From subsequent clinical trials the new steroid emerged as more active than any of the steroids used hitherto[2]. Further clinical experience has shown that it is remarkably effective against all steroid-responsive dermatoses. It gives a more rapid clearance of the relatively responsive conditions and brings many difficult and resistant diseases within the scope of topical steroid therapy.

Betnovate (betamethasone 17-valerate)

References
1. *Arch. Derm.* (1962) **86**, 608.
2. *Lancet* (1964) **i**, 1177.

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member of the Midland Bank (8 min. 44 sec.) and we think that the distance was somewhat under 2 miles.

All our opponents at this well supported event came from London Business Houses and we should feel flattered that we alone of all the London Colleges were invited to take part.

It was unfortunate that shortening daylight hours did not permit Lloyds Bank to run this event as they had originally intended. Each man was to have run a $1\frac{1}{4}$ mile leg twice, that is, the first runner would have done the fifth as well and so on. However, it was most enjoyable and we hope that we shall be invited again and we hope that next time we shall be able to produce a full team.

Owing to the lack of depth of our pockets, the lack of time available, the distance to travel to the event and, not least, the distance to be run when we got there, we had no participants in the Ben Nevis Race this year but we hope that we shall have a contingent in this and the Three Peaks Race next year.

Robert Thompson

Answers to Diagnosis

by J. R. Griffiths

The structure found in the section is a classical "ray colony" of Actinomyces israelii, and the patient's history is consistent with an infection by this organism. Actinomycosis is a frequent commensal in the mouth of country dwellers and often enters the blood stream after a dental extraction. The usual sites of infection are the jaws, the lungs and the ileo-caecal region. Liver abscesses normally arise from the carriage of cells from the bowel in the portal blood, but isolated liver infections are not unknown. The prolonged pyrexia and pain are characteristic, as are the raised ESR and leucocytosis. It is interesting to note that the liver scan showed an area of lowered uptake below the right costal margin which was nevertheless palpable in continuity with the liver. This coincided, in site though not in extent, with the mass. A liver scan is useful in any pyrexia of unknown origin.

I am indebted to Mr. Shorey, Dr. Zeegan and Miss McAlister for advice on this case and to Mr. Robinson for permission to publish.

somnambulists...

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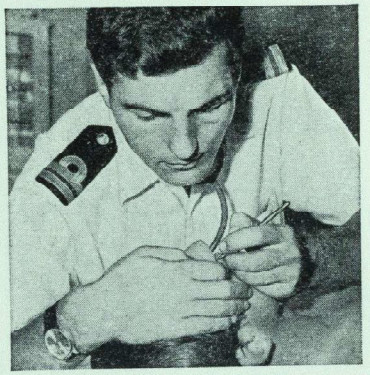

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SAINT · BARTHOLOMEW'S · HOSPITAL · JOURNAL

VOL. LXXI No.12 DECEMBER 1st, 1967

Widening the scope of topical steroid therapy

In 1962 McKenzie and Stoughton[1] showed that application of anti-inflammatory steroids to the human skin produces vasoconstriction, easily recognisable as areas of pallor. This 'skin blanching' technique proved valuable as a guide to the clinical effect of new steroids for topical use. It greatly speeded up the slow process of development. Results were quickly obtainable and the synthesis of chemical modifications could be guided towards securing high therapeutic activity. Thus Glaxo workers were able to prepare and screen more than fifty new compounds before selecting Betnovate (betamethasone 17-valerate) as the most promising. From subsequent clinical trials the new steroid emerged as more active than any of the steroids used hitherto[2]. Further clinical experience has shown that it is remarkably effective against all steroid-responsive dermatoses. It gives a more rapid clearance of the relatively responsive conditions and brings many difficult and resistant diseases within the scope of topical steroid therapy.

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References
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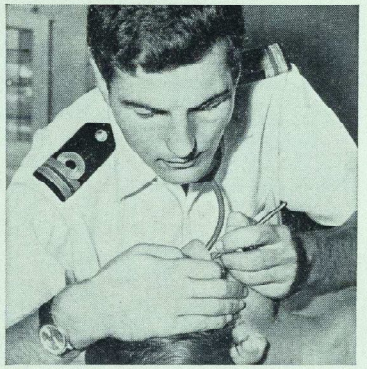

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St. Bartholomews Christmas Card 1967

The colour print of St. Bartholomews the Less—seen in the View Day supplement—is being used for this year's Christmas Card. Two types are being printed, one with the colour picture of the church on the outside and the other with Bart's crest on the outside and the picture inside. Both carry the greeting "With Christmas Greetings and all good wishes for the New Year." The cost is the same for either **6/- doz.**

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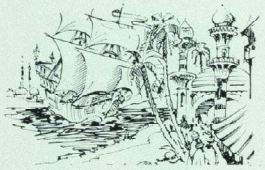

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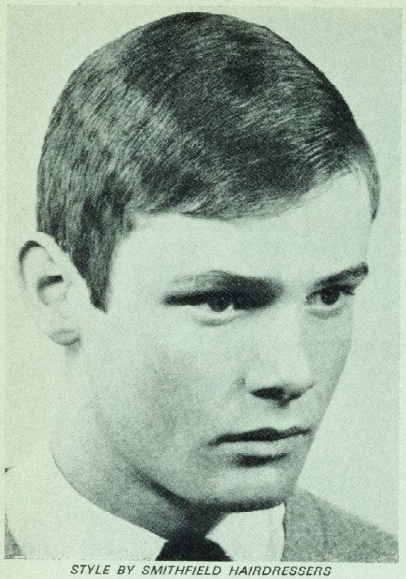

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Entry to Cadetships is by application and interview.

For more information please write, giving your age, nationality, and details of medical training, including expected date of graduation, to Squadron Leader M. A. Pallister, B.A., M.B., B.Chir., M.R.C.S., L.R.C.P., D.T.M.&H., D.P.H., D.I.H., R.A.F., Ministry of Defence, 1-6 Tavistock Square (26EB1), London, WC1.

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You can apply for a Medical Cadetship if you have passed your second M.B. or its equivalent, are under 25, and have a place at a medical school in the United Kingdom or Eire. If you are about to take your second M.B., you may still apply; but your acceptance will be conditional on your passing the examination.

If accepted as a Medical Cadet, you are given the probationary rank of 2nd Lieutenant. On qualification, you are promoted Lieutenant, and are paid as such while you fulfil your pre-registration appointment—either at a civilian hospital of your own choice, at the Queen Alexandra Military Hospital, Millbank, or the Cambridge Military Hospital, Aldershot. After being fully registered, you are promoted Captain, and take up your duties in the RAMC.

Your obligation is then for five years of service on a Short Service Commission. During those five years, you will have a good chance of travel, make many friends, have ample leave (six weeks' paid leave a year, with a locum provided by the Army). During that period you can, if you like, apply for a Regular Commission. Or you can leave the Army for civilian practice, the richer for some valuable experience of General Practice—and for a tax-free gratuity of up to £2,600 according to period of cadetship.

For further information about Medical Cadetships, or to arrange a meeting with an RAMC Officer to answer any questions you may have, write to: Colonel E. L. O. Hood MB, Ministry of Defence (AMD2), Dept. 053, Lansdowne House, Berkeley Sq., London W1

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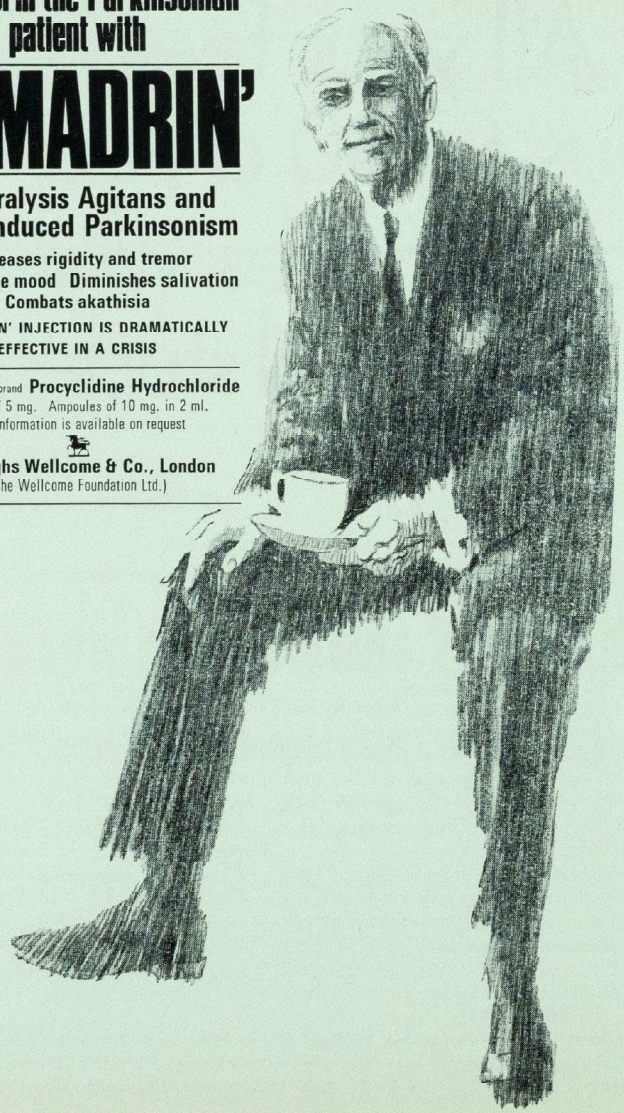

Saint Bartholomew's Hospital

JOURNAL

Vol. LXXI No. 12 — 1st December 1967

CONTENTS

Editorial ... 444
Letters to the Editor ... 445
News ... 445
New Course at St. Leonard's ... 446
Retirement: Miss Joan Loveridge ... 447
Stylytes "Consistency" ... 449
A remarkable letter by Benjamin Franklin on sex ... 450
Jaundice by Dr. C. D. Holdsworth ... 451
Blood Letting. Translated from the Middle English by Paul Swain ... 455
Horder Memorial Lecture: Chronic Renal Failure by Professor D. A. K. Black ... 462
Wix Prize Essay: Robert Lawson Tait "His Life and Work" Part 2. (1880-1899) ... 466
Music on the South Bank in December by Richard Thompson ... 470
Books for Christmas ... 470
Medical Book Reviews ... 472
Preclinical Book Reviews ... 473
Sports News:
- Nurses' Column ... 475
- The Rugby Club ... 476
- Hockey Club Report ... 476
- Golf Club ... 478
- St. Bartholomew's Hospital Golfing Society ... 480
- Squash Club Report ... 480
- Rifle Club ... 480
- Swimming Club ... 481

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PERIFERAL HOSPITALS

The beginning of the teaching programme at St. Leonard's, reported on page 446, is a very welcome and long overdue addition to the clinical curriculum. All other London teaching hospitals have general hospitals either designated to them by the Ministry or associated with them in their Regional Board area. In fact a glance at the Hospitals' Year Book reveals the embarassing isolation of Bart's alphabetically situated at the head of the page above the other London Hospitals each with its several associated hospitals. For example, The London send their students to Mile End, King's to Dulwich, Westminster to Roehampton and St. Thomas's both to Lambeth and The Waterloo. All these are unspecialized hospitals admitting all emergencies from the region which they serve.

The merits of the "Major Week" system, whereby students are resident a week at a time at peripheral hospitals are legion. By working, with the House Officers, perhaps with one fellow student, clerking many acute cases each day and seeing a multitude of clinical signs before treatment begins to reverse the pathology, a clinical student is exposed to the really interesting side of medicine. Gaps in his knowledge are more effectively revealed by his failure to reach diagnosis, and possible lines of treatment become an urgent consideration rather than a theoretical exercise. Moreover learning about disease from cases, rather than from text-books or half-cured patients on the wards, is easier as well as more stimulating.

Conversations with students at Hospitals lucky enough to have such facilities nearly always involve the admission that "I learnt more in a week working with the Houseman than I did in a month at the Hospital". Moreover they stress the fact that consultants away from London seem to enjoy having students to teach, and would like to have more opportunity.

In "A Questionnaire on the curriculum" written up by E. G. and E. A. G. Cantrell in the Bart's Journal of December last year (*Vol. LXX No.* 12) the authors recorded that of 23 recently qualified Bart's students asked, 21 would like to have had resident periods at peripheral hospitals.

There can be no doubt that present students would unanimously be grateful for the opportunity to spend time in such hospitals.

The St. Leonard's scheme if not the complete answer to the Bart's problem is certainly a most welcome step in the right direction. The finalists at present there are most enthusiastic about the amount they are learning; but could not some temporary arrangements with several out of town Hospitals (in the North East Metropolitan Region for which Bart's is eligible) be made, and time provided earlier in the training programme whereby students could decide for themselves which Hospitals they would attend, and approach them personally.

THE PRICE

The Government have given the nation a timely pre-Christmas present of devaluation, beribboned and bowed with Wilsonsian rhetoric of course. Possibly ours is not to reason why, but without doubt it will place an increased burden on the National Health Service. All imported medical equipment and drugs are up by 14.3% and those manufactured in this country will doubtless rise in price with the cost of imported raw materials. The actual increase in terms of pounds per annum will only reveal itself during the coming months. Morevover, drastic cuts in Government expenditure are planned, and it would surely not be wise for the Medical profession to rest secure in the thought that the Health Service will remain an untouchable sacred cow. Hospital building schemes and, more important, modernisation programmes may provide grist for the mill and yet again be subject to stringent cuts. It must be the duty of Doctors to let it be known that such a course of action can only be taken at the expense of the nation's health.

LETTERS TO THE EDITOR

No References

Sir,—The article by N. H. Brooks and K. G. Taylor in your October issue is an interesting account of some very careful work, but I would like to suggest that its value would have been much enhanced by giving some reference to the vast amount of previous work that has been done on the subject.

I realise that it was intended as a student exercise, but part of the exercise was writing up and publishing the results, and no reputable scientific journal would accept a paper in such a well-worked field without a review of previous work and the quoting of at least some key references.

The point of reviewing previous work is, of course, to decide what further work needs to be done, and to avoid falling into the traps that have caught one's predecessors, and in this I am afraid your contributors have not entirely succeeded.

I will not trespass on your space by making detailed comments but if your contributors are seriously interested in the subject and wish to pursue it further I shall be happy to help them in any way I can.

Yours faithfully,

24th Oct. B. M. Wright, M.A., M.B.

National Institute for Medical Research,
Medical Research Council,
Mill Hill, London N.W.7.

Blood Alcohol and Exercise

Sir,—The article on Blood Article and Performance in your October number was excellent, and all concerned are to be congratulated, not least the hero who played an hour's squash after his vodka with results on his blood alcohol that were not surprising.

What many of us would like to know is whether exercise taken **before** alcohol can affect the curve. If the research team are willing to investigate it I have little doubt that willing subjects could be found.

In particular, members of the Cross-Country Club could provide a form of exercise capable of fairly accurate assessment and standardisation. I should be surprised if the physiological changes associated with something like extreme effort produced no effect.

7 Long Running,
Warren Hill,
Loughton,
Essex.

Yours faithfully,
H. B. LEE.

Engagements

CROWTHER-DURLING.—The engagement is announced between Dr. Andrew Crowther and Miss Jane Durling.

DAVISON-EASTWOOD.—The engagement is announced between Mr. Peter Davison and Miss Jean Eastwood.

NEWMAN-TAYLOR - CRICK.—The engagement is announced between Anthony Newman-Taylor and Miss Gillian Crick.

NORMAN-SMETHURST.—The engagement is announced between Mr. Kenneth C. T. Norman and Miss Lorna M. Smethurst.

SPIRA-FISHER.—The engagement is announced between Dr. Michael Spira and Miss Alison Fisher.

THERKILSDEN-BONE.—The engagament is announced between Dr. Lance K. H. Therkildsen and Miss Valerie A. Bone.

WILMHURST-SMITH - LANGFORD.—The engagement is announced between Mr. Robert N. Wilmhurst Smith and Miss Catharine J. Langford.

DUDENEY-FOX.—The engagement is announced between Mr. Terence Dudeney and Miss Elaine Fox.

Births

COOPER.—On 27th September, to Leslie (née Betts) and Dr. Richard Leigh Cooper, a son (Justin Leigh).

CRAGGS.—On 19th October, to Vanessa (née Hudson) and Dr. Christopher Craggs, a

son (Giles Philip).

KUUR.—On 23rd September, to Dr. Carol R. (née Martin) and Dr. Johannes B. G. Kuur, a son (Jeremy Francis Geert).

Deaths

GRANGE.—On 19th October, Charles D'Oyly Grange, F.R.C.S., aged 80. Qualified 1910.

BENTON.—On 10th October, after a short illness, Dr. W. F. Douglas Benton, M.R.C.S., L.R.C.P., General Practitioner at Thornton Heath. Qualified 1926.

FISHER.—On 10th October, Alfred George Timbrell Fisher, M.B., Ch.B., F.R.C.S., F.A.C.S., aged 79. Qualified 1911.

HAY.—On 30th September, David Hay, B.A., M.R.C.S., L.R.C.P. Qualified 1930.

MAURICE-SMITH.—On 15th October, Kenneth Samuel Maurice-Smith, M.R.C.S., L.R.C.P., aged 66. Qualified 1924.

PAYNE.—On 20th October, Reginald Theobald Payne, M.B., B.S., M.R.C.S., L.R.C.P. Qualified 1923.

RADLEY.—On 13th September, Sidney Bertram Radley, F.R.C.S., aged 78. Qualified 1911.

ROSE.—On 12th October, Ian Falconer, Rose, M.B.E., F.R.C.S. Qualified 1937.

University of Tasmania

Dr. C. P. Wendall-Smith has been appointed to the Chair of Anatomy.

HONOURS AND AWARDS

Sir Geoffrey Keynes has been awarded the James Tait Black Memorial Prize by the Professor of English, University of Edinburgh, for the "best Biography of 1966" for his "Life of William Harvey".

Sir Geoffrey Keynes delivered the Wilkin's Lecture at the Royal Society, 1967 on "Baco, Harvey, and the Originators of the Royal Society".

Duty Calendar for December

Sat. & Sun. 2nd & 3rd	
	Dr. Black
	Mr. Ellison Nash
	Mr. Manning
	Dr. Gillett
	Mr. McNab Jones
Sat. & Sun. 9th & 10th	
	Dr. Hayward
	Mr. Badenoch
	Mr. Manning
	Dr. Bowen
	Mr. Dowie
Sat. & Sun. 16th & 17th	
	Dr. Oswald
	Mr. Tuckwell
	Mr. Aston
	Mr. Ellis
	Mr. Fuller
Sat. & Sun. 23rd & 24th	
	Prof. Scowen
	Prof. Taylor
	Mr. Lettin
	Dr. Ballantine
	Mr. Cope
Sat. & Sun. 30th & 31st	
	Sir Ronald Bodley Scott
	Mr. Hunt
	Mr. Lettin
	Dr. Jackson
	Mr. McNab Jones

Physician Accoucheur for December will be Mr. D. Williams.

New Course at St. Leonard's Hospital

On Monday, 23rd October, the first group of Bart's students started the new three month medical course at St. Leonard's Hospital. The course has been organised for third-year students to replace the "Second Time Clerking" which they previously carried out on one of the Bart's Medical Firms. Since St. Leonard's is so close to Bart's (only 10 minutes by bus or car) it has been possible to arrange a 10.30 a.m. to 4 p.m. day at St. Leonard's thereby allowing students to attend the 9 a.m. and 4.30 p.m. revision lectures at Bart's.

The course is being run by Dr. W. R. Cattell and Dr. C. D. Holdsworth, both Senior Lecturers at Bart's as well as Consultant Physicians at St. Leonard's

There is a distinct practical bias to the day's work, for which the students are divided into three groups. Each group is allocated to a floor with male and female wards with about thirty beds, so that each student has at least three patients which must be clerked and followed daily as in-patients. (There are in all about 90 medical beds.) Working ward rounds are attended weekly by students (when they must present their cases to the Consultant) as well as two teaching rounds. There are also three X-ray sessions weekly, one with Dr. Kelsey Fry, one with Dr. Simons and a combined X-ray conference between radiologists and clinicians to discuss the interesting cases. Professor Spector's department is collaborating with Dr. Cattell and Dr. Holdsworth to present a clinical pathological conference once a week. And every Tuesday morning one of the students makes a detailed case presentation, for which he is expected to have referred in depth to relevant journals and papers.

During the three months, provision has been made for a three-week compulsory resident period, one week at a time, when the student will be on call for acute admissions and ward crises. This will give students the opportunity of facing the sort of responsibility which they might otherwise face for the first time as Housemen.

The students at present at St. Leonard's are most enthusiastic about the new course. Apart from the manifest advantages of attending a course so recently planned to fulfil the particular requirements of the group being taught (in this case pre-finalists) there are other merits a peripheral hospital has which a teaching hospital cannot provide. Firstly, 90 per cent of medical admissions to St. Leonard's are emergencies and so students have the opportunity of seeing a large number of patients with acute physical signs. Secondly, the conditions which are seen are of a much more "general" nature than those referred to the more specialized clinics at Bart's, and reflect more closely the real incidence of the various diseases in the community. Thirdly, the patients are not overclerked and are not so bored as they become in teaching hospitals with the constant demand by a succession of doctors for a full history of their complaint. Fourthly, in a peripheral hospital there are few distractions and the atmosphere more nearly approximates to "the front line". There are fewer qualified men to shield the student and thus he feels a far greater incentive to channel his thoughts towards the realities of diagnosis and treatment.

Retirement:—

Miss Joan Loveridge

Miss Joan Loveridge leaves St. Bartholomew's Hospital at the end of November 1967 having been Matron and Superintendent of Nursing since 1949. She entered the Royal National Orthopaedic Hospital in 1930, where she took her orthopaedic training. She began her general training at Barts in 1933, taking her midwifery certificate at the Radcliffe Infirmary, Oxford, working for a time at the Nuffield Infirmary, in the neurosurgical unit, until returning to the hospital in 1939. She held a series of posts in the hospital, first at the Preliminary Training School, later as a Night Sister, a Ward Sister nursing successively with the Medical Professorial and the Plastic Surgical Units, before becoming Office Sister, Assistant Matron, and finally Matron.

Miss Loveridge also served as a member of the General Nursing Council for England and Wales from 1951 to 1965, for seven years as Vice-Chairman and as Chairman of the Disciplinary Committee of the Council. She was also a Director of the National Council of Nurses, Chairman of the North East Metropolitan Regional Area Nurse Training Committee, and President of the League of St. Bartholomew's Hospital Nurses.

This recital of her professional career has to be set against the problems arising during her tenure of office, for her contribution to nursing and to the hospital to be appreciated. Appointed shortly after the end of a long war, hospital activity was separated between St. Albans and London. Special Units required nursing in buildings ill suited for the special work being undertaken, and many services were grossly out of date. Building was on licence, supplies and materials were restricted. Further, the cast of the new National Health Service had yet to be established, and Boards and Committees may have been slow to realise their changed responsibilities in a national, rather than a voluntary system. It was not found possible until 1961, twelve years after she assumed office, for the units to be withdrawn from St. Albans, and the hospital re-united in West Smithfield.

Miss Loveridge was always well and loyally served by those she appointed to be her Deputies and Assistants, Principal Tutor and the senior Ward and Departmental Staff. She recognised that those in whom she placed her

Matron 1967 . . .

. . . with The Duchess of Gloucester in 1950

confidence should be given a generous degree of freedom to exercise their talents, and they, in turn, knew that they would receive unfailing support.

Her many qualities suited her ideally for her post of responsibility. She was friendly and approachable, and could quickly sense the other person's situation. She brought her wide practical experience to bear in producing a solution to problems by pointing out quite firmly where responsibilities lay. It will be widely recognised that, whereas nursing is a discipline, young nurses require a measure of freedom, and it is the task of any matron to steer a course between these opposing needs. Miss Loveridge was exceedingly able, in meeting this situation by adhering absolutely to the nursing ethic and the standard of service which had been set, but offering as much freedom as possible at the personal level when off duty. Year after year she carried the ultimate responsibility for the burden of staffing at the requisite level of skill and technique to requite the needs of the acutely sick. As guardian of the nursing esprit, she placed great reliance in personal contact, and she was unsparing of herself in maintaining this relationship, which gave her great insight in the work of the hospital at all levels.

It will be a cause of satisfaction to her that during the last year of her service the seeds of earlier efforts bore fruit, in that a degree course for nurses linked with the University of the City became possible; the Ministry of Health gave their approval to the extension to Gloucester House Nurses' Home, which will incorporate an extension to the teaching department, and enable the Preliminary Training School to return to Smithfield; further plans to provide a holiday house for nurses was agreed in essence, sponsored by the Voluntary Board of Governors of the hospital.

She was deeply interested in the Church and the special relationship of the Parish of St. Bartholomew-the-Less. In the past her practical help took such forms as organising sewing parties to "rehassock" the Church to an intricate and beautiful plan of design.

Miss Loveridge, a clever mimic (both sexes), would always enjoy the funny side of many daily situations. Her off duty interests were many and varied, and it might be said of her that she enjoyed immensely "doing anything rather better than it needed doing".

All who came into contact with her realised that she used her responsible office, her judgement, her skill, solely in preserving and enhancing the quality of patient care, and nurse training in her vocation, and in the hospital of her affection.

J. G.

CONSISATNCY

"Some years ago the numerous friends of the late Lord Melville were much alarmed for the valuable life of the right honourable gentleman, on hearing that he was gone into the country for the benefit of his health accompanied by Sir Walter Farquahr (The Physician). To relieve their fears, a Ministerial paper informed them that Sir Walter did not travel with him as a physician, but as a friend.

"M. Morlan, physician to the Duchess of Burgundy, going one day to the prince's with a sword, was jocose upon his adjustment, and said, 'Monseigneur, do you not think I resemble Captain Spezzaferro, of the Italian comedy?' 'It is impossible to resemble him less' said the prince, Spezzaferro never killed anybody' ".

Stylytes

"The principle difference between a Doctor and a quack, is that you die under one and the other kills you."

Amongst the other various delights of medical practice, the esteem and respect of the rest of the community rank as high as any. As for the attraction this must be for any husband-hungry female . . .

How reassuring to find that the general public is so consistent in its estimation of medical men. I quote from a little book which has recently had the pleasure of coming my way . . . "The London Compendium of Wit", or, "A thousand notable Jests". Published for Walker and Walker of Paternoster Row in 1817 . . .

"A surgeon being examined as a witness for the plantiff in a certain action of assault, was asked what he had found it necessary to do in consequence of the bruises the plantiff had received in the affray. 'I bled him sir', said the surgeon. 'And pray was that necessary?' asked the defendant's counsel. 'Sir'? replied the surgeon. 'We always deem it necessary to do something when called in' ".

"A physician who went to see a sick patient, was told by the servant that she had just expired. 'Your Lady may be apparently dead', said the doctor, 'Yet not actually so', He alighted from his carriage and went upstairs, where he found his patient actually dead, with the customary fee in the palm of her hand, and taking it, 'I see' said the doctor with much seriousness, 'The poor lady expected me' ".

A Remarkable Letter by Benjamin Franklin on Sex

With observations on the Physiology of ageing.

An authentic letter found in the Franklin Institute Collection of Letters, purchased by the United States Government at a cost of 30,000 dollars, and now in the possession of the Department of State at Washington, D.C.

My dear Friend:—

I know of no medicine fit to diminish the violent inclination you mention, and if I did, I think I could not communicate it to you. Marriage is the proper remedy. It is the most natural state of man and therefore the state in which you are most likely to find real happiness. Your reasons against entering into it at present are not well founded. The circumstantial advantages you have in postponing it are not only uncertain but they are small in comparison with the thing itself, namely: the being married and settled. It is the man and the woman united that make the complete human being. Separate she wants his force of body and strength of reason; he, her softness, sensibility and acute discernment. Together they are more likely to succeed in the world. A single man has not nearly the value he would have in that state of union. He is an incomplete animal; he resembles the odd half of a pair of scissors. If you get a prudent healthy wife, your industry in your profession with her good economy will be fortune sufficient.

But if you will not take this counsel and persist in thinking a commerce with the fair sex inevitable, then I repeat my former advice —in all your amours you should prefer old women to young ones. You call this a paradox and demand my reasons. They are these:—

Because they have more knowledge of the world, their minds are better stored with conversation, their conversation is more improved and more lastingly agreeable.

Because when women cease to be handsome they study to be good. To maintain their influence over men they supply the diminuation of beauty by an augmentation of utility. They learn to do a thousand services, small and great, and are the most tender and careful to all friends when one is sick. Thus they continue amiable and hence there is hardly such a thing to be found as an old woman who is not a good woman.

Because there is no hazard of children, which irregularly produced may be attended with such inconvenience.

Because through more experience they are more prudent and discrete in conducting an intrigue to prevent suspicion. The commerce with them is therefore safe with regard to this, that if the affair should happen to be known considerate people might be inclined to excuse an old woman who would kindly take care of a young man, from his manners, by her good counsels and prevent his ruining his health and fortune among mercenary prostitutes.

Because in every animal that walks upright the deficiency of the fluid that fills the muscles appears but in the highest part. The face first grows lank and wrinkled, then the neck, then the breasts and arms, the lower parts continuing to the last as plump as ever, so that, covering all above with a basket, and regarding that only which is below the girdle, it is impossible to know of two women an old from a younger. And as in the dark all cats are grey, the pleasure of corporeal enjoyment with an old woman is at least equal and frequently superior, every knack being by practice capable of improvement.

Because the sin is less. The debauching of a virgin may be her ruin and make her life unhappy.

Because the compunction is less. The having made a young girl miserable may give you frequent bitter reflections, none of which can attend the making of an old woman happy. And lastly, they are so happy and grateful. This much for my paradox.

But I still advise you to marry directly.

Your affectionate friend,
Benj. Franklin.

June 25, 1766.

JAUNDICE

by Dr. C. D. Holdsworth, F.R.C.P., Consultant Physician St. Leonard's Hospital, Senior Lecturer St. Bartholomew's Hospital.

To the pre-clinical student, jaundice means a rise in serum bilirubin from a restricted number of causes easily enumerated under the 3 headings 'pre-hepatic, hepatic, or post-hepatic'. To the clinical student, first confronted with a jaundiced patient, the problem assumes different dimensions. A firm diagnosis can however often be achieved with the aid of the history, examination, and a few simple investigations, although it would be dishonest not to point out that jaundice can constitute a challenge to the diagnostic ability of the most experienced observer.

Bilirubin Metabolism. (Fig. 1).

Most of the 300 mg. or so of bilirubin formed each day arises from the breakdown of haemoglobin in the reticulo-endothelial system. It

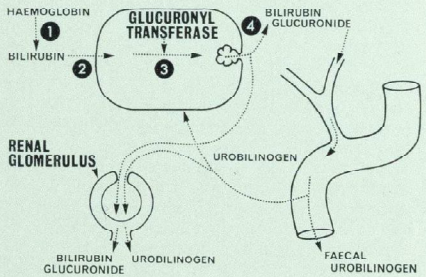


Fig. 1.

enters the liver cell and is conjugated within the microsomes by the enzyme glucuronyl transferase, with uridine diphosphate glucuronic acid as the glucuronyl donor. The bilirubin mono- and di-glucuronides thus formed enter the biliary canaliculi; small amounts regurgitate into the blood stream. Within the large intestine the conjugated bilirubin is converted to urobilinogen by bacteria. Much of this is excreted in the fæces to which it imparts their normal dark colour. Some of the urobilinogen is absorbed from the intestine and re-excreted in the bile, thus consituting an entero-hepatic circulation similar to that of bile salts. Any absorbed urobilinogen not excreted by the liver is excreted in the urine. This 'urinary urobilinogen' excretion is normally less than 4 mg. daily, an amount which can just be detected by the simple qualitative test using Ehrlich's aldehyde reagent.

In theory, therefore, measurement of urine urobilinogen should give valuable diagnostic information, and indeed this is often the case. For example, urobilinogen excretion is increased by haemolysis, and by liver damage of a degree sufficient to impair re-excretion in bile. Urobilinogen excretion is diminished, on the other hand, if biliary obstruction prevents bilirubin reaching the intestinal lumen. Additional factors do however exist, and complicate interpretation. For example urobilinogen is a weak acid; excretion is therefore increased if the urine is alkaline, and decreased if the urine is acid, and for the same reason excretion is very small at night, and is maximal between 12.00 and 16.00 hours. Colonization of the small intestine by bacteria, as in blind loop syndrome and many cases of cholangitis, increases urobilinogen formation in the gut in an area where absorption is rapid. Conversely broad spectrum antibiotics reduce the gut flora and diminish urobilinogen formation. Finally impaired renal function can lead to a low urinary output of urobilinogen.

The differences between bilirubin and its conjugates (Table 1) all hinge on the fact that their lipid and water solubility are completely different. One result is that the conjugated bilirubin (also called 'direct reacting' or 'post-hepatic' bilirubin) will not pass readily across biological membranes. Unconjugated bilirubin does not enter the urine because it is bound to albumen.

Occasionally a knowledge of the relative proportions of conjugated and unconjugated bilirubin in the plasma can be useful diagnostically. Very often however examination of the urine for bilirubin is quite sufficient.

Types of Jaundice.

Jaundice may result from a disturbance of bilirubin metabolism at any of the four stages illustrated in Fig. 1.

1. **Excessive production of Bilirubin.**

This occurs in haemolytic states. Up to 1,500 mg. of bilirubin may be formed daily. Due to the great reserve capacity of the liver, however, the serum bilirubin rarely rises to more than 4-5 mg. per 100 ml. if hepatic function is

TABLE I
The properties of conjugated and unconjugated bilirubin.

	Bilirubin	Bilirubin glucuronide
Solubility	Lipid soluble	Water soluble
Transport in Blood	Attached to albumin	Dissolved in plasma water
Reaction with Van den Bergh Reagent	Indirect reacting i.e. needs alcohol	Direct Reacting i.e. occurs without alcohol
Entry into neonatal brain	+	−
Passage across renal glomecular membrane	−	+

normal. Most of the rise is of unconjugated bilirubin, which does not enter the urine. Hence the synonym 'acholuric jaundice'. On the other hand urobilinogen is formed in excessive amounts in the intestine, and its excretion in both urine and stools is increased. Urine is therefore pale when fresh, but darkens on standing. The stools are dark.

2. **Impaired entry of Bilirubin into the hepatic cells.**

This appears to be the defect in a condition known as Gilbert's disease, which is a familial type of non-haemolytic jaundice. It is by no means rare, but it only causes slight jaundice, and is often undetected until plasma taken for some other purpose is noticed to be yellow. Liver function is otherwise quite normal, and of course bilirubin is not present in the urine. Its only importance is that if the unfortunate subject is diagnosed as having infectious hepatitis and is put in bed until the jaundice clears, he may remain there for months.

3. **Defective Bilirubin conjugation.**

This occurs in the premature infant, as the hepatic conjugating enzymes only develop to normal levels after birth. Together with haemolysis of immature foetal erythrocytes it accounts for the neonatal jaundice of the premature infant, and is partly responsible for the deep jaundice which occurs in haemolytic disease of the new born. The serum bilirubin is largely unconjugated, can therefore enter the nervous system, and may cause kernicterus.

A very rare form of congenital non-haemolytic anaemia, the Crigler-Najjar type, is due to the congenital absence from the liver of the enzyme glucuronyl transferase.

4. **Defective bilirubin excretion.** "Cholestatic jaundice".

This is not synonymous with obstructive jaundice although extrahepatic obstruction is one cause. Biochemically in all jaundice of this variety, most of the rise in serum bilirubin is the conjugated pigment, and bile is present in the urine. Urobilinogen disappears from the urine if obstruction is complete, so preventing the entry of bilirubin into the gut lumen. The stools are pale. In practice, hepatic cell damage is often present, and fractionation of the serum bilirubin is for this reason rarely helpful in the differentiation of obstructive jaundice from hepato-cellular jaundice. Furthermore a low urinary urobilinogen, can as we have seen, be due to factors other than biliary obstruction.

Cholestatic jaundice, so called because of the characteristic histological changes induced by bile stasis in liver cells, can be broadly subdivided into two categories

(a) **Intrahepatic cholestasis.**

The deficiency in bile excretion occurs at the liver cell or bile canalicular level. A good example is yet another type of chronic benign familial non-haemolytic jaundice known as the Dubin-Johnson syndrome. It can be differentiated from Gilbert's disease because the serum bilirubin is largely conjugated, bilirubin is present in the urine, and liver biopsy, instead of being normal, shows liver cells laden with a dark pigment. An interesting additional finding is that the dye bromsulpthalein (BSP) is handled abnormally by the liver. Forty-five minutes after injection the blood BSP level is as low as would be the case in a normal subject, but a late specimen taken after 3½ hours shows a high concentration, due to regurgitation of dye from the liver cells into the blood stream. Other types of intrahepatic obstructive jaundice include some types of drug jaundice, some cases of infective hepatitis, and primary biliary cirrhosis. A particularly interesting variety, rare in this country, recurs in the same individual during each pregnancy. The precise metabolic defect in bilirubin handling is unknown, but must obviously be strongly influenced by female hormones, for these unfortunate women also develop jaundice if they are given exogenous female hormones in the form of contraceptive pills.

(b) **Extrahepatic cholestasis.**

This of course is one of the commonest types of jaundice encountered clinically, and the differential diagnosis will be discussed later.

Approach to the jaundiced patient.

The history.

In addition to the history of the illness itself, it is essential to ask about any recent contact with jaundice, particularly within 1 month of the onset, suggesting infectious hepatitis, and any procedure which may have allowed the parenteral introduction of the virus of serum hepatitis within the preceding three months. This can be anything from a tattoo to open heart surgery, and it has even been recorded in a team of cross country runners scratched by the same thorn bush. A drug history is equally essential, and may be incomplete until the contents of the patients home drug cupboard have been found and identified. Some drugs, especially phenothiazine derivatives such as chlorpromazine ("Largactil") cause intrahepatic obstructive jaundice which is troublesome but never fatal. Others, such as monoamine-oxidase inhibitors, and perhaps the anaesthetic "Halothane", result, fortunately rarely, in an illness indistinguishable from virus hepatitis and with a considerable mortality from hepatic coma. An occupational history may indicate the possibility of Weil's disease (leptospirosis) or of exposure to a toxin such as carbon tetrachloride.

Prodromal symptoms preceding jaundice, such as anorexia, nausea and a marked aversion to smoking, are very suggestive of virus hepatitis (either infectious or serum). Steadily progressive, often painless jaundice may be due to carcinoma of the bile duct, or of the head of pancreas. Severe pain, on the other hand, points to a gall-stone as the cause. Rigors may be due to cholangitis, usually due to a stone, and never occur in infectious hepatitis. Severe systemic infections may result in rigors and a toxic jaundice, but in such cases jaundice is never deep. Previous jaundice may suggest chronic liver disease, particularly cirrhosis, or a recurrence of a common bile duct stone but could of course have been due to a virus hepatitis, and so may not aid differential diagnosis. A history of previous biliary tract surgery can on the other hand be very important, as it may have resulted in a traumatic bile duct structure. Itching is a particularly valuable symptom. It is thought to be due to retention of bile salts within the body, and almost always indicates some variety of cholestatic jaundice.

The examination.

Impairment of consciousness may be immediately apparent; other signs of impending hepatic coma include a flapping tremor of the hands, and a musty but sweet smell in the breath, which has been likened to that of a freshly opened corpse. Hepatic coma in acute liver disease is associated with deep jaundice and implies severe liver cell necrosis, but in chronic liver disease jaundice may be mild or absent.

The skin must be scrutinized inch by inch. Spider naevi indicate parenchymal liver damage, usually cirrhosis, and a mottled erythema of the thenar and hypothenar eminences has a similar significance, although both can occur to some extent in normal individuals, and in pregnancy. Dupuytren's contracture, parotid enlargement, and gynaecomastia suggest alcoholic cirrhosis, but it should be remembered that the alcoholic can become jaundiced due to toxic liver damage after a heavy drinking bout even if his liver is not cirrhotic. Scratch marks may emphasise the intractable itching of obstructive jaundice to the observer, and a greenish tinge to the jaundice will also support this diagnosis. On the other hand a pale yellow tinge of the skin due to a combination of anaemia and mild jaundice, suggests haemolysis. Secondary deposits of carcinoma may on occasion be found in the skin, or in lymph nodes.

Oedema usually signifies a low serum albumen due to liver cell failure, but a raised jugular venous pressure may mean cardiac failure. If severe this can cause jaundice due to hepatic congestion, especially if pulmonary infarcts have led to a greater load of bilirubin for excretion.

The abdomen is examined last. Dilated veins may on closed inspection prove to be due to portal hypertension (direction of blood flow away from umbilicus) or inferior vena caval obstruction (blood flow upwards). Ascites in the absence of oedema may be due to malignant

disease, although it can occur in cirrhosis if the portal pressure is very high. Splenomegaly is an important sign to detect, for it only rarely occurs in obstructive jaundice.

Finally the liver itself is palpated. In severe hepatic necrosis due to either hepatitis or drugs it may be impalpable, and not even detectable by percussion, although in early or mild hepatitis the liver is enlarged and tender. The cirrhotic liver varies enormously in size and shape, but is rarely grossly enlarged, and may in advanced cases be impalpable. Nodules may be palpable on the surface, but if the liver is extremely hard, and the nodules are very large and irregular, secondary deposits of tumour are probably responsible. Occasionally the gall bladder can be palpated below the liver. This implies that it is not fibrotic, and hence has not contained stones, so that the obstruction is probably caused by carcinoma rather than by gall stones.

Special Tests.

There is no such thing as a specific "liver function test", but as liver damage results in very many metabolic abnormalities innumerable tests have been proposed. It is advisable to know and use as few of these as possible but to be really familiar with the significance of the tests chosen.

Serum bilirubin is by definition raised in jaundice. Fractionation into conjugated and unconjugated pigment helps in detecting haemolytic anaemias, and in the differential diagnosis of familial disorders of bilirubin metabolism.

Bilirubin in the urine is present in all cases of jaundice due to liver cell dysfunction or bile duct obstruction. If absent, jaundice must be due to haemolysis.

Urobilinogen is present or increased in the urine of all cases of jaundice due to liver cell damage, or to haemolysis. It is only absent in complete extrahepatic biliary obstruction.

Alkaline phosphatase is usually raised to more than 30 K.A. units in cholestatic jaundice, but this is no guide as to whether the obstruction is intra-hepatic or extra-hepatic. A very high alkaline phosphatase, for example, is found in some cases of infective hepatitis, and in some patients with cirrhosis. A small rise in alkaline phosphatase is often the only indication of primary or secondary tumour in the liver. A raised alkaline phosphatase can also however be due to bone disease including secondary deposits. Bone and liver alkaline phosphatase cannot be distinguished by any routine chemical method, but a raised alkaline phosphatase due to liver disease is almost always paralleled by a rise in the enzyme 5-nucleotidase.

Serum transaminase (either S.G.O.T. or S.G.P.T.) is raised in the presence of liver cells necrosis.

Serum albumen is produced solely by the liver, and falls if liver cell function is severely depressed. Serial determinations are of value in assessing the progress of a patient with cirrhosis. In extra hepatic biliary obstruction the serum albumen only falls after months of complete obstruction have damaged the liver cells.

Serum Protein Electrophoresis has replaced the turbidity tests which until a few years ago were the only method of detecting changes in the serum globulins. A raised γ globulin is usual in cirrhosis and infective hepatitis. Cholestatic jaundice is characterised by raised α_2 and β globulins.

If the diagnosis is still in doubt, three further procedures may be undertaken.

(1) **Liver biopsy.**

This can be performed safely if jaundice is mild, and if there is no bleeding tendency. Its greatest value lies in confirming any suspicion of cirrhosis, as a definitive diagnosis of this condition can only be made histologically.

(2) **Percutaneous trans-hepatic cholangiography.**

Oral or intravenous cholangiography is not possible if the serum bilirubin is raised to more than 3 mg. per cent, and under these circumstances the bile ducts can only be demonstrated radiologically by the direct installation of contrast medium into the lumen. This can be done by introducing a long needle percutaneously into a dilated intrahepatic bile duct under local anaesthetic. In most cases of extra-hepatic bile duct obstruction this can be done, but laparotomy to relieve the obstruction must be performed within the next few hours, to prevent the biliary peritonitis which can otherwise follow successful penetration of a bile duct. This technique is perhaps most useful in defining the precise location and extent of bile duct strictures, and high bile duct carcinoma. Radiographs are often more informative than those obtained by introducing contrast media during operation, as the procedure is carried out in the X-Ray department with direct visual control.

(3) **The Steroid Diagnostic Test.**

It has been claimed that in cases of intra-hepatic cholestasis due to hepatitis, corticosteroids produced a consistent fall in serum bilirubin, whereas in extra-hepatic biliary obstruction steroids had little effect. If this was the case the test would be extremely helpful, as unnecessary laparotomy might be avoided. Unfortunately this test has not proved reliable.

Diagnostic laparotomy.

In a small minority of cases, the diagnosis may remain uncertain, and a diagnostic laparotomy may be necessary to ensure that a surgically remediable condition is not present. Operative mortality in the sick patient with parenchymal liver disease is high, and for this reason every diagnostic possibility must have been explored before proceeding to laparotomy. Extra-hepatic biliary obstruction will not produce liver failure or irreversible liver damage in the course of a few weeks, so that if there is diagnostic doubt, surgical exploration is not a matter of urgency. Even so, if after six weeks of observation jaundice has not faded, and the diagnosis is still not certain, operation should not be delayed. Failure to find a dilated common bile duct does not exclude obstructive jaundice and cholangiography is mandatory under these circumstances.

Summary.

The different types of jaundice are now best classified in terms of our present knowledge of bile pigment metabolism and excretion. Clinical examination and simple laboratory tests are often all that is required for diagnosis, but however refined the tests used, laparotomy is still occasionally required before extra-hepatic biliary obstruction can be confidently excluded.

References.

Sherlock S. (1963), Diseases of the liver and biliary system. 3rd Edn., Blackwell, Oxford.

Bouchier, I. A. D., and Billing, B. H., ed. 1967. Bilirubin metabolism. Blackwell, Oxford.

BLOOD LETTING

From Lanfrank's 'Science of Chirugie'

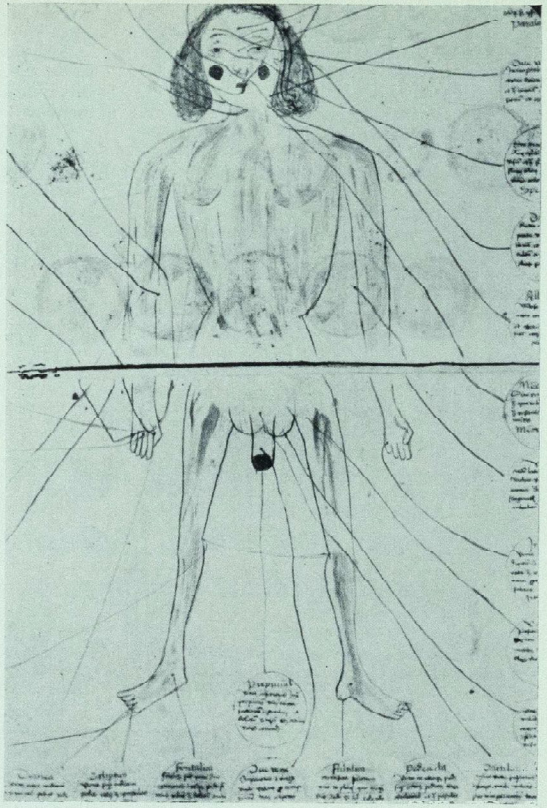
Translated from the Middle English by Paul Swain

This passage describing blood-letting is abstracted from a long work, Lanfranks Science of Chirugerie found in manuscript in the British Museum's Ashmole Collection. It can be dated at about 1390 and is a translation into English from the Latin which was written by the author approximately a century earlier. This piece is therefore a translation of a translation. But it is unashamedly so since it contains some of the most lucid prose in Medieval English. It was edited with impressive scholarship in 1894 for the Early English Text Society and this is translated from this edition with little reference to the Latin original. Many of the usages found in the work are recorded as early examples of English in the Oxford English Dictionary; that phenomenal feat of English scholarship. This work is perhaps the most influential of European text books on surgery of the period if distribution of manuscripts and number of languages into which it has been translated may be indicative of influence. It is a medical manifestation of the brilliant period of European culture which occurred in the late middle ages.

The author was LANFRANCUS MEDIOLANIUS: Mediolanius is the latinization of Milan; his name in Italian was probably Lanfranci. The facts recorded about his life are few and the traditional nature of some of them makes even these few dubious. He was a pupil of William of Salicet. Certainly he taught and practised in Milan at the end of the thirteenth century. Perhaps as a result of the feud between the Guelphs and the Gibelines which dominated the politics of this locality and caused Dante to leave Florence; he was forced to leave Milan, and the Visconti family are named as being responsible for his persecution. He settled first in Lyons but was later attracted to Paris where he became a famous lecturer at the university there, which was in a phase of great intellectual splendour.

Blood letting is a craft the function of which is to thin the blood in the veins of a man. It should be fully realised that it belongs to our surgeon's craft, even though we leave it out of pride to barbers and women. Blood letting belongs principally to surgeons.

O Lord, why is there so great a difference



An anatomically realistic Blood letting figure. (In a manuscript from the fifteenth century: Vatican Ms. Pal Lat 1709 folios 44v - 4s. Anonymous double page annotated illustration).

between a surgeon and a physician? For while the philosophers indicate that the craft has fallen into lewd men's hands, there are just as many men who still have the dedication to work with their hands. Many men still think that it is impossible for one man to know both crafts, but you must fully realise that he who knows nothing of surgery is not a good physician. The contrary also holds; a man cannot be a good surgeon unless he understands medicine.

Blood letting is used to keep healthy a man's body and to take away sickness from a man's body. But there are many things of which you must take account in blood letting: the season, and the time of day, the air, and the disposition of the sick man; and you must take care that you let no man's blood unless he is capable of enduring it.

In the first instance a man should be bled to maintain his health; principally from those who eat a good deal of meat and drink a good deal of wine, who eat foods that cause the formation of much blood, and who work little. Such a man should be bled principally while he is young, but also in old age if he is much used to it.

Second, you should bleed those who have aching in joints or the fever that is called synochus continuus or the quinsy or pluresy.

Bleeding a man. (In a manuscript from the fifteenth century Flanders: Ms. DG 92-93 folio 320. Galen, De flebothonica, prologue.)

All these should be bled before the accustomed time of crisis so that when that crisis comes it will pass because of this treatment and this treatment is called previsiuus.

The third reason: when a man has a great aching in his head without a fever, or a quinsy, peri pulmona, apostema, calides, and every sickness that is caused by too much blood. For all these causes you should bleed him, and this manner is called curantes.

Now I shall tell all of the ways in which a man may be bled. First who should let the blood; second is it necessary to let blood; thirdly in which veins a man should be bled for various crises and in what manner the vein should be cut.

A man who wants to be a letter of blood should be young: he should be neither a child nor an old man, he should not quake and he should have a good sharp sight. He should be sure that he knows the veins and that he can tell them from arteries; also he should have many different tools with which to let blood and they should be clean and bright and not rusty. Some of his tools should be long and some short with which to pierce afterwards to ensure that the vein is wide open.

Children should not be bled except in cases of great need: for example if a child were so filled with blood that he might be choked by this; this you would know by the constraint of his breathing and the fullness of his veins and the redness of his face. In this case it is necessary that he be bled, but it is extremely dangerous to bleed a child and therefore I will give no advice to do so. But if the case is such that he is in peril of death then let his blood. When you are aware of this danger do as you think fit, but you should warn the child's father and his mother of the perils that have been mentioned and save yourself from blame.

Old men should not be bled either; and yet some old men are stronger in spirit than certain young men and therefore you should pay attention in this manner to the rule that you should not bleed old men when they are convalescing after sickness.

Pregnant women too should not be bled and especially not in the first three months nor in the last month. And young men who are white and pale and have few hairs on their brows and have small hidden veins are unsuitable to be bled, as are men who have many diseases and little blood for the blood that is in them is treasure. Frenchmen do themselves a great deal of harm in just this case; when their bodies are full of coldness and corruption they have their own blood let, and when they see that

their blood is corrupt and foul, they assume that they have done well to let out that blood and their barber will say that he must quickly let the blood again. It would have been far better for him if he had kept his blood and that the corruptness had been voided in some other manner.

Blood letting is not good for a man at the beginning of a cataract nor is cupping good for him, but in certain set cases blood letting is of value. If a man eats too much meat and drinks too much wine, this will cause the formation of too much blood; then if this man is not bled then various sicknesses will develop in him with a frequent incidence of sudden death.

Men who have the gout through an excess blood disorder should be bled before the time that he is expected to have his crisis; often this will take away the aching. Further, in every disease that is caused principally by an excess blood disorder it is good to bleed the patient.

For men who have synochus continuus (the fever without intermission), blood letting is so necessary to them that they will faint without it. It will do away with the fever or it will waste the diseased matter so much that the patient must then be helped with other medicines which you will find in books of medicine.

If a patient is not bled then the blood that is in him will boil up into the breast and gather together inside the chest so that he will be practically suffocated. Sometimes a vein will break in the breast or in the lungs and then if that vein is not tied or stopped off the patient will die because of it.

In this chapter it is my intention to speak only of the opening of those veins that are in general use and what advantage there is in doing this.

In both arms of a man there are three veins that are in use for blood letting. The first is called CEPHALICA and is the highest of the arm and lies next to the elbow. This vein must be cut open over a large area and not too deeply. If that vein is cut straight through it then often forms a putrid swelling and you must be very careful to touch no sinews. For this reason you should bleed a man on the hand between his thumb and the finger next to it.

The BASILICA sinks down before the elbow under the arm: this vein runs very close to the large artery and therefore one must be very careful not to touch the vein's artery. And because of the endangering of the artery it is

An Arabic measuring instrument used in blood letting. (A single folio out of an Arabic manuscript of the year 1315 from Syria (?): Washington D.C., Freer Gallery Ms. 30.76 al Jazari, 'Book of knowledge of Ingenious Mechanical Contrivances').

better to bleed from between the little finger and the finger next to it. Blood letting from here is good for all the places under the breast and for the liver.

From the vein called Basilica and from the vein that is called Cephalica there comes a vein called MEDIANA. And when a man is bled from this vein two great sinews that lie both sides of the vein are endangered. When you intend to drain from all parts of a man's body you should bleed him from this vein, and particularly for the heart and for the breast.

In the Basilica in the right hand you should let a man's blood for a crisis in the liver and in the left hand for a crisis of the spleen. It is good to bleed from the left side of the forehead for aching in the head especially when a sickness is located within the head of a man. This I have approved for myself for it sometimes does away with a frenzy. I attended a woman

Bleeding a woman. (In a manuscript from the fifteenth century: Munich. Ms. German 28 folio 32v. Anonymous treatise on blood letting in German).

who had an intractable headache; I had let her blood from the hand as has been previously suggested and had purged her. Now the vein in her forehead was larger than any other vein on her body's surface; and when I opened that vein she was cured immediately afterwards. When you want to bleed a man in that place you should compress the neck and cut the vein lengthwise. This type of blood letting is good for ringworm in the head of a man and for hard abcesses there. For unilateral headaches you should let blood from the temples of the patient's head.

This same blood letting is good for a crisis of a man's eyes. I had a young man who had a unilateral headache caused by heat. I purged him frequently and let his blood and I tied off the artery that was on the same side of his head and he was cured completely.

Letting blood in the veins behind the ears is good for headaches and ringworm. Letting the blood from the tongue is of value in the neck swellings called quinseys and for the pus filled swellings that are like almonds as well as throat diseases but for this the patient ought properly to be bled from the head vein.

This is also good for the eyes and is good for itching and for pustules in the nose and for Scotomia (a vertigo attended with a dimness of sight) that are caused by an excess blood disorder. Sometimes a man is bled from the veins in the neck that are called jugular for fear of his being suffocated by blood: bleeding is sometimes used for lepers who should be bled from the lower lip.

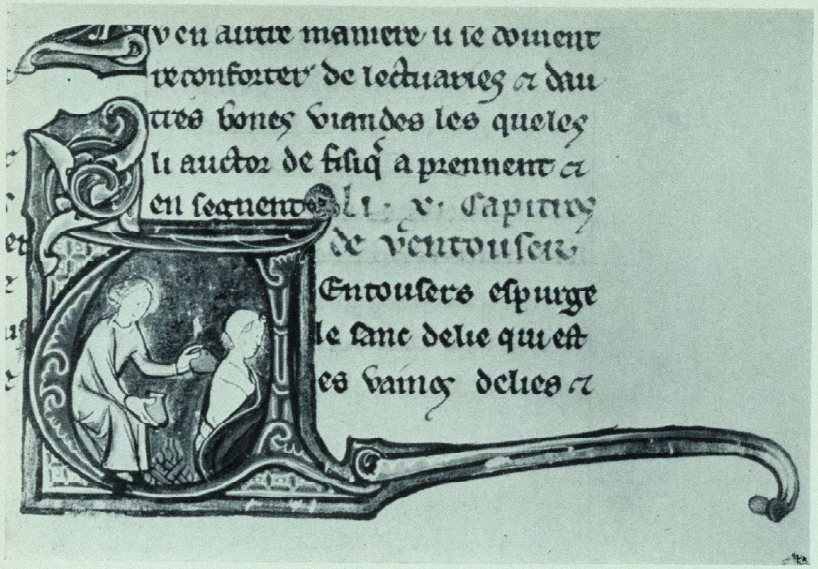
It is of value in cases of hot cysts in the mouth and hot swellings of the gums.

There are three veins in a man's foot which are profitably bled for many types of problem. There is a vein in the human calf under the knee which is worth bleeding in any crises related to the womb and to bring out the menstrual fluid: it also drains from all parts of the body.

There is another vein, which runs medially in the hollow of the foot and is called SAPHENA and from this vein women are bled for troubles of the womb while men are bled in this vein at the same place for testicular cysts.

The vein that serves the sciatic region is superficial between the heel and the hollow of the foot laterally; blood letting in this vein is good for sciatic crises as has been mentioned in the discussion of the cure of sciatica.

Take note of this. If you intend to bleed a man at two different times and not all at once, then this is the manner in which you should do it for the following reason that when you want



Cupping. (In a manuscript from Thirteenth century France; London, B. M., Ms. Sloane 2438, folio 14. Aldo brandoni da Siena. Le regime du corps I 10, in French).

to bleed a man who has a great deal of blood you may not dare to do it all at once: Then in order to let his blood ooze slowly, you should make a longer incision of the vein so that it does not close over quickly and then you should bind around the patient's arm and compress the place at which you want to bleed him with your finger or else make him bleed more—as much as you think is good.

When you want to make the diseased matter go to the opposite part of the body by letting blood: then you should put your finger over the wound, when you have bled off the third part of the blood that he is to bleed, and then make him stand up, move himself about and get him to sit down again after which you take away your finger and let more of his blood. You should do this three or four times for with this technique the blood is drawn more to the other side and the health of the patient will be better kept.

If a man has a tendency to faint during blood letting, or happens to fall down then allow him to lie down and be bled like that. And before a patient is bled get him to eat a slice of toasted bread dipped in wine of granatorum.

All the sorts of veins used in blood letting should be cut lengthwise. When you want to bleed a man from places above the neck then you should bind around the vein until that vein swells up from which you want to take blood.

When you want to bleed a man from his arm then you must bind his arm the breadth of four fingers above the place; and you must be very careful not to tie it too tightly as many men do. Many men tie up a man's arm so tightly that he cannot feel his arm.

If you want to bleed from the veins either of a man's feet or hands, you must set them in hot water and let them be warmed there for an hour; then you should bind the foot or the hand above the joint with a band, and all the time for as long as he must be bled his foot or hand should be in the water.

Dry cupping is sometimes used with scarification and sometimes without. Without scarification for instance it is used on the abdomen of a man or a woman for the aching that accompanies wind, and this is a good way of eliminating wind.

This is also used to draw on its way the stone

Cupping in the bath house. (In a manuscript from Germany in the year 1464: Edinburgh, Royal Observatory, Ms. Crawford 9.14.s, folio 78v. Anonymous treatise on health, in German).

that is passing down from the kidneys; in this case the cup should be placed a little beneath the aching in order that this should draw the stone lower and lower until it reaches the orifice of the bladder.

A cup can also be placed beneath a woman's breasts to restrain blood flow from the nose and from the womb. In cases of falling of the uterus which is called dislocation of the uterus a cup can be set on a region of the abdomen following the rule that if the uterus falls to the right then the cup should be set on the left while if the womb falls to the left then it should be set on the right side.

It may also be placed under a man's ear to draw out from the ear a grain or a stone that has fallen in.

It may be set under a man's arse to draw out internal piles which lie hidden far in. And it should be set in every place where you want to cause a great attraction. It is also good when applied to the bite of a mad dog or of a venomous beast.

Cupping with scarification is used instead of blood letting in cases of feebleness or old age and for children. After they are three years old we may scarify when blood letting is out of the question for them. It is specially valuable when we intend to draw away diseased matter that is under the skin.

We can scarify an adult behind the crown of his head for eye complaints, or on the two corners of the head for ringworm, for the pustules of the head that are found under a man's chin, for wens on the face and for ulcers in the mouth and on the lips and for aching of the teeth.

If it is placed between the two shoulders scarification can be used for fainting, for quaking of the heart and for those that have too much blood in that place.

Contrast this with blood letting which drains a man's body a great deal and makes him feeble.

Water leeches draw more blood than the previously mentioned techniques. This is the way in which you can tell which are the good water leeches and which are not. Those that have a black colour mottled with various colours and those that have big heads and live in foul stinking waters and have quantities of spume on them are bad. This is the way in which you can tell which are the good ones: they are those that have red bellies and little red stripes on their backs mottled with green, and they have little heads and small tails and they live in good water in which there are many frogs.

If you are going to apply them to a man they should be kept fasting all day before use. And then you should give them a little bitter blood to eat and then you should wash them with clear water. Then the place to which the leech is to be applied should be well rubbed before application so that it becomes red and then a cupping glass should be set on it to draw the blood to it. Then anoint the same place with blood and set the water leech on it. When he is full and you want to take him away blow onto the place where he is or use persuaders made of paper. After it has fallen off then apply a cup again to draw more blood to the place. Set upon it another water leech if a lot of matter has been gathered into the place. This technique is suitable for any sort of rotten blood since it draws it out.

1967 Horder Lecture

Chronic Renal Failure

by Professor D.A.K. Black M.D., F.R.C.P., Professor of Medicine, University of Manchester.

The layman is likely to derive his information on this common and important condition from reading the papers, listening to the radio, or watching television. In this way, he becomes the innocent victim of what I believe to be not indeed a false emphasis, but a rather partial one; so that he may come to hold the view that nothing can be done for renal failure short of transplanting a kidney, or admitting the patient to a programme of chronic intermittent haemodialysis. When renal failure has entered its desperate terminal phase, this view is correct; but it is incomplete in its neglect of the important contribution which can be made by the general practitioner, the general physician, and the renal physician or surgeon in delaying or even preventing the progress of renal failure to its terminal stage. The theme of this essay is the interest and value of a general diagnostic and therapeutic approach to the management of renal failure, as it presents itself in a hospital practice. The views expressed are of course my own; but I must acknowledge my debt for their formation to Robert Platt, with whom I worked for many years; to Max Rosenheim and Eric Ross, who contribute a masterly chapter on this theme to a book which I edit, and therefore read; and to the many patients with renal failure whom I have seen over the years.

Besides these general acknowledgements, I have a particular debt to the Horder Trustees, who did me the honour of awarding me the Horder Memorial Fellowship in 1967, with the intention that I should visit a number of African universities, but primarily those in the Union of South Africa. This gave me the opportunity of discussing the problems of renal disease with a number of excellent physicians, and of lecturing on them to a considerable number of audiences in countries of different stages of development. It also forced me to concentrate my faculties on this attempt at defining my views on a theme which is so much a part of the daily life of a renal unit that its ubiquity may conceal its manifold interest.

In delivering a lecture in memory of Lord Horder, I suffer from what may well seem two insurmountable handicaps. I am not a Bart's man, and I met Lord Horder himself on only one occasion, when in his ripe and fecund old age he was the gracious host at a dinner in the Ciba Foundation, for which he did so much. But if I may enter what the lawyers call a plea in mitigation, I can do so by acknowledging the great good fortune which has surrounded me by Bart's men at almost every stage of my own career since I took the Johnsonian highroad from my native Scotland. My first chief in England was Leslie Witts, a Bart's man by adoption; and in Oxford I had much to do with Charles Fletcher, R. G. Macfarlane, William McMenemy and Alastair Robb-Smith. In Poona, I was in the same hospital as Kenneth Black, Kenneth Keele and William Leishman. In Manchester too, similar good influences have surrounded me, incarnated in Michael Boyd, Patrick Collard, Richard Johnson, and Wilfrid Gaisford. There is no such thing as a Bart's stereotype; these are very different people; but they are at one in their appreciation of the imprint which Horder set on his own great school. But his greatness transcended even his services to Bart's, and his influence on generations of Bart's men. The great clinician enriches the whole practice of medicine; and the particular enrichment which we owe to Horder is an early and clear perception of the vital contribution which clinical pathology could make to the care of patients.

This reflection brings me back to my proper theme, which I have perhaps postponed too long. Chronic renal failure is no simple entity, but the end-result of many different processes, some of which may be already known to the patient, his family, or his doctor, but others may be quite insidious. The clinical picture is likewise inhomogeneous: sometimes a combination of earthy pallor, mental confusion and overbreathing, with a story of polyuria and nocturia, may proclaim the syndrome beyond reasonable clinical doubt; but at other times the first suspicion turns to the lungs, the heart, the alimentary tract, the skeleton—or even the mind. The patient may first be met in what appears to be terminal coma, with no history obtainable. The practical implications of all this

seem to me quite clear. The crux in the diagnosis of chronic renal failure lies not in any combination of clinical evidence, but in the demonstration of significant nitrogen retention, by estimating the blood-urea, the non-protein nitrogen, or the serum-creatinine. Clinical suspicion of renal failure must be confirmed and quantitated by chemical estimation; but also the estimation of the blood-urea must stand very high in the investigation of any obscure and puzzling episode of illness. Practically if not heuristically, it is better to be right by short-cut methods, than to be wrong through the application of impeccable reasoning to artificially limited information. Great clinician though he was, I feel confident that Horder's appreciation of clinical pathology would have led him to approve this view.

It may not be premature to emphasise even at this early stage that the symptomatology of renal failure has three major components—the effects of failure to excrete nitrogenous waste-products (*excretory renal failure*); the effects of inadequate regulation of the amount and electrolyte composition of body-fluid and tissues (*homeostatic renal failure*): and the effects of the hypertension which generally, but not invariably, attends renal failure. The selection which I have just made of a raised blood-urea, or some cognate index, as the hallmark of renal failure is a matter of practical convenience. Excretory renal failure is the most constant and the most readily quantifiable of the pathogenetic components of renal failure: homeostatic renal failure is more complex, and hypertension is less constant; but this detracts only from their practical usefulness as yardsticks, not from their importance in producing clinical effects, as we shall see later.

When a patient has been admitted, and the presence of some form of renal failure has been indicated by the demonstration of a raised blood-urea, the next practical question which arises is whether we are dealing with an acute situation, in which the patient has a reasonable complement of nephrons which are temporarily prevented from functioning either by extrarenal factors or by reversible tubular necrosis; or a chronic situation, in which most of the patient's nephrons have already been irrevocably destroyed. Acute renal failure arises in a context of acute illness or injury, whereas chronic renal failure is insidious, and there may be a past history of renal disease. Anaemia in the absence of haemorrhage; severe hypertension; and a high rather than a low urine-volume: these constitute more objective evidence of chronicity. None of these is categorical, and in the comatose patient the decision can be quite difficult. Some help can be obtained from radiography (or tomography) of the renal areas, small kidneys being a strong indication of chronicity; whereas renal shadows of normal size suggest an adequacy of potential renal function, temporarily in abeyance. There is the weakness that renal cysts or a hydronephrotic sac may simulate the X-ray appearance of a normal kidney. On the other hand, the routine use of a plain film may occasionally reveal unsuspected calculous disease as the cause of renal impairment. In acute renal failure, urological collaboration is essential, and in many cases of chronic renal failure it is highly desirable in establishing the aetiological diagnosis, quite apart from the question of therapy.

Although it does not fall within the strict scope of my title, I would like to make the point that very many patients, perhaps the majority, with acute renal failure can be expected to recover, after the correction of adverse extrarenal factors, or when time is allowed for damaged tubular tissue to be replaced by regenerate epithelium, or released from the pressure of inflammatory oedema. When death occurs, it is usually due to multiple injury, uncontrolled infection, or overloading with salt and water, rather than to renal failure directly, especially now that dialysis can usually be carried out. It follows from this that patients admitted in uraemic coma should be given the benefit of at least one dialysis, generally peritoneal, to keep open the possibility of their recovery from acute renal failure, or failing this to allow a proper assessment of their renal status, even if this turns out ultimately to be chronic renal failure. The time gained by dialysis must also be used to search for extrarenal states which precipitate or aggravate renal failure, of which infection and body-fluid depletion are the most important.

When a raised blood-urea persists after control of infection, correction of fluid-depletion, and adequate time for recovery from tubular necrosis, the situation is one of chronic renal failure, a syndrome with many causes, some of which are set out in table I. A complete clinical assessment to define the aetiology of the syndrome in the particular patient is always necessary, though not always successful. From the practical standpoint, particular attention must be paid to potentially reversible causes of chronic renal failure. There is naturally some overlap between reversible causes of acute and of chronic renal failure, but Table II is con-

TABLE I

Some causes of chronic renal failure

Common causes

Glomerulonephritis (proliferative and membranous)
Pyelonephritis
Obstructive nephropathy, involving both kidneys or a solitary kidney.
Vascular nephropathy (malignant hypertension, ischaemic atrophy).

Less common causes

Polycystic renal disease.
Congenital anomalies.
Primary tubular syndromes (renal tubular acidosis, Fanconi syndrome)
Diabetic nephropathy.
Metabolic nephropathy (gout, hypercalcaemia, potassium depletion)
Toxic nephropathy (lead, analgesics, cadmium).
Collagen disorders (polyarteritis nodosa, systemic lupus).
Tuberculosis.
Amyloidosis.

fined to conditions which have been known to cause potentially reversible chronic renal failure, some of them being also potential causes of acute renal failure as well. The exercise of differential diagnosis implied in these two tables is as much a matter of general medicine as of nephrology; but specific techniques such as renal biopsy, renal function assessment, and urological investigation can contribute to it.

Although the initial diagnosis of renal failure can be adequately based on a blood-urea estimation, we need something more precise when it comes to defining the severity of the condition, and to following its progress—observations which are needed both for prognosis and treatment. The blood-urea level is the resultant of the protein breakdown, and the capacity for renal excretion of urea. At any given level of renal function, the blood-urea can be reduced by a low-protein diet, or increased by either a high-protein intake, or by accelerated breakdown of body-protein such as occurs in many acute illnesses. This particular difficulty of variation in urea-production can indeed be got round by estimating not blood-urea level, but the clearance of urea, or of creatinine. Even a precise measure of G.F.R. is something of an underestimate of the number of nephrons destroyed; each surviving nephron becomes hypertrophied, so that clearance is maintained at a level higher than would be achieved by the same number of strictly normal, i.e. non-hypertrophied nephrons. To put this in figures, the blood urea level on an ordinary diet is not unequivocally raised above 45 mg./100 ml. until renal excretory function is reduced to about 25% of normal; but at this level of function, the population of nephrons has already been reduced not to 25%, but to 15% of the original number. Clearance tests are needed to demonstrate excretory renal failure above this level of 15% of nephrons; below this level, the blood-urea is likely to be detectably raised. But the level of symptomatic excretory renal failure is still lower, corresponding to blood-urea levels of at least 100 mg.%, clearance-levels of 5-10% of normal, and residual nephron-population of 2-5% of normal. Even this situation can be usefully palliated by dietary protein-restriction; but at levels of less than 2% of normal clearance, which may well represent the survival of only one out of every hundred original nephrons, life can no longer be maintained by the patient's own residual kidney tissue.

The conservative management of chronic renal failure comprises compensation for excretory inadequacy, correction of body-fluid distortions, and the control of hypertension. Clearly I can only illustrate these approaches, not describe them fully.

When established excretory inadequacy is

TABLE II

Causes which may sometimes be reversed

Obstructive uropathy

Prostate, stricture, calculus, retroperitoneal fibrosis (methysergide).

Metabolic disturbances

Gout.
Hypercalcaemia (hyperparathyroidism, milk-alkali syndrome, sarcoidosis, calciferol overdosage).
Potassium depletion.

Conditions related to infections

Pyelonephritis.
Sub-acute bacterial endocarditis.
Amyloidosis.
Renal tuberculosis.

Vascular disorders

Systemic lupus (may respond to steroids)
Renal artery stenosis.
Renal vein thrombosis.

Toxic agents

Analgesic nephropathy.
Heavy metals.
Recurrent haemolysis.

producing symptoms, we can act either by substitution of excretory function, i.e. dialysis, or by diminishing the load of waste-products. Dietary control is practicable on a large scale, and can prolong life, and relieve symptoms, especially those related to the gastro-intestinal tract. The conventional low-protein diet of around 40 g./day had not proved very successful in the care of uraemic patients; but Giordano in Naples and Giovannetti in Pisa introduced the principle of a diet still lower in protein content (about 20 g./day) but with all the protein of high biological value. They were able to show that nitrogen balance could be maintained on such a diet, while the level of urea or N.P.N. in the blood fell very strikingly. Their observations have been confirmed and extended by Dr. G. M. Berlyne in Manchester. The diet is somewhat monotonous, and it is sometimes necessary to reduce existing uraemia by dialysis, so that gastro-intestinal tolerance is increased. When the diet has become accepted, vomiting is controlled, and the blood-urea falls. There is probably no single 'toxin of uraemia', certainly not urea itself; but the blood-urea is a convenient index of the effect of protein-restriction. There is no need to restrict carbohydrate or ordinary fats; but there is evidence that phospholipide, protein, and amino-acids yield hydrion, which cannot be adequately excreted in severe renal failure. Besides dietary control, patients with renal failure need prompt treatment of infection and dehydration, to diminish breakdown of their own tissue proteins.

The disturbance of body-fluid in chronic renal failure can involve increase or decrease in total amount of fluid, of sodium, or potassium; there may be hydrion retention, i.e. metabolic acidosis; and Ca and P metabolism can be disturbed, with concomitant osteodystrophy. Here, I will mention only the matter of salt intake, a matter on which conflicting advice is given by different authorities, and sometimes by the same authority. On the one hand, some patients are liable to become sodium-depleted, sometimes by vomiting and diarrhoea, sometimes by losing more salt in the urine than they are taking in the diet. On the other hand, other patients readily become hypertensive, and this may be controlled by salt-restriction more easily than by hypotensive drugs. Both these apparently conflicting states are well-documented. We found some years ago that a significant proportion of patients with chronic renal failure could be improved by small amounts of 5% saline given intravenously; such patients might have a substantial fall in the blood-urea level, presumably because of improvement in their renal perfusion. Other patients failed to respond. Scribner, de Wardener, and Shaldon have all commented on the striking hypertensive effect of salt in terminal renal failure. I believe that observations on salt excretion by patients with different degrees of renal failure, such as those of Margaret Platts (1966), can explain this varied experience. At minor and moderate degrees of renal impairment, dietary salt is normally handled, except for rare patients who show the syndrome of 'salt-losing nephritis'. When the number of nephrons is further reduced, and the surviving nephrons are working under conditions of osmotic diuresis, then the major defect is in the power to conserve salt. Such patients easily become salt-depleted, if their intake is unwisely restricted, or if they lose salt by sweating or vomiting. But when the filtering surface is extremely inadequate, the amount of salt filtered (a prerequisite of excretion) may be insufficient to cope with a normal dietary intake. Such patients live in the threat of salt-retention, a threat which is of course substantially increased if they also suffer from hypertensive cardiac failure. Quantitation of a patient's urinary output of salt is the best guide to his desirable salt intake; but the estimation may have to be repeated from time to time, in view of the evolution which I have just outlined.

A relation between hypertension and renal disease has been known since Richard Bright, and the reciprocity of this relationship, constituting a vicious circle, has been emphasised by Clifford Wilson. The hypertensive effect of renal disease is partly at least mediated by renin, as suggested by Goldblatt; but we now take a broader view of the mechanism which he discovered. Not only is angiotensin a directly hypertensive agent; it also stimulates the secretion of aldosterone, which in turn leads to sodium-retention, and thus to aggravation of hypertension in at least some patients. Since severe hypertension leads to further renal damage, it is important to seek means of breaking the circle. It may, however, be difficult to control the hypertension without prejudicing renal perfusion. There may be something to be said for trying salt-restriction in the first instance, before resorting to hypotensive drugs, which may show swings in their action, especially if their excretion is dependent on renal function, and so liable to be inconstant when renal function fluctuates. Although the attempt to control hypertension must always be made, it is an attempt which has sometimes to be abandoned, unless of course intrinsic renal

function can be neglected, having been supplanted by dialysis. Since chronic dialysis depends on a supply of good vessels, control of hypertension is an important aspect of the programme.

I hope that I may have made out a case that there is worthwhile work for a physician and his colleagues in the care of patients with renal failure, even before this has reached its terminal phase. The care of what is coming to be called 'end-stage renal failure' is based on chronic dialysis, and on transplantation. It is almost a separate speciality, and one of which I have no great personal experience. My own belief is that the two techniques available are necessary to each other, and that patients in terminal renal failure can be optimally treated only in centres where both procedures are not only practised, but familiar. This will be a formidable charge on available resources, both of funds and of trained staff. We must have it in mind as an ultimate goal, but not—let me suggest—at the cost of restricting facilities for the care of renal disease in its earlier stages. Just as dialysis and transplantation are complementary, and not alternatives to each other, in the same way the care of terminal renal failure is only a part of nephrology, not the whole.

Summary. Chronic renal failure has to be differentiated from acute renal failure, and from the uraemia produced by extrarenal factors. Definition of the disease process which has led to chronic renal failure may sometimes reveal potentially reversible causes. The clinical and biochemical pattern of chronic renal failure can be analysed into the effects respectively of excretory failure, of homeostatic failure, and of hypertension. This analysis also indicates various lines of treatment. Close attention to the early stages of chronic renal disease can postpone the terminal state, which can only be successfully managed by a combination of dialysis and transplantation.

Reference

Platts, M. M. (1966) Electrolyte excretion in uraemia. Clin. Sci. **30,** 453.

Wix Prize Essay 1967:

Robert Lawson Tait "His Life and Work" 1845-1899

by Peter R. Jordan

Part 2: 1880-1899

Tait's introduction to liver surgery came in rather a dramatic way. When he was asked, by a Dr. Pike of Malvern, to see a thirty-seven year old woman with a nine year history of bilious attacks, dyspepsia, increasing respiratory difficulty and an enormous mass in the right hypochondrium he saw that she was in imminent danger of death from suffocation and exhaustion. Pike's diagnosis was that of a hydatid cyst of the liver. This diagnosis was confirmed by no less a person than Sir William Jenner who thought the cyst should be aspirated. This procedure had yielded only a little fluid and had given no relief.

Tait lost no time in deciding to operate, in view of the fact that life was threatened. When he opened the abdomen and incised the liver cyst he released " . . . myriads of transparent globes of all sizes, from a pea to an orange, (these) shot out covering the table and floor". He dug the remaining daughter cysts out with a "large silver gravy spoon, an instrument suggested to me by Dr. Pike". In all he recovered approximately two gallons of daughter cysts. By October, two months later, the patient was fully recovered. In 1882 the woman wrote to say that that she was in perfect health and had recently married. By October 1881 Tait was able to write up four successful cases of hepatotomy in the Birmingham Medical Review. Although not the originator of this operation—it is attributed to the German surgeon, Lindemann, in 1871—Tait made the procedure a practical part of English surgery.

Returning to his gynaecological achievements, the theory proposed in his paper "On Axial Rotation of Ovarian Tumours, leading to their Strangulation and Gangrene", he deduced from observation of a series of his own cases. The details of three he relates in his paper: in each case the tumour was right sided and the pedicle was twisted from within outwards and to the right side. The rotation was due, in his estimation, to the alternate

filling and emptying of the rectum. He continued to hold this view and published another paper on the subject propounding and elaborating on the same theory in 1890.

The International Medical Congress held in London in August 1881 was a truly historical event, sparkling with world famous medical celebrities. Sir James Paget was chosen as President and among the three thousand medical men who attended were such eminent figures as Pasteur, Charcot, Koch, Virchow, Volkmann and Langenbeck. Tait presented papers at surgical and gynaecological sectional meetings of the congress. Numbered amongst his topics were five new procedures which he had advocated and performed recently. These included:—Five cases of ectopic pregnancy at term; a series of operations for tubal disease; his method of removing the appendages for myoma; his method of treating pelvic abscess by abdominal section; and, the first successful cholecystotomy in Europe.

As usual his methods were criticised, but the fact that they were rapidly incorporated into the repertoire of operative procedures by the more progressive surgeons proved that Tait was truly a master of his craft. His innovations became common, every-day operations by the first decade of the twentieth century.

Tait performed operations in cases of recent ruptured tubal pregnancy, in this field he had no equal. He operated on the condition successfully until by 1888 he was able to record forty-two operations with only two fatalities, including his first. As he saw more cases he developed very definite views on the actiology and pathology of ectopic pregnancy. He set these out in a series of articles in journals and in the Ingleby Lecture of 1888 which he delivered in Birmingham. His name became connected with this subject very closely and by his pioneering of the operation he put another life-saving procedure into the hands of surgeons throughout the world.

That Tait's fame had spread far afield is evident from the numbers of foreign surgeons who visited Birmingham—a large number of them came from America. It is hardly surprising therefore, that in 1884, shortly after publishing his first recorded thousand cases of abdominal section, he was invited by one of his American visitors to go to America. The trip had a great influence on the development of abdominal surgery in America.

Such was the effect of his visit that soon his hospital was thronged with even more Americans than before, anxious to see his work. They numbered in their ranks some of the most eminent gynaecologists in the U.S.A., Cushing, Emmett, Munde and Kelly. Soon however the numbers got out of hand and Tait effectively stemmed the flow in a highly practical way, by refusing to admit visitors unless they paid a fee of one hundred guineas to become pupils for six months!

Nevertheless there arose a group of followers who came to learn from him, among them Mayo Robson of Leeds, Smyly of Dublin and Grieg Smith of Bristol. They realised that Tait was at the head of a movement which had revolutionised pelvic surgery and they had the privilege of being in at the start of the new era.

Around this time Tait reported upon a series of twelve cases of Urachal Cysts. Although Alban Doran writing in 1909 held the view that many of Tait's cases were not cysts of the urachus, but probably encysted peritonitis of tuberculous origin, the fact remains that Tait has the credit for creating the surgery of urachal cysts, yet another small but significant distinction.

The Medical Defence Union was founded in 1885 in London. Though the concept was sound, during its early days it went through stormy waters through incorrect handling. By 1888 its affairs were in such a muddle that reconstruction of the entire organisation was needed to save it from liquidation. This task was undertaken by Tait who was elected President. Under his direction the Medical Defence Union was a success, largely due to his power of organisation, business ability and acquaintance with medico-legal affairs. Tait was President until 1892 when his outspoken condemnation of vivisection started a rift between him and many of its members that caused him to resign the presidency.

Later in 1888 the Medical Faculty of Queen's College elected Tait as their first Professor of Gynaecology and in this capacity he again gave the Annual Ingleby Lecture—on "Ectopic Pregnancy."

The following year he was made Principal of Mason College, Birmingham. Tait's work as Professor and Principal of the above educational establishments paved the way to the foundation of the Medical School of Birmingham University. 1888 was also marked by Tait's election as President of the Birmingham Medical Institute. At about the same time, in recognition of his services to medical science, the Edinburgh College of Physicians awarded him the Cullen and Liston Memorial Prize.

That his fame and distinction in medicine were recognised in the highest circles was shown in the latter months of 1892 when Tait was offered a baronetcy. He decided for reasons known only to himself to decline the honour.

Throughout the story of his professional life it is possible to obtain mere glimpses of the private life of the busy provincial surgeon. His bustling round of activity at the operating table, in the consulting room and on his many committees seemed to have left little time for relaxation and enjoyment of home affairs. This was not strictly true for Tait was a lover of pleasure and comfort.

All in all he lived comfortably and provided generously for both his wife and mother, the latter having moved to live with the couple on their move to Birmingham. His mother died in 1882 in the house in Great Charles Street; shortly afterwards Tait sold it and moved to occupy the premises in The Crescent which had become vacant in 1878 when the Women's Hospital was transferred to a building in Sparkhill.

The move enabled Tait to set up his own nursing home and private residence together. He occupied No. 7 The Crescent and had Nos. 8, 9 and 10 The Crescent reconstructed as his private hospital with twenty rooms for patients. He employed a staff of twelve nurses, a secretary and one clinical assistant. He ran this establishment for thirteen years; during these years his income enabled him to buy "Buskett Fletchwood"—a beautiful house in the New Forest, two country cottages, a house at Cropthorpe, a house-boat and steam launch on the Severn and a yacht which he kept on the Solent. His homes became showcases for his valuable collections of curios; he became an avid collector of Japanese, Chinese and religious objets d'art. He once went so far as to disguise a valuable polychromatic relief attributed to Luca as a large cheese so that he could smuggle it home from Italy, whose laws forbade the export of art treasures.

Wherever he travelled for relaxation, whether for weekends to the house in the New Forest or, in the summer, for river cruises that he loved so well, his wife was his constant companion. It is rather sad that they never had children for they were both very found of young people. They surrounded themselves with young company at every opportunity. Perhaps it was in substitution for a family that the houses came to know many pets. Tait was particularly fond of cats and owned several Blue Persians. His love of animals caused him to deplore all forms of cruel sports and experiments with live animals. He took an active part in a long correspondence which took place in 1892 in both the "Times" and "Lancet" on the subject of vivisection.

To keep up the output of work that Tait did throughout his life it was of course necessary to put in a long day; he started early, rising at seven and setting out on his rounds by eight-thirty in his carriage drawn by two grey horses. He attended the Women's Hospital and the Crescent operating at both in the mornings. After lunch he saw patients at home and followed this by an out-patient clinic at the Women's Hospital. His evenings were occupied by his committee meetings and writing.

For all his hundreds of articles and volumes of letters, Tait's writing was almost illegible. He realised this, but made no attempt to improve it. His wife treasured for many years a telegram, in which her husband's rapidly written signature—"Lawson Tait"—had been interpreted by the telegraph clerk as "Damson Tart"!

He did everything speedily and efficiently, but without undue haste. He became rapidly exasperated by the inefficiency of others, his temper could be quite violent; he once became so inflamed during dealings with a telephone operator, that, in his frustration, he tore the instrument from the wall and jumped on it!

His dinner guests, however, saw quite another side of his character—the charming, witty host. Tait loved entertaining and to his dinner parties came many celebrities. He took especial delight in the theatre and invited to his house celebrities such as Henry Irving, Ellen Terry and J. L. Toole.

Though his appearance belied the fact, Tait was not a gourmand nor was he a drunkard—he did however smoke cigars to excess. He once upset his friends and medical advisers when, the day after an operation to remove a stone from his urethra (at which he had taken the anaesthetic very badly), he was found sitting in an armchair with a big cigar in his lips and a pint of champagne at his elbow.

The affairs surrounding Tait's break with the Medical Defence Union in 1892 tragically coincided with others, from which stemmed a decline in his powers and fortunes. Three main factors were instrumental in this process.

Firstly, his views on vivisection, which have already been mentioned at length. He chose to express these at the Church Congress held in Folkestone in 1892. This caused deep resentment among the profession.

Secondly, a libel action was brought against him over a letter. In this he shifted the blame for a patient's death from his own operation of hysterectomy for myoma to previous electrical treatment by a Dr. Denholm. The letter written to the patient's husband was used as evidence by Dr. Denholm who, not unnaturally, sued Tait. In the trial Tait defended himself eloquently and justified his words. The allegations were withdrawn and the case ended in a compromise. The Medical Defence Union who defended Tait expected him, in the circumstances, to pay the heavy costs. He naturally refused and this completed the break. The case did more than just cause trouble with the Defence Union, it also damaged his reputation in the eyes of both the profession and the general public, even though there was no adverse decision against Tait in court.

Lastly, the real underlying cause for his fall in fortune came in the shape of his failing health. Towards the close of 1892 he began to be troubled by loin pain; the seat of the trouble turned out to be renal calculi. One of these became impacted in his urethra in 1897, but his chronic renal condition led ultimately to his death in 1899.

This combination of events caused a reduction in his practice and consequently severely reduced his income. He wisely decided to "pull in his horns" and curtail the considerable expenditure necessary to support his various establishments.

For a time he practised in consulting rooms in Newhall Street, Birmingham, but saw fewer cases as the years went by.

He still kept up his writing, however, contributing some forty items to various journals, both medical and non-medical during his last seven years. Perhaps the most notable of these were those in which he dealt with his long established practice of washing out and draining the peritoneum in suppurative peritonitis. It was in these later years that he set out his views on the dangers of haemorrhage in impacted labour and placenta praevia. He is thought to have been the first to advocate Caesarean sections for the latter condition.

In 1897 he moved to Wales, having bought a house on the side of the Great Orme in Llanddudno. From there he used to travel either to London or Birmingham, operating and seeing patients on only three or four days a week. He wrote his last article—"On Bulb Culture" for "Amateur Gardening" in 1899. This reflects his more leisurely mode of life during his last years.

Though quite ill he still attended public functions in the Midlands quite frequently. His last was the opening of a railway station in Droitwich at which he appeared quite cheerful. This was on 3rd June, 1899. Shortly afterwards he had an attack of renal colic followed by anuria. He died on the 13th June, aged fifty-four. The cause of death on the death certificate was given as "Nephritis and Uraemia".

It is sad to think that the only memorial that he had is the large Celtic Cross inscribed with his name in Warriston Cemetery in Edinburgh. Of verbal tributes there were many. The obituary notices in all the leading journals paid due credit to the great man, but is this enough for a man who in his comparatively short lifetime changed the outlook of the world to surgery by revolutionising abdominal and pelvic operations?

Stewart McKay says of him—"Never in the history of surgery has it fallen to the lot of any other worker to be the originator of so many new operations on so many different organs". William Mayo described him as "The father of modern abdominal surgery". Yet for all this his name is not commemorated by so much as a statue or bust in any public place, no street or ward has been named after him, and not even scholarship perpetuate's his name.

Bibliography of works referred to.

Works by Lawson Tait:

Menstrual Irregularities and their Relation to Diseases of the Nervous System, Obst. J. of Gt. Br. and I., 1873.

Hospital Mortality, 1877.

Diseases of Women, 1877.

Repair of the Perineum, Lon. Obst. Soc., 1879.

Four Cases of Hepatotomy, Trans. Med. Chir. Soc., 1881.

Pathology and Treatment of Diseases of the Ovaries, 1883.

Lectures on Ectopic Pregnancy and Pelvic Haematocele, 1888.

The Evolution of the Aseptic Method in Surgery, 1898.

Works by other authors:

Leyland, J., Contemporary Medical Men, Vol. 2, 1888.

McKay, W. J. S., Lawson Tait's Perineal Operations, 1897.

McKay, W. J. S., Lawson Tait, his Life and Work, 1922.

Martin, C., Lawson Tait; his Life and Work, 1931.

Other Sources:

British Medical Journal, 1871-1899.

Lancet, 1867-1899.

Music on The South Bank in December

by Richard Thompson

A grim month! Four separate organisations propose to let the people sing—those who have paid for their seats, that is—at a time when many people have more opportunity to listen to concerts of serious music as well as hear carols at home and in church. And three Messiah's no less, including one on the 21st under Raymond Leppard—a "chamber version" edited by the conductor. No comment; but we are going to miss Sir Malcolm sadly.

The programme at the Festival Hall on 7th should be approached with caution. It features Arthur Rubinstein, whose legendary reputation does as much nowadays to fill the auditoria as do his performances. He is playing the last three concertos of Beethoven in a single evening—a barbaric and philistine practice which invariably results in overt symptoms of excess for audience and soloist alike. It is to be greatly regretted that this great and infrequent visitor should not give these works the setting they deserve—as the focal points of three separate concerts. Since part of the marathon is to be televised, this is perhaps mainly for those who have not yet seen Rubinstein, but would like to be able to tell their grandchildren that they have.

The following four concerts are recommended for their interest or for the assurance of their excellence.

12th at Festival Hall: Barbirolli and Jacqueline du Pré: includes Haydn's Cello Concerto in D and Elgar's 2nd Symphony.

13th at Festival Hall: Christoph von Dohnanyi and Clifford Curzon: includes Mozart's Piano Concerto k 537 (the "Coronation") and Schubert's 9th Symphony. Dohnanyi is not well known here yet, but one day he will be hailed as a very great conductor. This is a plum concert, not to be missed merely because it is to be broadcast.

16th at Festival Hall: The Modern Jazz Quartet, at 6.15 p.m. and again at 9.00 p.m.

17th at Festival Hall: A performance of Bach's Christmas Oratorio. Beware of "concert bottom" for this work—for which an inflatable cushion is a *sine qua non*—as it is very long. But sublime music, and worth any sacrifice of this kind.

Finally, music Vindaloo! Messieurs Ali Akbar Khan and Mahapurush Misra present a programme of Indian music. "Classical evening ragas expressing erotic and devotional moods, with traditional Pakhwaj accompaniment; other ragas with Tabla accompaniment." Precisely. And Mr. Khan also plays the Sarode traditionally too, it is to be hoped.

In spite of the frivolous tone of these observations, it might be very interesting to attend at least one of the four concerts this duet is putting on—at the Q.E. Hall on 11th, 14th, 16th and 18th December. Some people speak very highly of traditional pakhwaj accompaniment.

Richard Thompson

Books For Christmas

Components of the Scene, edited by Ronald Blythe. An Anthology of the prose and poetry of the Second World War. Price 7s. 6d.

Authors contributing to this collection include T. S. Eliot, C. Day-Lewis, Edith Sitwell, Sidney Keyes, W. H. Auden, Stephen Spender, Virginia Woolff, Alun Lewis, Dylan Thomas, John Sommerfield, George Orwell, Richard Hilliary, Arthur Koestler and many others.

Perhaps war poetry has a definite sort of appeal, however much steeped in melancholia it may be, or possibly this is one of its attractions. Certainly the verse in the book is devoid of any aspect of romance, of any beautifying of the dead, of patriotic sentiment as found in Owen's and Brooke's First World War poems. No, the atmosphere is very

different. Often it is of futility, boredom, malaise and dismay. Except T. S. Eliot's "Little Gidding" and that in a most sublime and far reaching way. The patriotic call is non-existent. More the theme is the enhancement of the moment; the moment shadowed by tension, the moment made more evident by the knowledge morning may not follow night, feelings often nostalgic but intensified, and, in the narrowness, moments of belittling vastness as in James Hanley's "Sailor's Song". Stephen Spender voices the commonly felt plea:

"Why cannot the one good
Benevolent feasible
Final dove descend?"

Sidney Keyes, to die aged 21, ends his "Cervières":

"Somewhere our loss will plant a
better orchard."

The poems are interspersed with prose pieces, a good idea, as the former are more palatable after humour, as in Fred Urquhart's "Tattie Dressers", or George Orwell's analysis of P. G. Wodehouse's odd behaviour in broadcasting for the Nazis.

The book is certainly modestly priced at 7s. 6d.

Tim Spooner

The Pony Plot by Sara Herbert. Published by Max Parrish at 13s. 6d.

For an older age-group (10-14) this rather unusual story is delightfully related by a middle-class pony-loving 12-year-old who moves to the country at Christmas time, and immediately finds herself involved with, and her loyalties divided between, a rich aristocratic family and some engaging circus children. The situation is complicated by the appearance of an orphan boy, strange events in a dark wood, a hunting accident, and other inexplicable events. When the unwilling heroine is then asked to help steal a horse for the pitiful orphan, an interesting moral dilemma develops. Altogether, it's a good fast-moving story with surprising insight into the workings of those not-so-innocent 12-year-old minds

Also by the same author **The Great Pony Raid.** Published by Max Parrish at 12s. 6d. Not just another pony book—this is a racy story expertly adapted from the children's film of the same title, which makes gripping reading for any child whether or not he knows one end of a horse from another. The whole story takes place in only a day and night (hence the raciness!) and involves several very astute children galloping against time to prevent an illegal pony round-up on Dartmoor at dead of night. Good reading for 9-13 year-olds who aren't afraid of the dark.

Peter Hill

The Policeman and the Sparrow by Jo Rice. Published by The World's Work at 18s.

A big well-illustrated story for 5-10 year olds about a rather naive London sparrow's life in Parliament Square. Bert the sparrow befriends an extraordinarily nice policeman called Percy (on point duty in the Square) and the story develops their friendship from when the sparrow is blown out of a tree, saved from being run over by rush-hour traffic by Percy, and finally the debt is repayed by Bert flying over to Gt. Ormond St. Hospital for Sick Children to give the policeman a progress report on his baby's illness (the illness is called COMPLICATIONS, and these miraculously clear up for Bert's visit). I think the humour of the situation could have been more exploited, but if you happen to know of any children who seriously like policemen, or would like to like them, this is just the book.

Sara Herbert

MEDICAL BOOK REVIEWS

Neurology:

Parkinson's Disease, by Leslie Oliver, M.B., B.S., F.R.C.S., F.A.C.S. William Heinemann Medical Books Ltd. Price 21s.

This short book is by a neurosurgeon who was a pioneer in this country on the surgical treatment of Parkinsonism. There are short accounts of the aetiology and clinical aspects of the disease and of its medical treatment. The major part of the book however consists of a description of the author's method of performing stereotaxic operations on the thalamus. He also makes an assessment of his results in 192 patients. In these days when "measurement in medicine" is so sought after it is interesting to read that "objective tests were given up early in this work in favour of the patients' testimony" and Mr. Oliver may well be right to use this method of assessment in this particular disorder. It is difficult to know for what type of reader this book has been written.

J. W. Aldren Turner

Neuroanatomy:

Correlative Neuroanatomy and Functional Neurology, by Joseph G. Chusid and Joseph J. McDonald. 13th edition. Lange Medical Publications (distributed by Blackwell's). Price 50s.

The Lange Publishing Group produces a number of soft-cover medical publications noted for their precise presentation. This book, now in its 13th edition, combines neuroanatomy and neurology in one volume and by doing so attempts to correlate structure with function. The section on neuroanatomy follows a rather unfamiliar pattern in so far that it works downward from cortical level rather than commencing with the spinal cord and progressing in a Rostral direction. This descending system seems far more illogical than an ascending system of study.

The use of itemisation in the text makes for rather heavy reading and at times the resulting barrage of neuroanatomical terminology is overwhelming. Controversial matters are dealt with in a few lines with no mention of experimental evidence. Embryogenesis and cellular aspects of neurones are dealt with in a handful of pages, and no mention appears to be made of histochemistry as a method which has recently gained importance in the elucidation of neural pathways.

The book contains a profusion of illustrations and many of the diagrams have been redrawn from more authoritative sources. Lithographic printing has produced clean cut reproduction which is pleasing to the eye and yet not sufficiently schematised to the extent of losing anatomical recognition. If anything the authors have been overzealous with the amount of information imparted on some illustrations and the limited use of colour would have been well warranted to reduce the inevitable confusion of fibre tracts, blood vessels, stippling and arrows in what are otherwise excellent diagrams.

The neurological section, although it too presents topics in a rather unpredictable order, is an eminent improvement on the first part of the book. Considerable space is devoted to the principles of neurodiagnosis, including chapters on radiological and radioisotopic encephalography and, new to this edition, a chapter on neuro-opthalmology. The remainder of the book deals adequately with central nervous system, while earlier chapters cover the peripheral motor and sensory systems and are accompanied by numerous diagrams and charts.

Inevitably a book packed with so much detail as this must dispense with niceties of phraseology and verbiage if it is to remain condensed and concise but by doing so the beginner in neurology, for whom the book is intended, may never get to grips with a subject which by careful analysis and understanding, need not be as formidable as it first appears.

Roger Rolls

Cardiography:

Principles of Clinical Electrocardiography by Mervin J. Goldman. 6th Edition. Blackwell Scientific Publications. Price 45s.

The author's intention has been to present the basic concepts of electrocardiography and their clinical application. This he has achieved with considerable clarity, the explanations being accompanied by numerous diagrams and good electrocardiograms to illustrate his text. No previous knowledge of electrocardiography is assumed and all necessary basic definitions are given. Unfortunately for the medical student who wishes to pick up the rudiments of electrocardiographic interpretation quickly, this book extends to almost 400 pages and would probably take up more time than he can afford to give to this subject. Considerable benefit may still be obtained from selective reading of a few chapters and it is possible to omit such chapters as the electrophysiology of the heart and the effect of heart position on the electrocardiogram without losing the argument of the book. The section on the spatial electrocardiogram in this new edition is a simple introduction to this as yet mainly research branch of electrocardiography.

James S. Fleming

Virology:

Clinical Virology by Swain and Dodds. Published by Livingstone. Price 75s.

It would be difficult to praise this book too highly. The content is perfectly matched to the medical student's requirements, yet its lucidity will commend it to the most junior picornatechnician. In addition to being authoritative and absorbing with regard to the principles of virology it also makes brilliant sense of the maculopapular labyrinth of infectious disease. The paragraphs on virus identification are superbly illustrated, the high spot of a series of excellent colour photographs which can only be faulted when tackling the vexing problem of photographing body rashes and jaundice. The author has not been afraid to use the same illustration at two different points in the text, a practice that is as rare as it is effective. If there is to be word of criticism it is that the diagrams are too autonomous and require a few more words of explanation.

This book is in the same series as the superb two-volume textbook of pathology by Montgomery, and neither author, illustrator, publisher nor series need further commendation.

Peter Hill

PRECLINICAL BOOK REVIEWS:

Physiology:

Review of Physiological Chemistry, by Harold A. Harper. Published by Lange Medical Publications. Price 50s.

The increase in knowledge of cell biology in the last decade has shifted the emphasis in biochemistry away from the chemical and towards the biological aspects of the subject. This change has not been reflected in biochemistry textbooks, which remain rooted in organic chemistry, but until a new generation of textbooks replaces them the work under review seems the best available.

Like other Lange medical textbooks it is well edited, frequently revised and robustly bound in paper covers. Although dating from 1939 it appears in its biannual revision with several new contributors and extensive updating. Many 1966 references are included and such fashionable subjects as protein synthesis, enzyme active sites and the respiratory chain are treated thoroughly, if rather didactically. Some of the new material has been slotted into the old format rather arbitrarily (sections on cellular organelles could well be grouped together) but the physiological orientation of the later chapters should chime well with modern biochemical courses.

Most medical subjects are dealt with neatly and concisely, and the book can be recommended for 2nd MB or for reference by clinical students. Despite the recent material, many controversial subjects are dealt with rather baldly and it would serve only as an introduction to a B.Sc. course.

John Griffiths

Anatomy:

Cunningham's Manual of Practical Anatomy. 13th Edition. Revised by G. J. Romanes. Published by Oxford University Press. Price 30s. per volume (paperback).

Concise Anatomy. 1st Edition by G. M. Wyburn, J. G. Warbrick and M. E. Todd. Published by Longmans. Price 35s.

These two books are basically dissection handbooks which, to a limited extent, double as textbooks of topographical anatomy in their own right. Both are Scottish and are characteristically striving towards economies of

factual presentation. *Cunningham* has been rejuvenated in paperback with new format and illustrations, new attack on the brain, and new methods of laryngeal assault. The new book from Glasgow claims to reflect the contemporary decline of anatomy from its prime extravagant importance in the pre-clinical curriculum to a more streamlined and realistic allocation of curriculum time. It is short (218 pp. for the entire body) and geared to a three term dissection course with emphasis placed on general relational concepts rather than on detailed cataloguing of separate regions. However, divorced from the Glasgow course that fathered it, it presents an inadequate quantity of data for medical students; in particular the (intentional) omission of a section on systematic osteology necessitates reference to a major textbook. Since the section on Osteology in *Gray* is considerably longer than this entire book, the whole purpose of so brief a book comes under question. If it is to function as a corpse-side guide to the larger textbooks surely osteology (probably the most consulted section in the big books) is the one area where some indications of relative significance is required. If *Concise Anatomy* does not refer to the Alar part of the Nasalis, should you need to learn its osteological relations, and if so, what about its actions? If a book is to act as navigator then it cannot afford to omit reference to fair-sized continents.

As dissection manuals both books have been developed over several if not many, years. The choice of manual to buy is not, however, an open one to the student, different courses having different requirements. In many university departments dissection is largely a means of self-tuition in anatomy, and to this end *Cunningham* is eminently superior, comprising as it does a textbook of topographical anatomy in its own right complete with the exhortations to trace and identify, find and clean. The Glasgow book has been developed for two years in actual use in a department where, one must assume, some form of tuition supplements its elegant but sparse line drawings and cursory instructions. The two books then, are not alternative purchases, given a particular course, but represent two differing schools of approach.

At this point it seems apposite to point out that if the current rash of short, concise, ABC of, guides to or fool's anatomies that bespeckle the market are intended to lighten the memory load of the student, reduction in the bulk of fact is only one factor. Presentation of the fact is the key problem. Illustrations, we know, are irreplaceable but must be intelligently conceived, Line diagrams are less use than detailed pictures in a dissection manual to be used next to a perplexing mound of shredded flesh, whereas a simple coloured diagram is surely the ideal representation of the inguinal canal. As important as choice of style of illustration is appropriate choice of labelling methods; the fine penwork in *Concise Anatomy* is rendered useless by inadequate labelling using guide lines of equal thickness and appearance as the tissue boundaries of the diagram.

But retournez a nos moutons. *Concise Anatomy* is to be praised for its attempt to pare the anatomy thing down to manageable size. If there is one overriding criticism it is that it lacks clinical emphasis: the lymphatic drainage of the colon is not mentioned, nor is that of the testis. The testicular artery is barely accounted for, collateral circulations and muscle group actions receive little acknowledgement, the lymphatic drainage of the breast is, we are told, important, but we are not told what it is. It is of course, in the bigger books in exhaustive and exhausting detail. . . . The special excellence of *Cunningham* in the field of more detailed and more visual presentation is, surely, unchallenged. Osteology is sensibly incorporated into an integrated study of the part undergoing dissection, and this innovation has been balanced by a re-written and shorter text resulting in a clearer and less repetitive presentation. A few scattered clinical references would, however, add to the interest of the medical student rather than the sponge.

Peter Hill

SPORTS NEWS

NURSES' COLUMN

The Nurses' Swimming Team

This year has seen an upsurge of enthusiasm for swimming amongst the nurses. For a dormant period of two years there has been no swimming team to represent the nurses. However, during the past few months a team has been swimming regularly in galas and matches with a very high degree of success and the achievement of four cups.

In July, the Inter-Hospital Gala took place. At this event, organised by the Nurses' Swimming Association, two cups and several prizes were won. This was followed in September by a similar occasion when Jillie Potts won the Begginers' Race Cup and Bart's took second place overall.

At the Westminster Hospital Gala in September our newly formed team gained the winning number of points, and on 26th October at an invitation relay at the Royal Free, the team won a cup and the relay. A very satisfactory performance indeed.

The vigorous individuals who have done so much staunch team swimming are Jane Timmis (captain), Ros Ingram, ex-international, Lyn Webster, Jenny Cummings and Rosemary Fowler.

Should any nurses be interested in joining the team, the requirement is a good time over two lengths recorded by the swimming pool attendant. If the thought of Winter swimming deters you, bear in mind that the pool temperature is invariably 80° F. Your support is much appreciated, be it in the water or from a drier spot on the edge as spectator.

Patricia Kilshaw.

THE RUGBY CLUB

Our 1st XV record at present is: won 3, drawn 1, lost 4; 79 points for, 95 points against.

A great improvement upon last season's early results, but it is rather disappointing considering our potential talent. The fault lies in the fact that we have not been able to go down to Chislehurst and iron out our mistakes and build team cohesion. We have either had matches ourselves, or members of the team have been playing for other sides.

Congratulations to Keith McIntyre and Mark Britton on gaining their County Caps for Middlesex and Hampshire respectively and Elwyn Lloyd for playing in Representative matches for Middlesex. The above, Barry Cassidy and Nick Packer have played for United Hospitals.

Ahead of us lies the Cornish Tour, it is hoped that we shall return having won all our games.

The potential of the Fresher Intake is strong, as shown by the results of the Pre-clinical Team. It is now the intention of the Committee to disband this team and spread the talent.

St. Bartholomew's Hospital, 14; Harlequin Wanderers, 24

The ground was firm and dry, very suitable conditions for the first trial of the new Kicking Laws. The Wanderers were soon attacking hard and only good tackling kept them at bay. In the thirtieth minute Bart's took the lead against the run of play with a good penalty by Cassidy but the lead was soon reduced by a penalty and an unconverted try. Although the Wanderers pack was much the bigger the Bart's forwards held their own, especially in the lineouts, where they always were quickly on to any loose ball. The Wanderers just on stroke of half-time scored a push-over try near the posts. Thus Bart's were trailing 11-3.

Bart's started the second half with renewed fire and they were soon awarded a penalty. Cassidy, who was playing his first game for the Hospital, converted this and indicated that the Hospital have at least a kicker of some calibre. Bart's pulled out all the stops and after twenty minutes Britton rounded off the best moves of the match by scoring under the posts following a very good run by Lambert. A conversion by Cassidy brought the scores level. Two converted tries, both of which were the result of bad tackling, and a penalty gave the Wanderers the lead. Just before time Cassidy converted a penalty from 40 yards to bring the scores to 24-14.

It was rather a disappointing result for Bart's as they often looked very dangerous, especially McIntyre and Lambert, and it was silly mistakes that tended to let them down.

Team: N. Packer; S. Smith, D. Jefferson, R. Lambert, G. Hopkins; B. Cassidy, P. Buckley; N. Fairhurst, E. Lloyd, P. Furness, C. Smart, P. Fairclough, T. Fenton, M. Britton, K. McIntyre (Capt.).

Other results:

Oct. 4th. Bart's, 11; Westcombe Park, 15.
Oct. 7th. Bart's, 19; Beckenham, 6.
Oct. 14th. Bart's, 14; Woodford, 3.
Oct. 21st. Harpenden, 3; Bart's 14.
Oct. 28th. Sidcup, 17; Bart's, 6.

HOCKEY CLUB REPORT

The value of successful performance at the beginning of the season in creating "team-confidence" is well recognised by all sports clubs. Owing to the facts that (a) this year, our team is relatively unchanged from that which was so successful in the cups last year; (b) training has been a regular feature and; (c) we have adopted the new "4-2-4" configuration which, on overcoming the expected teething troubles, appears to be promisingly effective, it would be unreasonable to attribute our early success entirely to luck.

v. H.A.C. 7th October (H). Won 9—0.

This was an excellent beginning. Play was lively and very enjoyable on a pitch which has, once again, been so superbly prepared for us by Mr. White. Goals came from D. Edmundson (3) R. Barclay (3), N. Houghton (2), and A. Barclay (1; short corner).

v Beckenham II 14th October (A). Lost 3—2.

Although lost, this represents an improved result against a strong opposition who defeated us 8—0 two years ago. A well balanced match on a fine pitch.

v St. Mary's Hospital 21st October (H). Drawn 1—1.

Why sherry is so relentlessly revengeful in its aftermath, I shall never cease to wonder, but,

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as a factor in the mediocrity of our play on this occasion, its nature is less wonderful. We were indeed fortunate to equalise in the last 10 minutes of play against Mary's who were short of three U.H. players. The cup match?—we hope for better things.

THE CAMBRIDGE TOUR

v. Fitzwilliam College. Drawn 0—0.

As the result suggests, this was a hard fought battle evoking excellent hockey from both sides. Only were we close to scoring when our centre forward N. Houghton "Rymered" a ball just over the cross bar which was then lost to sight in low cloud.

v. Jesus College. Won 2—1.

This always was an exciting game where the result stands for much in the bar after the match. It was enthusiastic efforts by the forwards which forced their unsteady defence into errors of haste and which led to the two short corners, classically converted to goals by Andy Barclay. The social evening that followed was up to standard.

v. Selwyn College. Won 6—0.

Staving off the residual aura of the previous evening Barts went on to this annhialation. Driving rain and gale-force winds could not quell their noble victory—or was it poor visibility and consequent umpiring difficulties which were in our favour? Goals D. Edmundson (4), P. Curry (2). It was this evening that our right wing, D. R., savouring the tradition and heraldry which surrounds Cambridge, donned his coat of arms and motto: "Alopaecia mihi esse semper mechanicale".

v. Pembroke College. Lost 1—0.

Pembroke were a good side, their hockey strong and their stamina relatively untaxed before the match. In a game fast and interesting hockey our defence worked hard to control the many attacks. It was good to see old team friends W. Goss and J. B. Thompson up for this match.

Our gratitude extends to all the colleges for their wonderful hospitality. Players:—G. Benke (Capt.), P. V. L. Curry, P. R. Jordan, N. Houghton, M. Rymer, M. Spencer, D. Robinson, D. Edmundson, R. Barclay, A. Barclay, C. Hunt, P. Dieppe, P. Millard, C. Yates, D. Armstrong.

P. V. L. Curry

GOLF CLUB

October 18th: **v. St. Thomas's Hospital G.C.,** at Chislehurst. **Result: Won by five matches to nil.**

This was a good opportunity for a "work out" in preparation for our Hospital Cup Semi-final fixture with Guy's on the 20th. We fielded our complete side, with one exception—Ken Ross took Stewart Davidson's place for the day, playing in the number two position. The fixture turned out to be less testing than we thought. Possibly we all hit good form that day—but more likely a "local knowledge" of Chislehurst gave us the advantage.

Results: Chris Booth won 3—2.
Ken Ross won 4—2.
Dave Grieve won 5—4.
Angus Hoppe won 7—6.
Howard Rutherford won 9—7.

October 20th: **v. Guy's Hospital G.C.** (Semi-final of Hospitals' Cup), at Wentworth Golf Club (West). **Result: Lost by four matches to one.**

The previous day we had spent our time trying to get to know both the Wentworth courses (West and East). This proved to be a very elusive business. The fixture for the 20th had been arranged so that whoever came through the semi-final match (played on the West Course) would meet the Middlesex Hospital in the afternoon on the East Course.

Guy's have had a virtual monopoly of the Hospitals' Golf Cup over the past five years or so. We thought that we had a fair chance of ending their run this year. Unfortunately we did not have either Jon Sadler (Captain) or Mike Bowen available for this date. The team in order was David Grieve, Stewart Davidson, Angus Hoppe, Chris Booth and Howard Rutherford. The only player who came out of the swift skirmish with an unstained record was Chris Booth, he played an excellent round to come home with a 6—4 win. Howard Rutherford was unlucky to crack up on the last hole, and crumbled to a one hole defeat.

The saga of the other three maestros is best not related. Certain murmurings of "Next year we'll have it all right," could be heard as the shattered team collected in the dressing-rooms afterwards—perhaps indeed our new limited membership of the Berkshire Golf Club will

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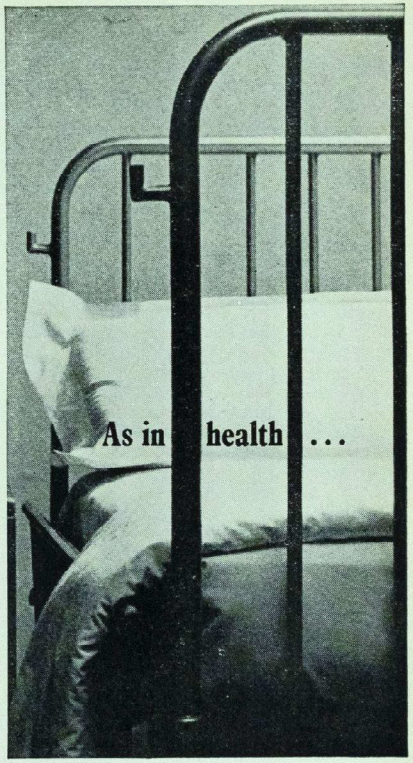

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pay dividends and improve the performances of some.

Results: Dave Grieve lost 3—2.
Stewart Davidson lost 4—3.
Angus Hoppe lost 3—2.
Chris Booth won 6—4.
Howard Rutherford lost by one hole.

October 22nd: **v. Thorpe Hall Golf Club** (eight-a-side). **Result: Won, five matches to three.**

Afternoon: Mike Bowen and Richard Begent won by one hole.
Jon Sadler and Dave Rickards halved.
Chris Booth and Angus Hoppe halved.
David Grieve and Stewart Davidson won 4—3.

Morning: Mike Bowen and Angus Hoppe won 2—1.
Richard Begent and Dave Rickards won 3—2.
Jon Sadler and Stewart Davidson lost 4—3.
David Grieve and Chris Booth lost 4—2.

This match was a repeat of the one very kindly arranged by Dr. Bevan Jones two years ago. It was an all-day fixture, four-ball matches in the morning, Greensomes in the afternoon. The serious golf was strictly limited to the morning's rounds; in these we managed to get our noses in front, coming into lunch ahead by three matches to one (two being won, and the other two halved).

After a wonderful lunch and entertainment, we continued at 3 p.m. with our less serious golf. In the afternoon, most matches were played under Greensome rules, one noteable match however, was a Yellowsome. This meant that all four players drove from the tee, but it was the opponents who chose the drive that would be used (from then on, shots being alternate). Inevitably, some very amusing incidents took place. Among our opponents of the day were the Bonnalack brothers, Michael and Tony.

Angus Hoppe.

ST. BARTHOLOMEW'S HOSPITAL GOLFING SOCIETY

The 32nd Autumn Meeting of the St. Bartholomew's Hospital Golfing Society was held at the Ashridge Golf Club on 27th September, 1967. Twenty-three members managed to arrive in spite of the difficulties of finding the whereabouts of the Club, several driving across ploughed fields to arrive late for the morning round.

The competitions were as usual played under the Stableford method of scoring, with the following results:

Milsom-Rees Cup
A. B. Haigh (12) 39 points
J. O. Robinson (17) 38 points

Graham Trophy
A. B. Haigh (12) 30 points

The 34th Summer Meeting will be held on 26th June, 1968, at the Berkshire Golf Club, when it is hoped that as many members as possible will turn up for the whole day.

J.O.R.

SQUASH CLUB REPORT

We returned expecting a wealth of talent from the new Freshers, but only one, Ken Ross, has proved really useful. We have played five matches so far, and have annoyingly lost four of them 3-2. This could be put down to a lack of a competant fifth string. John Ussher started the season well and has just joined the New Grampian Club. We wish him luck in the higher echelons of the squash world.

After a slightly chaotic transition period between secretaries, the Club is now running smoothly and we look forward to a successful season.

A. M. Burke.

RIFLE CLUB

On 7th October, the annual Staff v. Students match, and the Club Championships were held at Bisley on a very pleasant day with very good conditions. The Students beat the Staff by ten points, thus revenging last year's defeat. This was despite some excellent shooting by some of the Staff who had not shot for many years.

Ian Battye won the Club Championship for

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the second year running with an excellent score of 79 ex 85. Dick Thomson, Chris Sedergreen, and Simon Crocker all tied with a score of 78, which shows just how close a competition it was.

The new small bore season is now well under way and we have recruited many freshers who are proving to be very promising shots. We hope that they will continue practising regularly as the University Leagues are starting up in the very near future. Also if there are any students that have not yet tried their hand at shooting and feel that they would like to, they will be most welcome in the range at any time that it is open.

C. I. V. Franklin

SWIMMING CLUB

As a result of energetic campaigning by the Secretary and the Charterhouse Representative we have at least nine freshman swimmers, some of great promise.

The U.H. Winter League opened in mid-November. We have two teams entered in divisions II and III and will, publish results in the January Journal. The University Swimming Championships will be held on 22nd November. Douglas Shearer, Paddy Weir and Charles Van Heynigen have entered together with two relay teams. The Water Polo knockout competition is on 28th November.

A very successful evening resulted from a joint effort with the Nurses against teams from St. Thomas's, Mary's and Westminster Hospitals. The result was (mixed teams):—

1st Bart's 72
2nd St. Thomas's 47
3rd Westminster 45
4th St. Mary's 43

We are very grateful to Mrs. Owen for providing refreshments, and Jane Timmis for her outstanding organisational efforts. Some of our guests retired with us to the White Hart for replacement therapy.

A relay team went along to The Royal Free Gala and swept the opposition aside to win a very attractive thermos flask each. Some of the team continued in this vein at the party afterwards, but no details of prizes as yet!

R. Jolly

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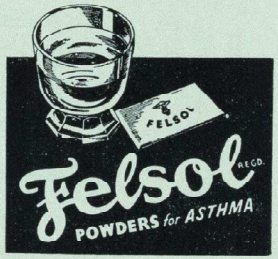

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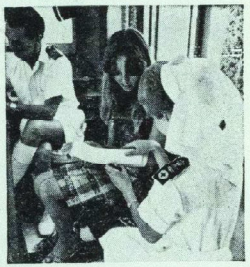

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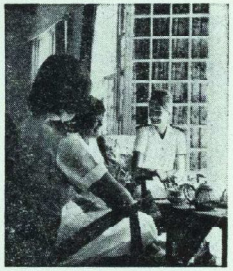

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CLINICAL AND RESEARCH SUPPLEMENT

CONTENTS

The Heidelberg Classification of the Epilepsies *by* Sylvia M. Watkins i
Simplified Premedication for Housemen *by* R. A. Bowen vi
Recent Papers by Bart's Men viii

Supplement No. 17 **Vol. LXXI, January, 1967**

THE HEIDELBERG CLASSIFICATION OF THE EPILEPSIES

Sylvia M. Watkins

PART II

EPILEPSIES WITH MINOR SEIZURES

Under the term "minor seizures" are included all forms of attacks in which there are no generalised convulsions. They may be classified according to their dependence on age (i.e. age of onset), and according to their characteristics.

Classification

A. **Dependent on age: the Petit Mal Triad.**
1. **Propulsive petit mal; infantile spasms; "lightning seizures".**
(a) Salaam convulsions (generalised tonic).
(b) Lightning-like convulsions (generalised clonic).
(c) Nodding seizures (upper pole).
(d) Static (drop) seizures (lower pole).

This group of epilepsies starts between the ages of one month and four years (with a peak between two and six months); the EEG shows hypsarrhythmia in cases starting early in life; those starting later usually show an irregular slow spike-wave pattern.

2. **Pure Petit Mal.**
(a) Retropulsive (elevation of eyes, extension of neck) 55%
(b) Propulsive (flexion of head, staring eyes) 8%
(c) Adversive (head and eyes to one side) 6%
(d) Indifferent (movements not in any particular direction, or purely "absence" without movement) 24%
(e) Psychomotor (with oral movements and other ictal automatism but without aura or post-ictal automatism) 7%

This group starts between the ages of four and twelve years (with a peak between six and eight years), and may be pyknoleptic or non-pyknoleptic in frequency, showing 3/sec. spikes and waves, and 3.5-4/sec. double spikes and waves respectively in the EEG.

3. **Impulsive Petit Mal; Myoclonic Petit Mal.**
   Attacks characterised by a sudden rapid movement of the arms (and sometimes of the head and legs as well). The age of onset lies between ten and twenty years (with a peak between fourteen and seventeen). The EEG shows 3.5-4.5/sec. multispikes and waves.

B. **Not depending on age.**

1. **Psychomotor Seizures**
   (a) Dreamy state 8%
   (b) Oral-digestive (uncinate attacks) with epigastric, olfactory or gustatory aura, oral movements and post-ictal automatism 55%
   (c) Adversive (with movements to one side) 16%
   (d) Dysphasic 8%
   (e) Non-characteristic (non-specific aura, followed by "absence" and automatism) 13%

2. **Cortical Seizures**
   (a) Jacksonian.
   (b) Adversive.
   (c) Sensory.

THE NATURAL HISTORY OF THE MINOR EPILEPSIES

In their study of the natural history of the minor epilepsies, Janz and his colleagues were particularly interested in finding that spontaneous cures in the petit mal triad are far less common than is often believed; and that furthermore, one type of epilepsy could give place to another.

Propulsive Petit Mal (lightning seizures)

This is a particularly malignant form of minor epilepsy, since only about one fifth of the 88 patients studied developed a spontaneous remission, and of these, about half relapsed again later, albeit most of them in a different form (mostly grand mal or psychomotor seizures). About one-third of the patients were dead after 15 years. Two-thirds of the patients developed grand mal at some stage (58% sleep grand mal, 38% diffuse grand mal and 4% grand mal on awakening). The poor prognosis in these patients appeared to be related to the fact that a high proportion of them had symptomatic epilepsy (with an underlying cerebral lesion).

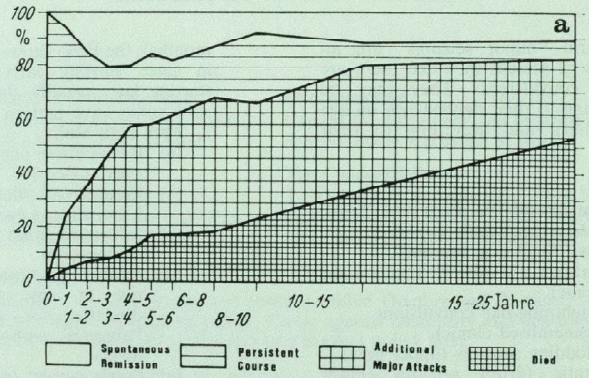

Fig. 9.
The natural history of 88 cases of propulsive petit mal, showing the proportion of patients with spontaneous remission, persistence of minor seizures, major seizures in addition to minor ones, and those who died. (Reproduced from Der Nervenarzt, 34 (1963), 333).

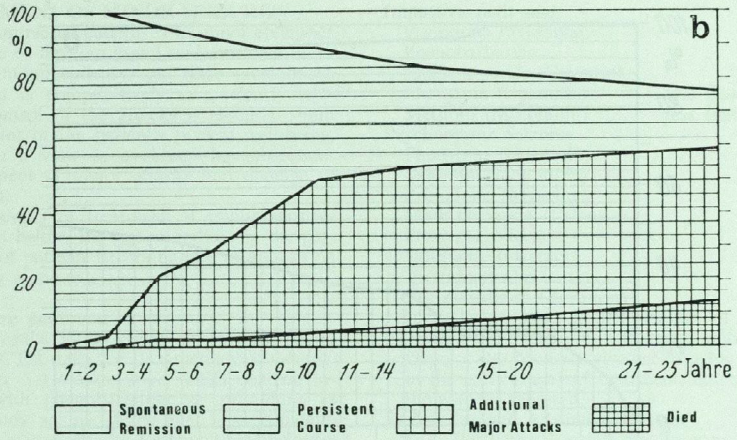

Fig. 10
The natural history of 144 cases of pyknoleptic petit mal, showing the proportion of patients with spontaneous remission, persistence of minor seizures, major seizures in addition to minor ones, and those who died. (Reproduced from Der Nervenarzt, 34 (1963), 333).

Pure Petit Mal (Pyknolepsy)

The prognosis for these patients, though very much better than in propulsive petit mal, seems nonetheless far from good, as long as the condition remains untreated. Spontaneous remissions were observed in a quarter of the patients followed up for 25 years. Deaths were much less common than in propulsive petit mal, but over half of 144 patients developed grand mal (88% of these had grand mal on awakening); in most cases this occurred between the ages of sixteen and eighteen. In untreated patients over the age of 30 it was rare to find combined grand mal and petit mal, or pure petit mal alone: by this time in most cases either there was spontaneous remission, or major seizures had replaced the minor ones.

Impulsive Petit Mal (myoclonic petit mal).

About one-third of all patients whose illness started with minor seizures were found to have impulsive petit mal, although this type of attack not uncommonly first appeared after the onset of grand mal seizures. Almost all of these patients sooner or later developed grand mal (mostly of the awakening type). An accurate study of the natural history proved impossible, since pure impulsive petit mal (i.e. not associated with grand mal) is rarely seen in practice, as it is so often misdiagnosed (e.g. as hysteria or fright reaction). Only one of 166 patients had a spontaneous remission. However, therapy resistance was almost as uncommon (4 in 166).

So far, only a development from pure minor to major epilepsy, or from minor forms has been considered. Rabe has studied changes in the type of minor seizure in the course of the natural history. Such changes in the type of minor seizure did not appear to be common: Rabe found 20 examples among 3,200 epileptics (9 changes within the petit mal triad, and 11 changes from some form of petit mal to psychomotor seizures). In fact the true incidence of the phenomenon cannot be determined accurately, as one can never be sure that a patient presenting, for example, with psychomotor attacks or impulsive petit mal, did not previously have pure petit mal.

Amongst patients with epilepsies of the petit mal triad, two forms of change were observed: either to the type of petit mal next *up* the age-of-onset scale, or to psychomotor attacks, in the latter cases only *after* the appearance of grand mal attacks. In the case of a change from one type of petit mal to another, there was always a corresponding change in the EEG to a more mature form: thus, for example, a change from propulsive petit mal to pyknolepsy was associated with a change from

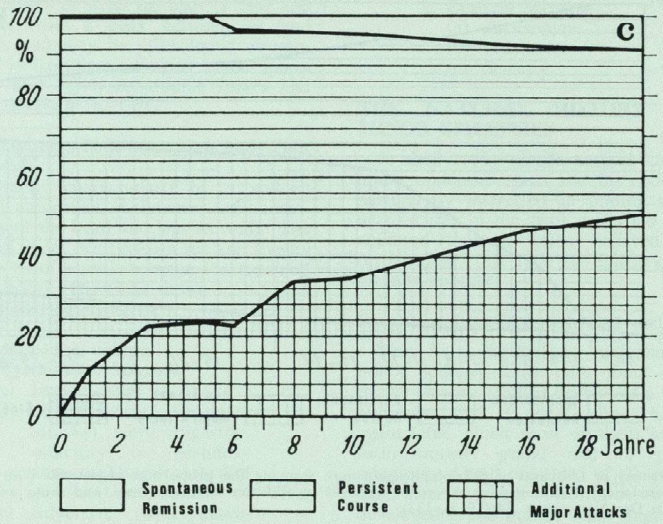

Fig. 11.

The natural history of 167 cases of "primary" pschomotor epileptics, showing the proportion of patients with spontaneous remission, persistence of minor seizures, and those who developed major seizures in addition to the minor ones. (Reproduced from Der Nervenarzt, 34 (1963), 333).

hypsarrhythmia to 3/sec. spike-wave rhythm; similarly, a change from pure petit mal to impulsive petit mal was associated with the development of multi-spikes-and-wave patterns, which in one patient appeared six months before the onset of impulsive petit mal, at a time when the patient was still having attacks of (clinically) typical pure petit mal.

The development of psychomotor seizures in a patient with petit mal, seemed to be independent of the patient's age or length of history, but appeared only after numerous grand mal attacks (often after a series of grand mal seizures, or after status epilepticus, or immediately following a marked increase in the frequency of the grand mal attacks). The onset of psychomotor seizures in these patients was often preceded by increasing symptoms of mental deterioration, and the EEG showed, in addition to the original epileptic patterns, new focal changes, usually in the temporal lobe. The development of psychomotor attacks after frequent grand mal seizures, (either with or without associated minor seizures), supports the notion that ictogenic damage may play an important rôle in the changing pattern of disease in the individual. A clinico-pathological study of 4 patients with such "secondary" psychomotor seizures was undertaken by Neimanis, who believed that the change in clinical type from grand mal to psychomotor seizures, and the corresponding change in the EEG from the typical idiopathic epileptic findings to the apparently "symptomatic" changes in the temporal lobes, could be accounted for on the basis of such ictogenic damage.

Patients with "primary" cryptogenic psychomotor seizures (i.e. not following grand mal attacks) showed a tendency to develop grand mal later, although only about half of 167 patients did so within 20 years of the onset of the illness: this was a surprising finding in view of the "bad reputation" of psychomotor epilepsy. However, spontaneous cures were also rare (7% after 20 years).

Primary or secondary psychomotor epilepsies practically never change in form to another type of minor epilepsy (with the exception of symptomatic cases in which, for example, as a tumour increases in size, psychomotor attacks could be replaced by some form of cortical attack).

TREATMENT OF MINOR SEIZURES

Since untreated patients with minor epilepsies are liable to develop grand mal, or some other form of minor epilepsy, and since spontaneous remission is comparatively rare, clearly adequate control of the attacks is essential, both on account of the patient's present well-being, and with a view to avoiding the subsequent development of major attacks and damage to the brain.

The results of treatment of minor seizures are given below, the figures indicating the percentage of patients becoming free of attacks on one drug alone.

Propulsive petit mal

Best results found using ACTH: 40-60 IU depot ACTH daily (or dexamethasone 4-9 mg. daily) for 3-4 weeks, under EEG control, together with phenobarbitone or primidone as prophylaxis against grand mal, and penicillin cover. Treatment to be continued for one week after normalisation of the EEG, after which the steroids should be withdrawn gradually. This course of treatment may be repeated in the event of a relapse, which may, however, in some cases be avoided by intermittent steroid therapy (at ever increasing intervals).

Phenobarbitone	45%
Phenytoin (Epanutin)	30%
Troxidone (Tridione)	29%

Pure petit mal

Ethosuccimide (Zarontin)	90%
Troxidone (Tridione)	74%
Methsuccimide (Celontin)	69%
also has some action against grand mal	
Phenobarbitone	31%
Phenytoin (Epanutin)	less than 25%
Primidone (Mysoline)	less than 25%
Methoin (Mesontoin)	less than 25%
Phensuccimide (Milontin)	virtually useless

Impulsive petit mal

Primidone (Mysoline)	81%
Phenobarbitone	65%
Methsuccimide (Celontin)	50%
Phenytoin (Epanutin)	less than 50%
Methoin (Mesontoin)	less than 50%

Psychomotor Seizures

Phenytoin (Epanutin)	47%
Methoin (Mesontoin)	42%
Primidone (Mysoline)	40%
Methsuccimide (Celontin)	30%
Phenorbarbitone	22%
Sulthiame (Ospolot)	10%
Troxidone (Tridione)	7%
Ethosuccimide (Zarontin)	6%

In resistant cases a combination of primidone with phenytoin was most efficacious. Ospolot was found to give encouraging results in the early stages of treatment, but most of the patients relapsed.

Jacksonian and Adversive Seizures

In a fairly small series, results were similar using barbiturates or hydantoinates (40-50%).

Conclusions

Clearly a study such as the one undertaken in Heidelberg, some aspects of which are presented here, is of great value: not only does it increase our purely scientific knowledge of the epilepsies, of their nature, types and natural histories, but furthermore, the observations made have many important and useful diagnostic, prognostic and therapeutic implications.

Acknowledgements

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REFERENCES

BRAUTIGAM, W. (1951): *Psyche.*, **5**, 523.
CHRISTIAN, W. (1960): *Dtsch., Z. Nervenheilk.*, **181**, 413.
CHRISTIAN. W. (1962): *Dtsch. Z. Nervenheilk.*, **183**, 218.
HALLEN, O. (1952): *Dtsch. Z. Nervenheilk.*, **167**, 143.
HALLEN, O. (1953): *Dtsch. med. Wschr.*, **78**, 260.
HALLEN, O. (1954): *Dtsch. Z. Nervenheilk.*, **171**, 236.
HALLEN, O. (1962): *Dtsch. Z. Nervenheilk.*, **183**, 199.
JANZ, D. (1953): *Nervenarzt.*, **24**, 361.
JANZ, D. (1953): *Arch. Psychiatr. Z. Neur.*, **191**, 73.
JANZ, D. (1953): *Dtsch. Z. Nervenheilk.*, **170**, 486.
JANZ, D. (1953): *Nervenarzt.*, **26**, 20.
JANZ, D. (1955): *Dtsch. med. Wschr.*, **80**, 1392.
JANZ, D. (1957): *Medizinische.*, **42**, 1517.
JANZ, D. (1962): in "Psychopathologie Heute". *Thieme-Verlag Stuttgart*, 1962.
JANZ, *D.* JEFPTIH *Epilepsia.*, **3**, 69.
JANZ. D. (1962): *Med. Welt.*, **12**, 629.
JANZ, D. (1963): *Nervenarzt.*, **34**, 333.
JANZ, D. (1964): "Wegweisung zu einer differenzierten Behandlung der Epilepsie" (5th edition). *Dtsch. Sekt. d. Internat. Ligag. Epilepsie.*
JANZ, D. and CHRISTIAN, W. (1957): *Dtsch. Z. Nervenheilk.*, **176**, 321.
MATTHES, A., and MALLMANN-MUHLBERGER (1963): *Dtsch. med. Wschr.*, **88**, 426.
NEIMANIS, G. (1962): *Dtsch. Z. Nervenheilk.*, **183**, 258.
RABE, F. (1961): *Dtsch. Z. Nervenheilk.*, **182**, 201

SIMPLIFIED PREMEDICATION FOR HOUSEMEN

R. A. Bowen

New members of the House sometimes find difficulty in deciding what drugs to order their patients before operation. The following notes are offered as a guide.

The purpose of premedication is threefold; to allay anxiety, to dry secretions and to reduce the vagotonic effects of anaesthetics on the conducting mechanism of the heart. Sometimes an anti-emetic effect is also required.

Fear of operation (and more commonly of anaesthesia) is natural and almost invariable. Kindness therefore dictates preliminary sedation. Mucus secretion during ether anaesthesia may be enough to prejudice the airway; a drying agent is therefore essential. But even when non-irritating drugs are given, save in very short procedures, abolition of the swallowing reflex allows mucus to collect and the use of atropine or scopolamine is indicated. Cardiac rate and rhythm may be disturbed by most anaesthetics: cyclopropane and to a lesser degree trichloroethylene and halothane are frequent offenders.

In deciding what premedication to order, patients may be divided into groups according to age: birth to 2 years, 2 to 12 years, 12 to 65 years, and 65 years and over.

0-2 years

In very early life *atropine* alone suffices. From birth to 1 year an intramuscular dose of 0.3 mg. should be given 30 minutes before anaesthesia. From 1 to 2 years the full adult dose of 0.6 mg. is satisfactory.

2-12 years

Here a double choice presents:—

1. **Omnopon-Scopolamine** (more correctly, papavaretum-scopolamine)
   This time-honoured preparation combines the sedative properties of morphine and other opium alkaloids with the drying, anti-emetic and amnesic qualities of scopolamine. The standard 1 ml. ampoule contains omnopon 20 mg. with scopolamine 0.4 mg. For children a useful formula to remember is:
   Dose in minims=age in years + 2
   Thus a child of 5 years would receive 7 minims of the mixture. It should be given intramuscularly 1½ hours prior to induction.
2. **Vallergan** (Trimeprazine tartrate)
   This antihistamine is made up in flavoured concentrated form as Vallergan Forte syrup. Each ml. contains 6 mg. of trimeprazine. The dose is 2 mg. per lb. of body weight, given by mouth 2 hours before induction. Within half to one hour most children are asleep. Scopolamine or atropine should then be given. It is important to remember that atropine is a cerebral stimulant and will offset the sedative effects of other drugs. In contrast, scopolamine depresses cerebral activity and produces a drowsy amnesia. It is preferable in most cases, save where early return of protective reflexes is essential, as in tonsillectomy. Here atropine is a safer choice.

12-65 years

In this group the most generally satisfactory premedication is Omnopon 20 mg. with scopolamine 0.4 mg. given intramuscularly 1½ hours before induction. Where a patient mentions a sensitivity to morphine, Pethidine 100 mg. may be substituted for omnopon. In those who complain of nausea and vomiting following anaesthesia, a third alternative may be tried, namely Pethidine 100 mg., Promethazine (phenergan) 50 mg. and scopolamine 0.4 mg. This is available in the preparation known as SP 100, which contains this dosage in conveniently small volume (2 ml.). It is slow in action and should be given early, 2½ hours before induction.

Over 65 years

Respiratory depression should be avoided in older patients. A good choice is morphine 10 mg. or Pethidine 100 mg., with atropine 0.6 mg. The dose of opiate may be reduced to half in older members of this group.

Special Cases

Cerebral injury demands the omission of respiratory depressants. Atropine 0.6 mg. or scopolamine 0.4 mg. alone should be used.

If the operation is to be performed under local analgesia and there is *no question of general anaesthesia being demanded later,* amylobarbitone sodium (sodium amytal) 200 mg by mouth 1½ hours beforehand produces good sedation, and also reduces the toxicity of local analgesics, as do all barbiturates.

In liver disease it is customary to replace morphine by pethidine.

Frail patients (I don't mean the thin, wiry postman) in whom the metabolic rate has been lowered by cachexia or prolonged debility may well be given half the customary dose.

Those undergoing treatment with monoamine oxidase inhibitors may develop profound collapse during anaesthesia. A similar condition may be precipitated in those having had recent or remote steroid therapy. It is therefore essential that the Anaesthetic Department be consulted before ordering premedicant drugs for these patients.

Some asthmatics are sensitive to morphine. A safe choice is Pethidine 100 mg. with atropine 0.6 mg. In Very Important Persons (nurses, doctors, Hospital Governors, etc.) it is well to stick to routine. But in all cases, members of the Department of Anaesthesia are always pleased to be consulted in cases of difficulty.

For the normal groups of patients the dosage table is summarized below for easy reference.

0-1 year *Atropine* 0.3 mg. I.M. 30 mins. preop.

1-2 years *Atropine* 0.6 mg I.M. 30 mins. preop.

2-12 years

(1) *Omnopon-Scopolamine mixture* according to formula:—
Dose in minims=age in years + 2
I.M. 1½ hours preop.

(2) *Vallergan Forte Syrup* 2 mg. per lb. body weight by mouth 2 hours preop.

Plus

Scopolamine (0.2 mg. from ages 2-6 years, 0.4 mg. from 6-12 years).

Or

Atropine 0.6 mg. I.M. 1 hour preop.

12-65 years

Scopolamine 0.4 mg.
Omnopon 20 mg. } I.M. 1½ hours preop.
Pethidine 100 mg.
Scopolamine 0.4 mg. } I.M. 1½ hours preop.

Or

SP 100 2 ml. I.M. 2½ hours preop.

65 years and over

Atropine 0.6 mg.
Morphine 10 mg. } I.M. 1 hour preop.

Or

Pethidine 100 mg.
Atropine 0.6 mg. } I.M. 1 hour preop.

RECENT PAPERS BY BART'S MEN

BACH, F. Social and psychological factors in the rheumatic diseases. *Br. rheum. Ass. Rev.*, Sept. 1966, pp. 232-235.

BADENOCH, A. W. Benign enlargement of the prostate. *Practitioner*, 197, 1966, pp. 598-604.

BALCH, Sheila, and HUDSON, C. N. I. Prolapse. *Nursing Times*, Aug. 26, 1966, pp. 1118-1119. II. Prolapse: operative treatment. *Nursing Times*, Sept. 2, 1966, pp. 1159-1160. III Prolapse: post-operative management. *Nursing Times*, Sept. 9, 1966, pp. 1194-1196.

*BESSER, G. M., and others. Modification of the auditory flutter fusion threshold by centrally acting drugs in man. *Nature*, 211, 1966, p. 751.

BETHUNE, D. W., and others. A device for simplifying the measurement of central venous pressure. *Lancet*, Sept. 24, 1966, p. 684.

BLACK, K. O. Diabetes and the surgical patient. *Br. J. clin. Pract.*, 20, 1966, pp. 555-560.

BOULTON, T. B. Anaesthesia in difficult situations 3. General anaesthesia—technique. *Anaesthesia*, 21, 1966, pp. 513-545.

——, and others. Wall charts. *Anaesthesia*, 21, 1966, pp. 490-497.

BOURNE, G. L. The anatomy of the human amnion and chorion. *Proc. R. Soc. Med.*, 59, 1966, pp. 1127-1128.

BOXALL, T. A. Current trends in rectal surgery. *Nursing Mirror*, Sept. 16, 1966, pp. 583-585.

*BROWN, J. R. A select bibliography of public health and preventive medicine. *Med. Servs. J. Can.*, 21, 1965, pp. 645-677.

*——. Impermeable clothing and heat stress. *Med. Servs. J. Can.*, 21, 1965, pp. 518-532.

*——. Bacteriological standards for bathing water. *Med. Servs. J. Can.*, 21, 1965, pp. 778-786.

*——. More effort on prevention is urgent need today. *Health*, 33, 1965, pp. 12–13.

*——. Virus dispersal by water. *Health Laboratory Science*, 3, 1966, pp. 182–189.

*——. The metabolic cost of industrial activity in relation to weight. *Med. Servs. J. Can.*, 22, 1966, pp. 262-272.

BUNJE, H. W., (with Waterlow, J. C.). Observations on mountain sickness in the Columbian Andes. *Lancet*, Sept. 24, 1966, pp. 655-661.

*CAIRNS, J. D. Maternal jaundice with hydatidiform mole—six case reports. *Obstet. Gynec. Digest.*, 8, 1966, pp. 47-74.

*CAPENER, N. Road accidents. *Ann. R. Coll. Surg.*, 39, 1966, pp. 158-160.

——. Defence, repair and rehabilitation. *Physiotherapy*, 52, 1966, pp. 377-381.

——. The vulnerability of the posterior interosseous nerve of the forearm: a case report and an anatomical study. *J. Bone Jt. Surg.*, 48B, 1966, pp. 770-773.

*CASSON, F. R. C. Children who are nervous. *Family Doctor*, Nov., 1966, pp. 620-621.

CATCHPOLE, B. N. The treatment of paralytic ileus. *Br. J. Surg.*, 53, 1966, p. 859.

COLLIS, J. M. Concentration graphs for the 'Halox' vaporiser. *Anaesthesia*, 21, 1966, pp. 558-562.

CRICHTON, T. C., *see* BETHUNE, D. W., and others.

CULL, P. G., *see* BOULTON, T. B., and others.

*DARMADY, E. M. The renal changes in some metabolic diseases. In, *The Kidney*, International Academy of Pathology Monograph no. 6, 1966, pp. 253-268.

DAWSON, A. M., (with others). Jejunal disaccharidases and some observations on the cause of lactase deficiency. *Br. med. J.*, Oct. 29, 1966, pp. 1037-1041.

DAWSON, J. B. 'A man's a man for a' that', or The great oaths, pledges, codes and declarations connected with our profession. *Oxf. med. Sch. Gaz.*, 18, 1966, pp. 23-33.

DUNCAN, Catherine, *see* BESSER, G. M., and others.

*EDWARDS, A. The response of the reticulo-endothelial system to a cancer. *Br. J. Surg.*, 53, 1966, pp. 874-880.

*FREEMAN, A. G. Neurotrophic ulceration of the face with erosion of the ala nasi in vascular disorders of the brain-stem. *Br. J. Derm.*, 78, 1966, pp. 322–331.

*FRY, I. KELSEY, and others. Some observations on the movement of the pelvic floor and rectum with special reference to rectal prolapse. *Br. J. Surg.*, 53, 1966, pp. 784–787.

*GIBBS, Dorothy A., and WATTS, R. W. E. An investigation of the possible role of xanthine oxidase in the oxidation of glyoxylate to oxalate. *Clin. Sci.*, 31, 1966, pp. 285-297.

GILLETT, G. B., *see* BETHUNE, D. W., and others.

GRIFFITHS, J. D. Ischaemic diseases of the colon: the blood supply of the colon. *Proc. R. Soc. Med.*, 59, 1966, pp. 881-882.

*HARRIS, D. M. Antibacterial chemotherapy: a bacteriologist's approach to clinical problems. *Guy's Hosp. Rep.*, 115, 1966, pp. 159-174.

*HAVARD, C. W. H. Recovery after myocardial infarction. *Br. med. J.*, Pt. I—June 11, 1966, pp. 1467-1468. Pt. II—June 18, 1966, pp. 1525-1527.

*——. A reappraisal of the thiazide diuretics. *Curr. Med. Drugs*, 7, 1966, pp. 14-24.

*——. Thymic tumours and refractory anaemia. *Series haematologica*, 5, 1966, pp. 18-50.

*HIBBARD, B. M. Placental localization using radioactive isotopes. *Clin. Obstet. Gynec.*, 9, 1966, pp. 93-113.

*——, (and Fliegner, J. R.). Active management of the third stage of labour. *Br. med. J.*, Sept. 10, 1966, pp. 622-623.

*HOWELL, T. H. Neurological problems of the elderly.

Geront. clin., 8, 1966, pp. 77-84.

HUDSON, C. N., *see* BALCH, Sheila and ——.

*HUNTER, R. A. Thomas Hodgkin, Samuel Tuke and John Conolly. *Guy's Hosp. Rep.*, 115, 1966, pp. 263-267.

*——, and MACALPINE, I. The diary of John Casaubon. *Proc. Huguenot Society of London*, 21, 1966, pp. 31-57.

*JENKINS, J. S. Biochemical aspects of the Stein-Leventhal syndrome. *Hospital Medicine*, 1, 1966, pp. 37-41.

KEELE, K. D. John Hunter's contribution to cardiovascular pathology. *Ann. R. Coll. Surg.*, 39, 1966, pp. 248-259.

——. Uses and abuses of medical history. *Br. med. J.*, Nov. 19, 1966, pp. 1251–1254.

KINMONTH, J. B., (with others). Endolymphatic therapy of tumours with particular reference to the VX_2 tumour in lepus cuniculus. *Brit. J. Surg.*, 53, 1966, pp. 969–978.

LEFFORD, M. J., (and Mitchison, D. A.). Comparison of methods for testing the sensitivity of mycobacterium tuberculosis to ethionamide. *Tubercle, Lond.*, 47, 1966, pp. 250-262.

LEWIS, O. J. The phylogeny of the cruropedal extensor musculature, with special reference to the primates. *J. Anat.*, 100, 1966, pp. 865-880.

*LOFTS, B., (and Murton, R. K.). The role of weather, food and biological factors in timing the sexual cycle of woodpigeons. *British Birds*, 59, 1966, pp. 261-280.

*—— (and others). Effects of methyl testosterone on the testes of a hypophysectomized Cyprinodont fish, *Fundulus heteroclitus*. *Gen. comp. Endocrinol.*, 6, 1966, pp. 74-88.

*——, (and others). Seasonal changes in the testis of the cobra, *Naja naja* (Linn). *Gen. comp. Endocrinol.*, 6, 1966, pp. 466-475.

*——, (with others). Function and cytology of the normal and autotransplanted pars distalis of the hypophysis in the toad *Bufo bufo* (L). *Gen. comp-Endocrinol.*, 6, 1966, pp. 491-518.

MACALPINE, I., *see* HUNTER, R. A., and ——.

*MACKENNA, R. M. B. Dermatology at St. Bartholomew's Hospital, London (1123-1946). *Br. J. Derm.*, 78, 1966, pp. 425-443.

MISIEWICZ, J. J., (and others). Comparison of the effect of meals and prostigmine on the proximal and distal colon in patients with and without diarrhoea. *Gut*, 7, 1966, pp. 468-473.

MUIR, G. G. Multiple enzyme studies in the vaginal fluid in relation to benign and malignant gynaecological conditions. *Br. J. Cancer*, 20, 1966, pp. 448-462.

*NOBLE, M. I. M., (and others). Left ventricular ejection in conscious dogs:
I. Measurement and significance of the maximum acceleration of blood from the left ventricle. *Circulation Res.*, 19, 1966, pp. 139-147.
II. Determinants of stroke volume. *Circulation Res.*, 19, 1966, pp. 148-152.

*—— (and others). Effect of changing heart rate on cardiovascular function in the conscious dog. *Circulation Res.*, 19, July, 1966.

*—— (with others). The effect of bilateral block of vagus and glossopharyngeal nerves on the ventilatory response to CO_2 of conscious man. *Respiration Physiology*, 1, 1966, pp. 206-210.

O'GRADY, F., and SMITH, Barbara. Neuromyopathy in the mouse produced by the antimicrobial agent nitroxoline. *J. Path. Bact.*, 92, 1966, pp. 43-48.

*PARTINGTON, M. W. (and Mathews, J.). The relation of plasma tyrosine level to weight gain of premature infants. *J. Pediat.*, 68, 1966, pp. 749-753.

PATTERSON, D. S., *see* TURNER, P., and ——.

PENNINGTON, J. H., *see* ROBINSON, T. W. E., and ——.

PRANKERD, T. A. J. Polycythaemia, diagnosis and variants. *Proc. R. Soc. Med.*, 59, 1966, pp. 1089-1091.

QUILLIAM, J. P., *see* BESSER, G. M., and others.

*ROBINSON, T. W. E., and PENNINGTON, J. H. Basophil counts in patients with urticaria, treated with oral antihistamines. *Br. J. Derm*, 78, 1966, pp. 472-475.

ROSS, *Sir* JAMES PATERSON. Associations with the Royal College of Surgeons of England. *J. Bone Jt. Surg.*, 48 B, 1966, pp. 619-620.

ROYLE, J. P. Autogenous vein bypass: an improved technique. *Surgery*, 60, 1966, pp. 795-796.

SEDDON, *Sir* Herbert. Orthopaedic surgery. *Br. J. Surg.*, 53, 1966, pp. 836-839.

——. Volkmann's ischaemia in the lower limb. *J. Bone Jt. Surg.*, 48B, 1966, p. 627-636.

SILVERSTONE, J. T. Obesity: some psychosomatic aspects. *Nursing Mirror*, Nov. 4, 1966, pp. 116-118.

SMART, P. J. G., *see* FRY, I. KELSEY, and others.

SMITH, Barbara, *see* O'GRADY, F., and ——.

*SNEDDON, J. M., and TURNER, P. Adrenergic blockade and the eye signs of thyrotoxicosis. *Lancet*, Sept. 3, 1966, pp. 525-527.

SPECTOR, W. G., and LYKKE, A. W. J. The cellular evolution of inflammatory granulomata. *J. Path. Bact.*, 92, 1966, pp. 163-177.

*STAINSBY, G. D. (with Meachim, G.). The incidence of malignancy in localized thyroid swellings treated surgically. *Br. J. Surg.*, 53, 1966, pp. 788-791.

*STALLARD, H. B. Combined iris retractor and lens expressor. *Br. J. Ophthal.*, 50, 1966, pp. 552-553.

*——. Radiotherapy for malignant melanoma of the choroid. *Br. J. Ophthal.*, 50, 1966, pp. 147-155.

*——. Haemangioma of the iris. *Br. J. Ophthal.*, 50, 1966, pp. 434-435.

*——. Partial iridocyclectomy and sclerectomy. *Br. J. Ophthal.*, 50, 1966, pp. 656-659.

*——. Partial choroidectomy. *Br. J. Ophthal.*, 50, 1966, pp. 660-662.

*——. The treatment of retinoblastoma. *Ophthalmologica*, 151, 1966, pp. 214-230.

*TAYLOR, G. W. Arterial disease of the lower limbs. *Hospital Medicine*, 1, 1966, pp. 60-63.

—— (with Wyatt, A. P.). Vein grafts: changes in the endothelium of autogenous free vein grafts used as arterial replacements. *Br. J. Surg.*, 53, 1966, pp. 943-947.

THORNE, N. Some dermatological problems of middle age. *Br. J. clin. Pract.*, 20, 1966, pp. 495-497.

——. Cosmetics and the dermatologist: Rouge. *Br. J. clin. Pract.*, 20, 1966, pp. 547-548.

*——. The problem of camouflage. *Family Doctor*, Nov. 1966, pp. 627-630.

——. Camouflage of blemishes and scars. *Br. J. clin. Pract.*, 20, 1966, pp. 593-596.

*TODD, R. MCLAREN. Birth injuries. *Practitioner*, 197, 1966, pp. 297-306.

TREDINNICK, W. D., *see* BOULTON, T. B., and others.
*TURNER, P., and PATTERSON, D. S. Smell threshold as a test of central nervous function. *Acta oto-laryng.*, 62, 1966, pp. 149-156.
——, *see* SNEDDON, J. M., and ——.
*VARTAN, C. K. Hypertension in pregnancy: a new look. *Proc. R. Soc. Med.*, 59, 1966, pp. 841-844.
WATSON, A. C., *see* BETHUNE, D. W., and others.
WATTS, R. W. E., *see* GIBBS, Dorothy A., and——.
*WHITTERIDGE, Gweneth. Growth of Harvey's ideas on the circulation of the blood. *Br. med. J.*, July 2, 1966, pp. pp. 7-12.
*WIDDICOMBE, J. G. Action potentials in parasympathetic and sympathetic efferent fibres to the trachea and lungs of dogs and cats. *J. Physiol.*, 186, 1966, pp. 56-88.
*—— (with others). The role of vagal and glossopharyngeal afferent nerves in respiratory sensation, control of breathing and arterial pressure regulation in conscious man. *Clin. Sci.*, 30, 1966, pp. 161-170.
*—— (with others). The effect of bilateral block of vagus and glossopharyngeal nerves on the ventilatory response to CO_2 of conscious man. *Respiration Physiology*, 1, 1966, pp. 206-210.
——, *see* NOBLE, M. I. M., with others.
WILLOUGHBY, D. A. The mechanism of cutaneous hypersensitivity in the rat and its suppression by immunological methods. *J. Path. Bact.*, 92, 1966, pp. 139-150.

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ST. BARTHOLOMEW'S HOSPITAL JOURNAL

CLINICAL AND RESEARCH SUPPLEMENT

CONTENTS

The Digestion and Absorption of Lipids *by* J. D. Hamilton i
Mitral Valve Replacement *by* N. A. J. Hamer vi
Recent Papers by Bart's Men x

Supplement No. 18 **Vol. LXXI, April, 1967**

THE DIGESTION AND ABSORPTION OF LIPIDS

by J. D. Hamilton

Lipids are poorly soluble in water, and therefore man, who is an aqueous organism, creates a problem for himself when he eats lipids as a major component of his diet. This article will present recent knowledge on the mechanisms of fat digestion, solubilisation and absorption, and indicate how in disease states they may be altered. The mechanisms have been studied from several directions, individually none of which give more than an approximation to the true dynamic state in intact man, but which together support each other in defining most of the factors involved. The main lines of investigations are:

(a) Physicochemical studies, especially of solubilities of lipids in bile salt solutions. Workers have used simple model situations and the techniques of detergent chemists.

(b) Tissue slice or homogenate studies have defined metabolic pathways in the mucosa, and their characteristics and requirements. Radioactive isotopes and the recently developed techniques for separating and analysing lipids have allowed major advances in the last ten years.

(c) Animal experiments allow a study of the details of lipid absorption, but sharp differences between species and even strain of the same animal can make for unnecessary controversy in comparing results of different workers and warn against an unreserved extrapolation from animals to man.

(d) Studies in normal man are always limited by technical and ethical considerations. They can be made by analysis of intestinal contents obtained by intubation, by examination of blood chylomicrons after a fat meal, by enzyme studies on intestinal mucosa obtained at operation, and by histology of biopsies taken during absorption of a fat meal,

and by fat balance studies.

The study of a system by the methods of different disciplines has sometimes led to controversy that is at least in part due to a failure to appreciate their limitations. For instance, it is dangerous to draw conclusions about biochemistry and metabolism from purely anatomical studies.

THE DIGESTION AND ABSORPTION OF TRIGLYCERIDES OF LONG CHAIN FATTY ACIDS

These triglycerides are the major dietary lipid. A fatty acid is attached by an ester bond to each of the three carbon atoms of glycerol, which are named as illustrated in Fig. 1. Examples of such fatty acids are oleic acid (18 carbon chain with one double bond) and stearic acid (18 carbon chain saturated acid). The stages in digestion and absorption of triglycerides are as follows.

1. *Lipolysis by pancreatic lipase*

Pancreatic lipase is an esterase which splits only the α ester bonds of triglycerides. A small proportion of the β fatty acids migrate to the α position from which they are removed by lipase (Fig. 1), but the major products of lipolysis are β monoglyceride and fatty acids.

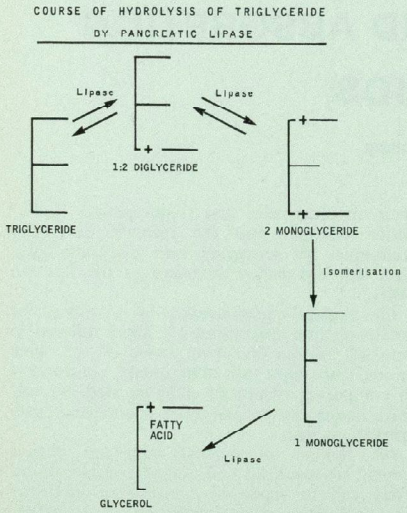


Fig. 1—*The hydrolysis of triglyceride by pancreatic lipase.*

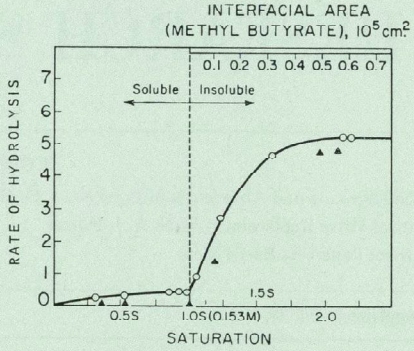


Fig 2—*Hydrolysis of tributyrin by pancreatic lipase.* From Desnuelle (1961).

Lipase has properties that distinguish it from the other pancreatic esterases and suit it for dealing with triglycerides. It adsorbs onto any oil-water interphase, including that of dietary triglyceride.

Presumably adsorption at the interphase alters the enzyme shape or controls its alignment with the substrate triglyceride, for it is only at such an interphase that rapid hydrolysis occurs. As shown in Fig. 2 tributyrin is hydrolysed slowly when it is in simple solution, but much more rapidly as soon as an emulsion is formed. The kinetics of hydrolysis have been shown to depend upon surface area, and not upon total mass of substrate.

Emulsification is necessary to provide an adequate surface area, and this is achieved by mechanical dispersion of the fat by peristalsis, aided by bile salts which lower surface tension. Nevertheless, in the absence of bile, adequate emulsification can still be achieved, probably because monoglyceride also reduces surface tension.

2. *Solubilisation of lipid by bile salts*

Once released by hydrolysis, fatty acids and monoglyceride, both poorly soluble in water, would remain mainly dissolved in triglyceride were it not for bile salts, which increase their solubility in water.

Bile salts are formed in the liver from

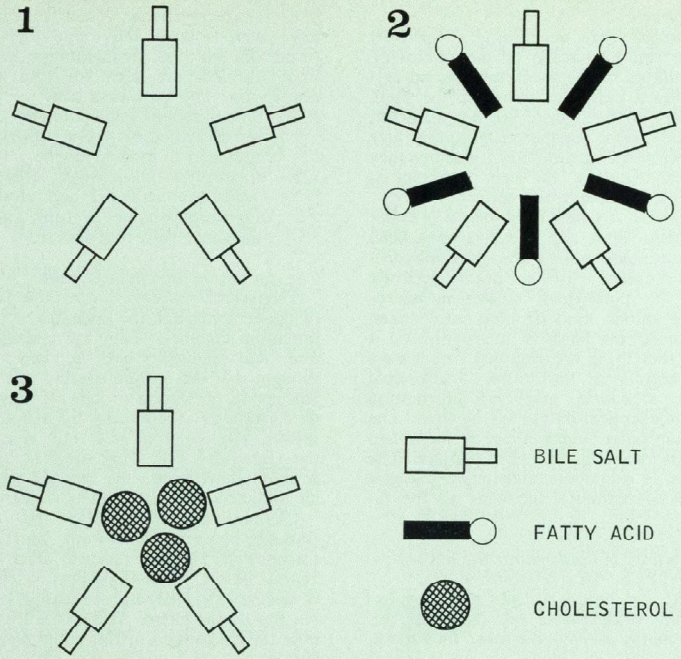


Fig. 3—*Bile salt micelles* (1), *solubilising fatty acid* (2), *and cholesterol* (3).

cholesterol, and are secreted as the conjugates of taurine or glycine. These amino acids provide a water soluble end to the molecule, and the sterol portion provides a lipid soluble end. Such molecules are called "amphipathic". They form simple dilute solutions but at higher concentrations, instead of precipitating out of solution they form molecular aggregates called "micelles". The concentration at which this occurs is termed the "critical micellar concentration". Bile salt micelles contain about 70 molecules, orientated with the water soluble portion outermost, and the lipid soluble portion innermost. Molecules such as fatty acid and monoglyceride, that are poorly soluble in water, can be taken into a bile micelle, and their lipid soluble portion buried, as it were, in the interior of the micelle (Fig. 3). The molecules of the micelles are probably in dynamic equilibrium with those in simple solution.

Studies *in vitro* have demonstrated, for each natural bile salt, their critical micellar concentration and ability to solubilise fatty acid and monoglyceride. In intestinal contents in man bile salts have been found to be above their critical micellar concentration, and the water clear micellar solution obtained after spinning intestinal contents obtained after a fatty meal contains most of the fatty acid and monoglyceride.

A high concentration of bile salts is maintained throughout the small intestine because they are only absorbed in the terminal ileum, where an active transport site has been demonstrated. Reabsorbed bile salts are excreted by the liver and the total body bile salt pool passes through this enterohepatic circulation about ten times a day.

3. *The entry of lipid into the absorptive epithelial cell*

It is assumed that micelles give up their lipid at the cell membrane of the microvilli. The phospholipid of the membrane would certainly provide a milieu to solubilise the lipid. The bile salts of the micelle are not absorbed and it is not known whether they simply give up their lipid at the membrane or whether they shuttle in and out of the cell. This initial absorption does not require energy.

Triglyceride is virtually insoluble in micellar solution of bile salts, and it has always been claimed that at least some is absorbed unhydrolysed as droplets, by a quite separate mechanism of "pinocytosis". Electron micrographs have shown lipid droplets surrounded by membrane at the bases of microvilli and it is assumed that these are engulfed rather as a leucocyte engulfs a bacterium. Anatomical observation, of course, gives no information about the biochemical nature of the lipid. The relative quantitative importance of these two modes of absorption has not been clarified. The steatorrhoea of pancreatic deficiency suggests that pinocytosis cannot cope with all the fat absorption.

4. *The handling of lipid within the absorptive cell*

Fatty acid and monoglyceride are resynthesised to triglyceride inside the epithelial cell prior to discharge as chylomicrons. Two metabolic pathways for this have been demonstrated, both requiring energy. Their enzyme systems have been isolated and found to be attached to the smooth reticular membrane within which lipid droplets are seen to form during fat absorption. The pathways are:

A. *The monoglyceride pathway*—fatty acids are activated by acyl Co-Enzyme A and attached to monoglyceride.

B. *The glycerophosphate pathway* — fatty acids are activated and attached to α-glycerophosphate to form phosphatidic acid and then triglyceride.

The formation of chylomicrons

Triglyceride passes out of the lateral wall of the cells through the openings of the smooth reticulum channels. They are coated with protein and phospholipid. It was previously thought that the protein coating was by passive adsorption of plasma protein. If, however, protein synthesis is inhibited by a dose of puromycin, chylomicrons are not released from the absorptive cell. This suggests that protein is synthesised within the cell and added to the chylomicron before it can be released.

Chylomicrons pass into the lymphatics through pores in their walls, and are thence transported via the thoracic duct to central venous blood. A small proportion of fatty acid is not re-esterified and probably is absorbed via the portal blood. There is still controversy over the magnitude of this route of absorption.

CLINICAL SITUATIONS IN WHICH FAT ABSORPTION IS IMPAIRED

Lipase deficiency

In chronic pancreatitis and mucoviscidosis, lipase secretion is reduced or abolished. In theory, one could by-pass lipolysis by feeding pre-hydrolysed fat, but the monoglycerides taste like soap, and the fatty acids irritate the stomach.

Bile salt deficiency

(a) In obstructive jaundice the intraluminal concentration of bile salts falls below their critical micellar concentration, and solubilisation of the products of hydrolysis is therefore impaired. However, even in complete biliary obstruction, up to half the dietary fat is absorbed, demonstrating that bile is not obligatory.

(b) In disease or resection of the ileum, which is the site of reabsorption of bile salts, there is an interruption of their enterohepatic recirculation. The rate of bile salt synthesis in the liver increases, but it does not compensate fully, and there is an intraluminal bile salt deficiency and resulting steatorrhoea. This could be corrected by feeding bile salts, but large doses are required, and commercial preparations contain a large proportion of free bile salts which cause nausea and diarrhoea.

Alteration of bile salts by bacteria

Normally faecal bacteria deconjugate the 10 per cent of bile salts that escape re-absorption in the ileum. If they colonise the upper small intestine they will deconjugate bile salts there also. Unconjugated bile salts are very

inefficient at solubilising lipid, and so steatorrhoea occurs. This situation arises in the blind loop syndrome, jejunal diverticulosis and chronic small gut stricture with proximal stagnation. Intubation studies in these conditions have shown high bacterial counts in jejunal contents, with a high proportion of unconjugated bile salts. All these abnormalities are corrected by antibiotics. It may be that the free bile salts damage the mucosa, for they have been shown to inhibit re-esterification of lipid in isolated tissue strips. This has not, however, been demonstrated in the intact animal.

Mucosal damage and resection

In idiopathic steatorrhoea, coeliac disease and tropical sprue there is generalised damage to the mucosa. Absorptive cells are reduced in number, and biopsy specimens show an impaired ability to re-esterify lipids.

Massive small gut resection may leave insufficient mucosa for normal fat absorption, despite the normal compensatory hypertrophy.

Defective formation of chylomicrons

In a-β-lipoproteinaemia, triglyceride droplets accumulate in the absorptive cell and are not discharged as chylomicrons, and there is steatorrhoea. It is thought that there is a defect in synthesis of the protein layer of chylomicrons, in which case this disease is analogous to the effect of puromycin in animals.

Lymphatic obstruction

In lymphangiectasia, chylomicrons are formed normally but their removal in the lymph is obstructed. They accumulate in dilated lymphatics and between the epithelial cells, and there is steatorrhoea.

Lymph fistula

In chyluria, chylothorax and chylous ascites, lymph rich in triglyceride is lost. This is not strictly a malabsorption state because absorption is normal, but it is mentioned because medical treatment to prevent malnutrition (described below) is of interest in relation to the physiology of fat absorption.

Steatorrhoea due to neomycin therapy

It was previously thought that neomycin caused steatorrhoea by mucosal damage. It is now thought however that it does so by interfering with solubilisation of lipid, because a clear micellar solution of lipid in bile salts becomes opalescent when neomycin is added.

THE ABSORPTION OF MEDIUM CHAIN TRIGLYCERIDES

It has been found that in malabsorptive states triglycerides of fatty acids of chain length below C14 are absorbed more efficiently than long chain fatty acids. From animal studies the differences in their absorption that might account for their clinical value are as follows:

1. Hydrolysis by lipase is more rapid—hence its use in pancreatic disease, although results are variable.
2. They are soluble in water without the aid of bile salts; hence its use in bile salt deficiency.
3. In the absorptive cell very little is re-esterified and most of the fatty acid passes directly into portal vein blood, thus by-passing those stages of absorption that are impaired by various disease states: re-esterification in idiopathic steatorrhoea; chylomicron formation in a-β-lipoproteinaemia; lymphatic transport in lymphangiectasia, and lymphatic leakage in lymph fistula.

THE ABSORPTION OF OTHER LIPIDS

Cholesterol, some sterols and vitamins D, K and A are completely insoluble in water and their absorption is therefore almost totally dependent upon bile salts. This has been shown in animals, and probably explains the clinical observation that in bile salt deficiency there are severe clinical signs of vitamin D and K deficiency, whilst in pancreatic disease these signs are less marked, even though the steatorrhoea may be more severe. Lysolecithin, formed by the action of pancreatic lecithinase upon biliary lecithin, may be found to have a significant role in solubilising these lipids.

REFERENCES

The following are some of the more useful recent review articles which will in turn lead to the very extensive literature on this topic:

DAWSON, A. M. Bile salt and fat absorption. *Gut*, **8**, 1967, pp. 1-3.

DAWSON, A. M. Fat absorption. *Brit. Med. Bulletin* (in print).

DESNUELLE, P. Pancreatic lipase. Advances in Enzymology, **23**, 1961, pp. 129-161.

HOFMAN, A. F. The function of bile salts in fat absorption. Biochem. J. **89**, p. 57.

HOFMAN, A. F., and BORGSTROM, B. Physicochemical state of lipids in intestinal contents during their digestion and absorption. *Fed. Proc.*, **21**, pp. 43-50.

HOLT, P. R. Dietary treatment of protein loss in intestinal lymphangiectasia. The effect of eliminating dietary long chain triglycerides on albumen metabolism in this condition. *Pediatrics*, **34**, 1964. pp. 629-635.

SENIOR, J. R. Intestinal absorption of fats. *J. Lipid Res.*, **5**, 1964, pp. 495-521.

STRAVES, E. W. Electron microscope study of intestinal fat absorption in vitro from mixed micelles containing linolenic acid, monoleiu and bile salt. *J. Lipid Res.*, **7**, pp. 307-323

MITRAL VALVE REPLACEMENT

by N. A. J. Hamer

The introduction of artificial heart valves in recent years has revolutionised the outlook for patients with chronic rheumatic heart disease. Until a few years ago the surgical correction of the valvar abnormalities in these patients was practically confined to the relief of mitral stenosis. Mitral valvotomy is undoubtedly a successful treatment for mitral stenosis when the valve cusps are mobile and the chordae tendineae are not too distorted, but in patients with more seriously damaged valves the relief of the stenosis is often incomplete and may be associated with the production of some mitral incompetence. The surgical treatment of patients with predominant mitral incompetence or with aortic valve disease has in general been unsatisfactory until recently.

Aortic valve disease is usually well tolerated in the early stages, but rapid deterioration follows as soon as the left ventricle begins to fail, and surgical treatment is often needed as a matter of urgency. In mitral valve disease the situation is less clear-cut. The end-result of severe mitral disease is usually several years of increasing disability from pulmonary congestion and right heart failure. Atrial fibrillation is almost invariable and the illness may be complicated by systemic embolism. Many patients have some degree of secondary disease of the pulmonary arterioles producing pulmonary hypertension and accentuating the tendency to right ventricular failure.

The clinical picture of terminal mitral valve disease with congestive failure, low cardiac output, and only a limited response to digitalis and diuretics suggests that the fundamental problem is deterioration in the performance of the heart muscle.

However, experience with mitral stenosis suggests that this is not in fact the case. Some patients with serious pulmonary hypertension and congestive failure due to mitral stenosis make an excellent recovery after mitral valvotomy, and it seems likely that the failure of other patients to respond satisfactorily is due to incomplete relief of the stenosis when the valve is seriously distorted by fibrosis and calcification.

Now that it is possible to replace the mitral valve with a mechanical prosthesis that works nearly as well as the natural normal valve, the true importance of the valvar and the myocardial factors is becoming apparent. Our experience over the last three years suggests that correction of the valvar abnormalities leads to considerable clinical improvement with resolution of the congestive failure. It seems that the myocardial disturbances, which are undoubtedly present and persist to some extent after the operation, are not usually severe enough to prevent the patient returning to a normal life. The conversion of a cardiac invalid to an active housewife or breadwinner justifies the considerable risk of the operation, although of course, the long-term outlook must be guarded.

The insertion of artificial valves has been made possible by the development of open-heart surgery in recent years. The early experience was based on the correction of congenital cardiac abnormalities, and now that the technique of heart-lung bypass has become a relatively safe and routine procedure it is possible to apply it to other forms of heart disease. As with other new operations it is difficult to decide whether to begin treating less severely affected patients who can stand the operation easily or to risk operating on the seriously-ill who might be expected to have a high mortality. In view of the possible complications of putting foreign material into the heart we have adopted the latter policy, and our patients have been those who were not expected to survive for long with conventional management.

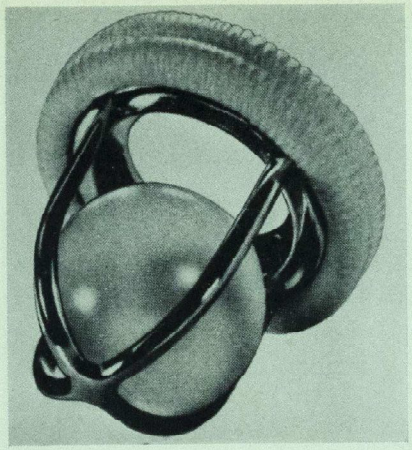


Fig. 1. *The Starr-Edwards mitral valve prosthesis.*

The artificial valve which we have used is the one devised by Starr and Edwards (1961) (Fig. 1). It consists of a ring of cobalt-chromium alloy with a knitted teflon sheath that is sewn to the heart, with a cage of the same metal arising from the ring. The valve action is produced by a silicone-rubber ball in the cage which is driven back on to the ring in systole and falls back into the cage in diastole. Many other types of artificial valve have been designed, but no other valve has been used as extensively. There has been no tendency to breakage of the valve in use, although there have been reports of a degenerative process due to lipid deposits in the ball in some cases in which an inferior batch of silicone-rubber was used.

At St. Bartholomew's Hospital, Mr. O. S. Tubbs and Mr. I. M. Hill have, since the end of 1963, replaced the mitral valve with a Starr-Edwards prosthesis in 50 patients; there are 39 survivors, a mortality rate of 22 per cent. The first patient to survive had intractable heart failure and was operated on in desperation. He made an excellent recovery, and since then we have not thought it justifiable to refuse operation, however severe the heart disease. Detailed analysis of the first 16 patients gives a good idea of the response to operation (Fig. 2).

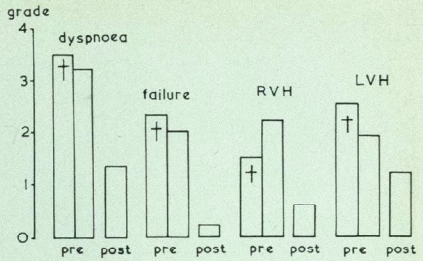


Fig. 2. *Clinical features before and after operation in the first 16 patients undergoing mitral valve replacement. The columns marked with a cross indicate the severity of the changes in the 4 patients that did not survive the operation.*

Four of these patients died at operation, but the remaining twelve have been followed from one to three years and show gratifying improvement. The severity of the breathlessness, congestive failure and ventricular hypertrophy was assessed in four grades, i.e. as slight, moderate, severe or gross. Severe or gross dyspnoea (grades 3 and 4) was present in all these patients before operation and nearly half of them had severe congestive failure in spite of diuretic therapy (grades 3 and 4). The patients who died did not seem more seriously disabled than those that survived, and death was usually due to accidental cerebral or cardiac damage at operation rather than to the severity of the disease. These patients were not given any diuretic therapy after operation, but there was nevertheless a dramatic reduction in the degree of dyspnoea and congestive failure. Only a few had noticeable breathlessness, and the venous pressure was normal or slightly raised. The Starr-Edwards valve is not ideal in that it produces a little obstruction to blood flow in diastole. However, the effect is slight and is not sufficient to produce dyspnoea except on strenuous exercise. In our patients the chest X-rays (Fig. 3) show clearing of the changes due to pulmonary congestion, and cardiac catheterisation studies indicate only slight elevation in the left atrial pressure.

The clinical findings after operation also suggested that there had been considerable resolution of the pulmonary arteriolar changes. There was noticeable less right ventricular hypertrophy, functional tricuspid incompetence disappeared and there was some reduction in

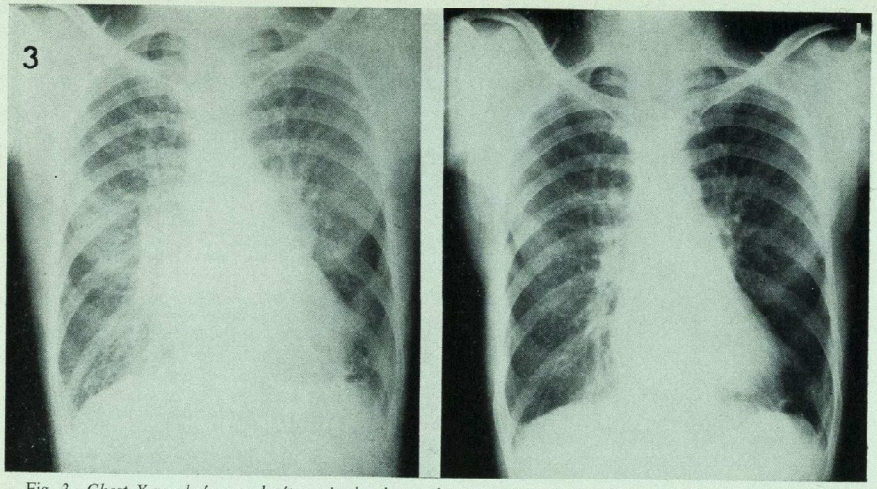


Fig. 3. *Chest X-ray before and after mitral valve replacement showing resolution of pulmonary congestion.*

the size of the pulmonary artery and right atrium on X-ray (Fig. 4). These changes develop gradually during the first few months after operation, and cardiac catheterisation about six months after surgery showed that the pulmonary vascular resistance had fallen to nearly normal levels. The pulmonary vascular obstruction in mitral valve disease has not always resolved after mitral valvotomy, but the uniformly good response to mitral valve replacement suggests that mitral valvotomy may have been incomplete or complicated by mitral incompetence in these cases. The resolution of the pulmonary arteriolar disturbances after mitral valve replacement indicates that these changes are a secondary effect of the pulmonary congestion.

The post-operative management of patients with severe pulmonary hypertension is difficult and in most thoracic surgical centres patients with pulmonary hypertension are not accepted for operation. Dr. T. B. Boulton and his team have had to maintain these patients with high concentrations of oxygen on a ventilator for many days to obtain these results. A tracheostomy is often required and a very high standard of nursing care is needed, particularly to prevent infection.

Two of the patients in this group have unsatisfactory results because of a leak of blood alongside the mitral valve, probably due to one of the fixing sutures cutting out. This "para-mitral incompetence" leads to pulmonary congestion and reduces the benefit of the operation. It also accentuates the haemolysis produced by the action of the mechanical prosthesis on the red cells. The bone marrow is usually able to compensate for the haemolysis so that anaemia is not produced if the valve is functioning satisfactorily.

The very great clinical improvement in most patients after mitral valve replacement is evident from the absence of breathlessness. However, the persistent left ventricular hypertrophy and the cardiac enlargement in the chest X-ray suggest that there is some residual myocardial disease. It is difficult to assess the exercise tolerance as the patients were so limited before operation that they are inclined to think of an ability to lead a normal life at home and at work without noticeable dyspnoea as a return to normal. Nevertheless, several patients have been able to swim and cycle without difficulty.

It seems likely that there have been considerable changes in the structure of the heart muscle during the years of chronic failure before the operation in these patients. Distension and hypertrophy are often associated with fibrosis, and these changes will remain after the operation. The ventricle will become smaller when the effects of valve incompetence and failure are removed, but it seems unlikely

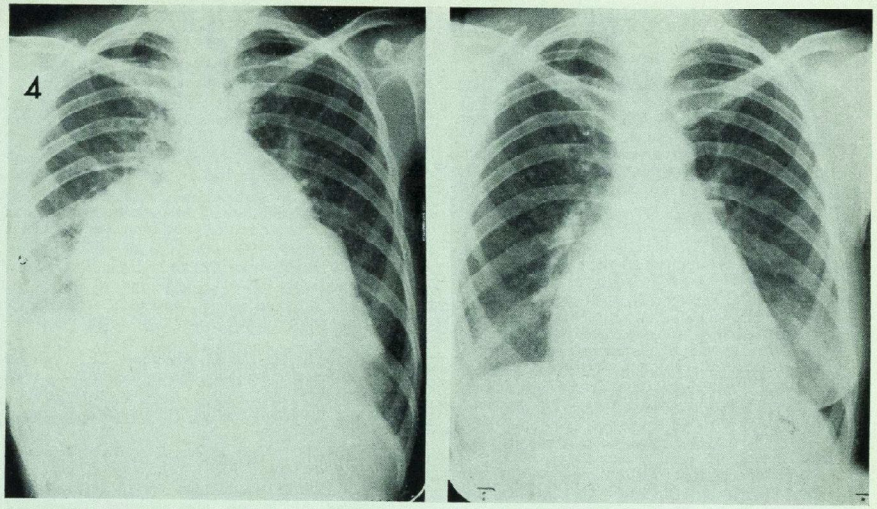


Fig. 4. Chest X-ray before and after valve replacement showing reduction in size of the pulmonry artery and right atrium.

that it will be restored to normal. It may be that further cardiac symptoms will arise in these patients as time goes by, but the operation will probably give a satisfactory result for the natural life expectancy of patients in the fifth and sixth decade. A striking clinical feature has been the gain in body weight after operation. Many patients have gained from one to two stone in weight; an indication of the degree of cardiac cachexia before surgery.

One difficulty with mitral valve replacement is the tendency to thrombosis on the prosthesis and subsequent systemic embolism. Satisfactory anticoagulant therapy greatly reduces this risk, and we are fortunate in Britain in that good control of anticoagulant treatment is freely available in all parts of the country. The situation in the United States in this respect is less satisfactory. Embolic incidents have, happily, not been frequent in our patients. One patient had a cerebral embolus on the day after operation, before anticoagulant treatment started. One patient operated on recently died suddenly a few months later from a cerebral vascular accident. Our experience in this respect has been distinctly fortunate in comparison with some other centres.

Associated tricuspid valve disease is not usually severe enough to need surgical treatment and in these patients we have preferred to replace the mitral valve only. In patients with pulmonary hypertension the tricuspid incompetence usually resolves gradually after operation, but other patients with organic tricuspid valve disease are left with persistent abnormalities. We have found that the disadvantages of a prolonged operation to replace both valves outweighs the post-operative difficulties with venous congestion due to the uncorrected tricuspid abnormalities.

Cardiac surgery is now in the position of being able to restore patients bedridden with severe rheumatic heart disease to a useful active life. However, operation in these patients has a considerable mortality, and the insertion of a prosthetic valve introduces the risk of embolism, of anticoagulant treatment, and of haemolysis. Persistent myocardial damage may prevent a complete recovery. Operation at an earlier stage in the disease may lead to a lower mortality and a better result as the myocardium will be less damaged. At present there are so many seriously affected patients needing valve replacement that there is no question of operating on those with moderate disease. However, the future outlook for patients with chronic rheumatic heart disease has been dramatically improved by this operation.

RECENT PAPERS BY BART'S MEN

AUMONIER, F. J. *see* Cave, A. J. E., and ——.

*BACKHOUSE, K. M. The hand in rheumatoid arthritis. *Hospital Medicine*, 1, 1967, pp. 329-334.

——. The interosseous muscles and metacarpophalangeal movements in the hand. *J. Anat.*, 101, 1967, pp. 180-181.

*BAKER, D. J., and others. Monitored regional hypoxia in radiotherapy. *Br. J. Radiol.*, 39, 1966, pp. 908-914.

BENTALL, A. P. Planning a modern maternity hospital. *Practitioner*, 198, 1967, pp. 248-255.

BETHUNE, D. W., and COLLIS, J. M. The evaluation of oxygen masks: a mechanical method. *Anaesthesia*, 22, 1967, pp. 43-54.

——, and CRICHTON, T. C. A modified Ayres T-piece. *Anaesthesia*, 22, 1967, pp. 160-161.

BLUNT, M. J., and others. Oxidative enzyme activity in macroglia and axons of cat optic nerve. *J. Anat.* 101, 1967, pp. 13-26.

BORRIE, P. F. Pretibial myxoedema. *Proc. R. Soc. Med.*, 60, 1967, p. 183.

——, and others. The treatment of psoriasis with methotrexate. *Br. J. Derm.*, 79, 1967, pp. 7-77.

BOULTON, T. B. Anaesthesia in difficult situations. 4. The use of local analgesia. *Anaesthesia*, 22, 1967, pp. 101-133.

BOWEN, R. A. An introducer for difficult intubation. *Anaesthesia*, 22, 1967, pp. 150-152.

*BOXALL, T. A. Emergency surgery in ulcerative colitis. *Gut*, 7, 1966, pp. 606-611.

BRAIMBRIDGE, M. V., (with others). Possiblity of a new infective aetiological agent in congestive cardiomyopathy. *Lancet*, Jan. 28, 1967, pp. 171-176.

BUCKLE, R. M. Studies on blood keto acids in vitamin deficiency. *Proc. R. Soc. Med.*, 60, 1967, pp. 48-52.

*CASSON, F. R. C. Dreams and dreaming. *Family Doctor*, Feb., 1967, pp. 784-786.

*CAVE, A. J. E., and AUMONIER, F. J. A note on lymph node structure in *Choeropsis*. *Jl. R. microsc. Soc.*, 85, 1966, pp. 413-415.

*——, and AUMONIER, F. J. Parathyroid histology in the *Rhinocerotidae*. *Jl. R. microsc. Soc.*, 86, 1966, pp. 51-57.

*CHAMBERLAIN, D. A. Effects of beta adrenergic blockade on heart size. *Amer. J. Cardiol.*, 18, 1966, pp. 321-328.

*CHARLTON, C. A. C. Pathogenesis of urolithiasis: relation of urinary fibrinolytic activity to non-dialyzable urinary solids. *Surg. Forum.*, 17, 1966, pp. 503-505.

*——, (and Evans, D. J.) Multicystic kidney and contralateral polycystic kidney in an adult. *Br. J. Urol.*, 38, 1966, pp. 505-509.

*——, (and Richardson, W. W.) Squamous cell carcinoma of an ectopic kidney with staghorn calculus: case report. *Br. J. Urol.*, 38, 1966, pp. 428-431.

COLLIS, J. M., see Bethune, D. W., and ——.

CRICHTON, T. C., see Bethune, D. W., and ——.

CUNNINGHAM, G. J., with others. A histological and histochemical examination of autogenous vein grafts. *Br. J. Surg.*, 54, 1967, pp. 147-155.

*DISCOMBE, G. Some problems of staffing the hospitals. *Br. med. J.*, Dec. 3, 1966, pp. 1382-1383.

DOSSETOR, J. B. Creatininemia versus uremia: the relative significance of blood urea nitrogen and serum creatinine concentrations in azotemia. *Ann. intern. Med.*, 65, 1966, pp. 1287-1299.

*DREW, W. R. M. John Hunter and the army. *J. roy. Army med. Cps.*, 113, 1967, pp. 5-17.

EDWARDS, G., (and others). Setting up a therapeutic community. *Lancet*, Dec. 24, 1966, pp. 1407-1408.

*FAIRLEY, G. H., (with Alexander, P.) Cellular resistance to tumours. *Br. med. Bull.*, 23, 1967, pp. 86-92.

*FLAVELL, G. Hiatus hernia. *Nursing Mirror*, Jan 6. 1967, pp. v-vii.

HAMILTON, W. J., (and others). Early twin pregnancy. *J. Anat.*, 101, 1967, p. 182.

*HARRIS, J. W. S., (and Ramsey, E. M.) The morphology of human uteroplacental vasculature. *Contributions to embryology*, No. 260, 1966, pp. 43-58.

*——, (with Ramsey, E. M.) Comparison of uteroplacental vasculature and circulation in the rhesus monkey and man. *Contributions to embryology*, No. 261, pp. 59-70, 1966.

HAVARD, C. W. H. Clinical disorders associated with abnormalities in the thymus. *Hospital Medicine*, 1, 1966, pp. 206-209.

*HIBBARD, B. M. Folic acid and reproduction. *Nursing Mirror*, Jan 6, 1967, pp. 305-307.

HOFFBRAND, A. V., (with Neale, G.) The nutritional consequences of surgery for peptic ulceration. *Hospital Medicine*, 1, 1967, pp. 402-407.

HOWELL, T. H. Invalidism in hemiplegic patients. *Nursing Mirror*, Jan. 13, 1967, pp. i-iv.

HUDSON, M. D. "The other side of the fence" . . . A look at general practice. *South London Faculty Journal, The College of General Practitioners*, Sept., 1966, pp. 10-16.

*HUNT, A. H. The results and complications of the surgical treatment of portal hypertension due to cirrhosis of the liver. *Br. J. clin. Pract.*, 20, 1966, pp. 607-610.

*——. The spleen. *In*, Rob, C. and Smith, R., *Eds., Clinical Surgery*, v. 10, 1966, pp. 218-228.

*HUNTER, R. One hundred years after John Conolly. *Proc. R. Soc. Med.*, 60, 1967, pp. 85-89.

HUNTSMAN, R. G., (with Elkington, S. G.) The Talbot fingers: a study in symphalangism. *Br. med. J.*, Feb. 18, 1967, pp. 407-411.

JONES, P. F. Intravenous infusion techniques. *Proc. R. Soc. Med.*, 60, 1967, pp. 72-74.

KAZANTZIS, G., (with others). The performance of nasal catheters and a face mask in oxygen therapy. *Lancet*, Feb. 25, 1967, pp. 415-417.

KERSLEY, G. D. Allopurinol in primary gout with and after the administration of uricosuric agents. *Ann. rheum. Dis.*, 25, 1966, pp. 643-644.

KINMONTH, J. B., (with others). Selective lymphopenia in man after intralymphatic injection of radioactive ^{131}I Lipiodol. *Br. med. J.*, Feb. 11, 1967, pp. 331-335.

LAWTHER, P. J. Air pollution, bronchitis and lung cancer. *Postgrad. med. J.*, 42, 1966, pp. 703-708.

LINDOP, Patricia J., *see* Baker, D. J., and others.

*MCCOLL, I. The comparative anatomy and pathology of anal glands. *Ann. R. Coll. Surg.*, 40, 1967, pp. 36-67.

*MAINGOT, R. Observations on pancreatitis. *Roy. Free Hosp. J.*, 29, 1966, pp. 169-186.

MEDVEI, V. C., *see* Spence, A. W., and ——.

MILLARD, F. J. C. The electrocardiogram in chronic lung disease. *Br. Heart J.*, 29, 1967, pp. 43-50.

MISIEWICZ, J. J., (with others). Observations on the absorption of oral betamethasone 17-valerate and its therapeutic value in ulcerative colitis. *Br. med. J.*, Feb. 11, 1967, pp. 335-337.

MORGAN, B. W. G., *see* Baker, D. J., and others.

*MUIR, G. G., and CANTI, G. 6-phosphogluconate dehydrogenase (6 PGD) activity in the vaginal fluid in benign and malignant gynaecological lesions. *J. Obstet. Gynaec. Brit. Cwlth.*, 73, 1966, pp. 611-620.

*MURLEY, R. S. Hernia, excluding hiatus hernia. *In*, Rob, C. and Smith, R., *Eds. Clinical Surgery*, V.10, 1966, pp. 21-40.

*——, (with others). *Towards a welfare society: the report of an Institute of Economic Affairs study group. London, April, 1967*, 1967.

O'GRADY, F. Differences in ammonia production by faecal bacteria of patients with hepatic encephalopathy. *Proc. R. Soc. Med.*, 59, 1966, p. 56.

*——. Tuberculin reaction in tuberculosis. *Br. med. Bull.*, 23, 1967, pp. 76-80.

*——. Measurement of drug action in experimental *Candida* infections. *In*, Winner, H. I. and Hurley, R. *Eds. Symposium on Candida infections*, pp. 54-64.

——, and PENNINGTON, J. H. Synchronized micturition and antibiotic administration in treatment of urinary infection in an *in vitro* model. *Br. med. J.*, Feb. 18, 1967, pp. 403-406.

*OSWALD, N. C. Thérapeutique de la bronchite chronique. *Méd. et Hyg.*, 24, 1966, pp. 1230-1233.

PARRISH, J. A., *see* Misiewicz, J. J., (with others).

PENNINGTON, J. H., *see* O'Grady, F., and ——.

*PERKINS, E. S. Recent advances in the treatment of glaucoma. *Trans. Ophthal. Soc.*, 86, 1966, pp. 199-210.

*——. Tonometry. *Proc. R. Soc. Med.*, 60, 1967, pp. 63-65.

REES, W. LINFORD. Diagnosis and treatment of depressive and obsessional states in industry. *Proc. R. Soc. Med.*, 60, 1967, pp. 177-179.

ROBINSON, T. W. E., *see* Borrie, P. F., and others.

ROTHNIE, N. G., *see* Cunningham, G. J., with others.

ROYLE, J. P. Critical evaluation of the assessment of maximal gastric secretion stimulated by histamine. *Br. J. Surg.*, 54, 1967, pp. 56-63.

*RUSSELL, B. F. Idiopathic and disseminated eczema. *Br. med. J.*, Dec. 31, 1966, pp. 1637-1639.

*SHOOTER, R. A., and others. Faecal carriage of *Pseudomonas aeruginosa* in hospital patients: possible spread from patient to patient. *Br. med. J.*, Dec. 17, 1966, pp. 1331-1334.

SKEGGS, D. B. L., *see* Baker, D. J., and others.

SPECTOR, W. G. Histology of allergic inflammation. *Br. med. Bull.*, 23, 1967, pp. 35-38.

SPENCE, A. W., and MEDVEI, V. C. Fenfluramine in the treatment of obesity. *Br. J. clin. Pract.*, 20, 1966, pp. 643-644.

TAYLOR, G. W., *see* Cunningham, G. J., with others.

THORNE, N. Some dermatological problems of dark-skinned people. *Br. J. clin. Pract.*, 21, 1967, pp. 53-55.

WALKER, K. A., *see* Shooter, R. A., and others.

WATTS, R. W. E. Allopurinol in the therapy of neoplasia and blood diseases: metabolic aspects. *Ann. rheum. Dis.*, 25, 1966, pp. 657-659.

WEAVER, P. C. Ruptured amoebic abscess leading to inferior vena cava obstruction. *Proc. R. Soc. Med.*, 60, 1967, pp. 136-137.

WENDELL-SMITH, C. P., *see* Blunt, M. J., and others.

WHITTLE, R. J. M., *see* Baker, D. J., and others.

WILLIAMS, I. G. 'Let there be light': the treatment of advanced retinoblastoma by external irradiation. *Proc. R. Soc. Med.*, 60, 1967, pp. 189-196.

——. *see also* Baker, D. J., and others.

WILLIAMS, Veronica R., *see* Shooter, R. A., and others.

WILLOUGHBY, D. A., (with Schild, H. O.). Possible pharmacological mediators of delayed hypersensitivity. *Br. med. Bull.*, 23, 1967, pp. 46-51.

*WYATT, A. P., and others. A study on the ground substance of arteries, veins and grafted veins in dogs. *Exp. molec. Path.*, 5, 1966, pp. 531-538.

* *Reprints received and herewith gratefully acknowledged. Please address this material to the Librarian.*

St. Bartholomew's Hospital Journal

View Day Colour Supplement

Presented by the Board of Governors

MAY 10th 1967

Bart's & the future

A Symposium held in the Great Hall on 14th December, 1966

It was, said the Treasurer, 'an experiment in communications' and designed to tell the staff of the Hospital not only something of the events of the past twenty-five years, 'but, more importantly, the substance of the policy we are trying to implement for the future and to stimulate comments and questions which I hope will be constructive.'

After this brief introduction, Sir Michael Perrin was followed by the Clerk to the Governors who discarded, as he put it, some eight centuries of history to outline the pattern of development at West Smithfield since 1939. Mr. Gooddy reminded his audience that, on the outbreak of World War II the Hospital had 763 beds; of these 345 had been retained at West Smithfield while a 'second Bart's' had been built up at Hill End Hospital, near St. Albans. This arrangement was to continue in force for longer than most people had anticipated at the time; in 1945 there were 500 beds at Hill End and when the National Health Service came into operation in 1948, 400 of them still remained there.

While it was the declared intention of the Board of Governors at the time to reunify the Hospital on the Smithfield site (fig. 5) they had, said the Clerk, an annual capital allocation, from the Ministry of Health, of £60,000 for this purpose against an estimated cost of £1¼ millions. Eventually it had been decided to use the accumulated interest from the Hospital's Endowed Funds and, within the precinct of Bartholomew Close, it became possible to build the Queen Elizabeth II Wing, Gloucester House Nurses' Home and the Radiotherapy Department. This operation, and others of a less substantial nature in the East and West Wings, had enabled the special departments to return to West Smithfield and, by 1961, the intention of the Governors had been realised, (fig. 5). But, what of the future?

In 1962 the Board had accepted the need for a substantial maintenance programme "involving the themes of more scientific support for the clinician; the modernisation of patient areas, and the refinement of the 'Island Site' so that less essential services could function on the periphery". "At the same time," said the Clerk, "the Hospital had had to remain operational, and to keep abreast of developments in the field of medical and para-medical services. All this had been done, but further major and substantial redevelopment was now necessary to carry the Hospital forward for the next twenty or thirty years. The extent and direction of this, however, could not be determined until the Governors knew—from the Ministry of Health—the essential prerequisite for major planning: the number of beds on the Smithfield site; the relationship with other hospitals in the Region, and the facilities to be provided for the University." When these three questions had been answered, Mr. Gooddy concluded, it would be possible to go forward in the words of the Committee which instructed James Gibbs in 1729,—"That all future buildings to regulated and done in all respects agreeable to the same plan and design".

Following the Clerk, The Treasurer, Sir Michael Perrin, enlarged on the problem of future development. "The Hospital," he said, "had submitted the Board's views of its requirements to the Ministry of Health in 1962 and 1965, for the first and second national long term hospital plans. But, as far as our aims are concerned, the answers were generally dusty ones and not very helpful." Sir Michael then went on to say that, since 1962, the Hospital had spent just over £1 million on the modernisation of existing buildings and services both for patients and staff in order to ease operational problems; of this total rather less than a half had come from the Endowment Funds, of which the Board of Governors were Trustees. This he explained, had been made possible by the 'new look' taken of Endowment Funds by the Board in 1962, which, in essence, amounted to acceptance of the fact that the income from the Endowment Fund

Fig. 1. St. Bartholomew's-the-Less:—to remain undisturbed.

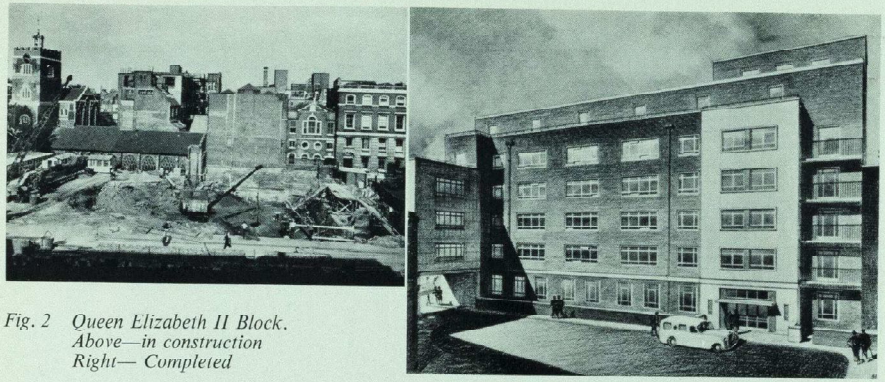


Fig. 2 *Queen Elizabeth II Block.*
Above—in construction
Right— Completed

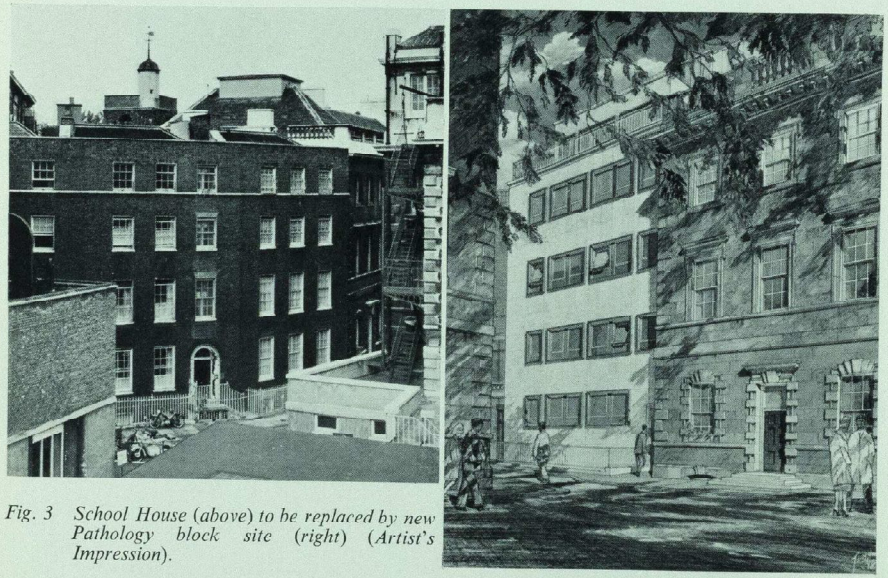


Fig. 3 *School House (above) to be replaced by new Pathology block site (right) (Artist's Impression).*

should be used for appropriate purposes and not allowed to accumulate over many years, while the capital of the Endowment Fund should be employed when necessary provided that longterm replacement funds were set up. But, said the Treasurer:

"I think we ought to face the fact that this sort of essential 'make do and mend' activity has gone far in the last few years and we are really now up against the point where we are confronted with major policy issues for the future. And I'd like to take the line that it is our job in the Hospital to decide, and to stick to, a broad policy, thought out on the basis of what seem to us the most reasonable assumptions at the present time. I suggest that these are:

(i) That an undergraduate teaching hospital, such as Bart's, must work in collaboration with the medical school associated with it. And we must always remember that this involves a dual allegiance, on the one hand to the Ministry of Health and, on the other, to the University of London.

(ii) Secondly, that the current (and possibly still greater) increase in the number of medical students makes it imperative that there should be a proportionate and, much greater, increase in the facilities for clinical teaching.

(iii) That a teaching hospital and its associated medical school must have three aims which I do not put in any order of priority because they are all equally important:

(a) *The care of patients.*

(b) *The provision of opportunities for advances in medicine, linked with research.*

(c) *The ability to provide, for the doctors of the future, not only experience of the rare and difficult cases, but of the day to day problems of the health of the community*".

Sir Michael went on to say that, in the light of this, the Board of Governors had recently pressed the Minister of Health for permission to take on an enlarged district responsibility and for the designation of a number of hospitals which were now the responsiblity of the N.E. Metropolitan Regional Hospital Board. The Minister had asked that detailed discussion of this proposal should take place through the machinery of a Joint Consultative Committee of the interested parties although, as the Treasurer said, the Minister would himself have to make the final decision. "If", said Sir Michael, "a successful conclusion comes from this debate, our idea would be to build up the total Smithfield site; it would be desirable to think not of very many more beds on it, but of the use of the increased area to provide much better clinical facilities for teaching, specialist services and research activities; we could then look to the designated hospitals for approximately 1,000 additional beds and out-patient facilities as part of an effective district service."

The next speaker was the Chairman of the Planning Sub-Committee of the Board, Mr. H. M. O'Connor, who outlined the way in which the Sub-Committee worked, mentioned the use of Project Teams for individual schemes and referred to the major redevelopment plan (fig. 6) (prepared by Mr. W. A. Guttridge, of Messrs. Adams, Holden & Pearson, the Hospital Architects), which, he said, would initially involve the redevelopment of the area of the West Wing, the present out-patient department and the museum block. Mr. O'Connor then introduced Mr. Guttridge.

"The general idea", said Mr. Guttridge, "is firstly to develop that part of the island site which is most easily susceptible to development, namely, the out-patient building, the main kitchen area and the West Wing . . . and to transfer to it the work of the obsolescent wards

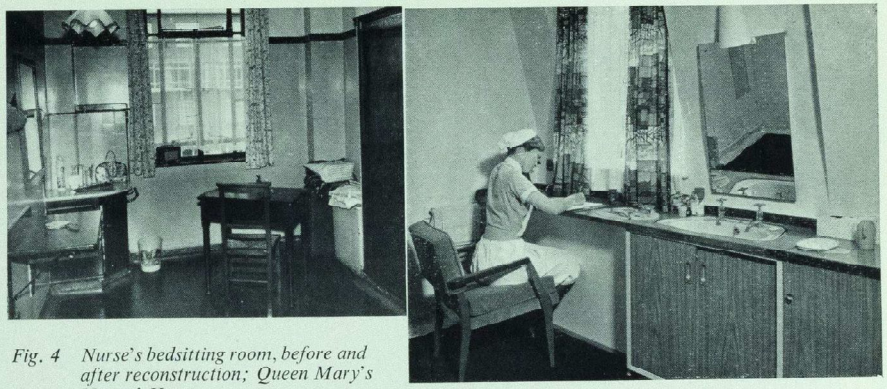


Fig. 4 *Nurse's bedsitting room, before and after reconstruction; Queen Mary's Nurses' Home.*

Fig. 5

The Present Hospital Site

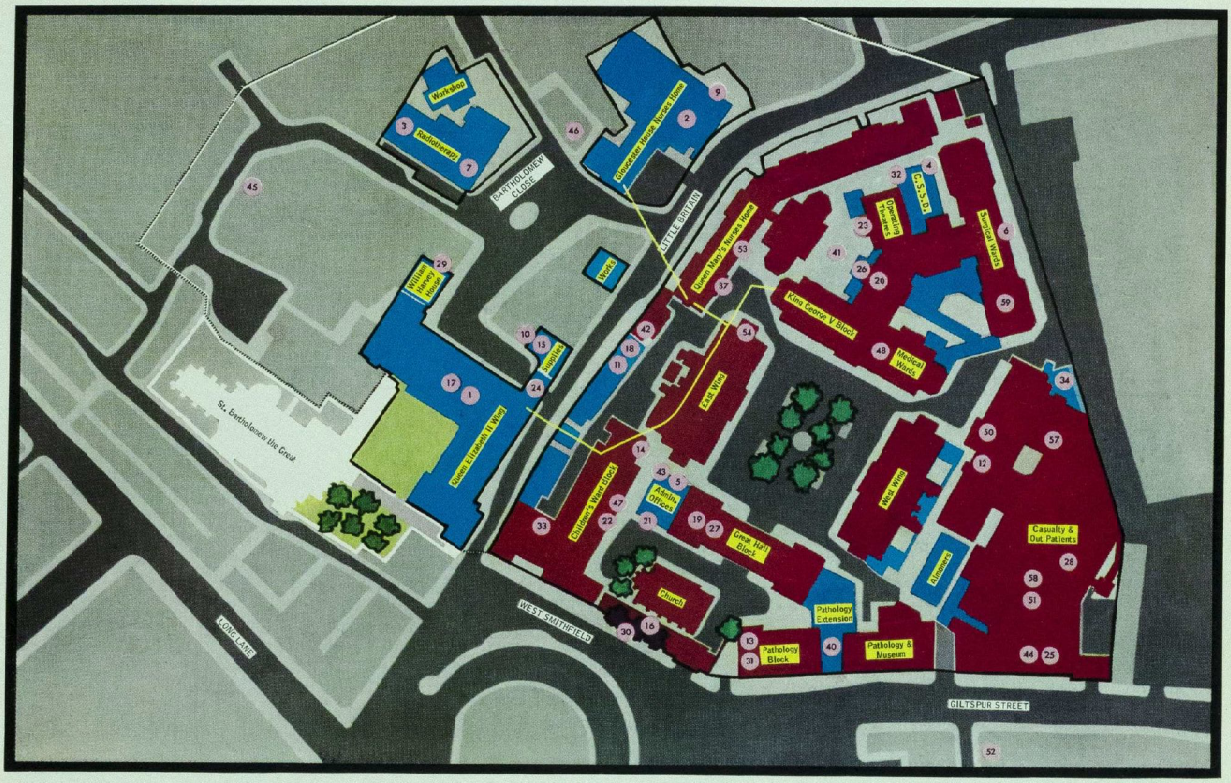
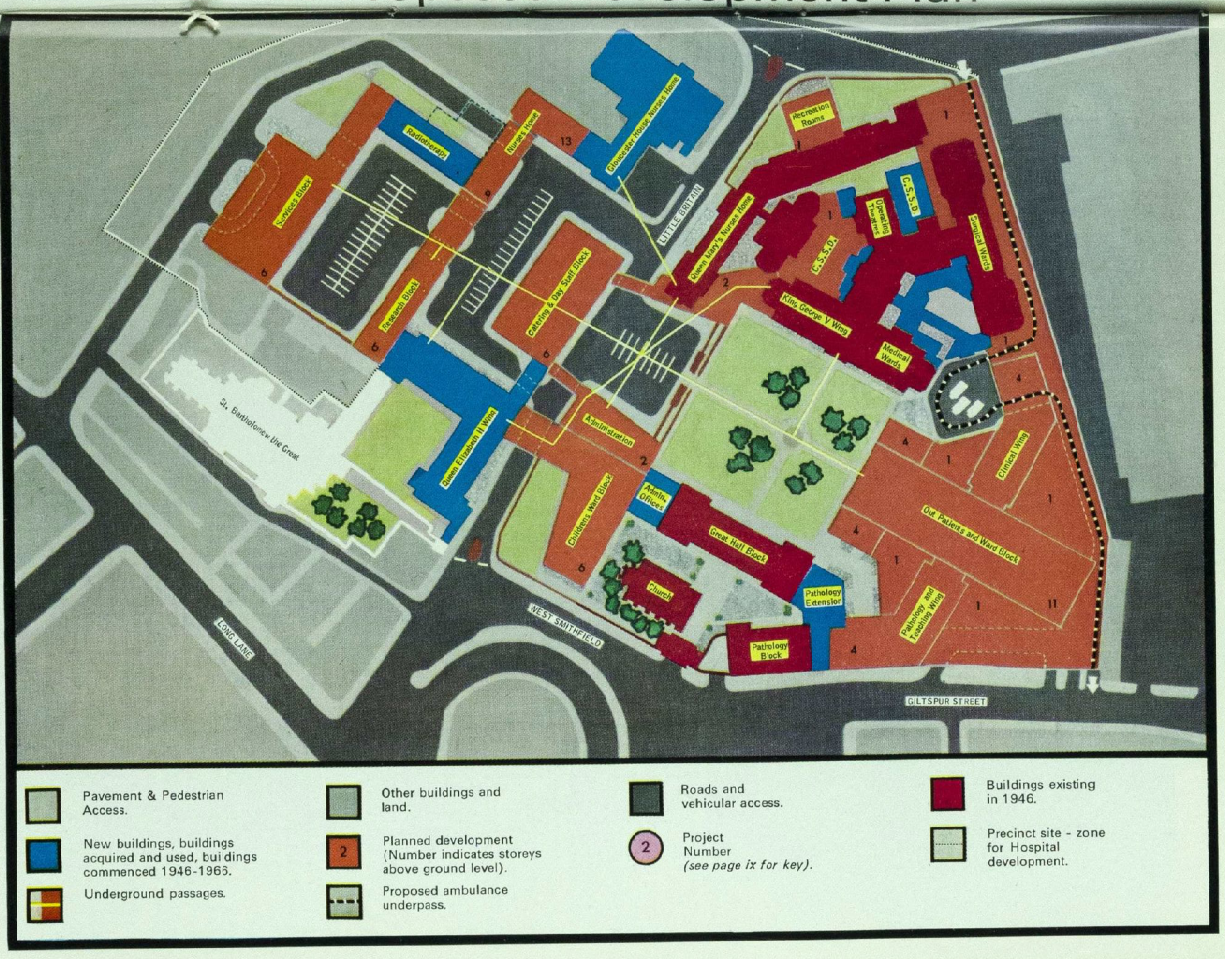


Fig. 6

The Proposed Development Plan



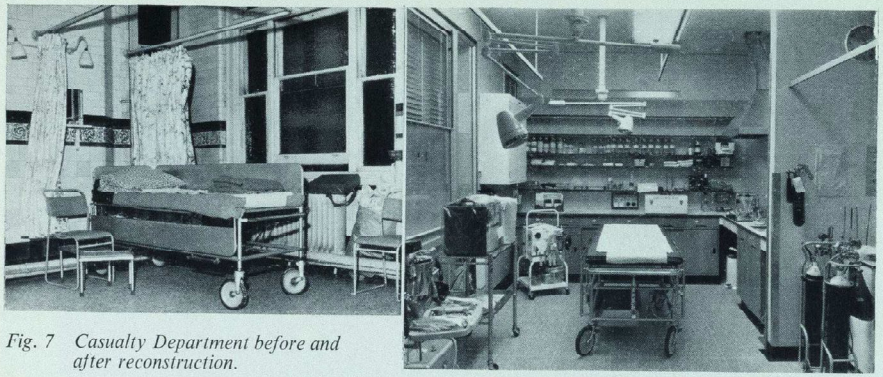


Fig. 7 Casualty Department before and after reconstruction.

in the East and West Wings; then to rebuild the out-patient and casualty departments and reorganise the whole of the traffic circulation of the Hospital. The one vital element in the whole scheme is the Kitchen, which must really be removed from the island site to leave freedom to move; also, goods and refuse disposal and the service function must be taken right out of it, connecting the new buildings by a two storey subway, the upper storey being for patients and visitors and the lower storey for goods and services. Having done this it is hoped that traffic will be taken out of the Square, that Little Britain will have been closed, and that there will be an underground garage for 160-200 cars."

After these introductory statements the Treasurer threw the meeting open to general questions and answers; Dr. J. H. Margerison wondered what the distribution of beds and specialist services might be between Smithfield and the designated hospitals; Dr. T. B. Boulton felt that the key to future planning was the centralisation of medical technology and wondered, in fact, whether "Big Brother Minister" was really concerned about building better hospitals. The Treasurer said, in reply to his second point, that it was not really a question of the Ministry of Health alone, nor even of the Treasury, but of government policy and of the allocation of the total economic resources of the country. "And if they say we haven't got the money to support what we believe to be necessary we may be stopped, but there is no reason why we shouldn't say what it is we want to do, and we can help ourselves as far as we can along the road . . . ."

Sir Michael added, in reply to a further point from Dr. Boulton, that he did not think it was politically wise to make a public issue of "what we think we ought to get at Bart's when there are scores of hospitals in the country whose case for support is far more dramatic than ours and would be far more acceptable to public opinion". Mr. J. W. Holt emphasised this too, when speaking as Chairman of the Supplies Sub-Committee of the Board:—

> "Dr. Boulton mentioned the question of equipment and the difficulty of getting it . . . it is our desire to supply what is necessary . . . but we are tied to the Ministry and if the Ministry refuses to be convinced then there is little opportunity of getting it. There are a vast number of hospitals in the country nowhere near the same standard as Bart's . . . I know that this is no consolation, but it is a fact."

Mr. D. F. Ellison Nash felt that Dr. Boulton and others were perhaps a little unfair. "It is very difficult to convey to a meeting like this all that has been going on", and he was afraid that not everybody appreciated the variety of obstacles in the way of the Hospital's development.

Other questions covered the development of car parking facilities; the participation by junior medical staff in the planning of departments in which they worked, and the creation of day hospital or hostel facilities for patients not requiring intensive nursing care.

And on this note Sir Michael brought the formal proceedings of an interesting and stimulating evening to a close. Informal discussion over sherry, and around the exhibition provided by the Department of Medical Illustration, continued for some time, and perhaps the Treasurer's first experiment in communication was well and truly justified if, with suitable modifications, it could be made a regular feature.

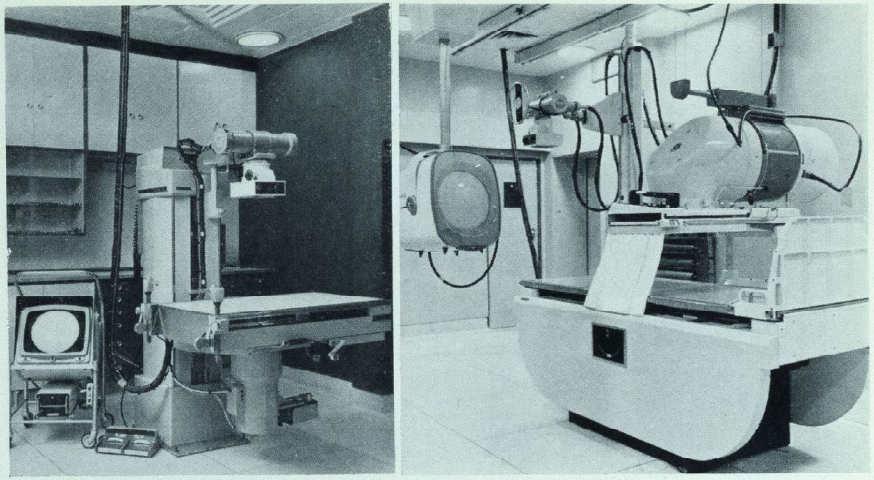


Fig. 8 The new Endoscopy Theatre

KEY TO PROJECT NUMBERS AS FIGS. 5 AND 6 — AND THEIR COST.

Projects completed	**£**
1. Queen Elizabeth II Block	863,930
2. Gloucester House Nurses Home	449,903
3. Radiotherapy Department Phase 1	129,000
4. Central Sterile Supply Department	43,947
5. Administrative Office Extension	25,374
6. Dunn Laboratories	24,494
7. Radiotherapy Department Phase 2	39,070
8. Ring Mains Phase 1	22,416
9. Gloucester House Fire Escape	12,062
10. New Telephone Exchange	23,504
11. New Abernethian Room	23,940
12. Modernisation of Department of Medical Illustration	10,925
13. Modernisation of PM Room and Animal House	15,731
14. Offices for Department of Anaesthetics	750
15. Supplies Office, Stores and Printing Department	7,434
16. New Personnel Offices	2,163
17. Ventilation of Cardiological Dept.	5,087
18. Lay Staff Rest Room	(included in 11)
19. Great Hall Phase 1	26,670
20. Metabolic Ward Unit King George V Block	2,000
21. Administrative Block—Provision of Canopy	1,906
22. Rehabilitation Unit—Occupational Therapy and Physiotherapy Depts.	800
23. Main Theatres Ventilation	23,295
24. Intensive Therapy Unit, Vicary Ward	1,919
25. Casualty Department Stage 1	55,355
26. Endoscopy Theatre	44,290
27. Great Hall Phase 2	71,000
28. Automatic Processing—Main X-Ray Department	15,098
29. Conversion of William Harvey House	47,696
30. Visitors' Canopy, West Smithfield	8,474
31. Modernisation of Mortuary	11,994
32. Central Sterile Supply Department Completion	18,300
33. Lucas Block Basement, Alterations	36,406
34. 35. Modernisation of Incineration Area and Ring Mains Phase 2	93,980
36. Charterhouse Chambers 1st. Floor—Alterations	24,066

Projects in progress	**£**
37. Queen Mary's Nurses Home —4 Contracts	200,100
38. Signposting Throughout The Hospital	1,600
39. 56/58 Bartholomew Road, Steff Hostel	91,191
40. Pathology Extension	396,249
41. Central Sterile Supply Department Extension	76,919
42. Planning Office and Registrars' Common Room	48,251
43. Administrative Office and Extension	17,996
44. Casualty Department Stage 2	78,654
45. 51/53 Bartholomew Close —First Floor	35,000

Projects in Planning Stage	**£**
46. Gloucester House Extension	600,000
47. Children's Wards, Alterations	20,000
48. Medical Wards, Alterations	170,000
49. Zachary Merton Convalescent Home	?
50. Dispensary, Improvements	?
51. Out-Patient Area Redevelopment Phase 1	?
52. Cock Lane Project	?
53. Central Linen Room	?
54. Improvements to Sanitary Annexes, East Wing	54,500
55. New Boiler House, Swanley Laundry	49,600
56. Ring Mains Phase 3	?
57. Special Treatment Centre, Improvements	1,250
58. Out-Patient Department and Medical Records, Ventilation	24,000
59. Surgical Wards, Double Glazing	17,600

The History of View Day

by N. J. Kerling
Archivist to the Hospital

The history of our annual View Day is intriguing. When did it start and why? Were outsiders always allowed to visit the hospital on that day? To get an answer to these questions we have to go back a long way.

St. Bartholomew's Hospital was founded in 1123 together with a Priory for Austin Canons, but by the end of the Middle ages the two institutions worked almost independently of each other. Yet when the Priory was dissolved in 1539 the Hospital was threatened with the same fate and there must have been a feeling of great frustration among those who were in charge. They probably felt that it was no use planning for the future in such uncertain times. Money for rents of the property seems no longer to have been collected and the necessary equipment was not bought. In December 1546 the King granted the Hospital to the City of London and the first Governors were appointed. They soon discovered that of the Hospital's property some houses were "in great decaye and some rotten ruynous". In the hospital itself they found "so much of housholde ymplementes and stuffe towarde the succouryng of this hundred poore, as suffised thre or foure harlottes, then lieng in chyldbedde, and no more, yea barely so muche, if but necessary clenlinesse ware regarded". No wonder that it was felt that what was needed in the first place, was to secure a regular income with which any essential commodities could be bought. The minutes of the Governors' meetings which have been preserved from 1549 onwards, show how conscientiously the administrators pursued this task. On nearly every page of the 16th century Journals it is stated that some property was "viewed", repairs were discussed and new leases arranged. Sometimes the Governors went as far away as Hendon in Middlesex or Dunton in Essex. After 1551 it became the custom to visit the hospital's land and tenements in the City and suburbs of London regularly once a year. It is understandable that this viewing of the extensive London property was a long and tiring work which sometimes took two days and one can imagine that the viewers were ready for a good meal afterwards. Because the money for these Annual View Day dinners was paid by the hospital, we can follow the history of this event in the Treasurer's Accounts. The first of these dinners took place on 9 March 1568/9 when the steward was paid 40 shillings for the "fewe dynner". After that year they were held regularly sometimes in the "Pope's Head" in Lombard Street, sometimes at the "Shipp neare the Exchange". The last of these dinners seems to have taken place in 1730 when the Treasurer accounted for £12.15.0. The next year no dinner is mentioned in the accounts, neither is there any reference to an Annual View Day of the London property in the minutes of the Governors' meetings. In 1732 a new entry appeared in the ledger of the Treasurer: "paid for a dinner at the View of the house £16.1.6". The hospital was at that time being completely rebuilt by James Gibbs. He began in 1730 and in 1732 two admission rooms for patients next to the great staircase (now part of the Clerk's office) were finished. Was the "View of the house" a view of these new rooms? It seems quite likely for every year during the 18th century the new buildings were "viewed", generally on the Monday two weeks before Easter Monday. Though views of the hospital property were still carried out by the Governors, an annual view of the London houses seems never to have taken place after 1730. After 1748 a surveyor was employed who, whenever necessary, carried out surveys, thus relieving the Governors of this strenuous task.

So far we have not mentioned any patients, but here again we have to go far back into history to explain how it happened that a view of the building in the 18th century changed into a view of the wards and the patients as we know it today.

View Day at the turn of the Century.

In the Middle Ages special services were held in Easter week in the Priory or hospital of St. Mary without Bishopsgate, generally called St. Mary Spital. They were held to attract people's attention to the hospital and to induce them to give money and to arrange for bequests to this charity. In the 15th century the City of London became interested in these services and the Lord Mayor and Aldermen nominated the preachers for them. When the Priory was dissolved in the 16th century, the tradition of these Spital services as they were called, continued. Originally five public services were held in the City at Easter time, three of which were at the Spital but after 1660 the number was reduced to three, only one being held at the Spital. In 1675 there were complaints about the "ruinous state" of the pulpit and in 1680 the ceremony was therefore held at St. Bride's. After 1797 it was held regularly on Easter Monday in Christ Church, Newgate Street. As this church was destroyed in the last war, there is now a yearly service in St. Lawrence Jewry in the second week after Easter.

Ever since the Reformation the Lord Mayor invited the Governors of the City hospitals: St. Bartholomew's, St. Thomas's, Bridewell, Bethlem and Christ's Hospital. They formed a procession in which the physicians and surgeons joined. In the 17th century also the apothecary of St. Bartholomew's attended together with Mrs. Worth who treated the "scaldheads". There was a strict order of precedence. In 1687 it was decided that surgeons had to walk before the Governors. They arranged themselves according to seniority which sometimes caused some trouble as for instance in 1699 when the senior surgeon of St. Thomas's beat one of his colleagues who had not given him precedence. In 1720 the surgeons of the outhouses of St. Bartholomew's complained that they had to follow the assistant-surgeons of the hospital and it was decided that they would in future be allowed to walk before these assistants. The aim of the Spital services was always to attract attention to the City's hospitals. They were generally attended by many well-known people. On 13 April, 1669 Pepys noted in his diary "I by hackney coach to the Spittle and heard a piece of a dull sermon to My Lord

Mayor and Aldermen."

For some time after the Reformation the medieval idea of showing the actual patients was apparently still carried out. We do not know how long this custom continued, perhaps the Civil War, the Great Fire of London of 1666 or the years of the plague in the 17th century brought it to an end. They certainly were no longer present at the end of the 17th century and outsiders had to be impressed by a view of the Governors, physicians and surgeons, or by a special sermon rather than by seeing diseased people. Somehow the 18th century Governors must have felt that this change in the Spital services was not an improvement and when they began to view the new hospital buildings, they invited certain outsiders not only to see Gibbs' design but also the patients. The idea was the same as in the Middle Ages: to attract attention to the work in the hospital and to try to get money. Mostly those who might be eligible for the function of Governor were asked to the ceremony, for in those days one way of becoming a member of the Board was to give a donation of at least £50. The names of these 18th and 19th centuries' donors are still to be seen on the wall of the Great Hall. The View dinner held afterwards was no doubt a special attraction for future Governors and their ladies.

In 1824 the physicians and surgeons advised the Board of Governors that it was "extremely desirable" to hold View Day at "a less inclement season" and it was decided to fix it on the second Wednesday in May instead of two weeks before Easter Monday as it had been since 1732. One wonders why the doctors were worried about View Day? Were they thinking of the health of the visiting Governors or of the patients? If the patients suffered, was it because walking patients were asked to be on view to visitors much on the same lines as at the 16th century Spital services? The minutes of the Governors' meetings do not mention any details and perhaps we will never know why View Day has been held in May ever since 1824.

When the novelty had worn off Gibbs' buildings, View Day remained only a view of patients and of the wards, carried out by the Treasurer and Governors. In the 19th century visitors were no longer allowed to join them during this inspection. Until 1882 only medical students were present but in that year the Governors complained of the inconvenience caused by their conduct in the wards during the annual view. The problem was discussed in the Medical Council and it was agreed that it was not desirable to abolish View Day altogether "since it caused many Governors to take an interest in the hospital," but that it should no longer be a holiday. As the Treasurer did not wish to issue an order against the attendance of students, the Council agreed to ask the medical staff to "use persuasion" to induce students not to go into the wards when the Governors were present. Inspection of the wards became the most important factor in the course of the 19th century and prizes were given to the sisters and nurses responsible. In 1848 Mr. Matthew Lucas, President of the hospital from 1831 to 1848, left money for a yearly prize to be distributed on View Day to the most deserving sisters and nurses "as an encouragement to them to be kind and attentive to the poor patients." In 1857 Mr. James Bentley, Treasurer from 1842 to 1855, instituted a similar prize and both these rewards are given to this present day.

With a few exceptions View Day was held regularly on the second Wednesday in May from 1824 onwards. In 1869 it was postponed because the President, the Prince of Wales, who wanted to be present, was abroad in May of that year and in 1872 there was no annual view because of the illness of the Treasurer. Twice in this century View Day was changed, once in 1937 because it coincided with Coronation Day and once in 1945 when it would have been on the same day as VE Day. Even during the years of the first and second world war the wards were inspected annually, though in 1941 the visitors who were invited to tea had to pay 1/6d each.

The history of View Day is complicated because it has its origins in the medieval Spital services where outsiders were shown something of the hospital's good work, and in the annual views of the London property which were urgently needed to improve the hospital's financial situation in the 16th century. It was not until after 1730 when much money was needed for the re-building that the idea behind the Spital service was revived and the view of the new buildings was combined with a view of the patients for the purpose of collecting funds. Apparently the staff became gradually accustomed to introduce on that day outsiders other than prospective Governors and now that private donations are no longer required, View Day is the day on which relations and friends of the staff, after the wards have been viewed by the Treasurer and Governors, can get a glimpse of the important work carried out in this hospital.

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ST. BARTHOLOMEW'S HOSPITAL JOURNAL

CLINICAL AND RESEARCH SUPPLEMENT

CONTENTS

Cardiac Catheterisation *by* James S. Fleming i
Phaeochromocytoma, a case report *by* L.I.M. Castleden vi
Recent Papers by Bart's Men xi

Supplement No. 19 **Vol. LXXI, July, 1967**

CARDIAC CATHETERISATION

by James S. Fleming

In 1929 Forssmann first demonstrated that it was safe to pass a tube into the heart from an arm vein. He used a ureteric catheter which he introduced into his own heart and confirmed its position by taking an X-ray. The immense potential value of this new technique for the study of the heart and circulation was recognised by Cournand in the United States and McMichael in Great Britain who carried out much of the early work. Rapid improvements were effected in the construction of flexible catheters for use in cardiac catheterisation and in the design of electrical instruments to register pressures at the end of the catheter. The days are gone when pressures were measured through a simple saline manometer and an assistant stood ready to climb a step ladder when the catheter entered a high pressure chamber.

Today well tried techniques exist which enable a cardiac catheter to be passed into any of the chambers of the heart or great vessels. In this article the more commonly used methods will be described and the use of cardiac catheterisation in diagnosis and research will be discussed.

Right heart catheterisation

After introducing the catheter into an arm vein or into the long saphenous vein, it can be passed easily through the great veins to the right atrium, through the tricuspid valve into the right ventricle and on into the pulmonary artery. Usually the selected vein is entered through a small skin incision using local anaesthesia and the entire procedure is painless. The operator watches the movements of the catheter on an X-ray screen and any obstruction encountered during the operation is easily overcome by rotating the catheter. This procedure has proved remarkably safe and its value can be further enhanced by wedging the catheter tip in any branch of the pulmonary artery; the pressure so recorded is very similar to the pressure of the pulmonary veins and left atrium. The simple procedure of right heart catheterisation therefore, supplies considerable information: blood samples

may be taken from the pulmonary artery, the right ventricle and the right atrium, pressures can be recorded in these sites and an estimate of the pressure in the left atrium may be made.

Left heart catheterisation

Many of the more common heart diseases including mitral stenosis, aortic stenosis, and mitral and aortic incompetence affect the left side of the heart. For an accurate evaluation of these lesions pressure measurements are required from the left atrium, the left ventricle and aorta, and these measurements are rather more difficult to obtain. Some early attempts at left heart catheterisation carried considerable risk to the patient and involved much discomfort. Needle puncture of the left atrium through the left main bronchus, the needle being inserted through a bronchoscope, gave much useful information, but the measurements could scarcely be regarded as made under basal conditions. Today there are two main methods for catheterisation of the left heart, the retrograde approach from a peripheral artery and the approach through the inter-atrial septum.

The retrograde approach to the left ventricle involves the insertion of the catheter into a peripheral artery, usually the femoral or brachial artery and the advancement of the catheter up to and through the aortic valve into the left ventricle. The percutaneous method of Seldinger is widely used for entering the femoral artery. A large bore needle is used to puncture the artery and a guide wire is threaded through the needle into the lumen of the artery. When the needle is removed the catheter is threaded onto the guide wire and the wire serves to guide the catheter into the lumen of the artery. The wire can then be withdrawn to leave the catheter lying within the artery. At the completion of the study the catheter is simply withdrawn and firm pressure applied to the site of puncture for ten minutes. It is unusual for the femoral artery to be damaged by this procedure.

The second commonly used method for entering the left heart is by puncture of the inter-atrial septum. The catheter is inserted into the right long saphenous vein or the right femoral vein and advanced to lie against the atrial septum. A long needle passed up within the catheter punctures the atrial septum in the region of the foramen ovale and the catheter can then be passed over the needle into the left atrium and through the mitral valve into the left ventricle. Figs. 1 and 2.

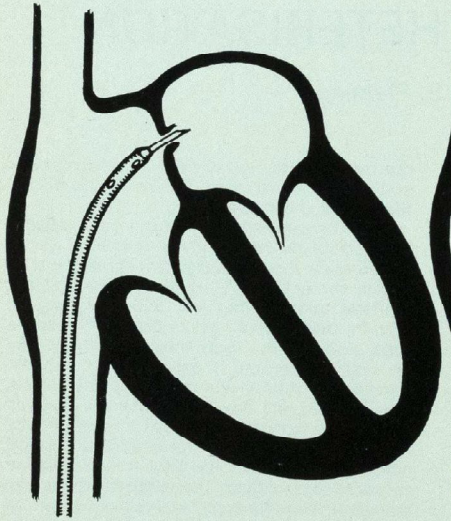

Fig. 1. Catheter in right atrium with tip against inter-atrial septum. Needle has just punctured the septum.

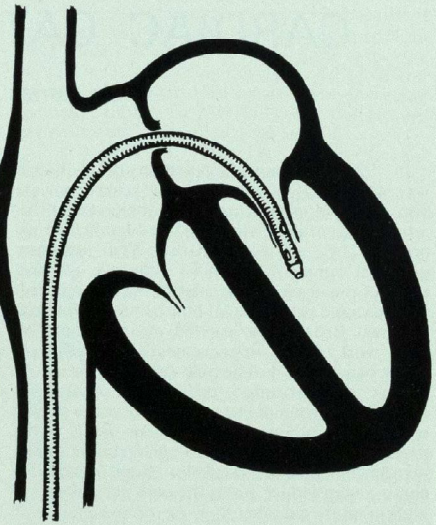

Fig. 2. Catheter has now been passed over the needle into the left atrium and through the mitral valve into the left ventricle.

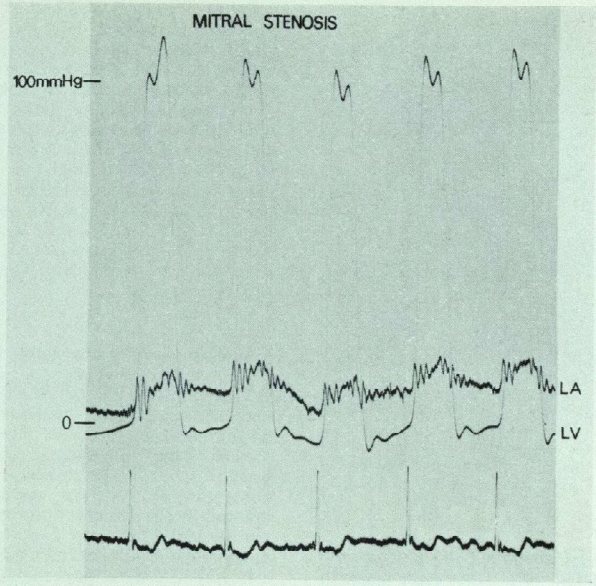

Fig. 3. The left atrial pressure does not equalise with the left ventricular pressure during diastole, indicating mitral stenosis.

The choice between the retrograde approach across the aortic valve and the transseptal method is governed by the lesion under study. When a left atrial pressure tracing is required the transseptal method is used and this is also our method of choice in the investigation of aortic valve stenosis. The retrograde approach across the aortic valve is preferred by some operators who are very skilful in passing the catheter through the narrowed aortic valve into the left ventricle, but we find that the transseptal approach gives us a higher success rate for entering the left ventricle in aortic stenosis.

Information obtained by cardiac catheterisation

The extent of any investigation and the relevant calculations to be made depend on the cardiac lesion under study. Some of the calculations often required are:

Cardiac Output. The Fick principle is used. If the amount of oxygen in the blood going to and and coming away from the lungs is known, together with the amount of oxygen taken up by the blood as it flows through the lungs, then the rate of blood flow through the lungs i.e. the cardiac output is readily obtained. The patient's oxygen uptake is measured by collecting the expired air, and the oxygen content of the systemic arterial blood is practically identical with that of the pulmonary venous blood. The cardiac output is therefore obtained as:

$$\text{Cardiac output} = \frac{\text{Oxygen uptake in the lungs/min.}}{\text{Oxygen content of systemic arterial blood} - \text{oxygen content of pulomary arterial blood}}$$

Pulmonary vascular resistance. This gives a measure of the degree of obstruction to blood flow through the lungs offered by the pulmonary arteries and arterioles. The net pressure driving blood through the lungs is the pressure in the pulmonary artery minus the pressure in the pulmonary veins. The pulmonary vascular resistance is this forward pressure divided by the blood flow i.e.

$$\text{Pulmonary vascular resistance} = \frac{\text{Pulmonary arterial pressure (mean)} - \text{left atrial pressure (mean)}}{\text{Cardiac output}}$$

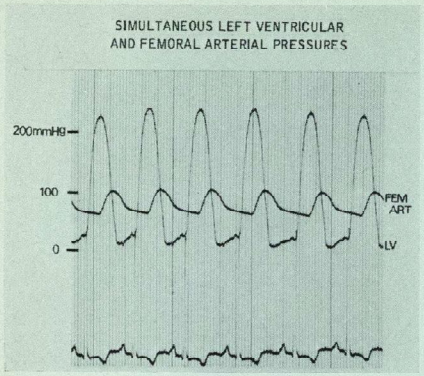

Fig. 4. The systolic pressure in the left ventricle is much higher than the arterial systolic pressure. This means there is obstruction to blood flow between the left ventricle and the arterial system, i.e. aortic stenosis.

Site and magnitude of a left to right shunt. In the presence of a left to right shunt, blood which has just passed through the lungs and is therefore highly oxygenated mixes with the blood arriving at the heart from the superior and inferior vena cava. A step up in the oxygen content of samples of blood will be detected in the chamber into which the shunt occurs and the size of the shunt is estimated from the magnitude of the step up in oxygen saturation. Thus in a ventricular septal defect bright red blood is obtained from the right ventricle, and when a persistent ductus arteriosus is present the samples from the pulmonary arteries have a high oxygen content.

Severity of mitral and aortic stenosis. Simultaneous pressure measurements are recorded from the left atrium and left ventricle as in Fig. 3. During diastole the mitral valve cusps are open and in the absence of mitral stenosis the left atrial and left ventricular pressure measurements should be equal. When the left atrial pressure remains above the pressure in the left ventricle then mitral stenosis is present and the severity of the stenosis can be estimated from a formula which includes the difference in diastolic pressures, and the cardiac output. Similarly in aortic stenosis the pressure in the aorta remains below the left ventricular systolic pressure. Fig. 4.

When the precise anatomy of any cardiac abnormality is required, angiocardiography is usually performed during the cardiac catheterisation investigation. Selective angiocardiography, that is the injection of radio opaque contrast fluid close to the site of the lesion, provides the clearest detail. For this, contrast such as hypaque 85% is injected through the catheter at a pressure of 110 lb./sq. inch or more, and rapid X-ray exposures are made onto either large films or cine film. Selective angiocardiography can be performed into either the right or the left heart using the techniques of cardiac catheterisation described above.

Complications of cardiac catheterisation

By careful attention to technique, which includes strict asepsis as for a surgical operation, and by recognising conditions likely to be dangerous in any particular patient the morbidity and mortality from cardiac catheterisation can be kept very low. The possible complications are numerous and include cardiac arrhythmias induced by the catheter tip in the heart, cardiac tamponade if the heart is perforated, and pulmonary and systemic embolism if a thrombus arises on the catheter or becomes dislodged by the passage of the catheter within the heart. Catheterisation of the left heart carries a greater risk, and a one per cent mortality has been reported from the analysis of many such investigations performed in many different laboratories. The incidence of serious complications is considerably less than this when the investigation is performed by an experienced team especially when careful selection of patients is made, the transseptal approach, for example, being unsuitable for patients who have a history of sytemic embolism or huge hearts.

As far as the welfare of the patient is concerned, the precision in diagnosis obtained by cardiac catheterisation outweighs the slight risk of the investigation, for there is no doubt that an accurate diagnosis is essential to the planning of suitable treatment. For many cardiac lesions the diagnostic information provided by cardiac catheterisation and angiography cannot be equalled by any other technique. A complete evaluation of the abnormalities is of particular value should cardiac surgery be necessary for the surgeon can then confidently plan his operative approach to deal with all the abnormalities and no time is lost during the operation. Diagnosis on the operating table cannot always be accurate or complete.

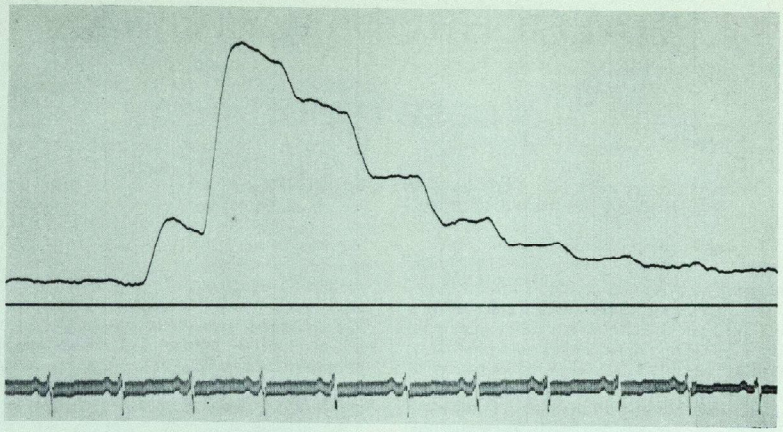

Fig. 5. Beat by beat change of temperature in the ascending aorta after the injection of cold saline into the left ventricle. Temperature is obtained from a thermocouple in the ascending aorta.

The use of cardiac catheterisation in research

Much of our present knowledge of the physiology of the circulation has been obtained from cardiac catheterisation. The ability to measure intracardiac pressures and cardiac output continuously is of great value when assessing the effects on the circulation of exercise or disease or drugs. Many highly specialised techniques can be employed during an examination, including the injection of radio-isotopes, the recording of dye dilution curves, intracardiac phonocardiography and temperature measurement within the circulation. At Barts most of these techniques are in frequent use and we are particularly interested in the assessment of left ventricular function. Fig. 5 shows the stepwise change in temperature detected by a very fine thermocouple in the ascending aorta of a patient with aortic stenosis after the injection of cold saline into the left ventricle. A beat by beat temperature change is seen and by measuring these changes the amount by which the left ventricle empties with each beat can be estimated. A poorly functioning ventricle tends to expel only a small fraction of its volume during systole and in this way poor ventricular function may be detected.

Cardiac catheterisation as a therapeutic tool

Recently a special catheter has been devised for helping infants suffering from transposition of the great vessels. (Rashkind). Such infants usually die in the first month of life unless an atrial septal defect is created. During the diagnostic cardiac catheterisation of these infants, as soon as the diagnosis has been confirmed, a special catheter containing a balloon near the tip is passed through the foramen ovale into the left atrium. The balloon is then inflated and drawn back into the right atrium thereby rupturing the interatrial septum. This simple manoeuvre creates an atrial septal defect thereby avoiding the dangers of cardiac surgery in the neonatal period, and allowing the child to survive to an age when a definitive operation to correct the directions of blood flow can be more safely undertaken.

PHAEOCHROMOCYTOMA

a case report

by L. I. M. Castleden

Phaeochromocytomata are uncommon tumours arising from the chromaffin cells of the adrenal medulla which secrete adrenaline and noradrenaline. The tumours are usually innocent and produce the effects which would be expected physiologically from overactivity of this part of the gland—the adrenal sympathetic syndrome. No known disease has yet been attributed to hypofunction of the adrenal medulla. The only other medullary tumour arises from the sympathetic nervous tissue and is highly malignant but produces no metabolic effects.

Chromaffin cells are also present in the intrathoracic sympathetic chain and in the organs of Zuckerkandl. The paraganglionomata which originate in these cells secrete noradrenaline only, a fact which may have a localising value.

Phaeochromocytomata occur in patients of either sex usually between the ages of 20 and 45 years but may be encountered in older people. They produce a variety of clinical pictures which fall mainly into the following groups:

1. **Paroxysmal Hypertension** is the classical and original clinical picture and is due to the flooding of the circulation with pressor substances. Attacks occur in which the patient experiences a feeling of anxiety, groundless fear or fear of impending death with profuse cold sweats, palpitations and throbbing headache. Sometimes there is a sensation of coldness with "gooseflesh" of the skin without sweating and a feeling of constriction of the throat. Both the systolic and diastolic pressures are elevated in the attack but are within the normal range between. Death may occur in an attack from circulatory failure or cerebral haemorrhage. The attacks usually occur spontaneously but may be provoked by the patient adopting certain postures or by palpation of the abdomen.

2. **Persistent Hypertension,** clinically very similar to essential or malignant hypertension, may be found either as a presenting condition or as a sequel to the paroxysmal type. Unexplained variations in the blood pressure superimposed on a persistently high reading are suggestive of an adrenaline or noradrenaline secreting tumour.

3. **Cardiac arrhythmia** can be produced by the intravenous injection of adrenaline and a phaeochromocytoma mimics this dangerous procedure. Arrhythmic crises have been reported by Durant and Soloff (1962).

4. **Hypotension,** either paroxysmal or sustained has been reported on rare occasions. Richmond et Al (1961), Hamrin (1962). These cases may be explained by the continuous intravenous adrenaline experiments in animals of Freeman et al (1940).

5. **A mixed group** of signs and symptoms has come to be associated with this tumour as experience of it has widened. Attacks of upper abdominal pain with nausea and vomiting can be presenting symptoms and occasionally distension of the bowel with closure of the sphincters simulates intestinal obstruction or paralytic ileus Gilliland and Daniels. (1951). Paraesthesiae in the limbs, attacks of giddiness or of frank angina pectoris are sometimes the symptoms which urge the patient to seek medical advice. Fortunately a careful history nearly always reveals attacks of fear or anxiety with sweating, palpitation, throbbing headache or constriction in the throat in addition to the misleading symptoms and so gives a clue to the true condition.

The patient is frequently normal on first examination or shows hypertension which seems to be of the essential type. Owing to the mobilisation of liver glycogen the blood sugar may be above normal and intermittent glycosuria without ketonuria can occur. The body temperature is frequently elevated to between 99° and 100° F. and both the E.S.R. and B.M.R. may be persistently raised. In cases of hypertension in relatively young subjects, therefore, excessive sweating, vasomotor phenomena, elevated body temperature without obvious cause, raised B.M.R. or E.S.R., or glycosuria should give rise to the suspicion of the possibility of a phaeochromocytoma. Smithwick et al (1950).

SPECIAL INVESTIGATIONS

I. **Catechol Amines and Urinary Metabolites.** Because about 5% of adrenaline and noradrenaline liberated into the blood is excreted in free form in the urine estimation of this fraction as catechol amines or pressor amines by a bioassay is a useful and reliable test but one difficult to perform. A 24 hour output of 0.01 to 0.1 mg is accepted as the normal range but Hunter et al (1963) suggest that values exceeding 0.05 mg per 24 hours are diagnostic. A simpler test useful for screening is the estimation of urinary 3-methoxy-4-hydroxy mandelic acid (vanillyl mandelic acid or V.M.A.) which is a metabolite of both adrenaline and noradrenaline. Hunter et al (1963) state that a urinary level above 10 mg per 24 hours is highly suggestive of the presence of a phaeochromocytoma. The chemical estimation of urinary catechol amines or their metabolites is only reliable if the patient has been receiving no drugs before the test. An increasing number of substances has been found to give altered figures, for instance tetracyclines give a high and hypotensive drugs, notably methyldopa, a low reading.

II. **Blood Pressure Tests**

(a) *Provocative.* These are rarely used because of their danger. One only has survived, the response to histamine. With the B.P. at a resting level 0.025 to 0.05 mg of histamine in 0.25 to 0.5 ml of normal saline is injected intravenously. In a case of phaeochromocytoma the rise of B.P. will exceed that caused by the pressor effect of cold whereas the converse obtains in essential hypertension. Swan. (1951).

(b) *Adrenolytic or α-receptor blocking drugs.* When first introduced phentolamine was believed to have either an adrenolytic or α-receptor blocking action and was used as a test for phaeochromocytoma. Recent work strongly suggests that the predominant action of phentolamine in man is direct vasodilatation rather than sympathetic or catecholamine blockade. Taylor et al (1965). If this is so the test is not specific. It has been abandoned not only for this reason but also mainly because there have been reports of fatal hypotension following its use. Ross (1954), Emmanuel et al (1956), Roland (1959).

The special investigations may in some cases be equivocal or completely negative. In such cases surgical exploration is justified if the clinical picture is sufficiently suggestive because the treatment of the condition is surgical and, if a tumour can be found and removed, curative.

CASE REPORT

The following case of phaeochromocytoma seemed to be worth reporting because many of her presenting symptoms were those not usually associated with the condition. This led to alternative diagnoses being considered and much time elapsed before the cause of her ill health was proved. With the correct diagnosis finally established it was obvious that there had been many clues which should have enabled it to have been made earlier.

Mrs. M. Y. a housewife aged 45 was admitted to Edgware General Hospital on 7.10.63 complaining of attacks of palpitation and sweating for four years and of lassitude with loss of weight for two years.

H.P.C. She had attended M.O.P. on 17.2.60 complaining of attacks of palpitation and bouts of sweating which had occured separately or together for a year. For the same period she had also had shortness of breath on stairs and substernal discomfort on effort. She had recently had an upper respiratory infection with cough, mucopurulent sputum and substernal rawness.

O.E. she was a pale, thin, anxious woman with a slight uniform pigmentation of the skin. T.99 P. 96. R.24 Râles were present at the right base but the heart, abdomen and C.N.S. were normal. Her B.P. was 140/90. She was admitted to hospital where her slight fever rapidly subsided with disappearance of the lung signs on treatment with aspirin only. The Hb was 90% and an E.C.G. normal. She remained symptom free with no attacks of palpitation or sweating and a normal B.P. and was discharged home on 24.2.60 with a diagnosis of resolved respiratory infection, angina due to coronary atheroma and? paroxysmal tachycardia.

A year later on 23.2.61 she was sent to the diabetic clinic by her doctor as a case of diabetes on account of lassitude, loss of weight, sweating and glycosuria and admitted on direct questioning to some thirst and polyuria two months previously. On examination this time she was nervy with a coarse tremor. There was no goitre or sign of thyrotoxicosis. The heart was normal in regular rhythm at 64/min and B.P. 170/100. No abnormality was found in the lungs, abdomen or C.N.S. and the urine was normal to clinical tests. A glucose tolerance test gave a lag type of curve without glycosuria. It was thought that the patient was suffering from an anxiety state or possibly thyrotoxicosis and was not a diabetic. She failed to keep a follow up appointment.

On 23.4.63 she was sent again to M.O.P. by her doctor because she had lost a further 10 lbs. weight and had palpitations which she said were

a "banging of the heart at normal rate". These palpitations were of fairly sudden onset and subsided after about 20 minutes. They occured at any time of the day or night but were more frequent on first rising in the morning and were sometimes accompanied by an aching pain in the front of her chest which tended to spread up to her jaw and occasionally by a choking sensation. She sweated profusely in nearly every attack. She had had marked lassitude for several months and a period when she woke feeling very cold during the night which she attributed to a spell of cold weather. She was again noted to be a thin, anxious slightly pigmented woman with tremor of her hands. Physical examination was otherwise normal. B.P. 170/100. Hb. 93% E.S.R. 17 mm./hr. Serum electrolytes normal. As before an anxiety state or thyrotoxicosis was thought to be the most likely diagnosis with the climacteric as a possibility. Perphenazine 4 mg. t.d.s. was prescribed and she was given a follow up appointment which she again failed to keep. She was written to and attended on 25.6.63 when she reported that she was very much better, having gained a few pounds in weight and had fewer attacks of palpitation. I_{131} uptake studies were done and were normal. Perephenazine was continued.

She was again lost sight of until 2.10.63 when her doctor referred her to M.O.P. with renewed loss of weight, sweating attacks, glycosuria and polydipsia with deterioration in her general health. Admission was arranged.

P.H. Pneumonia and Diphtheria. No Rheumatic Fever.

F.H. Father A/W. Mother died of coronary thrombosis.
3 Brothers A/W. 2 Sisters A/W.
Husband A/W. 2 Children A/W.

O.E. A thin, anxious, hirsute and slightly pigmented woman who looked 60 years old. Hands cold and clammy with coarse tremor. T.99°. P. 108. R. 20. Heart normal. B.P. 160/92. No abnormality in lungs, abdomen or C.N.S. Thyroid gland normal. No adenopathy.

INVESTIGATIONS

Urine and chest X-Ray normal.

Blood Count Hb 85%. W.B.C. 6,400, normal differential. E.S.R. 19 mm./hr.

Glucose tolerance test again a lag type of curve this time with glycosuria.

P.B.I. 4.4 microgrammes per 100 ml.

Serum cholesterol 253 mg./100 ml. Electrolytes and Urea normal.

Urinary ketosteroids normal.

B.M.R. +70 and +78.

The patient remained unchanged without any attacks of palpitation or sweating. It was noted that she frequently had slight rises of temperature to between 99° and 100° the cause of which was not apparent. There was no urinary infection. Her E.S.R. was always a little raised. On 16.10.63 she had an attack of sweating whilst lying in bed and her blood pressure was found to be 220/140 subsiding when the sweating ceased to her usual level of 160-150/90-100. This finding raised the suspicion of a phaeochromocytoma and urine taken next day for a V.M.A. test gave a figure of 27.2 mg./24 hrs. and her pressor amine excretion at that time was 0.68 mg./24 hrs. by bio-assay.

Glycosuria without ketonuria was reported in her ward test on 20.10.63 but her B.P. was not elevated again until 22.10.63 when it was 160/110. Her pressor amine excretion was assayed again on 24.10.63 and found to be 0.51 mg./24 hrs. and the V.M.A. test was repeated on 25.10.63 and 26.10.63 giving figures of 34.4 and 28.2 mg./24 hrs. respectively which strongly supported the diagnosis of a phaeochromocytoma. Clinical confirmation was obtained on 27.10.63 when the patient reported during a morning ward round that she was having one of her "turns". She was found to be giddy, sweating profusely and vomiting with a blood pressure of 300/180 at 11.0 a.m. subsiding by 1.30 p.m. to 140/90 with cessation of her symptoms. Intravenous pyelogram studies of the renal tract were then done and showed normal anatomy and function. The radiologist reported that the left suprarenal gland might be a little enlarged but that this was not very definite. Tomograms of the kidney and suprarenal areas showed no soft tissue shadows and no calcification.

On 19.11.63 exploratory laparotomy was carried out by Mr. N. S. Slater. A large tumour high above the upper pole of the left kidney was found. There were two large vascular pedicles entering the tumour from the medial and inferomedial aspects and three small pedicles on the posterior aspect. During the initial stages of the operation the patient's systolic B.P. was 280 to 240 and within 20 minutes from the ligation of the last pedicle it had fallen to 120. Noradrenaline 4 ml. per pint was added to the intravenous drip and the systolic B.P. was 160 when the patient was returned to the ward. The B.P. had to be supported by a noradrenaline drip for the first 48 hours postoperatively.

Operation for the removal of a phaeochromocytoma is a hazardous procedure, particularly in patients with sustained hypertension but most where an unsuspected tumour of this kind is found. The dangers are: 1. hypertensive crises after the induction of anaesthesia, 2. extreme fluctuations of blood pressure during the handling of the tumour, 3. hypotension following removal of the tumour due to relaxation of the vascular bed and the reduction of circulating plasma volume previously produced by adrenaline and noradrenaline and 4. cardiac arrhythmias from sudden release of large concentrations of sympathomimetic amines coupled with sensitisation of the myocardium to the production of arrhythmias by the anaesthetic agent. These dangers can now be reduced considerably by careful pre-operative preparation and operative management of the patient. Ross et al. (1967). The methods employed are: 1. The use of α-receptor blocking agents e.g. phenoxybenzamine, to control the fluctuations of blood pressure, 2. The pre-operative restoration of plasma volume and 3. the use of ß-receptor blocking agents, e.g. propanolol, to control tachycardia and tendency to arrhythmia.

Dr. Hamilton-Paterson's report on the tumour removed at operation was as follows: "The specimen consists of a very soft egg-shaped tumour measuring approximately 8 cms. in length. Sectioning reveals a solid tumour with a large central cystic area containing blood. (Fig. 1). Sections show the typical appearance of a very vascular phaeochromocytoma. Some of the cells give the positive chromaffin reaction on staining with bichromate. There is much variation in nuclear size." (Figs. 2 & 3).

Dr. B. A. Callingham of the School of Pharmacy, University of London, who kindly did the urinary pressor amine bio-assays for us, carried out a hormone assay of the tumour as well. He reported: "The tumour weighed 137 grammes. We have assayed this and find it contains: Noradrenaline 0.75 mg. per G., Adrenaline 3.0 mg. per G., Dopamine a trace".

The V.M.A. test was repeated post-operatively and gave the following figures: 21/11/63 11.2 mg., 22/11/63 5.4 mg., 23/11/63 6.9 mg. and 4/12/63 4.7 mg. per 24 hours.

COMMENT

This patient complained of attacks of sweating and attacks of palpitation, sometimes combined, at each of her out-patient attendances before admission to hospital. These were characteristic symptoms the constant complaint of which should have raised a suspicion of the reason for their cause. That they did not do so is accounted for by the facts that: 1. they were accompanied on each occasion by other symptoms such as lassitude, loss of weight, effort dyspnoea and angina which are common to several conditions. 2. examination did not reveal any significant elevation of blood pressure until she was observed in hospital because it only became elevated on rare occasions. 3. the other findings of constant nervousness, tremor, uniform pigmentation, loss of weight and transitory glycosuria did not appear to be significant but the nervousness and glycosuria would have been if considered in conjunction with the attacks of sweating and palpitation. 4. on each of her out-patient attendances she was seen by a different doctor and sometimes at a different clinic until just before admission. The related continuity of her symptoms was therefore probably not so obvious as it would have been if she had been seen by the same firm each time. This is a point

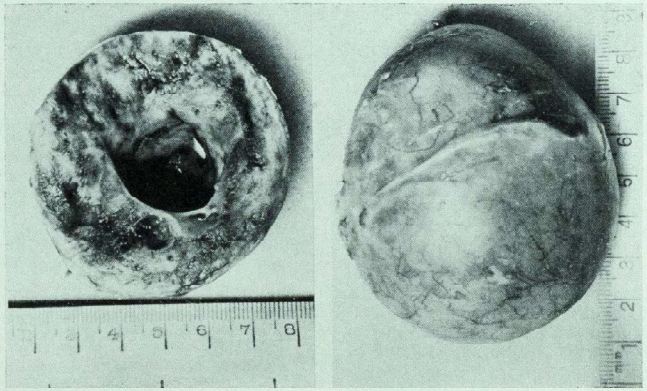

Fig. 1. The Tumour.

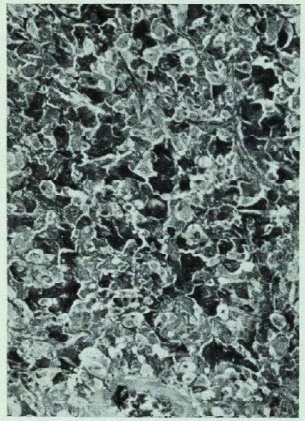

Fig. 2. Schmorl stain × 100.

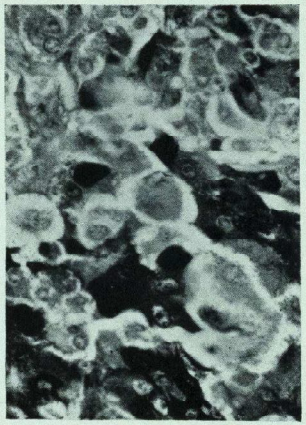

Fig. 3. Schmorl stain × 400.

in favour of a patient being referred back to the same physician or the same clinic whenever possible unless an obviously different condition has arisen and for there being sufficient time in O.P. clinics for return cases to be reviewed ab initio.

It is interesting that this patient frequently had a mild unexplained pyrexia, a slightly raised E.S.R. each time it was tested and a B.M.R. significantly above normal and it is possible that the conjunction of these non-specific findings in a case in whom the presence of a phaeochromocytoma is suspected, or perhaps unsuspected, may be helpful in indicating the need for the performance of specific tests.

My thanks are due to Dr. J. L. Hamilton-Paterson for his report on the histology of the tumour and for the loan of the colour slides from which the illustrations were made, to Mr. G. Booker of the photographic department at the Central Middlesex Hospital for his help in making the black and white prints and to Dr. B. A. Callingham for performing the pressor amine bio-assays on the patient's urine and on the tumour.

REFERENCES

DURANT J., and SOLOFF, L. A.: *Lancet*. (1962), **2**, 125.

EMMANUEL, D. A., ROWE, G. C., MUSSER, M. J., and PHILPOT, V. B.: *J. Am. Med. Ass.* (1956), **161**, 436.

FREEMAN, N. E., FREEMAN, H., and MILLER, C. C.: *Am. J. Physiol.* (1940), **131**, 545.

GILLILAND, I. C., and DANIELS, O.: *B.M.J.* (1951), **2**, 275.

HAMRIN, B.: *Lancet*. (1962), **2**, 123.

HUNTER, R. B., MARSHALL, P. B., and ORAM F. J.: *Quart. J. Med.* (1963), **NS32**, 225.

RICHMOND, J., FRAZER, S. C., and MILLAR, D. R.: *Lancet*. (1961), **2**, 904.

ROLAND, C. B.: *J. Am. Med. Ass.* (1959), **171**, 1806.

ROSS, E. J., PRITCHARD, B. N. C., KAUFMAN, I., ROBERTSON, A. I. G., and HARRIES, B. J.: *B.M.J.* (1967), **1**, 191.

ROSS, R. D.: *Ann. Int. Med.* (1954), **41**, 1061.

SMITHWICK, R. H., GREER, W. E. R., ROBERTSON, C. W., and WILKINS, R. W.: *New Eng. J. Med.* (1950), **242**, 252.

SWAN, H. J. C.: *B.M.J.* (1951), **1**, 440.

TAYLOR, S. H., SUTHERLAND, G. R., MACKENZIE, G. J., STAUNTON, H. P., and DONALD, K. W.: *Clin. Sci.* (1965), **28**, 265.

TAYLOR, S. H., MACKENZIE, G. J., GEORGE, M., and MACDONALD, A.: *Brit. Heart. J.* (1965), **27**, 627.

TAYLOR, S. H., MACKENZIE, G. J., STAUNTON, H. P., and DONALD, K. W.: *Circulation*. (1965), **31**, 741.

RECENT PAPERS BY BART'S MEN

ALMENT, E. A. J. (and others). Normal confinement: a domiciliary and hospital study. *Br. med. J.*, 27th May, 1967, pp. 530–535.

†BACH, F. Rheumatism—its treatment and prevention. *Health*, 4, 1967, pp. 35–37.

†BACON, P. A. (with others). Pituitary adrenal function during corticosteroid withdrawal in rheumatoid arthritis. *Ann. rheum. Dis.*, 26, 1967, pp. 18–25.

†BAKER, D. J., and TOWN, C. D. "Anoxia" in radiobiology. (Corres.) *Br. J. Radiol.*, 39, 1966, pp. 706–707.

BEARDWELL, C. G., *see* BACON, P. A., with others.

BETHUNE, D. W., and COLLIS, J. M. An evaluation of oxygen therapy equipment: experimental study of various devices on the human subject. *Thorax*, 22, 1967, pp. 221–225.

BENTALL, H. H. (with others). Investigation and treatment of constrictive pericarditis. *Thorax*, 22, 1967, pp. 242–252.

†BESSER, G. M. Some physiological characteristics of auditory flutter fusion in man. *Nature*, 214, 1967, pp. 17–19.

†———, and others. Glandular fever and specific viral infections: uptake of tritiated thymidine by circulating leucocytes. *Br. J. Haemat*, 13, 1967, pp. 189–193.

†BETT, W. R. The rarest thing in the world. *Health*, 4, 1967, pp. 18–20.

BIRNSTINGL, M., *see* CATTELL, W. R., and ———.

BOULTON, T. B. Disposable anaesthetic masks. *Anaesthesia*, 22, 1967, p. 313.

BROOKE, B. N. Acute adrenal dysfunction. *Br. J. Surg.*, 54, 1967 (Special Lister Centenary Commemoration Number), pp. 489–493.

———, (with others). New methods of studying intestinal transit times. *Gut*, 8, 1967, pp. 195–197.

†BROWN, J. R., and MACLEAN, D. M. Observations on halogens as bathing water disinfectants. *J. appl. Bact.*, 29, 1966, pp. 559–565.

†BURROWS, H. Jackson. Emergency amputations. Summary. *Ann. R. Coll. Surg.*, 40, 1967, pp. 221–222.

BUTLER, H. The oestrus cycle of the Senegal bush baby (*Galago senegalensis senegalensis*) in the Sudan. *J. Zool. Lond.*, 151, 1967, pp. 143–162.

CAPENER, N. Emergency amputations. Upper limb. *Ann. R. Coll. Surg.*, 40, 1967, pp. 218–221.

†CATTELL, W. R., and BIRNSTINGL, M. A. Blood-volume and hypotension in obstructive jaundice. *Brit. J. Surg.*, 54, 1967, pp. 272–278.

†CHAMBERLAIN, D. A. The heamodynamic effects of Beta-Adrenergic blockade in man. *Cardiologia*, 49, (Suppl. II), 1966, pp. 27–42.

†COLE, P. V., and HAWKINS, L. H. The measurement of the oxygen content of whole blood. *Bio-med. Eng.*, Feb. 1967, pp. 56–63.

———, *see* BETHUNE, D. W., and ———.

CONNOLLY, R. C. Intracranial tumours in childhood. *Nursing Times*, May 5, 1967, pp. 584–586.

COOK, Josephine, and FINCHAM, W. J. Arthritis produced by intra-articular injections of streptolysin S in rabbits. *J. Path. Bact.*, 92, 1967, pp. 461–470.

COOTE, Elizabeth, *see* WILLOUGHBY, D. A., and ———.

COTES, J. E. (and others). Relationship of oxygen uptake, ventilation and cardiac frequency to body weight during different forms of standardized exercise. *J. Physiol.*, 190, 1967, 29–30*P*.

CRAWHALL, J. C. (and others). Dissolution of cystine stones during D-penicillamine treatment of a pregnant patient with cystinuria. *Br. med. J.*, 22nd April, 1967, pp. 216–218.

†DALY, M. de BURGH (and others). The reflex effects of alterations in lung volume on systemic vascular resistance in the dog. *J. Physiol.*, 188, 1967, pp. 331–351.

DAWSON, A. M. Disaccharidase deficiency: Textbook assumption incorrect. *Med. News* (Suppl. on Gastroenterology, May), 1967, p. 6.

†DU BOULAY, G. H. (with others). Further causes of hypertrophied tentorial arteries. *Br. J. Radiol.*, 40, 1967, pp. 350–357.

†EDWARDS, G., and GUTHRIE, S. A controlled trial of inpatient and outpatient treatment of alcohol dependency. *Lancet*, 11th March, 1967, pp. 555–559.

†FENTON, J. C. B. The plasma ammonium and liver disease. *Hospital Medicine*, 1, 1967, pp. 491–493.

FIDDIAN, R. V. A method of training in perurethral resection. *Br. J. Urol*, 39, 1967, pp. 192–193.

†FRANCIS, G. E., and HAWKINS, J. D. Liquid scintillation counting of aqueous H^3—and C^{14}—protein solutions at room temperature. *Int. J. appl. Radiat. Isotopes*, 18, 1967, pp. 223–230.

†———, with MORGAN W. T. J. Arthur Wormall, 1900–1964. *Biographical Memoirs of Fellows of the Royal Society*, 12, 1966, pp. 543–564.

†FRIEDMAN, D. E. I., and SILVERSTONE, J. T. Treatment of phobic patients by systematic desensitisation. *Lancet*, 4th March, 1967, pp. 470–472.

GRANVILLE-GROSSMAN, K. L. Psychiatric teaching in the medical ward. *Br. J. med. Educ.*, 1, 1967, pp. 111–114.

GUYER, P. B., and MCLOUGHLIN, M. Congenital double gall-bladder: a review and report of two cases. *Br. J. Radiol.*, 40, 1967, pp. 214–219.

†HAMILTON, G. R. Railways and health: an historical review. *British Transport Police Journal*, No. 76, April, 1967, pp. 49–51.

HAMILTON, W. J. with BOYD, J. D. Development and structure of the human placenta from the end of the 3rd month of gestation. *J. Obstet. Gynaec. Brit. Cwlth.*, 74, 1967, pp. 161–226.

HAVARD, C. W. H., and MCALISTER, Joan. Radioactive isotopes in clinical medicine. I. *Br. med. J.*, 20th May, 1967, pp. 487–491; II. *Br. med. J.*, 27th May, 1967, pp. 555–559.

HAWKINS, J. D., *see* FRANCIS, G. E., and ———.

HAWKINS, L. H., *see* COLE, P. V., and ———.

HAZZLEDINE, Julie L., *see* DALY, M. de Burgh, and others.

†HEATHFIELD, K. W. G. Huntington's chorea: investigation into the prevalence of this disease in the area covered by the North East Metropolitan Regional Hospital Board. *Brain*, 90, 1967, pp. 203–232.

HILL, I. M. Surgery of atrial septal defect. *Lond. Clin. med. J.*, 8, 1967, pp. 43–43.

†HILL, R. C., and TURNER, P. Fenfluramine and critical flicker frequency. (Corres.) *J. Pharm. Pharmac.*, 19, 1967, pp. 337–338.

†HORTON, R. J. The route of migration of *Eimeria stiedae* (Lindemann, 1865), sporozoites between the duodenum and bile ducts of the rabbit. *Parasitology*, 57, 1967, pp. 9–17.

HUDSON, C. N., and ZEEGEN, R. Crohn's disease, presenting as chronic Bartholin's abscesses. *Proc. R. Soc. Med.*, 60, 1967, pp. 338–339.

JONES, F. Avery. Burbulence: a fresh look at flatulent dyspepsia. *Practitioner*, 198, 1967, pp. 367–370.

———. Cathartic colon. *Proc. R. Soc. Med.*, 60, 1967, pp. 503–504.

†JONES, P. F., with WINSEY, H. S. Acute abdominal pain in childhood: analysis of a year's admissions. *Br. med. J.*, 18th March, 1967, pp. 653–655.

KEELE, K. D. Pain sensitivity and the pain pattern of cardiac infarction. *Proc. R. Soc. Med.*, 60, 1967, pp. 417–419.

KERSLEY, G. D. Antimalarials and the connective tissue diseases. *Nursing Times*, 63, 1967, pp. 691–692.

KNIGHT, R. J. With a surgical team in South Vietnam. *Lancet*, 27th May, 1967, pp. 1153–1155.

†LAWTHER, P. J. Air pollution and chronic bronchitis. *Med. Thorac.*, 24, 1967, pp. 44–52.

LEHMANN, H. (with others). Abnormal haemoglobins in Iran. Observation of a new variant—haemoglobin J Iran (α_2 β_2 77 His→Asp). *Br. med. J.*, 18th March, 1967, pp. 674–677.

LOFTS, B. Interspecific differences in photosensitivity between three closely related species of pigeons. *J. Zool., Lond.*, 151, 1967, pp. 17–25.

MCALISTER, Joan M., *see* HAVARD, C. W. H., and

†MCCOLL, I., with GAZET, J. C. Absorption of vitamin B_{12} from the small intestine: study in man, monkey, cat, and dog. *Br. J. Surg.*, 54, 1967, pp. 128–131.

†——— (and others). Effect of intrinsic factor on absorption of vitamin B_{12} from small intestine. *Lancet*, 11th March, 1967, pp. 544–545.

MCKINNA, J. A. An experimental approach to adjuvant chemotherapy in carcinoma of the rectum and colon. *Proc. R. Soc. Med.*, 60, 1967, pp. 212–214.

MEDVEI, V. C., *see* OSWALD, N. C., and others.

MISIEWICZ, J. J., and WALKER, S. L. The effect of 5-hydroxytryptamine on the human colon *in vivo* and *in vitro*. *Proc. R. Soc. Med.*, 60, 1967, pp. 218–219.

†NASH, D. F. Ellison. Urinary diversion in congenital paraplegia. *Paraplegia*, 4, 1967, pp. 216–225.

†NORMAN-TAYLOR, W. (with others). Longer-term results of an anti-smoking educational campaign. *Med. Offr.*, 117, 1967, pp. 93–95.

O'GRADY, F., and PENNINGTON, J. H. Screening of antibacterial agents for *in vivo* activity against pseudomonas infection. *Postgrad. med. J.*, 43, 1967, pp. 72–73, (March Suppl.).

†OSWALD, N. C. The management of chronic bronchitis. *Lond. Clin. med. J.*, 8, 1967, pp. 17–26.

†——— (and others). Chronic bronchitis: a 10-year follow up. *Thorax*, 22, 1967, pp. 279–285.

†PAINTER, N. S. The effect of neostigmine methyl sulphate on the human colon in health and in diverticulosis. *Proc. R. Soc. Med.*, 60, 1967, pp. 219–220.

PENNINGTON, J. H., *see* O'GRADY, F., and ———.

†PERKINS, E. S., and BUCHANAN, W. M. Technical note: a simple diagnostic computer. *Med. & biol. Engng.*, 5, 1967, pp. 175–177.

RICKHAM, P. P. (with others). Long-term results of early operation of open myelomeningoceles and encephaloceles. *Br. med. J.*, 18th March, 1967, pp. 663–666.

†ROBINSON, J. O. Operative cholangiography. *Lond. Clin. med. J.*, 8, 1967, pp. 27–30.

†ROLES, N. C. Tribal surgery in East Africa during the XIXth century. Part I—Ritual operations. *East African med. J.*, 43, 1966, pp. 579–594; Part II—Therapeutic surgery. *East African med. J.*, 44, 1967, pp. 17–30.

SALSBURY, A. J. Indications for blood transfusion. *Nursing Mirror*, 17th April, 1967, pp. 17–20.

SAVAGE, E. O., *see* BACON, P. A., with others.

SCOWEN, E. F., *see* CRAWHALL, J. C., and others.

†SILVERSTONE, J. T. The treatment of obesity. *Hospital Medicine*, 1, 1967, pp. 594–599.

———, *see also* FRIEDMAN, D. E. I., and ———.

†SNELL, W. E. Frank Buckland—medical naturalist. *Proc. R. Soc. Med.*, 60, 1967, pp. 291–296.

SPECTOR, W. G. The cytokinetics of chronic inflammation. *Scient. Basis Med. Annual Reviews*, Ch. 10, 1967, pp. 163–173.

†TANNAHILL, Mary. Attempted suicide. *Hospital Medicine*, 1, 1967, pp. 511–517.

THOMPSON, C. J., *see* CRAWHALL, J. C., and others.

THOMSON, W. H. F. Infected aneurysm of abdominal aorta: successful resection and prosthetic replacement. *Proc. R. Soc. Med.*, 60, 1967, pp. 475–476.

TURNER, P., *see* HILL, R. C., and ———.

UNGAR, A., *see* DALY, M. de Burgh, and others.

†VICKERY, C. M. (with others). Morphologic observations of internal mammary artery-myocardial implantation. *Surgery Gynec. Obstet.*, 123, 1966, pp. 799–806.

†WALLER, R. E. Bronchi and lungs—air pollution. *In*, Raven, R. W., and Roe, F. J. C., *eds. The prevention of cancer*, 1967, pp. 181–186.

WATERWORTH, Pamela M., with DARRELL, J. H. Dosage of gentamicin for pseudomonas infections. *Br. med. J.*, 27th May, 1967, pp. 535–537.

WATTS, R. W. E., *see* CRAWHALL, J. C., and others.

WILLOUGHBY, D. A., and COOTE, Elizabeth. The lymph-node permeability factor: a possible mediator of experimental allergic thyroiditis in the rat. *J. Path. Bact.*, 92, 1967, pp. 281–289.

ZEEGEN, R., *see* HUDSON, C. N., and ———.

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ST. BARTHOLOMEW'S HOSPITAL JOURNAL

CLINICAL AND RESEARCH SUPPLEMENT

CONTENTS

Hodgkins Disease. Immunology, Prognosis and Treatment *by* G. Hamilton Fairley .. i

New Specimens added to the Pathology Museum during 1966 x

Three New Specimens of Interest *by* W. J. Hanbury xi

Recent Papers by Bart's Men xiv

Supplement No. 20 **Vol. LXXI, October, 1967**

Hodgkins Disease

Immunology, Prognosis and Treatment

by G. Hamilton Fairley Consultant Physician St. Bartholomews Hospital

Since the first description by Hodgkin in 1832, the manifestations and course of this disease have presented a fascinating and, until recently, depressing picture. It is now generally agreed that it is a malignant disease, which untreated leads inevitably to death. It may occur at any age, but like sarcoma and unlike carcinoma frequently attacks young adults, a fact which heightens the tragedy surrounding this illness if the diagnosis is not made early in the course of the disease.

Recently there has been a renewed interest in Hodgkin's disease for two main reasons. First, treatment has improved to such an extent that some patients with localised disease have a real chance of being "cured", and even with generalised disease new forms of chemotherapy, although not curative, may enable patients to lead many months or even years of happy useful life. Secondly, disturbances in immunity mechanisms have been described which may have an effect on the course and prognosis of the disease.

The purpose of this article is to review the immunological abnormalities in Hodgkin's disease, and discuss the recent advances in treatment which have led to the improved prognosis.

Immunological abnormalities in Hodgkin's disease:

(i) Immunological response to foreign antigens

It is possible to study both humoural immunity (the formation of circulating antibody) and cellular immunity (delayed hypersensitivity and homograft rejection) following immunisation with a foreign antigen.

In Hodgkin's disease the formation of circulating antibody following immunisation with an antigen the patient has never met before (primary response) may be impaired, but the secondary response to antigens encountered in the past is usually normal. By contrast in the malignant diseases of lymphocytes and plasma cells both the primary and secondary responses are grossly impaired.

The situation with cellular immunity is quite different. Delayed hypersensitivity is impaired to a greater extent in Hodgkin's disease than in any other malignant disease. Fig. 1 shows the results of Mantoux tests on 138 patients and

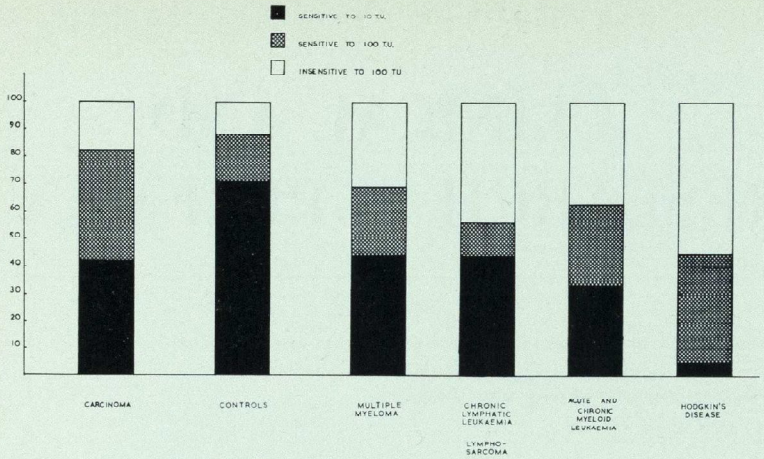


Fig. 1 Results of skin testing patients with 10 and 100 T.U.

controls. The important findings are those obtained with 10 Tuberculin Units (T.U.). 71% of the controls responded to 10 T.U. compared with 42% of patients with carcinoma, between 33-44% of those with various reticuloses, but only 5% of those with Hodgkin's disease. Similar results have been obtained with skin homografts.

Delayed hypersensitivity is also impaired in non-malignant diseases of the reticulo-endothelial system, such as sarcoidosis, and it was suggested at one time that the mechanism of suppression in sarcoidosis might be the same as in the reticuloses. However, this is not the case because half the patients with sarcoidosis who are insensitive to tuberculin respond if cortisone is injected with the tuberculin (Citron and Scadding, 1957), whereas there is no such effect in the reticuloses, including Hodgkin's disease (Fairley and Matthias, 1960).

The practical significance of this is that these patients are more prone to infection with certain organisms, particularly tubercule bacilli and various fungi, and it is necessary to exclude these before assuming that fever is simply due to the disease.

(ii) Immunological reaction by the patient against his own tumour

Evidence is now accumulating that in man, as in animals, there is an immunological reaction by the host against his own tumour, that this reaction is cellular rather than humoural, and mediated by lymphocytes. For example, it is known that the prognosis in various malignant diseases including Hodgkin's disease is related to the number of lymphocytes in the biopsy specimen, lymphocytic depletion being associated with a poor prognosis and generalised disease (Lukes, 1964). For these reasons and because of the impairment in cellular immunity, which is mediated by lymphocytes, Dr. Crowther at Bart's has been studying the lymphocytes in the peripheral blood of patients with Hodgkin's disease before they have received any treatment. (Crowther et al., 1967).

The lymphoid cells in the peripheral blood in Hodgkin's disease differ from those in normal blood in the following ways:—

(a) In 14 out of 18 patients there was a definite increase in the number of large lymphoid cells (Fig. 2), which were approximately 20 μ in diameter with prominent nucleoli, and on electron-microscopy had large numbers of ribosomes arranged in rosettes but little endoplasmic reticulum (Fig. 3). Similar cells are also found in the efferent lymph from nodes draining the sites of antigenic challenge in experimental animals (Hall et al., 1967).

(b) There is an increase in the number of medium-sized lymphocytes with basophilic cytoplasm, some of which contain endoplasmic reticulum which is found in plasma cells (Fig. 4).

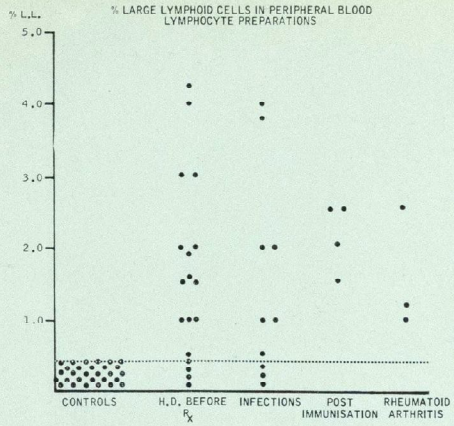


Fig. 2 Percentage of large lymphoid cells in peripheral blood lymphocyte preparations.

(c) There is an increase in the DNA synthesis in the lymphoid cells, without any stimulation with phytohaemagglutinin, as shown in Fig. 5. Autoradiography confirms that the increase in DNA synthesis occurs in the large lymphoid cells.

One possible explanation for these findings is that the lymphocytes in Hodgkin's disease are involved in an "immunological" reaction against the disease, and we therefore studied the lymphoid cells in the peripheral blood of patients with a variety of infections, normal subjects after immunization, and patients with rheumatoid arthritis. The results are shown in Figs. 2 and 5. The fact that similar changes in the lymphoid population occur in patients where there is known to be a definite immunological reaction in progress, supports the hypothesis that the lymphoid cells in Hodgkin's disease may be reacting against the tumour, although of course other explanations are possible. For example, it is known that malignant cells in the peripheral blood actively synthesize DNA. This is unlikely in our cases because we were unable to find any reticulum

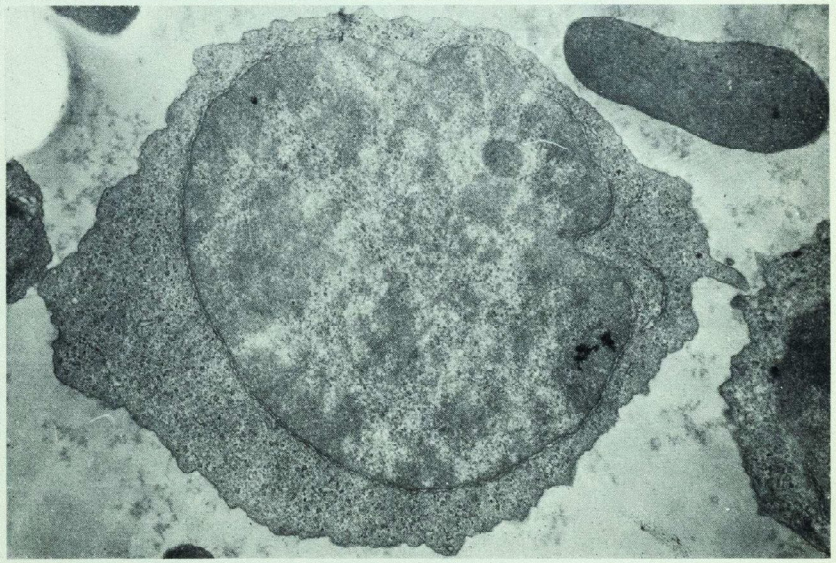


Fig. 3 Electron-micrograph of a large lymphoid cell from a patient with Hodgkin's disease showing large numbers of ribosomes in the Cytoplasm. (Photo courtesy Chester Beatty Research Institute.)

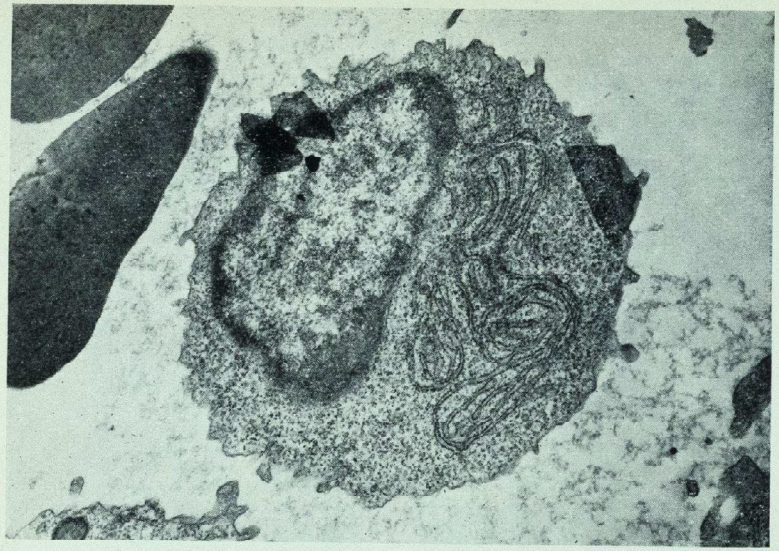


Fig. 4 Electron-micrograph of a medium-sized lymphocyte showing well-marked endoplasmic reticulum. (Photo courtesy Chester Beatty Research Institute.)

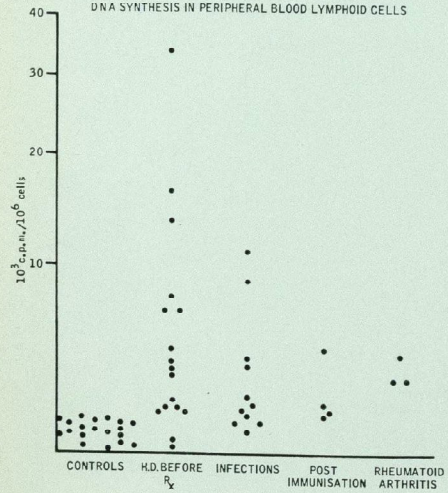


Fig. 5 DNA synthesis in peripheral blood lymphoid cells.

or Reed-Sternberg cells in the lymphoid cell preparations, and because it is improbable that the large lymphoid cells are the malignant cells in Hodgkin's disease.

Another possibility is that, because of disorganisation of the normal lymph node architecture, increased numbers of immature lymphoid cells appear in the peripheral blood just as, with infiltration of the bone marrow, primitive bone marrow cells appear in the blood causing a leuco-erythroblastic anaemia. The patients we have studied with carcinomatous infiltration of the lymph nodes, however, have usually had normal lymphoid cell populations in the peripheral blood. We are now extending the study to include more patients with carcinoma and reticulum cell sarcoma.

Undoubtedly, the most attractive hypothesis, which leads to the greatest amount of further research, is that the changes in Hodgkin's disease represent an immunological reaction. Whether this is directed against tumour specific antigens and hence the disease, or against some undiscovered subclinical infection, remains to be proved.

Prognosis and Treatment

The first clear results suggesting that Hodgkin's disease might not inevitably lead to death came from Canada from the work of Peters and her colleagues (Peters and Middlemiss, 1958). They divided the patients into three stages :—

Stage I — Disease confined to one anatomical group of lymph nodes.

Stage II — Disease involving one, two, or at the most three groups of lymph nodes confined to adjacent anatomical areas
(A) Without systemic symptoms
(B) With systemic symptoms.

Stage III — Disease involving two or more groups which are not adjacent.

For example, if both sides of the neck are involved this would be *Stage II*, but if one inguinal region and one side of the neck were affected it would be *Stage III*. The systemic symptoms of Hodgkin's disease are fever, pruritus, weight loss, lassitude and malaise. This classification has disadvantages and will shortly be replaced, but based on this, Peters and Middlemiss were able to demonstrate that the prognosis is much better if the disease is localised and there are no systemic symptoms as shown in Table I. 60% of patients in *Stages I and IIA* at the time of first treatment surviving 10 years, compared with only 6% in *Stages IIB and III*.

TABLE I

Peters and Middlemiss (1958)

	5 YEAR SURVIVAL	10 YEAR SURVIVAL
IIA — NO SYMPTOMS	64%	60%
STAGES I		
STAGES IIB III — WITH SYMPTOMS	31%	6%

Localised Disease

The dramatic improvement in the prognosis of patients with localised disease is due to radiotherapy. At first, treatment was given to the affected areas only, and large doses were not used because of the danger of damaging the skin with the early machines. The results were promising in that the enlarged lymph nodes returned to normal, but frequently the disease recurred in another site and there was no impressive improvement in the prognosis. More recently two developments in the technique of radiotherapy have occurred.

First, Peters and Middlemiss (1958) irradiated not only the affected area but also the adjacent lymph node areas. For example, if a patient had Hodgkin's disease affecting the glands on the left side of the neck, radiotherapy would be given to both sides of the neck, the mediastinum and the left axilla. The results are shown in Table II and are impressive, as half the patients with disease confined to one anatomical site were alive 15 years later. This forms a complete contrast with

TABLE II

Peters and Middlemiss (1958)

STAGE OF DISEASE	PERCENTAGE OF PATIENTS ALIVE AFTER: 5 YEARS	10 YEARS	15 YEARS
STAGE I: Disease confined to one anatomical site	71%	58%	50%
STAGE II: Disease confined to two or more adjacent sites	56%	35%	21%
STAGE III: Generalised disease	15%	2%	—

TABLE III

Peters and Middlemiss (1958)

	5 YEAR SURVIVAL	10 YEAR SURVIVAL	15 YEAR SURVIVAL
Only involved area treated with Radiotherapy	46%	31%	26%
Area involved plus adjacent Lymphatics treated with Radiotherapy	68%	53%	43%

the results in generalised disease in which only 15% were alive at 5 years, and none by 15 years. Table III shows the results of irradiating only the involved area compared with irradiating the involved area plus the adjacent lymph nodes.

Secondly, the technique of giving radiotherapy has improved and it is now possible, using megavoltage machines and radioactive cobalt (^{60}Co) to give much higher tumour dosage without damaging the skin to the same extent. Easson and Russell (1963), working in Manchester, have reported similar results to Peters, treating the whole volume of tissue involved in one field giving the maximum dose that could be tolerated. In the U.S.A. Kaplan (1966) has used megavoltage radiotherapy in high dosage to both the involved and adjacent areas and his results are even more impressive: 80% of the patients with localised disease have survived 5 years and he concludes from his figures that if there is no sign of a recurrence by the end of the fifth year, the patient has a 95% chance of being cured permanently. The prognosis in strictly localised disease may in fact be even better now that really accurate staging is possible due to the introduction of lymphangiography to show the presence of enlarged iliac and para-aortic glands, which often cannot be felt, and tomography to show intra-thoracic nodes (Fig. 6).

Clearly, as far as localised disease is concerned, the old idea that this is an incurable disease must be abandoned, and patients must be accurately assessed and treated at once since many patients will be *permanently cured.*

Generalised Disease

In addition to extensive involvement of the reticulo-endothelial system (lymph nodes, liver and spleen) the disease, like any malignant disease, may infiltrate other organs such as bone, skin, lung, pleura, gut, bone marrow, etc. As shown in Table II, once the disease has become generalised the prognosis is much worse, but again this is no reason for adopting the attitude that nothing can be done to help such patients. In addition to radiotherapy, which still may be useful even in generalised disease, there are a number of chemical agents, cytotoxic drugs, which can produce remarkable improvement for a variable period of time. The most powerful and the most rapid form of chemotherapy is nitrogen mustard, mustine hydrochloride. It has to be given by intravenous injection into a fast-running intravenous drip because if any leaks outside the vein it produces a severe burn. This form of treatment is now reserved for those cases in which it is essential to obtain a rapid effect, e.g. with extra-dural disease compressing the spinal cord, or with impending obstruction of the bronchi or

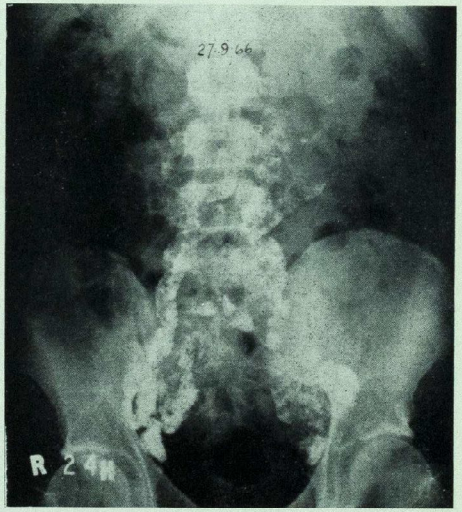
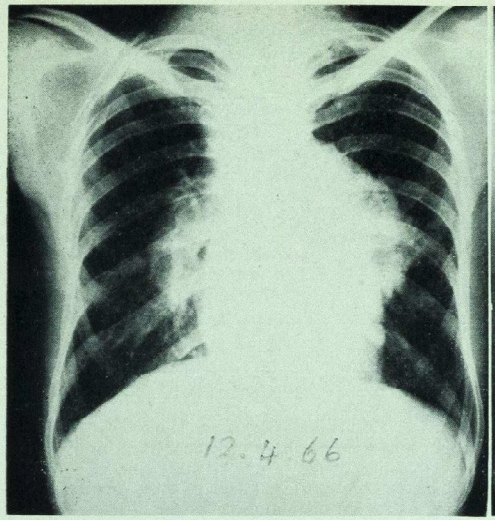


Fig. 6 Lymphangiogram before radiotherapy showing enlarged intra-abdominal lymph nodes. (Photo courtesy St. B. H. Medical Illustrations Dept.)



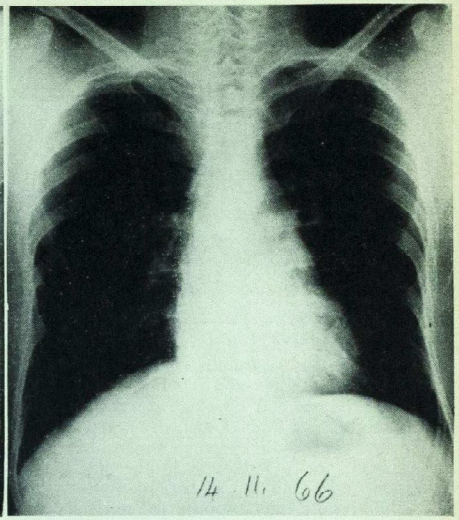
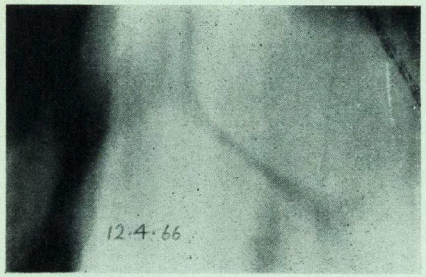
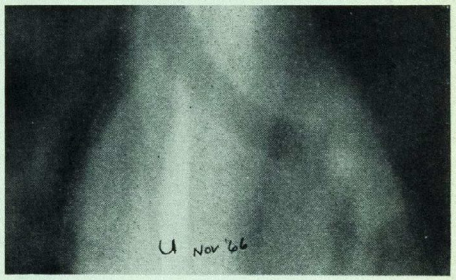


Fig. 7 (a) Chest xray of a man aged 22 with Hodgkin's disease in April 1966 showing a large mass in the chest.

(b) Chest xray 7 months later following treatment with mustine hydrochloride (Nitrogen mustard) and radiotherapy, showing that the mass has completely disappeared.
This patient is now quite well.





Tomograms taken at the same time as the above chest films, showing the gross narrowing of the Left Main Bronchus opened up following the treatment.
(Photos courtesy St. B. H. Medical Illustrations Dept.)

superior vena cava. An improvement is often seen within twelve hours, and often radiotherapy is then given to the area involved (Fig. 7).

When there is no great urgency it has been our practice at Bart's to treat patients initially with cyclophosphamide, and to continue this until the disease is no longer responding: vinblastine sulphate (Velbe) is then used until it becomes ineffective, and this is followed by a methyl hydrazine derivative, procarbazine hydrochloride (Natulan).

Because of the difficulty in assessing the efficacy of any form of treatment in a disease like Hodgkin's disease, with such a variable course, only the initial response to each agent

TABLE IV

Results of treatment with cyclophosphamide, vinblastine and procarbazine in patients with Hodgkin's Disease when each drug was used for the first time. (Fairley, Patterson and Scott, 1966).

RESULT OF TREATMENT	NUMBER OF PATIENTS TREATED		
	Cyclophosphamide	Vinblastine	Procarbazine
Beneficial	70 (69%)	18 (65%)	10 (59%)
Clinical state unchanged	13 (13%)	2 (7%)	2 (12%)
Failed:—			
Clinical deterioration	10 (10%)	4 (14%)	2 (12%)
Treatment abandoned	8 (8%)	4 (14%)	3 (17%)
TOTAL NUMBER OF PATIENTS	101 (100%)	28 (100%)	17 (100%)

has been analysed. Subjective improvement was assessed by the symptoms of malaise, pruritus, and pain when this could definitely be attributed to the disease, and objective improvement by the abolition of fever, a gain in weight in those patients in whom recent weight loss had occurred, and a reduction in the size of the lymph nodes and the spleen. In assessing the overall results, the response to treatment was considered to be "beneficial" only if there was improvement in one of the objective criteria for at least one month. No patient was recorded as benefiting if there was only an improvement in symptoms.

The results are shown in Table IV, cyclophosphamide having a beneficial effect in 69%, vinblastine in 65%, and procarbazine in 59%. This demonstrates that each of these drugs may be useful in the control of the disease, the minor differences in response are probably not

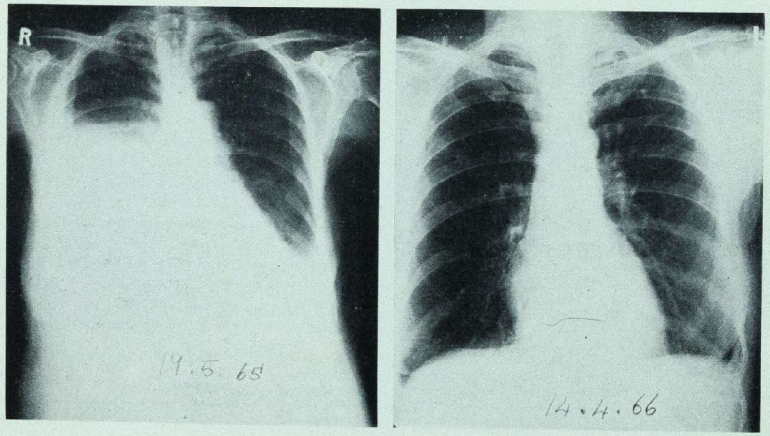


Fig. 8 (a) Chest xray of a woman aged 56 with Hodgkin's disease in May 1965 showing a large pleural effusion due to infiltration of the pleura with Hodgkin's disease. At this time she had generalised disease with many enlarged lymph nodes within the abdomen, together with ascites.

(b) Chest xray 11 months later showing complete resolution following treatment with cyclophosphamide, the abdomen mass and ascites also subsided. The patient is now well and has no signs of disease.

(Photo courtesy St. B. H. Medical Illustrations Dept.)

significant because of the small number of patients treated with procarbazine, and the order in which the drugs were given, procarbazine being used much later in the course of the disease than cyclophospamide. A typical response to chemotherapy is shown in Fig. 8.

Corticosteroids are also used in Hodgkin's disease but are much less effective than in some of the other reticuloses, e.g. lymphosarcoma. However, they may be useful in patients who are anaemic or have uncontrollable fever or pruritus.

Toxic Effects of Chemotherapy

The most troublesome and most common side-effects of cyclophosphamide was alopecia, which was readily corrected after the drug was stopped. The white cell count and particularly the mononuclear cells were used as a therapeutic index and were therefore constantly depressed, but the platelets and haemoglobin were usually well maintained throughout the use of this drug. Some patients developed mild gastro-intestinal disturbances, with nausea, vomiting, or diarrhoea, and two patients suffered from severe haemorrhagic cystitis which required a complete cessation of the drug. The appearances on cystoscopy were similar to those of irradiation cystitis, and only occur in patients who have been treated for a long time. For this reason we prefer not to give the drug continuously for longer than six months unless absolutely necessary.

Treatment with vinblastine commonly caused leucopenia and did not seem to be dose-dependent, since one patient developed a sustained depression of the white cell count after one injection of 6 mg. only; the haemoglobin and platelet levels were not affected by the dose used. The two patients developed severe abdominal pain and one had paralytic ileus with distension of the small gut and colon after a more intensive course of administration than subsequently became our routine. Peripheral neuropathy is a well-recognised complication which was seen in two patients; in one this occurred as a complication shortly before death, and failed to improve when the drug was stopped; in the other the signs improved slowly after the treatment was abandoned but it took five months for the tendon reflexes to return to normal. Epilation was not a troublesome effect of this drug.

In those patients who received procarbazine we found little in the way of troublesome side-effects apart from nausea and vomiting, which was usually controlled with either pyridoxine or perphenazine, though it led to the abandonment of treatment with three patients. The blood was examined frequently, but neither leucopenia nor thrombocytopenia was a problem in the dose we used, though, as with all cytotoxic drugs, these may occur. Only one patient, a man, noticed excessive loss of hair.

From all this it is clear that the hopeless approach to the treatment of Hodgkin's disease must be abandoned. Clearly the prognosis is best when the diagnosis is made in the early stages, but at any stage a great deal can be done to help these patients.

Acknowledgements

I wish to thank Sir Ronald Bodley Scott for permission to publish details of patients under his care; Dr. Michael Cymbalist of Ward Blenkinsop & Co. Ltd. for his help in the analysis of the results of patients treated with cyclophosphamide; and Mr. M. S. C. Birbeck of the Chester Beatty Research Institute, London, for the electron-microscopy.

References

CITRON, K. M., and SCADDING, J. G. (1957) Quart. J. Med., *26*, 277

CROWTHER, D., FAIRLEY, G. H. and SEWELL, R. L. (1967) Nature (in press)

EASSON, E. C. and RUSSELL, M. H. (1963) Brit. med. J., *1*, 1704

FAIRLEY, G. H. and MATTHIAS, J. Q. (1960) Brit. med. J., *11*, 433-436

FAIRLEY, G. H., PATTERSON, M. J. L., and SCOTT, R. B. (1966), Brit. med. J., *2*, 75-78

HALL, J. G., MORRIS, B., MORENO, G. D., and BESSIS, M. C. (1967) J.Exp. Med., *125*, 91

KAPLAN, H. S. (1966) Cancer, *19*, 356

LUKES, R. J. (1964), J.A.M.A., *190*, 914

PETERS, M. V. and MIDDLEMISS, K. C. H., (1958) Amer. J. Roentgenol., *79*, 114

NEW SPECIMENS ADDED TO THE PATHOLOGY MUSEUM DURING 1966

Museum No.	Specimen	Clinician
A. 545	Odontogenic Myxoma of Mandible	Mr. Wallace
A. 606	Chondrosarcoma of Femur	Mr. Manning
A. 946	Avascular Necrosis of Head of Femur following Fracture	Mr. Aston
B. 87	Osteo-arthritis: McMurray's Osteotomy	Mr. Aston
C. 11	Lumbar Spondylosis	Dr. Dawson
E. 5b	Corrected Transposition (with Ebstein's Malformation of left-sided Tricuspid Valve)	Mr. Tubbs
E. 7	Fallot's Tetralogy	Dr. Franklin
E. 10	Double Outlet Right Ventricle with Pulmonary Stenosis and previous Blalock Anastomosis	Dr. Hayward and Mr. Tubbs
E. 149	Ventricular Cardiac Hypertrophy (Composite Specimen)	
E. 174	Myocardial Infarction	Dr. Hayward
F. 111	Dissecting and Saccular Aneurysms of Aorta	Mr. Birnstingl
F. 320	Angiomatous Malformation of Femoral Vein	Mr. Birnstingl
G. 217c	Thyroglossal Cyst	Presented by Mr. Nash
H. 26	Primary Mesothelioma of Pleura	Dr. Jones
H. 27	Primary Mesothelioma of Pleura	Prof. Scowen
H. 54	Bronchial Asthma	Dr. Oswald
H. 142d	Infarction of Pneumonic Lung with Fungal Infection	Dr. Balme
H. 156a	Idiopathic Pulmonary Fibrosis	Mr. Hill
H. 156b	Bird Fancier's Lung	Dr. Spencer
H. 167a	Lipoid Pneumonia	Mr. Tuckwell
K. 45	Moniliasis in Agranulocytosis	Mr. Fuller
K. 104	Carcinoma of Oesophagus	Mr. Hill
K. 266	Chronic Duodenal Ulcer	Dr. Black
L. 103	Pseudomembranous Colitis	Mr. Birnstingl
L. 134	Megacolon in Chagas' Disease	Presented by Dr. Böhn
M. 257	Intussusception caused by Leiomyosarcoma	Mr. Hunt
N. 53a	Portal Cirrhosis	Mr. Hunt
N. 272	Carcinoma of Common Hepatic Duct	Mr. Tuckwell
P. 5	Primary Sideroblastic Anaemia	Sir R. Bodley-Scott
P. 9	Acute Lymphatic Leukaemia (Composite Specimen)	Sir R. Bodley-Scott
P. 17	"Eosinophilic" Leukaemia (Femur)	Prof. Scowen
P. 27b	Secondary Carcinoma (Femur)	Dr. Oswald
P. 89c	Infarcts of Spleen	Dr. Fairley
P. 128a	"Eosinophilic" Leukaemia (Spleen)	Prof. Scowen
P. 140	Di Guglielmo's Syndrome (Spleen)	Sir R. Bodley-Scott
P. 143	Hodgkin's Disease (Spleen)	Sir R. Bodley-Scott
P. 185b	Hashimoto's Disease	Mr. Nash

Museum No.	Specimen	Clinician
P. 191	Nodular Goitre	Mr. Robinson
P. 223	Carcinoma in Nodular Thyroid	Mr. Tuckwell
P. 230c	Primary Hyperparathyroidism	Surgical Unit
P. 232a	Carotid Body Tumour	Surgical Unit
P. 245	Cystic Hygroma of Mediastinum	Dr. Oswald and Mr. Tubbs
P. 249h	Intrathoracic Neuroblastoma	Mr. Tubbs
P. 269	Addison's Disease. Calcified Suprarenal Glands	Prof. Scowen
P. 247a	Adrenal Cortical Adenoma	Mr. Tuckwell
Q. 33	Monilial Infection (Kidney)	Dr. Dawson
Q. 67	Acute Suppurative Pyelonephritis	Dr. Black
Q. 176	Retroperitoneal Fibrosis affecting Ureter and Kidney	Mr. Badenoch
Q. 249	Nephroblastoma (Wilms' Tumour)	Mr. Nash
T. 18	Subarachnoid Haemorrhage (Intracranial Aneurysms)	Mr. O'Connell
T. 151	Acoustic Neurinoma	Mr. O'Connell
T. 160a	Astrocytic Glioma of Brain Stem	Dr. Oswald
U. 220a	Glomus Jugulare Tumour (Irradiated)	Mr. Cope and Dr. Hayward
V. 43	Umbilical Concretion	Presented by Mr. Hunt
W. 35	Brenner Tumour and Cystadenoma	Mr. Nash
W. 55b	Bilateral Ovarian Carcinoma (Primary Solid)	Mr. Fraser
W. 60a	Thecoma of Ovary with Endometrial Hyperplasia and Early Carcinoma	Mr. Bourne
W. 66	Krukenberg Tumours	Mr. Birnstingl
Z. 146	Hibernoma	Mr. Birnstingl
Z. 182	Granular Cell Myoblastoma (Subcutaneous)	Prof. Taylor
TE 140a	Congenital Atresia of Ileum	Presented by Mr. Nash
ML. 84	Bullet Wound of Uterus	Presented by The Royal College of Surgeons

Three New Specimens of Interest

by W. J. Hanbury Curator of the Pathology Museum

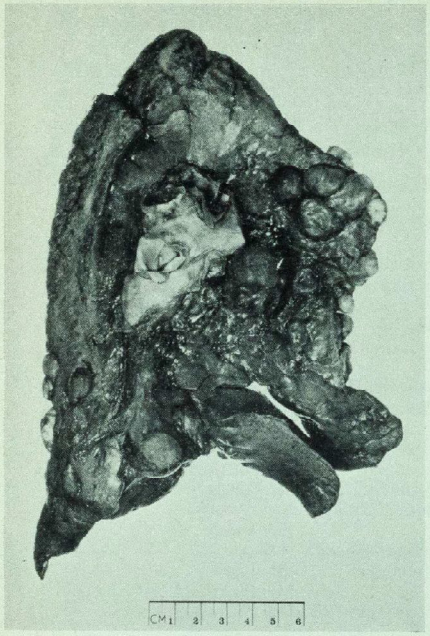
II. 156b Bird Fancier's Lung

Part of a left lung which is shrunken, firm and fibrotic, with numerous emphysematous bullae. Both lungs were similarly and diffusely involved.

Microscopic Examination

Sections show fairly extensive areas of fibrosis with foci of chronic pneumonia, cubical metaplasia of alveolar lining cells and scattered foreign-body giant cells, some of which are associated with cholesterol crystals. Occasional Schaumann bodies are also present. Some of the blood vessels show thickening of their walls, and ante-mortem thrombi are seen in branches of the pulmonary artery. The larger bronchi show some goblet-cell hyperplasia.

From a woman, aged 58, who presented with an 8-year history of bronchitis with copious sputum and dyspnoea on effort. She had club-



H. 1566. Bird Fancier's Lung

bing of the fingers, and a later X-ray showed patchy inflammatory changes. Respiratory function tests suggested that she had diffuse pulmonary fibrosis. Subsequent questioning revealed that she had kept a pet budgerigar for eight years and had often kissed and fondled the bird. It had also been noticed that coughing was exacerbated by the presence of the bird in the same room. Sensitivity tests then revealed that she had precipitins in her serum against budgerigar antigens, and budgerigar serum produced a positive Arthus-type skin reaction. The bird was destroyed and the patient's condition improved somewhat with steroid treatment, but she later developed a severe chest infection and was being treated for this when she suddenly collapsed and died due to a massive pulmonary embolism.

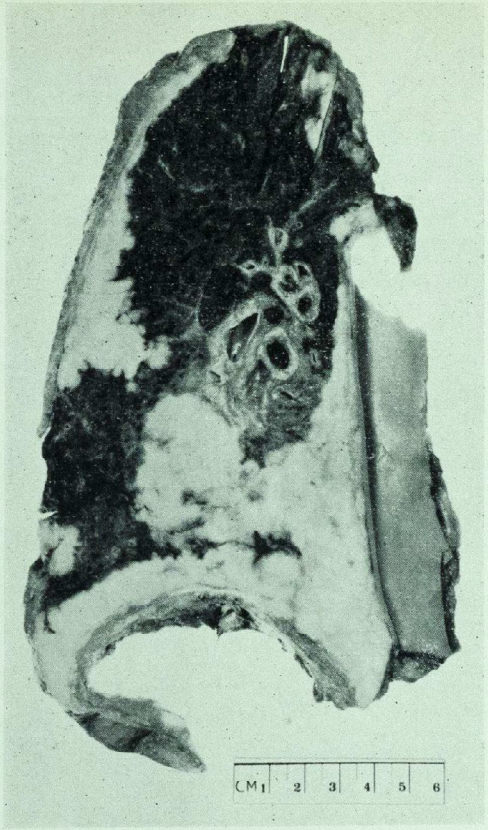
E. 10 Double Outlet Right Ventricle with Pulmonary Stenosis and Previous Blalock Anastomosis.

A heart opened to show complete transposition of the aorta resulting in the right ventricle giving origin to both great vessels. Associated with this is a large ventricular septal defect. The pulmonary orifice is stenosed, showing an eccentric perforation in a dome-like diaphragm. This variety of double outlet right ventricle which is associated with pulmonary stenosis is sometimes referred to as the "Fallot type." The right ventricle is greatly hypertrophied, and the right atrium is also much enlarged. In addition to the heart the specimen includes portions of the aorta, the left subclavian and pulmonary arteries and part of the left lung A red wire marks the operative anastomosis between the left subclavian and pulmonary arteries.

From a boy, aged 16, who at the age of six had undergone a successful Blalock-Taussig operation at another hospital for the relief of symptoms due to "Fallot's tetralogy". Subsequent to this operation the patient's condition remained fairly steady and he was only mildly incapacitated. For six months prior to death, however, there had been a slight increase of breathlessness, and the boy was referred here for further investigation and assessment with a view to total correction. Cardiac catheterisation was carried out and the findings were consistent with Fallot's tetralogy, although several unusual features were noted. It was decided that a total correction should be attempted, although there was some doubt about the precise nature of the anomaly. The boy died, however, before any operation was performed, and the cause of death was thought to be cardiac failure due to arrhythmia.

H. 26 Primary Mesothelioma of Pleura

A slice of a left lung and some immediately adjacent structures showing the visceral and parietal pleurae to be infiltrated extensively by whitish neoplastic tissue, which has invaded the lung in places. (The right pleurae, pericardium, chest wall, mediastinum, diaphragm, peritoneum, liver and vertebrae were also found to be involved by direct extension or metastases).



H. 206 Primary Mesothelioma of Pleura

Microscopic Examination

The tumour is a mesothelioma, in some parts epithelial-looking with pseudo-glandular appearances, in others more spindle-celled and in others more anaplastic with occasional giant cells present. There is no evidence of asbestosis.

From a man, aged 37, whose main symptom had been pleuritic pain throughout the course of his illness. There had been a previous history of contact with asbestos. Treatment by surgery and by deep X-ray therapy was of little avail. Terminally there were signs of constrictive pericarditis.

RECENT PAPERS BY BART'S MEN

AUMONIER, F. J., *see* CAVE, A. J. E., and ——.

*BACH, F. Arthritis, ability and disability, return to work. *Rehabilitation*, April-June, 1963.

BALME, H. W. The choice of analgesic. *Practitioner*, 198, 1967, pp. 769-776.

*BANKS, C. N. Orbital foreign body simulating a malignant melanoma. *Br. J. Ophthal.*, 51, 1967, pp. 566-567.

*BESSER, G. M. Auditory flutter fusion as a measure of the actions of centrally acting drugs: modification of the threshold for fusion and the influence of adapting stimuli. *Br. J. Pharmac. Chemother*, 30, 1967, pp. 329-340.

*——. Time course of action of diazepam. *Nature*, 214, 1967, p. 428.

*——, and DUNCAN, Catherine. The time course of action of single doses of diazepam, chlorpromazine and some barbiturates as measured by auditory flutterfusion and visual flicker fusion thresholds in man. *Br. J. Pharmac. Chemother.*, 30, 1967, pp. 341-348.

BIRNSTINGL, M. Results of sympathectomy in digital artery disease. *Br. med. J.*, June 3, 1967, pp. 601-605.

——, (and Craven, D.). Intraluminal obstruction of the femoral vein by an angiomatous malformation. *Br. J. Surg.*, 54, 1967, pp. 576-577.

——, and others. Variations in oxyhaemoglobin dissociation with age, smoking, and Buerger's disease. *Br. J. Surg.*, 54, 1967, pp. 615-619.

BOULTON, T. B., and COLE, P. Anaesthesia in difficult situations. 5, General and local complications. *Anaesthesia*, 22, 1967, pp. 435-464.

BOURNE, G. Innocent heart pain. Detailed history of great importance. *Medical News Magazine, July* 1967, pp. 20-21.

BOWN, R., *See* ZEEGEN, R., with others.

BUTLER, H. The giant cell trophoblast of the Senegal galago (*Galago senegalensis senegalensis*) and its bearing on the evolution of the primate placenta. *J. Zool, Lond.*, 152, 1967, pp. 195-207.

*CAIRNS, J. D., (with others). Carcinoma of endometrium and polycystic ovaries in a 22-year-old patient. *Can. med. Ass. J.*, 96, 1967, pp. 1473-1476.

*CASSON, F. R. C. Living within limits. *Cardiac News Letter*, Jan.-May, 1967, pp. 9-11.

CATCHPOLE, B. N., *see* NEELY, J., and ——.

*CAVE, A. J. E., and AUMONIER, F. J. The reniculus of *Tursiops truncatus, Stenella longirostris* and other cetaceans. *J. R. microsc. Soc.*, 86, 1967, pp. 323-342.

CAWLEY, M. I. D., and WILLOUGHBY, D. A. Lymph-node permeability factor in human synovial tissue as a possible mediator of chronic joint inflammation. *Lancet*, July 1, 1967, pp. 24-26.

CHAMBERLAIN, D. A., and others. Effects of atropine on heart-rate in healthy man. *Lancet*, July 1, 1967, pp. 12-15.

*CHARLTON, C. A. C. Fibrinolysis and urolithiasis. *Lancet*, June 3, 1967, pp. 1199-1200.

CLARKE, J. A., *see* SALSBURY, A. J., and ——.

COLE, P., *see* BOULTON, T. B., and ——.

——, *see also* BIRNSTINGL, M., and others.

* CRAWHALL, J. C., (with others). Intestinal transport of cystine and cysteine in man: evidence for separate mechanisms. *J. clin. Invest.*, 46, 1967, pp. 30-34.

CRICHTON, T. C., *see* MARSHALL, R. D., and others.

CULL, P. G. Medical illustration. *Nursing Mirror*, June 9, 1967, pp. i-iv.

CURWEN, M. P., *see* WYATT, A. P., and others.

DALY, I. de Burgh. The second Bayliss-Starling Memorial Lecture. Some aspects of their separate and combined research interests. *J. Physiol.*, 191, 1967, pp. 1-23.

*DAVIES, D. G. Persistent stapedial artery: a temporal bone report. *J. Lar. Otol.*, 81, 1967, pp. 649-660.

*——, (with others). Salicylate ototoxicity: a biochemical and electrophysiological study. *Ann. Otol. Rhinol. Lar.*, 76, 1967, pp. 118-128.

*DORMER, A. E. Bacterial endocarditis. *Hospital Medicine*, 1, 1967, pp. 797-804.

DUNCAN, Catherine, *see* BESSER, G. M., and ——.

EDWARDS, G. Relevance of American experience of narcotic addiction to the British scene. *Br. med. J.*, Aug. 12, 1967, pp. 425-429.

FAJRLEY, G. H., *see* WATKINS, P. J., and others.

FLAVELL, G. Crush injuries of the chest. *Hospital Medicine*, 1, 1967, pp. 1043-1050.

——. Lung abcess. *Nursing Times*, June 9, 1967, pp. 748-751.

FLETCHER, C. M. (with others). Serial studies of 100 patients with chronic airway obstruction in London and Chicago. *Thorax*, 22, 1967, pp. 327-335.

GALBRAITH, H. J. B. A clinical study of cephaloridine. *Br. J. clin. Pract.*, 21, 1967, pp. 331-336.

GASKING, J. D., and others. Closed-circuit television and videotape recording in teaching pharmacology. *Brit. J. med. Educ.*, 1, 1967, pp. 216-220.

*GIBBS, Dorothy A., and WATTS, R. W. E. Oxalate formation from glyoxylate in primary hyperoxaluria: studies on liver tissue. *Clin. Sci.*, 32, 1967, pp. 351-359.

HAWKINS, L. H., *see* BIRNSTINGL, M., and others.

HEATH, R. B., *see* STARK, J. E., and ——.

HENRY, L., *see* WYATT, A. P., and others.

HOFFBRAND, A. V., *see* MOLLIN, D. (with others).

HUBBLE, D. V. Diagnosis of hypopituitarism in childhood. *Arch. Dis. Childh.*, 42, 1967, pp. 228-231.

HUDSON, C. N. and STANSFELD, A. G. The histological changes produced in untreated adeno-carcinoma of the endometrium by a progestogen. *J. Obstet. Gynaec. Brit. Cwlth.*, 74, 1967, pp. 442-444.

JONES, N. O., *see* MARSHALL, R. D., and others.

KEELE, K. D. Cybernetic aspects of medical history. *Scott. med. J.*, 12, 1967, pp. 256-259.

KLIDJIAN, A. (and Sutton, P. D.). Duplication of the stomach associated with non-rotation of the gut. *Br. J. Surg.*, 54, 1967, pp. 731-735.

*LEHMANN, H. Haemoglobin Koelliker: A new acquired haemoglobin appearing after severe haemolysis: α_2 minus 141 Arg β_2. *Acta haemat.*, 37, 1967, pp. 174-180.

*——, (with others). Absence of variants of usual serum pseudocholinesterase (Acylcholine acylhydrolase) in South American Indians. *Acta. genet.*, 17, 1967, pp. 13-16.

*——, (with others). Haemoglobin F Texas I (α_2 γ_2 5Glu——Lys): a variant of Haemoglobin F. *Br. J. Haemat.*, 13, 1967, pp. 252-255.

*——, (with others). The silent serum cholinesterase gene. *Acta genet.*, 17, 1967, pp. 299-303.

*——, (with others). Hemoglobin G Saskatoon: β22 Glu——Ala. *Can. J. Biochem.*, 45, 1967, pp. 351-353.

*——, (with others). The suppression of Haemoglobin E synthesis when Haemoglobin H disease and Haemoglobin E trait occur together. *Humangenetik*, 3, 1967, pp. 312-318.

*——, (with others). Haemoglobin J Tongariki (α115 Alanine→Aspartic Acid): the first new haemoglobin variant found in a Pacific (Melanesian) population. *J. med. Genet.*, 4, 1967, pp. 1-6.

——, (with others). Haemoglobin J Baltimore interacting with beta-thalassaemia in an Australian family. *Med. J. Aust., i*, 1967, pp. 907-910.

——, (with others). The second observation of haemoglobin Norfolk occurring in an Italian family together with beta-thalassaemia. *Med. J. Aust., i*, 1967, pp. 910-913.

LYKKE, A. W. J., *see* SPECTOR, W. G., and others.

*MCGUIRE, N. G. A method of guillotine tonsillectomy with an historical review. *J. Lar. Otol.*, 81, 1967, pp. 187-195.

*——. Combined synchronous pharyngo-laryngo-oesophagectomy with colonic replacement. *J. Lar. Otol.*, 81, 1967, pp. 495-502.

MALPAS, J. S., *see* POWLES, R. L., and ——.

*MARKWELL, B. D. Correction of maxillary prognathism by one-stage osteectomy. *Br. J. plast. Surg.*, April 1967, pp. 179-183.

MARSHALL, R. D., and others. A T-piece for use with a blower-humidifier. *Anaesthesia*, 22, 1967, pp. 494-496.

MARWOOD, S. F. Louis Napoleon and his doctors. *Bristol Med.-chir. J.*, 82, 1967, pp. 71-82.

MOLLIN, D. L., (with others). A study of proximal and distal intestinal structure and absorptive function in idiopathic steatorrhoea. *Q. J. Med.*, 36, 1967, pp. 425-444.

MURLEY, R. S., *see* PUGH, J. I., and others.

NEELY, J. Comparison of the effects of a gastrin extract and a synthetic pentapeptide on gastrointestinal motility in the cat. *Gut*, 8, 1967, pp. 242-248.

——, and CATCHPOLE, B. N. An analysis of the autonomic control of gastrointestinal motility in the cat. *Gut*, 8, 1967, pp. 230-241.

*NOBLE, M. I. M., (and others). Effect of changes in Pa_{CO2} and Pa_{O2} on cardiac performance in conscious dogs. *J. appl. Physiol.*, 22, 1967, pp. 147-152.

*——, (with others). Serum carbonic acid pK^1 abnormalities in patients with acid-base disturbances. *Clin. Sci.*, 32, 1967, pp. 189-200.

*——, (with others). Relationship between the ballistocardiogram and the movement of blood from the left ventricle in the dog. *Cardiovasc. Res.*, 1, 1967, pp. 194-200.
*——, (and others). Blood pressure and flow in the ascending aorta of conscious dogs. *Cardiovasc. Res.*, 1, 1967, pp. 9-20.
OSWALD, N. C. Clinician's approach to respiratory viruses. *Br. med. J.*, July 1, 1967, pp. 35-36.
*PERKINS, E. S., (and Cheng, H.). Thyroid disease and glaucoma. *Br. J. Ophthal.*, 51, 1967, pp. 547-553.
POWLES, R. L., and MALPAS, J. S. Guillain-Barré syndrome associated with chronic lymphatic leukaemia. *Br. med. J.*, July 29, 1967, pp. 286-287.
*PUGH, J. I., and others. Granular-cell myoblastoma of the breast. *Brit. J. Surg.*, 54, 1967, pp. 590-594.
*——. Vesicointestinal fistula in the elderly. *Geriatrics*, Aug., 1967, pp. 87-95.
QUILLIAM, J. P., *see* GASKING, J. D., and others.
RADCLIFFE, W. A pioneer Lancastrian obstetrician: Kinder Wood (1785-1830). *Practitioner*, 199, 1967, pp. 234-238.
*REES, W. LINFORD. The pros and cons of monoamine oxidase inhibitors. *Prescribers Jnl.*, 7, 1967, pp. 13-18.
*ROSE, L., and WATSON, A. Flurothyl (Indoklon). Experience with an inhalational convulsant agent. *Anaesthesia*, 22, 1967, pp. 425-434.
SALSBURY, A. J., and CLARKE, J. A. New method for detecting changes in the surface appearance of human red blood cells. *J. clin. Path.*, 20, 1967, pp. 603-610.
SCOTT, *Sir* RONALD BODLEY, *see* WATKINS, P. J., and others.
SHOOTER, R. A., *see* SPEERS, J., and ——.
SILVERSTONE, J. T., (and others). Controlled trial of a new anorectic drug in the treatment of obesity. *Br. J. clin. Pract.*, 21, 1967, pp. 337-339.
*SIMON, G., (and others). Hypertrophic pulmonary osteoarthropathy in association with pulmonary metastases from extrathoracic tumours. *Thorax*, 22, 1967, pp. 226-231.
SMITH, Barbara. Myenteric plexus in Hirschsprung's disease. *Gut*, 8, 1967, pp. 308-312.
SNEDDON, J. M., *see* CHAMBERLAIN, D. A., and others.
——, *see also* TURNER, P., with others.
SPECTOR, W. G., and others. A quantitative study of leucocyte emigration in chronic inflammatory granulomata. *J. Path. Bact.*, 93, 1967, pp. 101-107.
SPEERS, R., and SHOOTER, R. A. Shedding of bacteria to the air from contaminated towels in paper sacks. *Lancet*, Aug. 5, 1967, pp. 301-302.
STANSFELD, A. G., *see* HUDSON, C. N., and ——.
*STARK, J. E., and HEATH, R. B. The development of antibodies against Sendai virus in childhood. *Arch. ges. Virusforsch.*, 20, 1967, pp. 438-444.
*STILES, P. J. Traumatic thrombosis of the external iliac artery. *Proc. R. Soc. Med.*, 60, 1967, pp. 546-547.
THORNE, N. What is a soap? *Nursing Mirror*, June 23, 1967, pp. xii-xvi.
TUCKWELL, E. G. Indications for surgery in peripheral arterial disease. Good 'run off' below thrombosis important. *Medical News Magazine*, July, 1967, pp. 22-23.
*TURNER, P., (with others). A comparison of the effects of chlorphentermine, diethylpropion and phenmetrazine on critical flicker frequency. *Br. J. Pharmac. Chemother.*, 30, 1967, pp. 307-316.
*WARD, A. M. (with others). Diagnostic value of liver function tests and *Entamoeba histolytica* antibody studies in East Africans. *J. clin. Path.*, 20, 1967, pp. 180-184.
*WATKINS, P. J., and others. Treatment of polycythaemia vera. *Br. med. J.*, June 10, 1967, pp. 664-666.
WATKINSON, G., (with others). Early surgery in the management of severe ulcerative colitis. *Br. med. J.*, July 22, 1967, pp. 193-195.
WATSON, A. C., *see* ROSE, L., and ——.
WATTS, R. W. E., *see* GIBBS, Dorothy A., and ——.
WIGGINS, K. E., *see* GASKING, J. D., and others.
WILLIAMS, D. K. The well women's clinic. *Nursing Mirror*, July 28, 1967, pp. i-iv.
WILLIAMS, I. G. Cancer in children. *Ann. R. Coll. Surg.*, 41, 1967, pp. 71-76.
WILLOUGHBY, D. A., *see* CAWLEY, M. I. D., and ——.
——, *see also* SPECTOR, W. G., and others.
WYATT, A. P., and others. Salivary tumours: a clinicopathological study and follow-up of 156 cases. *Brit J. Surg.*, 54, 1967, pp. 636-645.
*ZEEGEN, R., with others. Cytomegalovirus hepatitis in the adult. *Lancet*, June 24, 1967, pp. 1351-1354.

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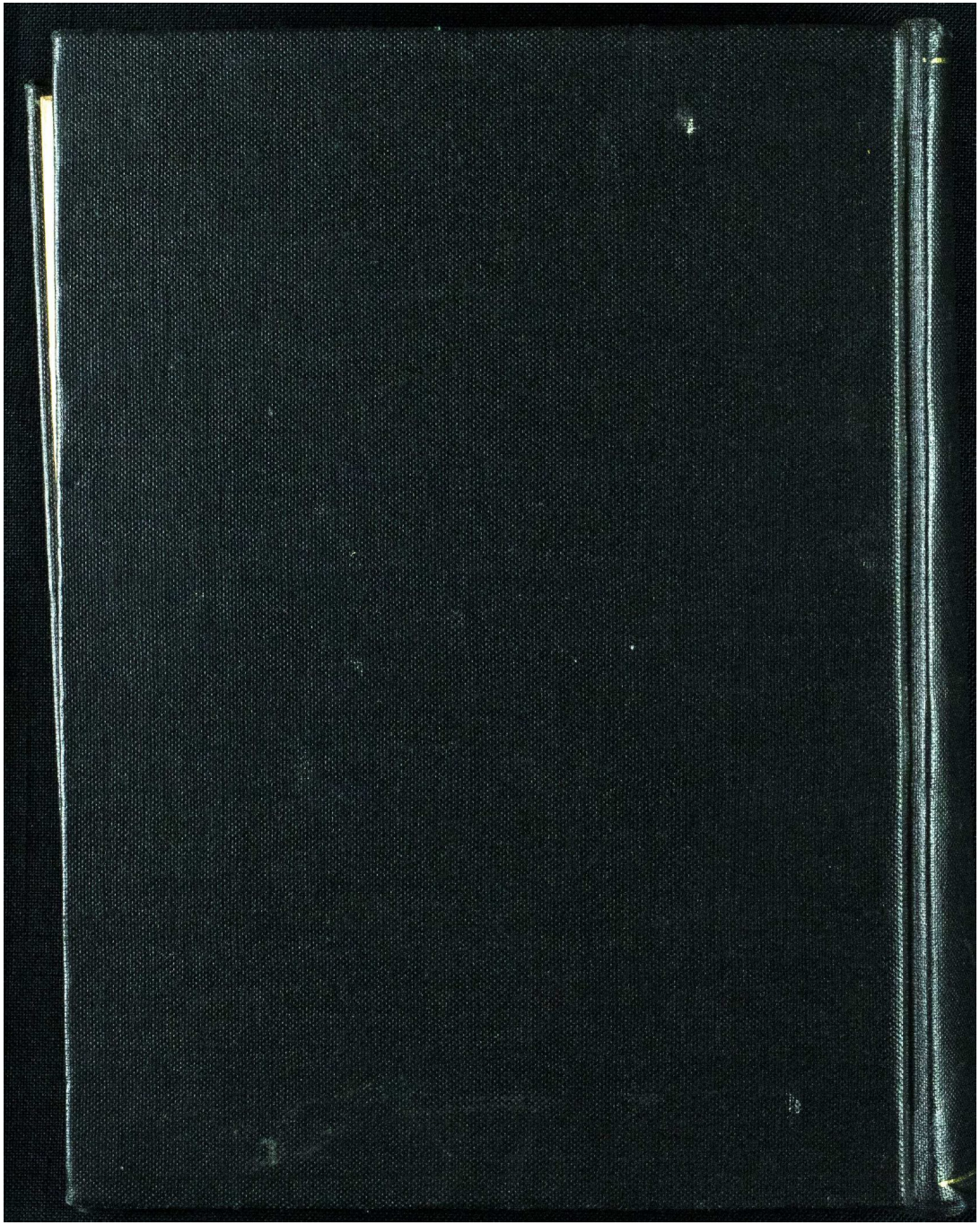
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