editor of the *Journal* he has combined the practice of the paediatrics of sick children with the very detailed psycho-analytical treatment of the emotionally maladjusted and the psychotic. He is essentially a simple and humble-minded physician, full of wonder about the problems presented by his patients and therefore full of wonder about the normal development of the emotional pattern of his fellow beings. Were there any method of studying the psychology of the foetus, Dr. Winnicott would be working hard at it and carefully recording his observations. As it is he has plenty to say about babies, children and their family and social relationships. The lectures and papers published in these two books are aimed at the laity and this includes medical students, nurses and even consulting paediatricians when the detailed analysis of infant behaviour is in question. The reader quickly discerns some of the ingredients of the author's success. Not only is each person important, but each detail is important. Babies cry. He asks why do babies cry? And then he puts himself in the position of the crying baby and of the mother of the crying baby, with sympathy and rare insight, and if his premises are correct his logical conclusions are inescapable. And so he builds up his case and because his problem is broken down into its simplest elements, his explanation is simple, his advice straightforward and practical. And the reader is bound to agree that these details are important, and that if everyone concerned with child care from the neonatal nursery to the school, mother, father, midwife, health visitor, doctor, hospital nurse, nanny, school teacher, understood all that Dr. Winnicott teaches, the world would be less of a jungle for the developing child.

A. W. F.

CEREBRAL PALSY IN CHILDHOOD *by* G. E. Woods, with a foreword by Peter Henderson, Bristol: John Wright & Sons Ltd. (1957) pp.xi, 158. Fig s. 41. Price 27s. 6d.

Dr. Grace Woods has produced an excellent study of cerebral palsy as she has seen it in Bristol during a five year research. In this book her results are carefully set out and add to the sum of medical knowledge about this most difficult subject. In Bristol the number of cerebral palsied children reaching the age of 5 years is 1.90 per 1,000 live births. Cerebral palsy is not a unity but is a convenient label for cases of defective movement due to disease of the brain. The cases are therefore classified according to the movement defect, paraplegia, monoplegia and so on. There are then chapters on the types of movement defect, athetosis, ataxia and rigidity, on the sensory defects, and on the relationships of cerebral palsy with birth process factors and social groups. Epilepsy was found in 38 per cent. and assessment of educability was needed in them all. The author is to be congratulated on this factual statement about the clinical findings and the problems raised in the education of a group of 301 cerebral palsied children which can be read with profit and with real interest.

A. W. F.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

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EDITORIAL

SOME MONTHS ago the Annual General Meeting of the Students Union discussed at great length the problem of the View Day Ball. The main controversy was whether to be bound by the traditional conservatism attached to this Hospital in all their doings and hold the Ball at a hotel or to branch out along new and hitherto unexplored paths and hold the dance in a marquee on the lawn at Charterhouse Square. This *Journal* supported a continuance of the well-tried and usually successful dance in the halls of gold to be found at the larger London hotels.

The move to change although passed by a majority at the Annual General Meeting was effectively squashed by the Medical College Council, who felt some qualms about the lawn at College Hall, and so the project was buried under ten inches of top-soil. There was also some question as to the problem of guaranteeing the dance, and this too contributed to the ultimate decision to hold the Ball at the Park Lane Hotel.

The Ball Committee immediately found it necessary to raise the price of admission to £3 10s. this year owing entirely to the hotel raising its charges for the meal, which discouraged many would-be attenders and eventually something under 300 persons took the floor at what should be the main social function of Bart's year. This represented a miserably small proportion of the number who have attended in previous years, and in consequence the dance was run at a heavy loss. It is indeed regrettable that more students, more nurses, and in particular more Staff did not make the effort to support their hospital on this occasion.

To consider the Ball subjectively it was a great success, but this success was entirely due to extraneous factors and not to the evening as arranged.

An objective view revealed but one advantage over the previous years—that of room to move—and the Park Lane Hotel certainly is a more pleasant place when there is no premium on space on the floor or at the bar, although this, as already indicated, was a two-edged sword. The standard of the meal, however, was not as good as might be expected, considering the price was raised to cover an increased cost for food. The Ball Committee had, however, very wisely decided to dispense with those expensive perennials at all dances, the Pipers, and this was a well justified omission.

In consequence of this year's Ball and its various shortcomings, any change must be for the better, and perhaps the idea of a marquee on the lawn could be resurrected with advantage. With the catering done by a reputable firm of outside caterers and an adequate marquee, it must be an improvement on this year's dance.

The work of the Ball Committee should, however, not go unheeded, for they worked hard and long to make the Ball a success, and it is no reflection on them that it failed to come up to expectations, for they depend on both moral and tangible support to make their efforts worthwhile. It is perhaps the woeful lack of this loyalty that was the most tragic and reprehensible feature of the whole affair for every club, society and function should be able to depend on the wholehearted support of the Hospital, from top to bottom, and anything less is not enough.

Mr. Hume's Last Lecture

Mr J. B. Hume gave his last clinical lecture as Senior Surgeon to the Hospital on April 20th and his subject was 'Sinuses and Fistulae of the Neck'. This lecture although his last academic appearance was not however his final farewell to Bart's since there will be some months elapsed before he retires from his wards. This may appear paradoxical but the order of lectures is predetermined and unalterable.

It is tradition that as many of the Staff as possible attend on these occasions and this was no exception for many of Mr. Hume's colleagues were present to support him in what must inevitably be one of the most difficult of the lectures he had ever given.

No-one enjoys the moment of parting from his life's work, for such occasions become a little sentimental and may be a measure of achievement. Mr. Hume can reflect in his retirement on the day that the whole of Bart's applauded with their hands and voices but wept in their hearts at the official departure of a much loved and respected son of the Hospital.

University of London

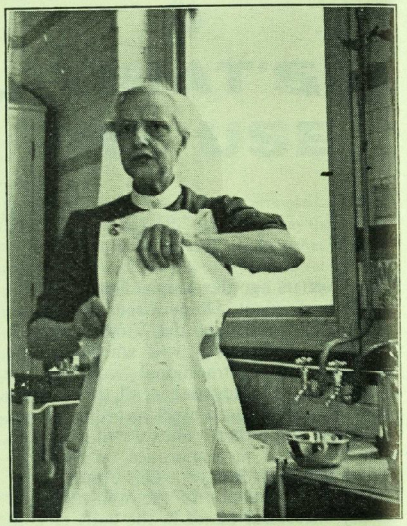
Dr. A. G. Spencer, G.M., has been appointed to the University Readership in Medicine at St. Bartholomew's Hospital Medical College.

Mrs. Croydon

APRIL 30TH, 1958 saw the disappearance of possibly the last of the Hospital legends—Mrs. Croydon left the Women's Out-Patient Department and Bart's for her well-deserved retirement.

Mrs. Croydon commenced her training at Bart's exactly forty years ago and obtained her "blue belt" in 1921. She then went on to do the then midwifery diploma, the C.M.B., on Elizabeth Ward, and she was probably the last nurse to do so since this was then discontinued.

After this she left Bart's and worked at the Royal Waterloo and the Samaritan Hospitals, returning to Bart's in 1935. She became Sister W.O.P's in 1946.



For all her fierceness to the students whilst on the "firm" she was loved, respected and now missed by all, and the whole Hospital wishes her a long and happy retirement.

NOTICES

Lecture on General Practice

Dr. G. F. Abercrombie will be giving the next lecture on General Practice on Tuesday, June 24th, at 12 noon. His title will be "Obstetrics in General Practice."

New Addresses

Dr. E. J. Blackaby to C. J. Crookes Hospital, Scottburgh, Natal, Union of South Africa.

Dr. H. P. Hutchinson, Austwick, Paddockhall Road, Haywards Heath, Sussex.

Mr. C. Martin Doyle to Holm Wykeham, West Malvern.

Journal Staff

Mr. R. Miller has been elected Charterhouse Representative in place of Miss A. M. MacDonald whose resignation was accepted by the Publications Committee with regret.

Applications are invited for the positions of Assistant Editor and Assistant Manager to the *Journal* and should reach the Editor by the 14th June, 1958.

Applicants for the Assistant Editorship will be required to submit a specimen editorial (approx. 1,000 words) with their applications.

ANNOUNCEMENTS

Engagements

CHORLEY—KENT. The engagement is announced between Dr. Gordon Ewart Chorley and Sheila Audrey Clare Kent.

HEDLEY WHITE—WALLER. The engagement is announced between John Hedley White and Elizabeth Tessa Waller.

PARRISH—CORLETT. The engagement is announced between Dr. Anthony Parrish and Elizabeth Jane Corlett.

WOOLRYCH—TAYLOR MARSH. The engagement is announced between Michael Woolrych and Ann Taylor Marsh.

Marriage

GABRIEL—RATCLIFFE. At St. Michael's, Highgate, on March 22nd, between Dr. David Gabriel and Dr. Diana Ratcliffe.

Births

BLACKLOCK.—On April 6th, to Marjorie, wife of Norman Blacklock, a daughter.

COCHRANE.—On April 16th, to Margaret, wife of Dr. T. D. Cochrane, a daughter (Fiona Jane).

FAIRLEY.—On April 6th, to Daphne, wife of Dr. Gordon Hamilton Fairley, a second daughter (Sarah).

HAVARD.—On April 13th, to Mhairi, wife of Dr. Cyril William Holmes Havard, a son (John), brother to Mark.

JACKSON.—On April 20th, to Jane, wife of Dr. D. F. Jackson, a son.

JACKSON.—On April 21st, to Jean, wife of Dr. Peter George Jackson, a daughter.

JAMES.—On April 3rd, to Audrey, wife of Dr. D. C. James, a son (Paul Anthony), a brother for Matthew.

JONES.—On April 11th, to June, wife of Dr. John M. Jones, a son (Richard Bryce).

NAINBY—LUXMORE.—On April 11th, at University Hospital, Jackson, Mississippi, to Ruth, wife of Dr. R. C. Nainby-Luxmore, a son (Jonathan Chave).

POWER.—On April 9th, to Carol, wife of Squadron-Leader G. H. D'Arcy Power, a daughter.

Death

FOWELL.—On April 28th, Dr. Patrick Harvey Clive Fowell. Qualified 1912

* * *

SCHOLARSHIPS 1958

Brackenbury Scholarship in Medicine
Not awarded

Brackenbury Scholarship in Surgery
R. B. Harcourt

Kirkes Scholarship and Gold Medal
J. D. Parkes
Prox. Access.: D. J. Tooby

Matthews Duncan Medal and Prize
C. J. Carr (Prize only)
Prox. Access.: J. D. Parkes

Burrows Prize ..... D. J. Tooby

Walsham Prize ..... R. B. Harcourt
Willett Medal ..... R. B. Harcourt
Skynner Prize ..... J. T. Silverstone
Roxburgh Prize ..... D. J. Tooby
Senior Scholarship in Anatomy, Physiology and Biochemistry ..... A. B. Shaw
Prox. Access.: A. J. Lines
Foster Prize ... K. Manchester, M. M. Orr *aeq.*
Herbert Paterson Medal
B. G. Boothroyd Brooks
Harvey Prize ..... A. J. Lines
Hichens Prize ..... J. Townsend
Treasurer's Prize ..... P. Collins
Certificates: M. G. Lewis
E. Knight
M. C. Stevenson

CALENDAR

Sat.	May 31	Dr. Geoffrey Bourne on duty. Mr. J. B. Hume on duty. Mr. F. T. Evans on duty.
Sat.	June 7	Dr. A. W. Spence on duty. Mr. C. Naunton Morgan on duty. Mr. R. A. Bowen on duty. Athletics: Sports Day. Tennis: v. St. Thomas's Hospital (H).
Sat.	„ 14	Dr. R. Bodley Scott on duty. Mr. R. S. Corbett on duty. Mr. R. W. Ballantine on duty. Athletics: U.H. Championships. Tennis: v. St. George's Hospital (A).
Sat.	„ 21	Dr. E. R. Cullinan on duty. Mr. J. P. Hosford on duty. Mr C. Langton Hawes on duty. Cricket: v. Royal Dental Hospital and Charing Cross Hospital (H). Tennis: v. U.C.H. (A).
Sat.	„ 28	Medical and Surgical Units on duty. Mr. G. H. Ellis on duty.
Sat.	July 5	Dr. Geoffrey Bourne on duty. Mr. J. B. Hume on duty. Mr. F. T. Evans on duty.

DR. JOIIN MACKWOOD

Dr. John Mackwood died and was buried at sea on Easter Saturday (April 5th) this year.

He was a great lover of the sea and, by a strange coincidence, had told me on one occasion that he wished to be buried at sea. He would have been seventy-two this coming July.

John Mackwood was one of nature's psychotherapists who came into the field from general practice, i.e., without any special training in clinical psychiatry. It was my fortunate duty to act as his supervisor when he was learning his craft at the Tavistock Clinic; so I can claim to have taught him the elements of psychotherapy. However, he soon thought out his own methods and learned to apply them with consummate success. He studied medicine at the London Hospital; and, after qualification, practised as a general practitioner in the country for many years, and afterwards practised medicine in China, where he made a reputation for himself.

During the first year of the last war, he worked at the Maudsley Hospital for a while and after that for the Emergency Medical Service in Sheffield.

On his return to London early in the war he joined the staff of the Department of Psychological Medicine at Bart's as a psychotherapist and won golden opinions all round. At the same time he worked for at least ten years as psychotherapist at Her Majesty's Prison, Wormwood Scrubbs. This was a great innovation; and I know that the Home Office very much valued his experimental work and the reports which he sent in.

All this time he carried out a private practice as a psychotherapist and was always booked up well ahead on account of the reputation which he had made for himself.

His approach to psychotherapy was rather metaphysical (he juggled with notions of time and space) but he had small facility in making his ideas clear to others, either in writing or in lecturing. On the other hand, he certainly got his patients well!

On his retirement, he retired to the country in Buckinghamshire, and later to Devon, literally to cultivate his garden.

He will be very much mourned by his friends and colleagues who meant so much to him and to whom he meant so much.

E. B. STRAUSS.

THERAPEUTIC USE OF ANTICOAGULANTS

by J. P. THOMAS

BEFORE THE prescription of any drug, two general criteria must first be satisfied. Can proof be obtained for its efficacy in limiting a particular disease and will its toxic effects preclude its usage?

In the past two years, the introduction of Phenyl indanedione (Dindevan) has simplified the control of anticoagulant therapy. Its ability to maintain a suitably prolonged prothrombin time, with little fluctuation, has reduced the incidence of haemorrhage previously associated with the older anticoagulants and thus curtailed the only serious complication associated with these drugs. Regarding the first question, it is important to emphasise that there is no general agreement upon the clinical value of anticoagulants. In fact, it would be true to say that no other group of drugs has produced greater controversy since their introduction twelve years ago.

Perhaps it will help to explain this problem by comparing these drugs with an accepted therapeutic agent such as Penicillin. If a patient has pneumococcal pneumonia, the sensitivity of the organism to Penicillin, in vitro, can be assessed quite accurately and experience has shown that a corresponding quantity given systematically will have a bacteriocidal action. A rapid decline of fever can be anticipated and resolution of pulmonary consolidation will follow. It seems that the only complaint now comes from the student who sees the florid signs of consolidation so rarely.

Turning to the anticoagulants, Heparin is known to inhibit the whole elaborate process of blood clotting both in vitro and in vivo, but the same cannot be said for the longer acting anticoagulants. These drugs act by depressing the formation of prothrombin (and Factor 7) in the liver; the quantity of drug administered being governed by the degree of prolongation of the prothrombin time. The precise relationship, however, between this laboratory estimation and the coagulability of circulating whole blood is not known. Again, in contrast to Penicillin, anticoagulants are used clinically to prevent the known complications of thrombo-embolic disease; the occurrence of which in an individual or group of patients cannot be predicted.

Taking these factors into account and mindful of the uncertain background of morbid anatomy, it is clear that dogmatic statements cannot be made about the treatment of thrombo-embolic disease, but I will aim at presenting the wider experience of others and, where possible, indicate the general opinion on anticoagulant therapy in a particular disease.

Venous Thrombosis and Pulmonary Embolism

The incidence of lower-limb thrombosis increases abruptly after the first three days of bed rest. It is induced by venous stasis and therefore, occurs particularly in elderly patients with poor musculature. The deep veins of the calf muscles are most commonly affected and at this site the initial thrombus, composed of a laminated meshwork of platelets, is firmly attached to the vein wall. Blood clot subsequently forms in the narrowed lumen and this commonly causes a sterile reaction in the vein wall to produce local tenderness. If this process extends proximally into the deep thigh-veins, blood clot often lies loosely in the lumen of these larger vessels. No localising signs are produced, but a portion may be dislodged to form a pulmonary embolus with varying degree of pulmonary infarction. Less commonly the femoral vein is occluded by a mass of adherent blood clot. In this case, marked oedema of the lower limb occurs, but pulmonary embolism is an unusual complication.

Gibbs (1958) maintains that the majority of pulmonary emboli arise, not from the calf veins, but from primary thrombosis of the femoral vein: the notoriously high incidence following pelvic operations being ascribed to

hip flexion during operation. Similar thrombosis may be induced in the obese or pregnant by compression of the femoral vein. If this statement is correct it would account for the fact that more than 50 per cent. of pulmonary emboli occur without prior evidence of thrombosis in the lower limb.

The importance of prophylaxis was emphasised by R. S. Murley (1950) who studied the problem of thrombo-embolic disease in 1,763 surgical cases at this hospital. Ward exercises and early rising after operation reduced the incidence of venous thrombosis from 9.0 to 3.3 per cent. All patients who developed calf tenderness were treated with anticoagulant drugs. The morbidity in the lower limbs, as evidenced by pain, duration of bed rest and subsequent oedema on walking was greatly reduced, but the incidence of pulmonary embolism was not influenced by anticoagulant therapy. These conclusions were later confirmed by Mears (1954) in a similar series.

In practice, one is required to treat two groups of patients. Firstly, the patient with calf tenderness only and secondly the more unfortunate individual who sustains a pulmonary embolus.

If careful watch is kept for peripheral thrombosis, this condition should be detected at an early stage. Provided that the patient is then able to remain or become ambulant without too much discomfort there is no necessity for anticoagulant therapy. On the other hand, the use of anticoagulants is warranted when the patient is confined to bed, particularly if he or she is elderly; gives a history of previous thrombosis or there is evidence of cardiac failure.

Pulmonary embolism is a serious complication. It is directly fatal in 12 per cent. of cases when massive clot occludes the main pulmonary vessels. Smaller emboli are, of course, more frequent but these can induce local thrombosis or predispose to lung infection. Repeated emboli may precipitate acute circulatory disturbance or be responsible for the later development of cor pulmonale.

Most of these emboli originate from the femoral veins and occasionally from the pelvic veins. Because thrombosis in these vessels is usually silent and anticoagulant therapy does not limit the danger of pulmonary embolism, one is unable to predict or prevent the initial pulmonary episode. When this complication does occur, however, the risk of further emboli and morbidity of the lung are reduced if anticoagulants are prescribed. Presumably this treatment, which should be continued for at least three to four weeks, deters fresh thrombus formation during the time that resolution is occurring in the chest and in the lower limb veins. Haemoptysis associated with pulmonary infarction does not prohibit anticoagulant therapy, for it is rarely profuse or sustained.

Myocardial infarction

The authors who favour most the use of anticoagulants for myocardial infarction are I. S. Wright (1948) in America and Gilchrist and Tullock (1954) in this country.

Wright was chairman to an extensive survey undertaken with meticulous care by the American Heart Association. Heparin and dicoumarol were administered to 432 cases admitted on odd calendar dates and no anticoagulants were given to 368 cases admitted on even dates. The incidence of previous infarction and degree of severity were assessed to be about equal for the two groups and there was little difference in their ages. The only serious criticism would be that "anticoagulants were given to some patients in the control group because of pressure by the family or private physician."

The mortality was 24 per cent. in the control group and 15 per cent. in those receiving anticoagulants. This difference was wholly accounted for by the mortality due to thrombo-embolic complications, which included pulmonary emboli from the periphery and cerebral emboli from thrombi on the damaged ventricular wall. A few embolic episodes occurred in the treated group, especially if the prothrombin time became less than 25 seconds. Haemorrhage occurred in 7 per cent. of those patients receiving anticoagulants but was severe in one case only. Bleeding was seen particularly when the prothrombin time exceeded 40 seconds.

Gilchrist and Tulloch recorded similar results in their study of 1,833 cases. They believed that the sequence of thrombosis, infarction, shock, hypotension and cardiac failure was influenced by treatment with anticoagulants, but the almost identical mortality from these causes in the two groups would indicate that these drugs play little part in controlling such factors. Deaths occurring before arrival at hospital or resulting from ventricular arrhythmia at any time during treatment cannot be reduced by anticoagulant therapy, but it is claimed that initial infarction may be prevented by long-term prescription (vida infra).

Evans (1954) summarised the results of numerous authors; little difference was observed in the incidence of thrombo-embolism with treatment and laboratory control of the prothrombin time did not tie up with the occurrence of thrombosis or haemorrhage. The damage caused by haemorrhage into a vital organ, such as the brain, could not be rectified by restoring a normal prothrombin time with vitamin K. It is important to point out, however, that dicoumarol was the only long-acting anticoagulant available at that time making control of treatment particularly difficult. If the contraindications to anticoagulant therapy are carefully observed, few haemorrhages will occur with the combined use of heparin and phenylindanedione. In fact, I have seen one mild instance only of haematuria when using this combination. Wright emphasises the need to look for some underlying pathology at the site of haemorrhage. He states that menstruation is normal in women receiving these drugs when the reproductive organs are healthy.

What in summary can be said regarding the use of anticoagulants in mycocardial infarction? The majority of physicians would agree that these drugs should be used in all such cases. Some physicians would withhold treatment from "good risk" patients but, as complications occur with equal frequency in "good" and "bad" risk cases, it is not possible to predict such hazards in a particular patient. This arbitary division therefore should not determine the prescription of these drugs.

Angina decubitus

Ischaemic pain at rest may be the precursor of infarction. Confinement to bed on anticoagulant therapy for a period of 4 to 6 weeks may allow the development of collateral coronary vessels and thus avoid infarction. Wood (1949) found infarction to be less frequent in a small group so treated in comparison with a similar number of patients not receiving anticoagulants.

Arterial occlusion

Where obstruction is caused by thrombosis or embolism, heparin prevents further thrombosis; eases the pain by relaxing vascular spasm and aids recanulation of the vessel, (Payling Wright, 1953). Heparin is particularly useful in preventing a progressive arterial thrombosis and may be continued over a period of weeks for this purpose. Alternately, it may be substituted by a longer acting anticoagulant where a localised obstruction exists. Following surgical repair of an artery, heparin may be given systemically or can be applied locally to the vessel and injected into its distal portion at operation.

Long-term anticoagulants

This form of treatment for cardio-vascular disease is limited in this country by inadequate facilities for laboratory control of anticoagulants. We have to look therefore to America for such reports. There the drugs have been administered over many years to patients who are subject to venous and arterial thrombosis or arterial embolism from a cardiac source.

Devlin (1958) observed the clinical course of rheumatic heart disease with auricular fibrillation. Over a period of 1,747 patient-months on anticoagulants there were a total of 146 thrombo-embolic episodes; whereas for 1,515 patient-months off these drugs 55 such episodes occurred. Devlin states that 60 per cent of his patients sustained further emboli within one year if treatment was withheld.

Millikan (1958) prescribed heparin and ethyl biscoumacetate for periods of six to twelve months to patients with insufficiency of cerebral blood flow. A total of 317 patients were divided into four categories:

1. 94 patients with intermittent insufficiency of the vertebral-basilar system who had transitory attacks of neurological dysfunction. Recurrent attacks were prevented in 94 per cent of these patients.

2. 107 patients who showed gradually increasing signs of insufficiency of this system. The mortality was reduced from 58 per cent to 8 per cent.

3. 85 patients with intermittent signs of insufficiency of the internal carotid blood flow. Such attacks were stopped in 96 per cent of these cases.

4. 31 patients with manifest signs of progressive insufficiency of the carotid system. The incidence of hemiplegia was reduced from 35 per cent to 6 per cent.

Anticoagulants were not given if a complete neurological lesion had developed; attacks were infrequent or evidence of intracranial hæmorrhage was suspected or proven.

Fisher (1958) gave anticoagulants to 58 patients who had cerebral thrombosis due to atherosclerosis. He concluded that "anticoagulants abolish transient ischaemic attacks and prevent indefinitely the arrival of threatening stroke". The incidence of cerebral hæmorrhage was not recorded but the impression is that this complication may arise quite frequently since some bleeding is always seen at post-mortem in the infarcted area of the brain even when the patients have not received anticoagulants. Initial distinction between cerebral thrombosis and hæmorrhage is also difficult at times.

Long-term treatment for coronary artery disease was begun by Owren in Norway in 1948. An interesting account of ten years experience has been published by Manchester (1957). Satisfactory records were obtained for 204 patients who had been kept on anticoagulants for one to ten years after an initial infarct, and for 200 controls. The incidence of subsequent infarction was three times greater and the mortality rate eight times greater in the control than in the treated group. Though this treatment greatly reduces the risk of recurrent infarction, the fact that these continue to occur "indicates the limitations of presently available oral anticoagulants".

Anticoagulant Drugs

Heparin

Heparin acts mainly by forming a reversible combination with thrombin. In addition, it inhibits conversion of prothrombin to thrombin and antagonises the formation of thromboplastin. One mgm. of the Standard Preparation contains 130 International Units of activity. The commercial barium salt contains 100 units per mgm. the preparations being dispensed in 1,000 I.U. (10 mgm), 5,000 I.U. (50 mgm.) and 25,000 I.U. per ml of solution. 10,000 to 15,000 units of heparin must be given intravenously every four hours to maintain a clotting time in excess of fifteen minutes. (Normal 4-7 minutes). The injection is usually given through a Gordt's needle or Polythene resident in an arm vein. Alternatively, heparin may be given by intramuscular injection when a dose of 25,000 I.U. is administered twelve hourly. This route is not advised because of its tendency to cause pain and hæmorrhage locally. Marks (1954) added O.I. mgm. hyaluronidase to each dose to aid absorption and allay pain.

Hæmorrhage is the only serious toxic effect ascribed to heparin, although temporary alopecia has been observed. 4-5 ml of 1 per cent. (4-50 mgm.) Protamine Sulphate, given intravenously will neutralise the effect of 10,000 units of heparin.

Since the oral anticoagulants take 24-48 hours to act, heparin is given during the first day, or preferably two days of treatment. The prothrombin time is a guide to the required dose of oral drug, but the position is complicated somewhat for heparin has a similar action on the prothrombin time. This test is therefore a rough guide only until twelve hours after the last injection of heparin. Since the initial loading dose of oral anticoagulant is thus given rather empirically, it is important to be aware of any clinical condition which may exaggerate its effects. Enquiry should be made for a history of cirrhosis, renal disease, blood dyscrasia or peptic ulceration. Severe shock with myocardial infarction tends to prolong the prothrombin time and salicylates or oral antibiotics are best avoided during treatment.

It is preferable to express the patient's prothrombin time as a percentage of a control estimation in a normal patient. This latter estimation should be done each day and varies little between 13 and 15 seconds. Anticoagulants are of little value unless this "prothrombin level" lies between 15 and 25 per cent of normal. Few clinicians seem to realise that a level of 50 per cent represents a prothrombin time which is little beyond the normal value. The daily record book in the Pathology Department bears witness to the inadequacy of anticoagulant therapy at this hospital.

Dicoumarol

Dicoumarol was the only long-acting drug available for six years. Its effects are slow to appear (48-72 hours) and to pass off so that a cumulative effect tends to occur requiring accurate control of the prothrombin level.

An initial dose of 200 to 300 mg is prescribed and 25 to 100 mg given to maintain its effect. Dicoumarol is used for long term therapy in America but the drug is no longer included in the British Pharmacopia.

Ethylbiscoumacetate (Tromexan)

This drug succeeded dicoumarol since it acted more promptly (18-28 hours) on the prothrombin level. Its more rapid excretion, however, produced marked fluctuation in the level which was only partially corrected by giving the drug three or four times daily. Tromexan may produce an urticarial or a papular rash and gastro-intestinal upset. An initial dose of 1500 to 1800 mg is followed by a maintenance dose of 300 to 900 mg divided into three doses daily.

Phenylindanedione (Dindevan).

An initial dose of 100 to 300 mg of this relatively new drug will usually produce a prothrombin level of 20 to 25 per cent of normal within 48 hours. Thereafter a dose varying between 25 and 100 mg, divided into two doses daily, will usually maintain the required level. This estimation, repeated on alternate days, will show little variation. Dindevan has therefore a more uniform action mitigating the danger of hæmorrhage Rarely this drug causes an agranulocytosis (Brown 1954) and it has a tendency to produce a pink discoloration of the urine; sometimes mistaken for haematuria.

Vitamin K

This vitamin is essential for the formation of prothrombin and Factor 7 in the liver and will reverse the action of all coumarin and indanedione derivatives. The fat soluble vitamin Ki is more effective than the water soluble compounds, such as the menaphthone salt or "Synkavit" and reduces the prothrombin level to safety in 4-5 hours.

A small hæmorrhage will cease on withholding an anticoagulant and the drug thereafter may be continued in smaller dosage.

If bleeding is more profuse or the prothrombin time unduly prolonged, two courses of action are possible. When it is intended that anticoagulants should recommence after the control of hæmorrhage, 5-15 mg of vitamin Ki given intravenously, will suffice and this dose will lessen the difficulty of restoring a therapeutic prothrombin level. If therapy is to be discontinued, a dose of 25-50 mg of Vitamin Ki is recommended.

Conclusion

Our knowledge relating to the action of the oral anticoagulants is very scanty. Unlike heparin, they do not delay the clotting time and have little effect on the serum lipoproteins. Despite this gap in knowledge, these drugs have been accepted for the emergency treatment of thrombo-embolic disease. Their long term usage is not popular in this country but the present M.R.C. enquiry may help to clarify this problem.

THE SUBJECTIVE EFFECTS OF CORTISONE

by M.B. (LOND).

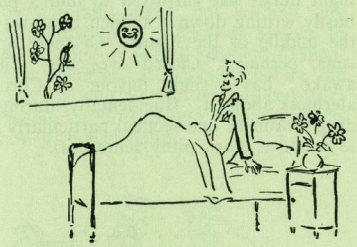
To experience "subjective" symptoms is one thing, but to write an account of them is another. For, to be of use, such an account must partake of an "objective" exercise. One's feelings, experienced from within, must so to speak be viewed from without, and a certain judgment exercised in producing the written record. In describing the effects of a drug, for instance, it is of little use to engage in a detailed description of all one's feelings during its administration, for many of these may be "natural" to one or due to causes other than the drug. One has to think back to the status quo ante and try to decide what are the new features in the case, to what degree previous feelings have been increased or diminished, and what, in the changing patterns of normal life, may reasonably be accepted as "effects" of the drug and not the mere fortuitous changes which would have occurred in the ordinary ups and downs of life. There is, too, a danger of over-dramatising and even of drawing on the imagination in order to produce a "good picture." All this is especially difficult when one is dealing with questions of mood—one of the outstanding effects of cortisone therapy.

It is with these thoughts in mind that the following account, written during the fourth week of continuous cortisone treatment, has been made. The writer is a man aged 55, with a long-standing pleural effusion, who has been receiving 10 mg. of Prednisolone by mouth four times a day for nearly four weeks (40 mg. daily). The effects noted are given in what appears to the writer to be their order of importance or impressiveness. It must be emphasised at the outset, however, that a quite definite improvement in general condition had commenced three days before starting (or knowing that he would start) cortisone. How long this initial betterment would have lasted on its own one cannot say, but the writer feels sure that some at least of the improvement in mood and appetite must be attributed to this occurrence.

The Effect on Mood in the form of Euphoria seemed very definite and appeared quite early in treatment. It is a sensation of well-being and elevation of spirits which is most marked in the morning. One seemed to wake up each day in Sunny Oklahoma to the strains of "Oh, what a wonderful morning, oh, what a beautiful day!" During breakfast a feeling that one could "knock down the world" seemed to express the idea best (the words were quoted thus to several people)—"knock it down," not through animosity but because of one's joie de vivre. The coming day, even though spent in bed, looked attractively rosy, and one felt there was not really time enough to do all that one wanted to do. Things looked more important than before and the day seemed fully occupied. One felt more lively (and was told one was more lively) and at the same time one did not tend to get weary or tired as before. One must not impute all this euphoria to cortisone. The above-mentioned initial improvement in the general condition, the excellent hospital attention, and the fact that spring was almost in the air (it was mid-February) all contributed, no doubt, but were not in the writer's opinion sufficient to account for this unusual exuberance of spirits without a big "boost" from cortisone.

The mind seemed to be more on the move than before. It is doubtful if it was any clearer in thinking power, for cross-word puzzles, for instance, were no easier than before the drug. But it kept active with a curious compulsion at times which caused one to interrupt one's meal or one's attempt to sleep in order to make an immediate note

of some thought which in the ordinary way would have bided one's time. In the same way this "mental mobility" was adverse to contemplation or reverie—cortisone does not appear to be the drug for the contemplative! —and a previous tendency to forty winks in the afternoon disappeared. One felt that,



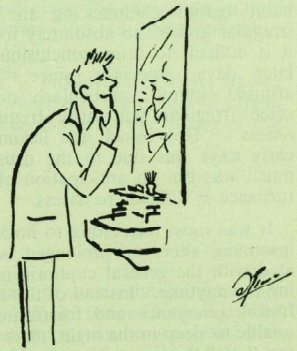
ONE SEEMED TO WAKE EACH DAY IN SUNNY OKLAHOMA.....

with a very excitable temperament to start with, or a larger dose to go on with, it would not be difficult to become slightly manic! But this continuous mental activity did not result in worry. Emphasis seemed to be on the present, rather to the exclusion of the past and future. Omar's "Unborn Tomorrow and dead Yesterday, why fret about them if Today be sweet," expressed this attitude well.

Self-criticism was less marked, and indeed one really felt rather pleased with one's little efforts. The letter written was rather a good one, one's powers of expression were quite apt at times, and if one anticipated doing some small job, it would be well done. Even shaving was really better than usual! In this way self-approval enhanced the general euphoria. Whether these performances were better accomplished than they would have been without cortisone is for the outsider to judge, but they were certainly performed with more elation, more sense of urgency, and more self-approval than before. "To see ourselves as others see us" was not one of the troubles of the day. Perhaps, too, one was less critical of others and felt more genial towards one and all. It seemed that one was slightly less conscious of, and more tolerant towards, one's symptoms (in this case chiefly dyspnoea) than before—no doubt a result of the euphoria.

What was one's prior mood, before starting cortisone? This is a difficult question to answer, but generally speaking it would seem that the drug exaggerated one's previous characteristics rather than producing quite new features. In other words, the change produced by Prednisilone was one of degree rather than one of kind, and the characteristics thus exaggerated were chiefly those of elevation of mood, activity (rather than acuity) of mind, self-assurance and bonhomie. Other features of one's personality were not altered. Probably, however, an outside observer would be a better judge of this than the subject himself, especially since his present "cortisoned" state might impair his insight.

The Effect on Appetite was quite marked and appeared early. All kinds of food seemed to be relished and it was astonishing to the individual how quickly and thoroughly his eating powers returned. Sometimes there would be short periods in which there was an almost overpowering and insatiate urge to



EVEN SHAVING WAS BETTER

keep on eating, and anything at hand, fruit, nuts, sweets, biscuits, would be devoured for a short space of time. These little episodes of "gluttony" were not frequent, but almost always occurred in the early evening.

The Effect on Circulation took the form of a warm glow noticed in the skin quite early on. Although it was winter, the cold was felt hardly at all. So marked was this warmth that one commented on it to others. It was a pleasant feeling, unassociated with any obvious flushing or extra sweating, and one tended to need less clothes than before.

The Effect on Sleep was noticed on the first night. For perhaps the first week there was a quite unusually long bout of initial insomnia, keeping one awake until about 1.30 a.m., without any intermediate naps. After 1.30 a.m. sleep was fairly good. Following this first week or so, there was a surprising change for two nights to a long terminal insomnia. In this, sleep came fairly normally about 10 p.m. and continued more or less till about 3 a.m.; and thereafter one remained awake. There seemed to be no obvious reason for this remarkable switch from initial to terminal insomnia, but after the two nights of the latter, the sleep programme gradually became more like the state of affairs before Cortisone, with a reasonably normal quota of sleep each night (and occasionally an even better quota later on in the treatment). However, as the sleep habit before commencing the drug was irregular and of no absolutely fixed pattern, it is difficult to draw conclusions for these later days, especially since "orthodox" aroused stimuli, particularly noises, were often irregular but fairly frequent occurrences. How much the insomnia of the early days was due to the drug and how much was due to anticipation of sleep disturbance is difficult to assess.

It was most interesting to notice that this insomnia, short or prolonged, was associated with the general euphoria noticed during the daytime. Instead of the usual rather fretful annoyance and frustration at being unable to sleep in the night, there was a feeling that "this is really quite pleasant lying here, it doesn't matter about getting off to sleep." The mind was at first rather active, but later in the insomnia was less so, but the night's wakefulness was not annoying in any way. The result was that there was no "hang-over," sleepiness or depression in the morning. Although the hours of sleep had been curtailed, the insomnia was not stressful and seemed to have no ill effects—one felt as if one had had a "good" night.

One night the initial insomnia was associated with the curious mental activity of making aphorisms and such was the compulsion (mentioned above) connected with some of these that, with the thought "that's a good one, it won't do to forget that!" the light was turned on and an immediate note of the aphorism was made. This odd compulsive behaviour happened once only, but the night nurse was surprised to find a patient busily writing down a sudden brain-wave in the middle of the night! Of these aphorisms, perhaps "Closed eyes may still be awake" has a slight flavour of Cortisone alertness about it. (Incidentally, during this drug treatment one seemed particularly keen to produce short, pithy sentences).

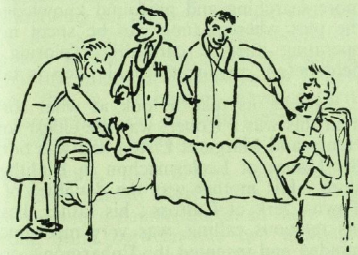
EXCELLENT

The Effect on the face was noticed after perhaps ten days of Prednisilone, when one became conscious of some difference of sensation in shaving. One felt that there was a "fattening" of the area just below and anterior to the ears (the anterior parotid area) which made shaving easier. Instead of the razor dipping into a slight hollow here it rode easily over a slight eminence. Later on, the swelling was clearly seen in the mirror when shaving, as well as being felt. One also noticed an improvement in one's appearance of health, and that one was generally putting on a little flesh. There was no "pitting" felt anywhere on the body to suggest that oedema was present.

The Effect on Inflammation seemed to be shown by a trivial boil on the nose which was found to persist for a long time and even slowly to progress. This was surprising,

as one had occasionally had similar small lesions in the past, and these had always healed quickly without treatment. The inflammation slowly "smouldered" for about two weeks and produced an odd little crop of "carbunculous" pustules, without, however, any serious symptoms. It was then treated with Tetracycline.

Other Effects noted were mild polyuria, both by day and night, but without any associated polydypsia. Digestion seemed to be improved, as occasional flatulent dyspepsia which occurred occasionally before the Cortisone was started was not noticed after commencing the drug. There was no obvious alteration in bowel habit.



HOSPITAL ATTENTION

It must be emphasised that this record is the account of only one patient, with one type of personality, and that he knew something of what to expect (in the way of euphoria, appetite, facial changes and modification of inflammatory response) before starting treatment. No doubt a more accurate account, without tendency to bias, would be forthcoming from one who had no knowledge of the effects which were to be expected. Moreover, as stated above, a general improvement had commenced three days prior to Cortisone, and some of the euphoria, increased appetite and so forth, should be attributed to this.

Nevertheless, the writer feels convinced that Prednisilone was at any rate partly responsible for definite elation of mood, mental activity, improved appetite, "glowing" skin and facial change. Finally, for what it is worth, this is a paper that was actually written whilst still "under the influence" of the drug, so that perhaps it is wise for the reader to "take it all with a grain of Cortisone"!

Summary

An account of the subjective effects of Cortisone is given by a patient during the fourth week of Prednisilone treatment.

The most outstanding effects were those on mood. Euphoria was marked and associated with mental over-activity and a tendency to compulsions and diminished self-criticism. These effects, it is thought, were more in the nature of an exaggeration of previous characteristics rather than the production of completely new features. Insomnia was marked at first but was euphoric and not debilitating. Worry and symptom-sensitivity were diminished.

Improved appetite was very obvious, as also was a warm glow in the skin. Other effects noted were an alteration in facial contour, delayed resolution of a mild inflammation and perhaps polyuria.

Reasons are given for exercising caution in assessing the value of these subjective findings.

The writer is indebted to Dr. R. Bodley Scott, under whose care the drug was administered and who suggested the writing of this paper.

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Postscript

Since writing the above the disappearance of euphoria which followed the gradual withdrawal of the Cortisone was quite definite. Thus, with only 30 mg. daily (6 weeks from commencement of the drug) elation lessened and the first "forty winks" reoccurred, and with 27½ mg. (8 weeks) euphoria was almost nil and was indeed occasionally replaced by an unnatural depression. With 22½ mg. (10 weeks) mood and mental activity were normal again, perhaps even sub-normal and less resilient than before Cortisone. Appetite altered similarly.

ROBERT LISTON

by M. J. L. PATTERSON

ROBERT LISTON, although nearly forgotten by the medical profession, deserves a place amongst those pioneers who changed the history of mankind. This influence was both direct and indirect, for his unknowing effect on Lister was to alter the whole field of operative surgery; and this is perhaps a most curious, and satisfactory, coincidence, since Liston was pre-eminently a practical surgeon. Joseph Jackson Lister was a Quaker and the son of a brilliant father who had developed the achromatic condenser which is still used on modern microscopes for which he was elected F.R.S. His son Joseph was in no way interested in medicine when he went in 1843 to University College, but at the end of 1846 he managed to be present at the first operation performed under an anaesthetic in Europe, and the surgeon was Liston. Lister was completely overcome with the importance of the event which he had just witnessed, and then decided to study medicine, which decision was just as important an event in the history of surgery and of mankind as the development of anaesthesia with all its concomitant advantages. Anaesthesia itself did nothing to prevent the patients dying, although it made their cross easier to bear, for the angel of death marked all these unhappy people with the scourge of sepsis; it was this which Lister attacked and conquered.

The second reason for an interest in Liston is that he marked an end of an age. Before the advent of anaesthesia the surgeon had perforce to be both knowledgeable with regard to anatomy and dexterous with regard to surgery. The art of surgery was, as Liston himself maintained, to be found in the rapidity of the operation, for the patient could bear so much and no more. In his manual on Practical Surgery, Liston held that a limb can be amputated in three movements, cutting through the soft tissues anteriorly and posteriorly being two, and the sawing of the bone making a third and he, Liston, reckoned that anyone taking longer than forty seconds was wasting time. Liston combined both these requirements, i.e., knowledge and dexterity, admirably, and no surgeon since has come up to his criterion. This is not meant as a condemnation of our surgeons, but with the advance in anaesthesia, asepsis, and chemotherapy, there has been no need for the *expertise* that Liston took such pains to acquire, for in his day successful and rapid surgery necessitated a more searching and profound knowledge of the part whereas time can be spent in the operating theatre carefully exploring the field before any irretraceable step is taken.

Now let us take a look at what sort of man this was. Robert was the eldest son of Henry and Margaret Liston and was born at the Manse at Ecclesmachon in Linlithgowshire. His mother was the daughter of the Town Clerk at Culross; his father, besides his religious calling, was very mechanically minded and invented the Euharmonic organ. This organ could produce diatonic scales in perfect order and, although very well received, it was never a great success. Robert's younger brother David and he both received their education in the main part from their parents, although Robert did go to a school at Abercorn for a time. Both the boys went off to Edinburgh University and David eventually became the Professor of Oriental Languages. Robert himself also went to study languages and at the end of his second term he won a prize for Latin poetry. However, the classics failed to hold his affections and, in 1810, he became assistant to Dr. John Barclay, who was then the Extra-academic lecturer in anatomy and physiology. Liston remained with John Barclay for five years, first as his assistant and then as his prosector. At the same time as he worked for Barclay in 1814 he obtained the position of surgeon's clerk, or house surgeon in modern parlance, to, in the first place, George Bell and then to Dr. Gillespie. He held these clinical appointments for two years up till 1816. It is interesting to note that at this time one could hold such positions without being qualified, for Liston only obtained his M.R.C.S. at the very end of 1816 and presumably it was very much on the principle of being elected to a club, for he had acquired two very distinguished men to act as proposer and seconder to his nomination.

In 1816, Liston decided that Edinburgh had offered him as much as it could at this stage in his career, and he determined to come to London for further instruction. He therefore arranged to work at the London Hospital for the Blizzard brothers, but in fact his main object was to hear Abernethy's lectures at this hospital, so in this much Bart's was Liston's alma mater. He remained in London for two years, after which he returned to Edinburgh and started to teach anatomy on his own account with his cousin James Syme as his demonstrator. Syme was to play a large part in shaping Liston's life, although neither he nor Liston realised this in the halcyon days of their early association, and in truth there was no reason why they should.

James Syme, like Liston, had studied under John Barclay during the time that his cousin was a demonstrator, so there was a strong bond between the two although since Syme's father was a Writer to the Signet, there had been little interchange at family level before since the Symes were socially superior to the provincial Liston family.

Also in 1818 Liston was admitted a Fellow of the Edinburgh College of Surgeons after presenting the treatise "Strictures of the urethra and some of their consequences" in which he described a new type of urethral bougie which was for many years the one in popular use and presumably can still be obtained and may even be currently used by some surgeons. During the next ten years he and Syme established a great reputation as teachers of anatomy, and Liston himself became a highly successful surgeon. However, these ten years were not without their trials and tribulations, for he spent a considerable time quarrelling with the Governors of the Royal Infirmary on professional matters. These persistent quarrels and the bad feeling which they engendered culminated with Liston being expelled from the Royal Infirmary in 1822. The main reason for his disagreement with the Infirmary was his persistent practice of operating upon patients discharged from that Hospital as hopeless, and operating successfully. This was interpreted by the authorities as impudence and they trumped up an accusation of his deliberately enticing the patients from the Hospital.

For five years he was denied any facilities in this Hospital, but in 1827, owing to the influence of his friends, he was re-instated as surgeon and a year later as operating surgeon.

At the end of this year (1828) Liston applied for the chair in Clinical Surgery, but since he expressed himself as unwilling to pay the retiring professor a pension of £300 a year, his application was refused, and his assistant James Syme was appointed over his head. This provoked great bitterness between the two friends, and it was ten years before this misunderstanding was put right.

Immediately after his rejection in Edinburgh and his quarrel with Syme, his practice fell off and he considered emigrating to the U.S.A., but with the fortuitous death of Sir Anthony Carlisle he was elected to the Council of the College of Surgeons and his fortunes changed.

Meanwhile, in London a new hospital was proposed and, on November 1st, 1834, University College Hospital was opened and Robert Liston was its first Professor of Surgery.

Liston was an unprepossessing teacher and found himself unable to express his thoughts in writing, therefore we know very little of his methods first hand. He pioneered the use of simple water dressings and was utterly opposed to poultices, plasters and ointments, which were the usual methods of treating any open lesion. Also he was scrupulously clean with his instruments, and in himself, which again was by no means the general habit of the time. Nonetheless, Liston's amputations had a mortality of 15 per cent., but even this compared very favourably with our own Sir James Paget, whose figures were a death rate of 27 per cent. for amputations done in cases of fracture and of 31 per cent. where there was any morbid pathology.

A considerable part of Liston's operative facility was due to his immense strength, for he stood six feet two inches high and was a keen sportsman, riding regularly to hounds and sailing his yacht which he kept on the

lower reaches of the Thames. As a man, and particularly as a surgeon, he was very vain, and he regularly invited his audience to time the duration of his operations.

In his private life he kept an excellent cellar and a hospitable house. The quality of his wine could be judged by the fact that Lord Palmerston paid 3 guineas for a bottle of this wine after Liston's death.

Once again Liston showed that he was entirely unable to remain on amiable terms with his colleagues at the hospital since he, Quain and Cooper disagreed continually with Tod Tompson and Elliotson, the senior physician. He was renowned for being intolerant of those who opposed him and of being coarse and rude to those below him. It is, however, to his credit that notwithstanding he was a very generous man and, by the time of his death, he had attempted to patch up all his quarrels and for the most part succeeded.

Liston's great rapidity at operations sometimes led him into disastrous situations when, for example, he opened an aneurysm in mistake for an abscess or when he operated upon an entirely inoperable tumour owing to his misinterpreting the physical signs. Liston was not by any means infallible in his clinical acumen, and there was a remarkable occasion when he and his houseman openly disagreed as to whether a swelling in a child's neck was pulsatile or not, Liston maintaining strongly that it was not.

In order to prove his point, he plunged a knife into the tumour and was surprised when arterial blood issued forth. It is perhaps strange that he should then later publish a report of this case taking much credit for its conduct.

He made many fine clinical observations, but unfortunately for him, and for posterity, he was unable to make the right deductions, for example in the case of the boy with the swelling in the neck, he noticed what we now know to be a Horner's syndrone, but he failed to appreciate its importance. Again, he noticed and recorded the healing of one of his amputation wounds by primary intention, but once more its significance escaped him. In 1841, he was elected F.R.S., and this was followed by publication of a paper on false aneurysms including in this series of nine cases that of the ill-fated boy with the comment, "There is often more of instructiveness in an unfortunate case than in a fortunate one." Four of the cases were his own and five were provided by other surgeons. Syme sent one from Edinburgh, thus proving entirely their friendship to be re-established; others came from Quain, Dupuytren, Sir James MacGreggor and Sir William Fergusson. This quartet included some of the most famous surgeons of the time. Fergusson was a student of Knox in Edinburgh, having changed from Law to Medicine. This Knox was the Scottish surgeon who became famous for his association with Burke and Hare, the resurrection men who were afterwards convicted and hanged. Liston himself was not above occasionally embarking upon grave-robbing expeditions, whilst he was teaching anatomy. Fergusson became a famous surgeon and skilled anatomist at King's College Hospital, and he eventually died of Bright's disease in his 69th year. Dupuytren was at the top of his profession in France, while Quain, with MacGreggor, were two well-respected surgeons in London at this time.

It is strange that Liston should have been so pre-occupied with aneurysmal surgery since he was ultimately to die of an aneurysm himself.

About this time he perfected an operation for removing tumours from both the maxilla and the mandible; he also was performing radical mastectomies in four minutes. In 1843 he was elected a Fellow of the College of Surgeons in London and was one of the original 300 fellows of this College.

At the end of this year he published a case describing his successful operation upon a subclavian aneurysm and the details of this case are interesting since they show the competence of Liston as a surgeon and the enormous trouble which he was prepared to put into equipping himself before any operation.

The patient was a coachman named Alexander Gibson with a small pulsatile swelling the size of a lemon at the root of the neck. This swelling could be reached by firm pressure and controlled by compressing the subclavian artery proximal to the lump. The tumour was very painful and the patient was reaching a parlous condition. The onset of his troubles was ascribed to a fall some months before, and he had been treated by many different methods before coming under

Liston's care, but the tumour gradually increased in size. The technical details of the operation which Liston performed are accurately described in their minutæ and are as follows:—

An incision was made over the swelling and above the clavicle and another incision made in line with the lower third of the sterno-cleido-mastoid muscle down to the first incision. The flaps were then carefully dissected back, and whilst all the arteries were **ligated**, the veins were left free to bleed. A ligature was threaded through an instrument which closely resembled our modern aneurysm needle, and was looped in effect under one of the trunks of the brachial-plexus. This accident was used as a means of retracting the soft tissues and the artery was carefully dissected out above the first rib and between the scaleni muscles. On reaching the artery he carefully divided scalenus anticus and ligated the artery proximal to the aneurysm.

Though Liston had practised ligating the subclavian artery for many years on cadavers, this was the first attempt on a live patient.

The man is reported to have borne the operation with great courage, and there was but slight post-operative constitutional upset until the fifth day, when there was a massive haemorrhage which necessitated a further operation. This revealed the bleeding point to be the untied end of the external jugular vein, which was stopped by manual compression. The tumour diminished in size and the pulse at the wrist reappeared after three weeks. The patient made a complete recovery.

Liston's comment on this operation was this: "The details of this case must, I doubt not, be interesting as being the only successful one out of a considerable number operated upon in Great Britain. The success met with will, I hope, encourage others to repeat it, and many patients may they thus save from an inevitable and dreadful death."

Meanwhile, in America, Wells had discovered some of the properties of nitrous oxide which he was using in his dental practice, and this had provoked great activity to discover other anaesthetic agents. Morton with Jackson investigated the effects of ether, again by coincidence in their dental practice; and with this the anaesthetic age had really begun.

On November 23rd. 1846. Frederick Churchill, a butler, was admitted to University College Hospital under Liston's care. He had developed a discharging sinus as the result of a fall and had probably acquired a staphylococcal osteomyelitis. At any rate, he had a very severe septic arthritis. Liston probed the sinus and decided that various sequestra were the cause of the constant discharge. In spite of Liston's great care with regard to the cleanliness of his instruments, Churchill soon developed a fever and rigors, and examination proved this to be due to patchy pneumonia consequent upon a severe septicaemia. Since Churchill was a weak and timorous man, and certain to loose his leg in any case, Liston determined to use him as a guinea-pig on which to try this strange new American nonsense.

On December 19th, Liston visited Dr. Williams Squire and told him of the great news from America which Dr. Boott had received from Dr. Bigelow Senior, of Boston. This news was that on October 16th of that year an amputation had been carried out entirely painlessly under the influence of ether, vaporised on a sponge and inhaled from a glass vessel. Liston and Squire, who was a nephew of the famous Oxford Street chemist, Peter Squire, decided to attempt to repeat the American success on Churchill in two days time. It was, however, necessary that Squire should obtain some slight experience in the use of ether as an inhalation anesthetic before embarking on this hazardous operation, so it was arranged that Peter Squire should provide the ether and that they both should attend at a dental extraction which Mr. Robinson of Gower Street proposed to carry out on that same day. Squire successfully anaesthetised his first victim, the extraction carried out to everybody's satisfaction, and all was set for the following Monday. On the afternoon of December 21st, history was made by Liston and Squire in London's newest hospital, which was then twelve years old. At 2 o'clock Squire arrived and carried out a preliminary trial for his own experience and for the benefit of the onlookers, amongst them being Lister. The volunteer for this experiment was Shelldrake, the theatre porter, who was a large, burly and plethoric man which choice was, perhaps, unfortunate for Squire, since in his first public demonstra-

tion he failed to get the subject lower than the second stage of anaesthesia, i.e., that of excitement. and Shelldrake leapt from the table and fled through the watching crowd from the theatre screaming oaths and invective against all those who attempted to restrain him.

After this somewhat chaotic overture to the afternoon's performance, Liston appeared, and the patient was brought to the theatre by the now subdued Shelldrake. However, their experience immediately before had placed the authorities on their guard and Squire did not begin the anaesthetic without two large students standing by to resist any untoward activity on the part of the patient. Liston's opening remark to the assembled gathering was " We are going to try a Yankee dodge for making men insensible," with which the operation commenced, and after twenty-five seconds the leg fell to the sawdust. During the operation Churchill was only rendered semi-conscious, for he answered questions put to him quite rationally. " This Yankee dodge beats mesmerism hollow," was Liston's parting quip.

That night Liston went to dinner with two ladies and took his house surgeon, William Cadge, with him. Being full of his success and experience of the afternoon, he insisted on anaesthetising Cadge on the dining-room table, much to the consternation of his hostesses, who really thought that Cadge would succumb. Within six months, the age of operating without an anaesthetic had gone for ever, and not one solitary voice was raised in protest at its passing. Simpson, by now, was experimenting with the halogen-substituted paraffins, and chloroform was soon discovered and brought into general use.

Liston was at the height of his profession and the crowning point of his career. He had been lionised by his colleagues and had received the approbation of the profession as a whole. However, in the early part of the next year, the boom of his yacht struck him a severe blow on his chest which, seemingly, had no ill effects at the time. By the beginning of the summer Liston complained of feeling constricted at the top of his windpipe. There was also a sense of choking when he leant forward or stooped, and this sensation was most clearly manifest when he drank the last remaining drops in his wine glass. This dysphagia was particularly distressing to Liston, since he was proud of his good health, and respected and enjoyed his glass of wine which was, as we have already heard, some of the best in London. Along with these other symptoms he had developed a cough that was harsh and grating and entirely unreproductive except with a very small amount of mucoid sputum after considerable expectorative endeavour.

Nonetheless, he still lived generously and indulged in his usual strenuous outside activities, that is, his hunting his sailing and his early morning walk.

Whilst in his own home one day in July, examining patients, his mouth suddenly filled with fluid which caused him to hurriedly withdraw to his dressing-room. Here he produced a haemoptysis of some 30 ounces of blood and, weak with the loss of blood, he fainted. The haemorrhage eventually ceased and he sent, in the first place, for his colleague Dr. C. J. B Williams of Cavendish Square, who was away in the country at this time, and hence two other physicians were called in to discover the cause of this dramatic and somewhat sinister attack. Unfortunately neither Dr. Forbes nor Dr. Watson could determine the nature of the lesion, although Liston, himself, hinted that it might be an aneurysm.

After his recovery from this haemorrhage, for which he was treated by cupping, dieting and a limitation of exercise, he was much improved and refused to tolerate any restriction upon his social, professional or pleasurable life.

After three months the cough returned, and accompanying it this time was the production of scanty amounts of rusty sputum with increasingly frequents bouts of dyspnoea. This was once more treated by a course of blood-letting and diet, and by November 28th he was once more about his professional life, and could not be prevented from making his visits on horseback. Some two days later, whilst at the house of a patient, he was seized with a sudden attack of what appeared to be spasmodic asthma, which disappeared immediately he returned to his own home. From this time, until his death, he had a severe degree of orthopnoea which was quite unmitigated. On December 2nd, the attacks were becoming more frequent and he inhaled chloroform with no effect ; there was, however, no pain or general disturbance as a result of his condition. The next day there appeared to be less dyspnoea and he gained great relief from opium. The physical signs in his chest at this time, as Drs. Watson and Forbes elicited them, were those of a mechanical obstruction to the trachea, i.e., a harsh and prolonged inspiratory sound. On December 4th his condition worsened, he had an increased difficulty in deglutination and more frequent bouts of coughing. There was more bleeding with the production of 20 ounces of blood and a concomitant rise in pulse rate. Over the next two days his condition rapidly deteriorated and on December 7th at 10.30 p.m. he died after a paroxysm of dyspnoea.

A post-mortem examination was carried out some thirty-six hours after his death in the presence of Sir James Brodie, Drs. Watson, Forbes and Latham and Mr. John Dalrymple, Mr. William Cadge, Liston's house surgeon, acting as pathologist. The lungs were found to be slightly congested and collapsed, but were otherwise healthy. The pericardium contained one ounce of clear yellow serum and the heart appeared heathy, apart from atheromatous plaques on the mitral and aortic valve cusps. On examination of the aorta a large aneurysm the size of an orange flattened from before backwards was pressing on the trachea. This arose from the upper part of the arch, close behind the left carotid artery at the origin of the innominata, which artery appeared to commence in the aneurysmal pouch. There was a communication the size of a half-crown between the aorta and the sac. The aneurysm had also perforated into the trachea.

Liston died on December 7th, in the house of Sir William Bowman, the man who first described the glomerular capsule in the kidney and who was also a distinguished ophthalmologist and friend of Florence Nightingale. On December 15th Liston's eldest son, also Robert Liston, suddenly died in Edinburgh, the whole family being plunged into abject misery.

Liston's death, although lamented by all his profesional colleagues, gave rise to many acrimonious disagreements, the first being between the physicians who attended him in his last illness. Dr. Williams wrote to the *Lancet* on December 18th, 1847, to justify " physical diagnosis and in justice to himself," saying that Liston sent for him in July, but he was unable to examine the patient until three weeks later. when he detected " A marked dullness above the left clavicle and scapulae (on strong percussion) ; large tubular breath and voice sounds in the same space with tubular expiration above and over the angle of the right scapula."

He (C.W.) had told the patient that there was some grave disease inside his chest, although the precise nature was undetermined. The differential diagnosis was between tuberculosis. aneurysm. or a growth, and in the absence of pulsation the haemoptysis led him to believe it was tuberculosis.

He was again called to Liston in November, and his warnings went unheeded and Liston put himself under the care of other physicians. Dr. Williams saw the patient no more. On December 25th, Dr. Watson wrote to the *Lancet* in his own defence, and countered that both Forbes and he had elicited adequate physical signs, Cadge's report to the *Lancet* on December 11th being " brief and in some respects imperfect."

The correspondence continued with Dr. Williams maintaining his point, but apologising for any injustice to the other physicians. This apology was subsequently accepted.

The second unpopular consequence was the appointment of Syme, Liston's one-time rival but later regained friend, to the chair of Surgery at University College Hospital, but owing to the outcry at his appointment he only stayed in London for a few months, returning once more to Edinburgh.

A fund was opened to endow a scholarship at U.C.H. in memory of Liston and £700 was quickly collected; amongst the donations being 50 guineas each from the Marquis of Anglesey, the Earl of Chesterfield and the Duke of Buecleuch. A fitting valedictory was made to Liston at the annual distribution of prizes held at that hospital in May, 1848. Lord Brougham paid tribute to Liston's death, saying " Whose merits were only half known to the world. He was only considered as the first surgeon of the age, but his other merits should be considered ; his unbounded charity to the poor, as well as his general skill and profound knowledge of every branch of pathological and medical

science connected with surgery, a knowledge not surpassed by any surgeon of the age. To comprehend all his merits he should be also known as a man of liberal feelings on questions of civil and religious liberty and, what was more, he should be known as a strictly upright and honest man (Cheers). That College and Hospital, society and the community at large, has reason to deplore the loss of one of the greatest men who ever professed the healing art; who know when and how to operate, and who never had recourse to the knife until every other means consistent with safety had been tried and failed."

Liston made no great contributions to the medical literature of the time for he only published two works—one "The Elements of Surgery," was published in two volumes in 1831 and 1832, and the second book was his "Practical Surgery," published in 1857, which ran for four editions. He did, however, publish numerous pamphlets in many of the journals of the day.

Perhaps the greatest of Liston's achievements was his move towards the simplification of treatment, for before his time the physicians and the surgeons allowed themselves to be led blindly by tradition, clinging to the remedies of generations. This Liston brushed aside, and it was in many ways a tragedy that his efforts were drowned in the flood of "anti-sepsis."

Liston has a right to his place in the list of those who changed the course of medicine and even the world. The epitaph to Liston, "Ante diem periit, sed non sine gloria," or "His day closed early, but not without glory," is a fitting tribute to a fine man.

ANKYLOSING SPONDYLITIS

by M. WILKINSON

THOUGH a chronic disease of moderate frequency, ankylosing spondylitis is not seen by medical students as often as one might expect, probably because cases tend to accumulate in special departments such as radiotherapy and rheumatic clinics.

The following account is based upon a study of more than 200 patients and is intended to describe the disease, emphasising the more important features. No mention will be made of aetiology since this is unknown.

Clinical picture

The disease occurs four or five times more frequently in males than in females and the initial symptoms almost invariably occur between the ages of 15 and 45 years. A history of spondylitis or of rheumatoid arthritis in a near relative is given by only a minority of patients but may be of diagnostic help.

The first symptoms may be spinal, as in most cases, peripheral arthritis, in perhaps a fifth of cases, or rarely uveitis. In the cases with a spinal onset the disease begins very gradually with referred sacro-iliac pain, i.e. aching or stabbing pains in the buttocks radiating to the upper thighs. More rarely the pain begins higher up the spine. This pain is accompanied by a characteristic stiffness which is worse after inactivity and is relieved by exercise. For instance, many patients have to be helped out of bed in the mornings but gradually loosen up with the day's activities. Rare patients seek to avoid these morning agonies by performing physical jerks at intervals throughout the night.

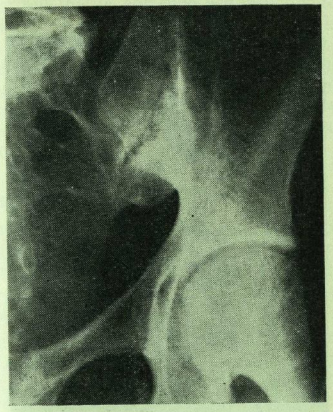


Fig. 1

These patients with a spinal onset may remain undiagnosed for years, often despite various medical examinations, perhaps a period of military service or even admission to hospital. An example of this was a man of 50 years whose backache began while in the army. After two years he was discharged (grade A2) and continued to do fairly heavy work as a greengrocer though with periodic bouts of backache. Eleven years after the onset of backache he was admitted to hospital for dyspepsia and gastroscoped yet his rigid but fairly straight spine remained unnoticed for a further year.

The patients who present with peripheral arthritis tend to be younger, in the 'teens or 20's, and often have a more acute onset. Apart from a preference for the joints of the lower limbs, the arthritis resembles rheumatoid arthritis and it is good policy to enquire for back symptoms and possibly to Xray the sacro-iliac joints of any young male with chronic arthritis. The same might also be said about young males with uveitis.

Important points in a full physical examination include a careful examination of the spine. Loss of the normal lumbar lordosis may give the lower spine a flat appearance and later an upper thoracic kyphos may be added. Spinal movements are usually restricted, especially rotation and lateral flexion of the thoraco-lumbar spine. Since the costo-vertebral joints are often involved, the chest expansion should be measured and is usually less than two inches. Finally the eyes should be examined using the +15D ophthalmoscope lens and preferably with the pupil dilated. Small dark tags on the front of the lens will betray the fact that at some stage the iris has been inflamed and adherent to the lens. About a quarter of spondylitic patients will give a history of uveitis or will show evidence of a past attack which may or may not have been recognised.

The course of ankylosing spondylitis is unfortunately one of intermittent but almost invariable progression and this is well seen radiologically. The sacro-iliac joints are probably always affected first and certainly one cannot diagnose the condition without

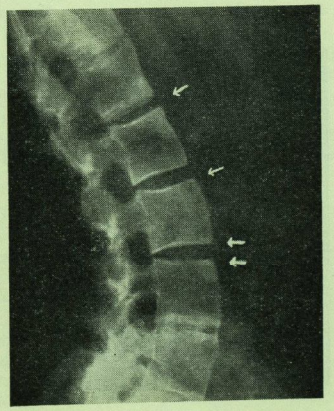


Fig. 2

radiological erosions of these joints (fig. 1) or in the later stages bony ankylosis. Next the disease spreads in a more or less ascending fashion up the spine to involve the

apophyseal joints, the vertebral body margins, the edges of the intervertebral discs and the costo-vertebral joints.

The apophyseal joints are eroded and eventually ankylose but this is difficult to see radiologically except in the cervical spine where the slanting apophyseal joints show up on the lateral view. Erosions of the vertebral body margins (fig. 2) are often seen on the lateral view of the lumbar spine early in the disease. Later these erosions heal, leaving a sclerotic squared corner and later still ossification extends out into the margin of the intervertebral disc to produce the so-called bamboo spine.

Erosion and later fusion of the upper costo-vertebral joints is easily seen on a standard chest film.

Lesions also appear at tendon insertions around the pelvis, possibly because of abnormal muscle strains involved in moving the rigid spine. Early in the disease pelvic radiographs may show erosions (fig. 3), rather like small bites, of the ischial tuberosities and as the years go by these heal, leaving a fringe of osseous whiskers (fig. 4). Such

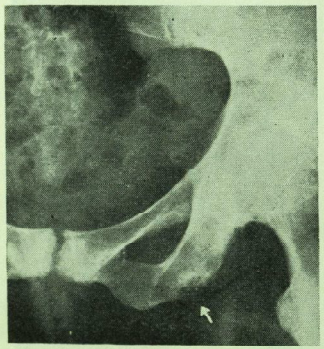


Fig. 3

whiskers are also seen along the iliac crests and occasionally erosions of the symphysis pubis may progress to bony fusion.

In the late stages of the disease the whole spine, ribs and pelvis, including the discs and ligaments may be converted into one block of bone.

Peripheral arthritis, if it is going to occur at all, usually does so in the first 10 years

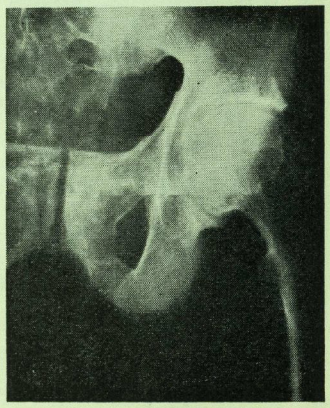


Fig. 4

of the disease and apart from its predilection for the joints of the lower limbs is indistinguishable radiologically or even histologically from rheumatoid arthritis. It should be emphasised that peripheral arthritis is very frequent in ankylosing spondylitis for fully 50 per cent of patients show arthritis of the root joints, i.e. hips and shoulders, or more peripheral joints at some stage in the illness. Such cases may show constitutional disturbances such as mild fever, anorexia and weight loss.

The only other investigation of value is the erythrocyte sedimentation rate which is usually accelerated during active phases of the disease. Thus it is useful for following progress but has no diagnostic value. In contrast to its value in rheumatoid arthritis, the Rose-Waaler or differential agglutination test is invariably negative in ankylosing spondylitis.

Course of the disease

Ankylosing spondylitis progresses in a spasmodic manner. Episodes of activity of

the disease lasting weeks or months may be followed by symptom-free intervals of months or years, but it is rare for the disease to remit permanently. Eventual ankylosis of the spine is usual after a course of several years but this is not such a disadvantage as it may seem for provided the spine ankyloses in a reasonably good position the patient can usually continue to do light work. Peripheral joint involvement is much more disabling especially if as is usual it affects the hips or knees. Rarely, recurrent iritis may threaten vision.

Complications

By far the most important complication is uveitis which afflicts about a quarter of spondylitics. Other complications are rare.

The reduced chest expansion is said to predispose the spondylitic to chest infections, including tuberculosis, though the evidence for this is slight. Mild normocytic anaemia may occur especially with extensive peripheral joint involvement. Rarely aortic incompetence may develop due to rheumatoid involvement of the root of the aorta and occasionally rheumatoid granulation tissue destroys ligaments and allows subluxation between cervical vertebrae with some risk of paraplegia.

Odd associations of ankylosing spondylitis are psoriasis and ulverative colitis and sometimes all three conditions occur together. Typical ankylosing spondylitis may also occur after Reiter's disease.

Treatment

There is no curative treatment for ankylosing spondylitis and from the onset it is probably wise to accept that a rigid spine will eventually result.

The aims of treatment are then to relieve pain and to allow the spine to ankylose in a good position.

Rest in bed should be avoided in purely spinal cases. Instead, the patient should receive regular exercises to maintain an upright posture and a good chest expansion. The patient should learn to sleep on his back on a firm mattress at night but mechanical supports are now rarely used.

For the relief of pain, aspirin and codeine are the usual remedy and should be prescribed generously in the hope of tiding the patient over until a natural remission occurs. If these prove insufficient phenylbutazone may be used but is a toxic drug and the maintenance dose should not exceed 400mg. daily. If this also fails, radiotherapy may be recommended but because the small risk of leukaemia after its use is proportional to the dosage, the spinal segments should be treated once only. Radiotherapy often produces a remission, unfortunately temporary, but lasting months or years. During this time the back may be painless and the sedimentation rate normal but the radiological changes usually progress.

If peripheral joints are involved the prognosis is much more serious and radiotherapy should probably be tried immediately. Here there is much less risk of irradiating active bone marrow with the late possibility of leukaemia so the treatment can be repeated. However, radiotherapy is less often effective with peripheral arthritis and if it fails one may have to consider suppressive treatment using steroids either systemically or, in the case of the knee joint, locally.

Finally the patient's occupation should be considered. Whenever possible it is better financially for the patient if his own job can be modified to suit his illness. Activity involving walking or even light exertion does no harm but heavy physical work usually aggravates spondylitis and a change of occupation is unavoidable. Work which involves much stooping over a low bench or desk may increase deformity and if possible the bench or seat should be adjusted.

Given a reasonable will power the spondylitic patient can usually earn a living and even a wheel chair case, supplied with mechanical transport, may be self-supporting doing clerical or light bench work. A striking illustration of this was a 36-year-old man whose spondylitis began at the age of 15 years and had progressed so that all the joints of the spine and lower limbs were ankylosed in a sitting position. This man did part-time work as a draughtsman and in his spare time travelled long distances around the country in the capacity of official of an invalids' club. The journeys were all made in a mechanically propelled chair which could be partially dismantled to form a light wheel chair for indoors. Other unofficial duties included the repair and maintenance of his own and fellow club members' conveyances

and from time to time he invented and made appliances, usually for attaching to invalid chairs. When this patient last attended hospital these latter activiites had been rewarded by a television interview.

In conclusion it is rather sad to reflect that the above case represents the result of more than 20 years' continuous medical treatment.

SPORTS NEWS

VIEWPOINT

Questionnaires, censorships and popularity polls appear to be the vogue. The staff of this *Journal* is at present engaged in analysing the answers to a questionnaire circulated to the students. The Sports Editor, not liking to feel out of it, is undertaking a small study of his own. It is designed to answer such questions as: what percentage of students are active sportsmen ; whether there is any notable difference in the sporting interests of Bart's trained clinical students and those from the ancient Universities, etc. The study will be limited to a small, and probably not representative, body of students, and it is hoped that no one will pay too much attention to the results when they appear.

More seriously, the writer would like to draw the attention of club officials to the following facts. The responsibility for seeing that regular reports of their clubs' activities appear in the *Journal* rests with them. Any reports received will be published as soon as possible. Although making a point of asking for them when they are not submitted, he does not feel bound to do so, and any club not receiving its fair share of publicity must consider itself at fault.

An apology must be made to both readers of this *Journal* and the Atheletics Club for the fact that the date of Sports day did not, as stated, appear in the April *Journal*. This was due to a confusion for which the Sports Editor accepts full responsibility.

SPORTS CALENDAR

June

Wednesday, 4th
Athletics v. Dulwich College (A).
Golf v. King's College at South Herts.

Thursday, 5th
Sports Day (heats).

Saturday, 7th
Sports Day.
Tennis v. St. Thomas' (H).

Wednesday, 11th
United Hospitals Athletics Championship (heats).
Golf v. U.C.H. at South Herts.

Saturday, 14th
United Hospitals Athletics Championships at Motspur Park.
Tennis v. St. George's (A).

Sunday, 15th
Cricket v. Horlick's (A). Start 11.30.

Tuesday, 17th
Athletics v. Harrow School (A).

Wednesday, 18th
Golf v. University College at Stanmore.

Saturday, 21st
Cricket v. Royal Dental and Charing Cross Hospital (H). Start 2.30.
Tennis v. U.C.H. (A).

Sunday, 22nd
Cricket v. O. Cholmeleians (H). Start 11.30.

RUGGER

INTER FIRM SEVEN-A-SIDES

The last day of the Rugby season at Chislehurst (a brilliantly sunny, but windy afternoon) saw the second-year Pre-clinicals win the Firm Seven-a-Sides.

The earlier rounds resulted in the second time clerks having a comparatively easy passage into the final. Unfortunately Mike Phillips was injured in the semi-final and could not play in the final, preferring to save himself for the Middlesex Sevens the following Saturday. In the other half of the draw, the Second Year Pre-clinicals went from strength to strength and by superior fitness overcame last year's winners, now the Finalists.

The final was fought at a great pace with the Pre-clinical Seven scoring early on following a delightful scissors between Britz and Stevens who then converted his own try. After the interval, Mitchell reduced the Pre-clinicals' lead with a fine but unconverted try. It was a fitting reward for Ross to score the decisive try for the Pre-clinicals. By his fine example of keenness and fitness he had urged his side on to a well-deserved victory, the first by a Pre-clinical team for seven or eight years.

The Housemen v. Registrars match resulted in another win for the Registrars by eight points to five. Perhaps if Mike Hackett had kept his kilt on it would have been the inspiration for Mackenzie and his housemen to turn the tables on last year's game. He was however ordered to attire himself in something more conventional and Badley requested to take his sack dress off. This done, the Registrars gave a fine exhibition of handling by their three-quarters, who included Picton Thomas, Havard and John Griffiths.

The Registrars scored two good tries, converting one of them, these being countered by a try under the posts by Edwards. Mr. Cope handled the game with great judgment, making sure that no one became too tired to enjoy the festivities afterwards, which included the traditional Sevens Dance and the unusual event of the bar running out of draught beer by the time the coachful of nurses arrived!

Easter Tour in South Wales, 1958

With a party of sixteen players, Bart's arrived in the Rhondda to play Treorchy in the evening of Good Friday, and Tredegar on Easter Monday.

In the first of their games Bart's were extremely unlucky not to deprive Treorchy of their unbeaten home record, for even the local Welsh conceded the next day that Bart's had played the better in losing by a goal to a try.

Although being without Mackenzie and Hamilton, the Bart's forwards soon settled and proceeded to give their backs a plentiful supply of the ball from the tight scrums and line-outs. It became evident that the firm conditions with virtually no wind suited the Hospital well, and early on Rees Davies made several clean but poorly supported breaks through the middle. This was indeed a pity, as Davies carved open the Treorchy defence time and time again and, with more speed in the centre, Bart's must surely have scored. During one of his breaks, he did succeed in linking up with Halls, who made ground before passing back to the forwards for the move to be checked only five yards from the Treorchy line—quite the best move of the match. Half-time arrived with Bart's still pressing, and robust tackling by the Hospital strangling any Treorchy moves at birth.

After the interval, Treorchy started to press and eventually succeeded in forcing a scrum five yards from the Bart's line. With a well-timed shove and wheel they scored a push-over try which was converted by a superb kick from near the touch line. This stirred the Bart's pack and Thomas and Pennington in the line-outs, together with D. Richards in the tight, reached new heights, giving the Hospital three-quarters nearly continuous possession. Soon, a penalty was forced ten yards from the Treorchy line, and an excellent try scored through an ingenious piece of quick thinking by Halls and Brian Richards. Before the opposition realised quite what had happened, Halls tapped the ball forward and, in a flash, Richards gathered and dived over for a try, ten yards from touch. The conversion only narrowly failed.

Continuing to attack, Phillips broke through the middle and on reaching the full-back passed out to Randle, who was just tackled short of the line. Shortly afterwards, Bart's just failed to score again when the home full-back was tackled in possession almost on his own line, and Treorchy managed to get the ensuing touch down.

The final whistle blew a minute later with Treorchy very relieved to have kept their ground record intact. No account of our visit to the Rhondda would be complete without mention of the wonderful hospitality we again received from our Welsh hosts.

We were also most fortunate in being entertained by Mrs. Davies, who welcomed us into her own home both for supper on our arrival on Thursday and coffee the next morning. We were made to feel completely at home and nothing was too much trouble for our charming hosts.

Team : M. Britz, R. M. Phillips (Capt.), J. Bamford, J. Stevens, G. J. Halls ; R. R. Davies, B. Richards ; J. L. C. Dobson, D. A. Richards, B. Lofts ; L. R. Thomas, J. Pennington ; R. P. Davies, W. P. Boladz, G. Randle.

After watching Cardiff and the Barbarians on Easter Saturday, Bart's travelled to Tredegar on Easter Monday to play before their largest crowd of the season, apart from the Cup Match. Some rather misleading accounts of this match appeared in the National Press the next day, when no mention was made of three crippling injuries to Bart's players early in the second half, when only 6—3 down and playing down-wind. However, this was obviously not a Bart's day and we had only ourselves to blame when Tredegar scored eight points in the last five minutes before a crumbling defence.

Tredegar had taken the lead in the first few minutes with a very neat dropped goal from close

range by their scrum half. Undeterred, Bart's threw the ball about, and one magnificent run by Phillips brought the crowd to its feet. From the ensuing set scrum Bart's heeled against the tight head and Brian Richards dived over for an unconverted try. Shortly before the interval, Tredegar regained the lead with another dropped goal by their fly-half.

Within ten minutes of the re-start, both Bamford and Rees Davies were injured and Phillips was now fly-half, Halls in the centre and Randle on the wing. However, play was still very open when Tredegar went further ahead when they scored a converted try in the corner. Shortly afterward, lock forward Boladz received a crippling knee injury and so the pack were reduced to six active members. However, D. Richards completely outhooked his opposite number and Laurie Thomas and Pennington were still getting possession in the line-outs. It was from another heel against the loose head that Rees Davies raced over for an unconverted try on the blind side. However, as the game progressed our defence became shakier and finally let in two more tries by the fast Tredegar left-centre to make the final score 19—6.

Considering the unfortunate handicap in the second half, Bart's had done well and continued to play bright attacking football till to the final whistle. It was pleasing to discover that our hosts would be delighted to see us again next year when, with a little more luck, we may well beat them.

Team: A. P. Ross; R. M. Phillips (Capt.), J. Bamford, J. Stevens, G. J. Halls; R. R. Davies, R. Richards; J. L. C. Dobson, D. A. Richards; B. Lofts, L. R. Thomas, J. Pennington; R. P. Davies, W. P. Boladz, G. Randle.

1st XV v. Nottingham. Away. Won 8-3, on March 29th.

Paying their first visit to Nottingham for over five years, Bart's gave a thoroughly sound performance, and gained their twelfth win of the season. With Hamilton unavailable as hooker, D. A. Richards made a most welcome return to the front row after absence through illness.

Kicking off against a strong wind on a muddy, heavy pitch, Nottingham established themselves early in the Hospital half by kicking to touch whenever their backs received the ball. Fortunately, however, Bart's were determined to play their customary handling despite the conditions, and twice, early on, Rees Davies broke right through and first Phillips and then Stevens were only just held short of the Nottingham line. However, after fifteen minutes' play Nottingham scored a try half-way out after a break by one of their centres. Undismayed, Bart's hit back and were very unlucky not to score from a brilliant run by Phillips of nearly sixty yards. Half-time arrived with Bart's only three points down with the slope and wind advantage to follow in the second half.

Within ten minutes of the re-start, Bart's had levelled the scores with a beautiful try by Phillips after Rees Davies and Bamford deceived the opposition with a very effective dummy scissors. Stevens narrowly missing the conversion. Although the mud became even more clinging, another good try followed ten minutes later. Gaining possession from a set scrum just inside our opponents' half, Bamford made a break and,? when threatened, passed inside to Mackenzie, who returned the pass and so on to Stevens, who crashed over half-way out. The scorer then converted his own try with a magnificent kick, and shortly afterwards hit the upright from a penalty thirty-five yards out.

Throughout this half, the forwards had gained control in the loose mauls, where Boladz and Pennington were frequently prominent, and easily held their heavier opponents in the tight by better binding.

Altogether a highly satisfactory performance, capable of erasing a heavy defeat we received on our last visit!

Team: M. Britz; R. M. Phillips (Capt.), J. Bamford, J. Stevens, G. J. Halls, R. R. Davies, B. Richards; J. L. C. Dobson, D. A. Richards, B. Lofts; L. R. Thomas, J. Pennington; G. Randle, W. P. Boladz, J. C. Mackenzie.

Season 1957-58

Colours have been awarded to: J. Bamford, M. Britz, C. C. H. Dale, R. P. Davies, J. Hamilton, J. Pennington, J. Stevens and R. Bonner-Morgan.

Colours have been re-awarded to: R. R. Davies, W. P. Boladz, J. L. C. Dobson, G. J. Halls, B. Lofts, A. B. M. McMaster, J. C Mackenzie, J. C. Neely, R. M. Phillips, B. Richards and D. A. Richards.

FOOTBALL

This season may conveniently be divided into two halves: before and after Christmas.

Before Christmas the team was playing well, won over half the games and had a good goal average.

What happened at Christmas to cause a rapid decline has never been known, but the tide turned very rapidly. Seventeen games were played, W3, D2, L12.

The team did not play particularly badly, but the goals did not come, and the defence had some poor days. Indeed, it was not until mid-March that the first win came. It is a tribute to the team's spirit that, having played twice weekly for two and a half months without a single victory, they never lost heart, and ended the season in good style with three sucessive wins. Gould and Tregbulem were the chief goal scorers. Particular noteworthy was the game in which St. Bart's beat the Swiss Mercantile College 2—1. The Swiss won the end-of-season 6-a-side competition for which 43 sixes entered. Bart's played in this competition for the first time and reached the last 16.

The A.G.M. will be on May 21st, when the season's happenings will be reviewed. Officers elected for next year, and plans laid for success next season.

BOOKS RECEIVED

Ideals in Medicine, by Vincent Edmunds and C. Gordon Scorer. Tyndale Press. Price 12s. 6d.

Aids to Organic Chemistry, by George Maw. Baltière, Tindall and Cox. Price 10s. 6d.

Childhealth and Paediatrics for Nurses, Health Visitors and Social Workers, by R. McL. Todd. Heinemann. Price 21s.

Pharmacology for Nurses, by J. R Trouncer. Churchill. Price 15s.

Foundations of Neuropsychiatry, by Stanley Cobb. Price 40s.

Textbook of Obstetrics (3rd. Ed.), by J. F. Cunningham. Heinemann. Price 40s.

Law and Ethics for Doctors, by S. Hadfield. Eyre and Spottiswoode. Price 42s.

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

LETTERS TO THE EDITOR

Sir.—Just prior to reading Mr. R. L. Hurt's excellent article "The Surgical Treatment of Ischaemic Heart Disease," I was present at a demonstration at the above hospital (which has established close ties with Bart's) on the very same subject, with a presentation of a case of severe Angina Pectoris treated by ligation of the two internal mammary arteries. Dr. West, who presented the case, very kindly loaned me a copy of an article (Minerva Medica, October 31, 1955) in translation. The article dealt with research on the anastomosis between the internal mammary-pericardial vessels and those of the myocardium, i.e., coronary. Fieschi, who did this work about seventeen years ago, thought it possible to create a state of hypertension in the region of the internal mammary artery by ligating it in the second intercostal space. Later, in 1939, Zoja and Cesa Bianchi performed the operation under local anaesthesia on a patient who had had repeated attacks of myocardial infarction. The post-operative course was claimed to have been good and no further myocardial attacks occurred in the following two years up to the time of publication.

Further experiments showed that by this technique, dye suitably injected found its way into the periaortic and peripulmonary arteries and branches of the coronary artery system.

Regarding the operative technique on patients, for those unable to secure the above-mentioned article, briefly it consists of:—

(1) Incisions made 4 cm. from the sternal border in the second intercostal space.

(2) Spreading apart the fibres of the Pectoralis Major.

(3) Exposing the margins of the second and third ribs and identifying the internal mammary artery.

(4) Ligating the artery by means of a double tie.

The procedure, of course, being bilateral.

M. Bodttezzati, commenting upon the Minerva Medica report, concludes his series of articles by expressing his belief that the treatment is a good contribution to the therapy of myocardial insufficiency.

From what I have observed, no one can deny the simplicity of the treatment and the patient presented at St. Luke's with Status Angiosus had no further attacks following the operation.

Yours truly,

JAMES RANDALL.

St. Luke's Hospital,
New York, U.S.A.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXII JUNE 1958 No. 6

EDITORIAL

Although the problem of House jobs is *sub judice* and therefore beyond the critical reach of the *Journal* one interesting feature has emerged from the events of the last few months. It is increasingly obvious that the masters are becoming more and more out of touch with the views of the men, for the students' feelings were not sought nor apparently respected in an alteration to their own future.

The Dean showed great understanding in these recent anxious weeks when he offered to meet and discuss the matter rationally with a representative group of students. This opportunity enabled a far better relationship to be established and the relative roles of University, Hospital and Medical College were explained fully.

Perhaps Bart's could emulate the Architectural Association where there are two members elected to the governing body to represent the interests of the Students and make their opinions known. Ideally the Senior Secretary of the Students' Union should be an ex officio member of the College Council but this would never be tolerated by the traditions of the Hospital and of the profession.

It is undeniably a fact that in all teaching hospitals, not only our own, the decisions which change the undergraduate's life are made without reference to the generation which they ultimately concern. Universities change the requirements for entry to the Faculty and the rules of Examinations with the tacit if not overt approval of those who should speak for the students' interests. The medical school enact their own by-laws which complicate the already disadvantageous position. An example of this latter case is the Bart's ruling on qualification with the Conjoint diploma which is not allowed at Bart's until the time for the degree qualification arrives. This is not so in other hospitals.

Many departments within the Hospital make more autocratic decisions which are difficult to understand and impossible to maintain. The recent attempted prohibition of the majority of helmsmen from going to the Sailing Regatta was a glaring example of this, for the interests of the Hospital were surely identical with those of the students on this occasion. Should this have been successful while the helmsmen idled nostalgically in their laboratory and thought of Burnham, their mentors would have regarded themselves as excellent fifth-form masters. But Bart's is not a public school!

To bridge this void the Dean should institute regular and uninhibited discussions between himself, the students and as many of the Staff as are interested. There is no doubt that the students would respect this move and behave with maturity and integrity whilst the Staff would learn something of their "pupils" thoughts.

It is on the youth of the profession that

the future depends and they must lend a hand at laying the foundations on which they are to build. Respecting age, experience and sagacity but bringing vitality, enthusiasm and drive into the future of themselves, their hospital and the world. It was a boy of twelve who confounded the doctors in the temple which shows age and position do not make quiet, reasonable and useful discussion impossible.

New Jobs and Old!

It is proposed that in future the *Journal* should be responsible for mediating the various advertisements that are sent to the Dean for locums etc. This will mean that a larger selection of Bart's men have the opportunity to apply than the present system allows since the notice board is rarely seen by the majority of the qualified and exiled Bart's men.

Before the war the College Secretary ran a private employment agency for Bart's doctors to everyone's advantage and it is hoped that the new arrangements will be as satisfactory. The charge for each insertion irrespective of length will be 10/- and applications should be made to the Manager of the *Journal*.

ANNOUNCEMENTS

Engagements

CAMPBELL—THOMAS. The engagement is announced between Dr. Euan David Ross Campbell and Dr. Susan Thomas.

DOWNHAM—CURTISS. The engagement is announced between Dr. David Downham and Jennifer Curtiss.

IRWIN—NAUMANN. The engagement is announced between Dr. Michael Henry Knox Irwin and Elizabeth Naumann.

JONES—WHITING. The engagement is announced between Dr. Brian Stanley Jones and Hilary Frances Whiting.

Marriage

BARNSLEY—HANNAM. On May 24th, Dr. Arnold Barnsley to Mrs. Betty Charmian Hannam.

Golden Wedding

ROWLAND—COOK. On May 15th, 1908, Penry Rowland, M.D., to Janet Cook.

Births

BIRDWOOD. On May 3rd, to Gaynor, wife of Dr. George Birdwood, a son (John Richard Gresford).

IVORY. On May 6th, at Warren, Pa., U.S.A., to Eleanor, wife of Dr. P. B. C. B. Ivory, a son (Mark Caesar).

THOMAS. On April 28th, to Phoebe, wife of Dr. Duncan Thomas, a daughter (Christine).

WESTON. On May 17th, in Jamaica, to Anne, wife of Peter Weston, F.R.C.S., a son.

Deaths

ADAM. On April 10th, Dr. George Henry Adam. Qualified 1907.

ATKIN. On May 9th, Dr. Charles Sydney Atkin. Qualified 1913.

GARSON. On May 6th, Philip Garson, F.R.C.S. Qualified 1924.

CALENDAR

June

Sat. 14th
Dr. R. Bodley Scott on duty.
Mr. R. S. Corbett on duty.
Mr. R. W. Ballantine on duty.
Tennis: v. St. Georges (A).

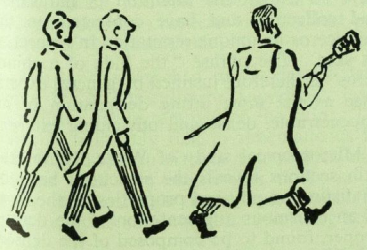
Sat. 21st
Dr. E. R. Cullinan on duty.
Mr. J. P. Hosford on duty.
Mr. C. Langton Hower on duty.
Tennis: v. U.C.H. (A)
Cricket: v. Royal Dental and Charing Cross Hospital (H).

Sat. 28th
Medical and Sugical Units on duty.
Mr. G. H. Ellis on duty.
Tennis: v. Middlesex Hospital (H).
Cricket: v. Jesters (H).

July

Sat. 5th
Dr. Geoffrey Bourne on duty.
Mr. J. B. Hume on duty.
Mr. F. T. Evans on duty.
Cricket: v. U.C.S. Old Boys (H).
Tennis: v. Dulwich School (H).

Sat. 12th
Dr. A. W. Spence on duty.
Mr. C. Naunton Morgan on duty.
Mr. R. A. Bowen on duty.
Cricket: v. Incogniti (H).
Tennis: v. London Hospital (H).



Medical Staff

The following appointments to the medical staff take effect from the dates mentioned:

Department of Pathology
Senior Registrar: Dr. E. G. Rees going to U.S.A. for 12 months: Dr. J. A. Gobert-Jones will act as Senior Registrar during his absence from 1st October, 1958.

Department of Diagnostic Radiology
Registrar: Mr. A. R. Chrispin: 1.10.58.

Department of Anaesthesia
Registrar: Mr. A. M. Keil.

* * *

APRIL, 1958, CLINICAL ENTRY

Busfield, H. M. B.
Hertford College, Oxford.

Cawdery, J. E.
Oriel College, Oxford.

Meade, T. W.
Christ Church, Oxford.

Stephan, Miss J. C.
St. Hilda's College, Oxford.

Waring, Miss A. M.
Lady Margaret Hall, Oxford.

THE HIDE OF THE RHINOCERUS

by **Prof. A. J. E. CAVE**

IN PINPOINTING the idiosyncrasies of one's fellows, traditional practice invokes, by way of metaphor or simile, the real or imagined characteristics of particular members of the animal kingdom. Such conventional attributions are usually apt, succinct and convenient of employment. This socio-zoological terminology may involve reference to the whole animal (as when a mischievous child is called a monkey or a stubborn man a mule) or to some particular of its anatomy (e.g., the heart of a lion, the brain of a hen, the eye of a hawk). All understand the connotation of

such terms, which compose a considerable repertoire. Therein "the hide of a rhinoceros" enjoys a long-established usage, as the ideal derogatory term to be applied to the "thick-skinned" fellow who is impervious to blandishment and censure alike, whose monumental stolidity is undisturbed by criticism and who rests impenetrably armoured in indifference. Such a one fits awkwardly into community life, wherein, fortunately, he is not over-abundant, though in diverse walks of life in modern societies he may be discerned among those who, of set purpose and from the humblest origins, have attained the summit of worldly success.

The purpose of this notice, however, is not a disquisition upon psychology or sociology, but an examination of the factual basis for the adoption of the rhinoceros as the classical embodiment of thick-hidedness, recalling that some other animals (e.g., elephant, hippopotamus, giraffe) have sufficiently thick skins, yet have not been selected by custom as exemplars. For it is pertinent to ask whether the choice of the rhinoceros in this connexion is merely empirical or whether it rests upon a scientific basis and to determine what distinctive physical characters of rhinoceros skin have so impressed naturalists and hunters and influenced popular opinion.

Despite much information on the subject gleaned from the flaying of wild or captive animals, the final answer to these questions must obviously be sought from the histological examination of rhinoceros skin and the discovery thereby of its exact intimate structure. The opportunity to undertake such examination was recently provided through the generous co-operation of two professional colleagues—Dr. E. H. Williams, of Arua, in the West Nile District of Uganda, and Dr. D. B. Allbrook, of the Anatomy Department, Makerere Medical College, Kampala. Both these gentlemen, indefatigable in sustained efforts to procure rhinoceros material for the writer's researches, have now increased his debt of gratitude by providing items suitable for microscopic examination—Dr. Williams, by collecting in the field (under the greatest difficulties) specimens of the skin and some other organs, Dr. Allbrook by forwarding blocks and slides of the collected material after preservation and processing. The source of the specimens was an immature White Rhinoceros (*Ceratotherium simum*). For the first time, therefore, it has been possible to study the histological nature of rhinoceros skin, of this species at least: that of the other rhinoceros species remains as yet apparently undetermined.

Before detailing the results of its microscopical examination, it is convenient to review that general knowledge of rhinoceros skin gleaned from the observation of living, and the flaying of dead, animals, which has formed the basis of its traditional reputation.

To one familiar with the smooth, supple, hairy skin of most mammals, that of the living rhinoceros appears to be "dead" and inert—a dull, wrinkled (sometimes tuberculated), hairless armour plating, resembling oak-bark rather than mammalian tissue. Not only does it give an impression of extraordinary thickness, but experience demonstrates the difficulty of its penetration save by sufficiently sharp or powerful weapons.

Upon flaying, the detached hide is found to be tremendously thick, heavy beyond expectation and exceedingly difficult of manipulation. It may weigh almost a ton and require a dozen or more men to drag it over the smoothest ground. Its consistency is that of a sheet of thin steel and it defies all attempts at folding (Heller[3]). So thick and rigid is it that it cannot be worked and (beyond the occasional manufacture from it of curios) it lacks commercial value and is of service to the taxidermist only.

It is these pronounced physical properties of density, thickness and inelasticity which have so caught the attention of naturalists and collectors and have conferred on the rhinoceros its unique reputation in respect of its skin. The phrase "the hide of a rhinoceros" is therefore justified by general experience as the most fitting designation of an impenetrable, dense and unyielding exterior.

Microscopical study of White Rhinoceros skin sections reveals the structural basis of its distinctive physical properties, in the form of an enormous augmentation of the dermis proper, found to be composed of the densest possible felting of pure collagen fibres. However, it further discloses the presence in the dermis of hair follicles, sebaceous glands, specialised apocrine sweat glands and blood vessels in fair abundance. The skin is discovered, indeed, to be no inert, lifeless outer wrapping, but instead to be a protective, sensitive, excretory organ, of typically mammalian constitution though specialised in certain particulars in conformity with the animal's mode of life. (As anticipated, sectioning of the skin-blocks proves difficult, and the best sections obtainable measure 15-20μ thick).

The heavily cornified epidermis is unexpectedly thin (averaging 1 mm.), although in regions of the body not examined it may be thicker: it has the classical component layers and sends down into the dermis hair follicles, sebaceous glands and peculiarly large apocrine sweat glands. The dermis is 18-20 times the thickness of the epidermis. A section of the relatively thin belly skin yields the following mensural details:

epidermis = 1 mm.

stratum corneum	0.25 mm.	
„ lucidum	0.5 mm.	
„ granulosum	0.25 mm.	
„ germinativum		

dermis = 18 mm.

In other situations the stratum corneum equals or exceeds in thickness the stratum Malpighii. The stratum lucidum is not everywhere apparent. The stratum granulosum is some two cells thick. Small melanin granules are present in the stratum corneum.

The extraordinarily thick dermis is a felting of dense collagen fibres, running in all directions relative to the surface. It contains no admixture of elastic fibres, any such present in the sections being confined to the walls of the skin arterioles. It is this extremely thick, non-elastic dermal layer which accounts for the characteristic physical properties of rhinoceros skin.

The hide is attached to the deeper structures by a non-resistant superficial fascia permitting facile removal of the skin. This layer is uniformly rich in subcutaneous fat, which in adult animals is a good inch thick on the back and two inches thick on the belly. Conservation of the body heat is thus assured by so substantial an insulating layer.

The presence of hair follicles containing in their depths the stumps of body hairs is noteworthy, since the animal is generally described as lacking body hairs save for those of the eyelashes and of the ear- and tail-fringes. In certain places hair-shafts extend further up the follicles, some of them even reaching the body surface. Nowhere are hairs discovered freely projecting. A distinct, if scanty, equipment of projecting body hairs, becoming less obvious with increasing age, has been noted by Bigalke[1] in a young White Rhinoceros. It may be that such projecting hairs are duly removed by the repeated friction of mud-bathing and rolling, or that they are shed naturally since any external hairy coat is rendered superfluous by the thickness both of the dermis and its underlying subcutaneous fat.

The sebaceous glands are relatively small and feebly developed: they are of piriform appearance and tend to be arranged in single pairs around individual hair follicles.

The ordinary, small type of sweat gland is not found in any of the sections studied. Instead, relatively enormous apocrine sweat glands (recalling those of human axillary skin) are an obtrusive histological feature. These large glands, not particularly numerous in the sections examined, occur in the superior part of the dermis as coiled networks, disposed in open basket fashion around the bases of the hair follicles, each gland having an individual blood supply. Their ducts spiral surfacewards, being fairly capacious in their intra-dermal, but narrower in their intra-epidermal, extent. Both the glands and the ducts are closely surrounded by numerous myoepithelial cells of remarkably large size, which constitute a distinctive and unexpected structural feature. The large apocrine sweat glands are well vascularised by cutaneous vessels which pierce the deep aspect of the dermis (through 1 mm. wide "foramina") and divide freely within this layer to gain the individual glands.

Thus rhinoceros skin (in this species at least) is typically mammalian in constitution, but is functionally specialised in respect of its dermis and its sweat glands. Physiologically, it is a highly active organ, subserving tactile sensation, the prevention of heat-loss and the elimination of body fluid in exactly comparable fashion to the skin of any other mammal.

Since structure is but the morphological expression of function, the large apocrine sweat glands with their huge myoepithelial cells call for interpretation in terms of the animal's physiology. In the White Rhinoceros, as in other perissodactyl mammals, unwanted body fluid is discharged as sweat or urine. The daily urinary output of this crea-

ture is not known and would appear almost impossible of accurate assessment, even in the case of the captive specimens at present living in zoological gardens (London, Antwerp, Pretoria). This is because of the peculiar mode of micturition, which consists of a discontinuous series of partial bladder contractions, at irregular intervals, during the animal's progress around its territory. Sweat output must complement that of urine, and a certain (but as yet unknown) degree of reciprocity must obtain between the two. But additionally, so large a beast as the rhinoceros has need of some active mechanism whereby body fluid can be discharged suddenly and copiously, as after severe exercise, in order to obviate a deleterious rise in body temperature. Normally, the White Rhinoceros moves about in cool, dull or cloudy weather only, and avoids bright sunshine. When pursued on a hot day it can be seen to sweat, and Coryndon[2] has reported the sudden drenching with sweat of a struggling young animal—a discharge so profuse as to simulate its dousing with a bucketful of water. These facts suggest that the body temperature remains, and must be maintained, at a fairly constant level, and that machinery of some sort is necessary to ensure the occasional sudden release from the body of considerable quantities of fluid in the form of sweat. Such machinery is obviously to hand in the large apocrine sweat glands and in the enormous and numerous myoepithelial cells which are so striking a feature of their structure.

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A CASE OF HASHIMOTO'S DISEASE

by **D. WEITZMAN**

THE TYPICAL clinical picture of Hashimoto's disease is that of a middle-aged woman, with a goitre of recent onset, and who may or may not have myxoedema (Luxton, 1957). The serum proteins are usually abnormal, with an increase in gamma-globulin; in consequence, abnormal flocculation reactions are obtained with thymol and zinc sulphate, exactly as in liver disease. The thyroid itself is infiltrated with lymphocytes and plasma cells. Recent work (Roitt et al, 1956) has indicated that the disease process is the result of auto-immunisation. Animal experiment (Witebsky, 1957) has shown that thyroglobulin is antigenic: release of this substance into the circulation, following injury to or disease of the thyroid gland, can provoke antibody formation. Individuals naturally vary in their capacity to produce thyroid antibody: should this reach a high titre, an antigen-antibody reaction takes place in the thyroid with destruction of normal histology and its replacement by lymphadenoid tissue. The presence of circulating thyroid antibody can be demonstrated by the technique of Doniach and Roitt (1957). Thyroid extract and the patient's serum are suspended separately in agar with a neutral zone of saline between (Fig. 1). Thyroglobulin and serum gradually diffuse into and meet in the saline zone: if thyroid antibody is present in the serum, precipitation occurs with the formation of an opaque white ring.

It is thus apparent that any form of thyroid disease or injury may be followed by the subsequent development of Hashimoto's disease provided that thyroid antibody is formed in high titre, although it is uncommon for

such titres to occur. Cases in which myxoedema follows subtotal thyroidectomy for

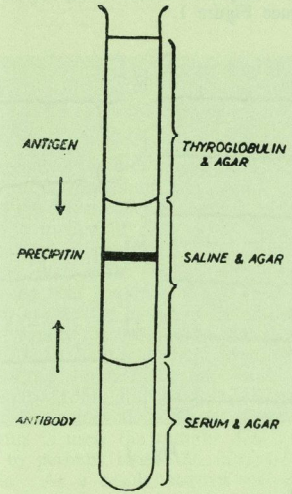

Fig. 1

thyrotoxicosis may be explained on this basis and the condition is seen also in association with simple colloid goitre, untreated thyrotoxicosis and thyroid carcinoma (Thomson, 1957). It may also result from thyroiditis due to mumps virus (Eylan, et al, 1957). In many cases the onset is insidious without any apparent precipitating factor. In the patient described below, a goitre and myxoedema developed rapidly over the course of a few weeks after an onset suggestive of an acute inflammatory thyroiditis.

Case Report

E.S., a housewife of 52, presented with swelling of the face and neck, and pain on the right side of the neck of five weeks' duration. She had been treated by her private doctor with anti-histamines, as a possible case of angioneurotic oedema, but without effect. On direct questioning she admitted to hoarseness, slight diminution of hearing and enhanced sensitivity to cold. Menstrual loss was unchanged. There had been no known contact with rubella.

Examination revealed an obese, quiet and rather depressed woman. The amount of swelling of face and neck was difficult to assess because of generalised obesity. There was no venous engorgement in the neck. The thyroid was firm and only slightly enlarged on her first visit: by a month later, just before commencing treatment, a moderate-sized goitre had developed. The skin felt normal: the hands were cold and slightly cyanotic. The heart-rate was about 60 per minute.

Investigation

X-ray of the chest and superior mediastinum was normal. The E.C.G. (Fig. 2) showed bradycardia with flattening or inversion of T waves. The serum cholesterol was 605 mg. per 100 ml. The serum protein-bound iodine was only 1.3 micrograms, well below the lower normal limit. A thyroid precipitin test was carried out by Dr. Deborah Doniach at the Institute for Clinical Research and proved strongly positive. The serum proteins were normal and the flocculation tests negative.

Treatment with 0.1 mg. of L-thyroxine daily was instituted. Within a few weeks there was a marked change in appearance and personality: she became alert and cheerful. The goitre decreased considerably in size and the serum cholesterol fell to 315 mg. The E.C.G. reverted to a normal pattern (Fig. 3). Nine months after the onset of the disease, thyroid antibody was still present in high titre in her serum. An attempt was made to observe the effects of stopping treatment and she was left without thyroxine for some weeks. On her next out-patient attendance, however, she stated that she had become so slow and depressed that she had obtained a further supply from her private doctor.

Comment

This appears to be an example of lymphadenoid goitre following acute or subacute thyroiditis. In the absence of histological confirmation, the diagnosis remains presumptive, but is supported by the high titre of thyroid antibody. This test is, however, not entirely specific since thyroid antibody is produced in other diseases, though seldom in high titre. The normal serum proteins and flocculation tests are surprising, since these are regarded as valuable in diagnosis (Goudie *et al,* 1957: Luxton, 1957), especially in differentiating Hashimoto's disease from carcin-

oma (Doniach and Hudson, 1957). The patient has declined biopsy, but the clinical progress hardly suggests malignancy: she has now been under observation for fifteen months with continued good health and disappearance of the goitre.

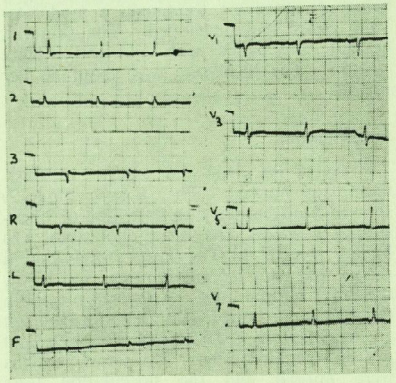

Fig. 2

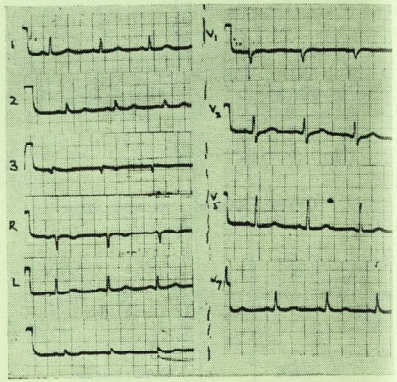

Fig. 3

Summary

An account is given of the rapid development of myxoedema and a goitre in a middle-aged woman. The clinical picture was typical of Hashimoto's disease and the diagnosis was supported by the finding of thyroid antibody in high titre in the serum. The immunological concept of the disease is briefly reviewed.

I am indebted to Dr. Deborah Doniach for her assistance with this case and to her and the Hon. Editors of the Proceedings of the Royal Society of Medicine for permission to reproduce Figure 1.

Figures.

Fig. 1. *Precipitin test for thyroid antibody (Reproduced from Roitt, I. M. and Doniach, D. (1957) Proc. Roy. Soc. Med., 50, 958, by kind permission of the authors and the Honorary Editors.)*

Fig. 2. *Electrocardiogram before treatment. Note the flat or inverted T waves, found in myxoedema.*

Fig. 3. *Electrocardiogram after treatment. The T waves have returned to the normal upright pattern.*

* * *

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THE MODERN USE OF RADIOTHERAPY

by **R. J. M. WHITTLE**

Two controlling factors are invoked in the control of a malignant neoplasm. Firstly, there is the direct effect of ionising radiations upon the malignant cell. The response is governed by the radiosensitivity of the cell. Secondly, there is the reaction of the tumour bed or the host response. When deep-seated tumours are treated by apparatus in the deep therapy range, the dose delivered often falls far short of the tumouricidal level. The reaction of the tumour bed cannot make up for the primary failure and control of the tumour cannot be achieved. When megavoltage apparatus is used the tumour dose can be raised to perhaps twice the dose formerly possible. As a result, control will be extended over an increased number of tumours. But the radiotherapist is still dependent upon the second phase, and if the host response misfires, then with the passage of time, recovery of the malignant cells occurs. This may explain the regression of a primary tumour on the floor of the mouth, or palate, while the malignant nodes which have received an identical dose show only a tardy response. The treatment of a tumour resembles the firing of a rocket. If one stage fails to fire, the rocket will not achieve its orbit. When enthusiasm overreaches experience and an excessive dose is delivered the host response may, in fact, be inhibited.

Desjardins in 1930, divided tumours into into three groups—the radiosensitive, amongst which he numbered lymphosarcoma and seminoma; the moderately radiosensitive, such as cancers of the breast and skin; and the radio-resistant, the largest group which included cancer of the rectum and osteogenic sarcoma. This conception was based upon the effects of treatment by deep therapy apparatus. In the third group the results were so disappointing that even attempts at palliation were avoided until all other methods of treatment had failed. When supervoltage machines were introduced effective palliation in this group became possible. Desjardins conception of tumour behaviour was widely accepted and has formed the basis of radiotherapeutic practice for over thirty years. Now that megavoltage therapy is becoming available to an increasing number of patients this conception will have to be modified, cetrainly as far as palliation is concerned. This will not be achieved without a great deal of "mental indigestion". The stage has now been reached when a tumour situated in the most unfavourable circumstances can be given the dose prescribed by the radiotherapist. Unfortunately the ceiling dose is determined for him by the tolerance of the adjecant structures and supporting tissues.

At the present time when the hapless taxpayer and even the social reformer are embarrassed by the rising cost of the Health Service, it would not be impertinent to ask if the benefits megavoltage apparatus provide justify the heavy expenditure incurred. The advantages can be summarised in the following manner:—

1. **The depth dose is improved.** When the energy expended in the production of the radiation is increased, the wave length is reduced, and the beam becomes harder and more penetrating. The two figures show the depth dose curves—one for a 200 k.V. beam, the other for a telecobalt beam. When an oesophageal growth, which lies at a depth of 10 cms from the skin, is irradiated by opposing anterior and posterior fields, it would receive a 30 per cent. greater dose when treated on the cobalt unit.

2. **The skin reaction is mitigated.** The skin dose from a deep therapy beam is increased by backscatter from the deeper layers of the dermis towards the epidermis. The maximum dose occurs on the surface. This results in moist painful skin reactions occurring when 3,000-4,000 rontgens have been

given over a period of 4 weeks. With the cobalt beam, the range of the electrons which produce the ionising effect is of the order of centimetres and therefore the dose

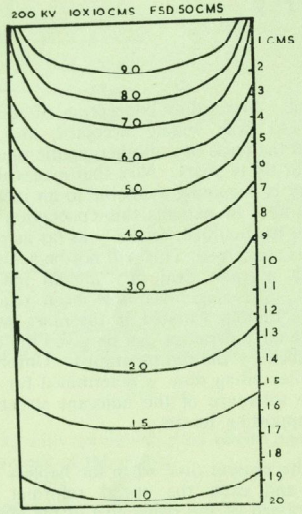

Fig. 1.

builds up as more electrons are set free, until the maximum build up occurs at a depth of 4 mm. As a result 7,500 r can be given over a period of 6 weeks and a brown pigmentation is the only outcome. From the patient's point of view, this is the greatest advantage afforded by megavoltage therapy. The protracted discomfort of a discharging raw area, the sensation of "burning," the sleepless nights, and the anxiety that something has gone wrong—all these features—the hallmark of the deep therapy machine, can be relegated to the past.

3. **The incidence of bone necrosis is reduced.** When a beam from a deep therapy machine traverses soft tissue and bone, the energy absorbed in the bone may show a five-fold increase over the absorption in soft tissue. This results from the photoelectric absorption by the heavy elements in bone. As a result there is a gross overdose in the bone and the soft tissue cells adjacent to it, which may bring about the death of the cellular component. Furthermore, neoplasm beyond the bone will be *protected* and underdosed. The irradiation of a tonsillar growth illustrates these points. A radionecrosis has occurred in the ramus of the mandible and because of the shielding of the tonsillar growth by the bone, the dose received by the tumour was actually 15 per cent. below the calculated dose. In contrast, the photoelectric absorption from a cobalt beam is negligible, and as a result there is no longer an excessive absorption of energy by bone. The virtual banishment of radiation necrosis of bone should follow the routine use of supervoltage apparatus. Caution will still have to be exercised when there is a superadded element of infection.

Physicists have approached the megavoltage goal from many different directions. The first attempt along conventional lines resulted in the installation of a million-volt x-ray machine at St. Bartholomew's Hospital in 1936. This machine has responded magnificently to the heavy demands made upon it, and a wide experience of supervoltage techniques has been acquired from the four thou-

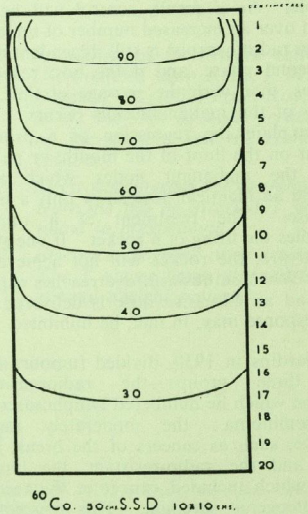

Fig. 2.

sand cases treated on it. However, 1,000 k.v. represented the practical limit and any further advance towards higher voltages would have to be made along quite different lines.

In the Van de Graaf generator, the requisite charge is built up by electrostatic means, through a continuously revolving belt. With this type of generator x-rays were developed at a potential equivalent to 2 to 3 million volts. The magnitude of the apparatus and mechanical problems hindered the development of this machine, although there is at the present time one in operation at the Royal Marsden Hospital, and another at the Westminster Hospital.

The linear accelerator if considered in the simplest terms involves the acceleration of electrons along a hollow wave guide, by the influence of an accelerating electrical field, produced by a radio-frequency supply. There are four 4 MeV linear accelerators in clinical use in this country, in addition to the 8 MeV accelerator which began operating in 1953 at the Hammersmith Hospital. The linear accelerator holds a place in the major radiotherapy centres, but unfortunately the heavy initial expense will preclude its adoption by most centres. The high output from an accelerator is regarded as a very favourable characteristic. The treatment time may therefore be reduced to a few seconds or minutes, but the time taken to set up the patient—5 to 10 minutes—cannot be reduced without sacrificing accuracy. It is this fact which will decide the number of patients treated daily.

At an early stage, the penetrating quality of the gamma rays from radium attracted physicists, who in time amassed large quantities—up to 5 and 10 grms.—in the radium "bomb." The low dose rate (the dose rate ratio for a radium bomb and an accelerator is 1:150), the dearth of this naturally occurring radioactive element, and its great expense were the reasons for the small number of radium bombs in clinical use. Radioactive cobalt has proved an excellent substitute for radium. When equivalent amounts are compared the dose rate from cobalt is found to be nearly 1.6 times as great. The source size has increased from the 10 grm. radium bomb, which is equivalent to 10 Curies, to 2,000 Curies in the present-day cobalt unit. This great increase of source strength permits a treatment distance of 50 to 70 cms. which should be contrasted with the 10 cms. distance between the skin and the radium source in the old-fashioned radium bomb. This point is readily appreciated when setting up the patient, for the cobalt unit is more manoeuvreable. It was difficult to approach the cervical region with a short-distance radium bomb, especially in a heavily-built man with a short neck. The longer treatment distance holds a further advantage for the depth dose is strikingly increased.

The cobalt unit, which is equivalent to a 2.4 million volt x-ray machine, is destined to become the most widely used megavoltage apparatus in this country and Canada. Its simplicity of design and robust qualities have won over many radiotherapists. Sixteen months ago the Governors of the London Clinic and Dr. W. M. Levitt suggested that selected patients from St. Bartholomew's Hospital should be treated on the cobalt unit at the London Clinic. This unit, which in fact was their prototype, was installed by Nuclear Engineering. There are two major problems to solve in the construction of a cobalt unit—the protection of the personnel from the gamma radiation from the source, and the design of a diaphragm which will delineate the beam, thus giving the requisite field size, without producing an embarrassingly large quantity of soft radiation. In the radium bomb the radiation hazard to the operator was successfully dealt with by keeping the source in a lead safe outside the treatment room and by transferring the radium which was held in an aluminium bobbin, by pneumatic transmission to the head, when the patient had been set up and the operator had withdrawn from the treatment room. With the cobalt unit the position is different for the source is permanently retained in the head, which must itself provide the necessary protection. When the machine is not operating the beam is shuttered by some mechanical means. A ton and a half of lead was needed to reduce the gamma ray intensity to the maximum permissible level decreed by the British Code of Practice. Needless to say, the engineering problems encountered in the movement of the head through three dimensions were magnified by the weight of the lead. The diaphragm consists of multiple sliding leaves of tungsten faced with copper sheeting. Their synchronised movement gives any choice of field from 4 x 4 cms. to 20 x 15 cms. (at a source-skin distance of 50 cms.). The cobalt source consists of six discs, each about the size of a halfpenny. If these discs were placed in a single column there would be

considerable loss of radiation from self-absorption. This difficulty was surmounted by arranging the discs in two clover leaves. The cobalt discs are made radioactive by placing them in a nuclear pile for twelve months, where they are subjected to intense neutron bombardment. The density of this neutron flux depends upon the construction and design of the pile. It so happens that in Canada and the United States of America the nuclear reactors are producing cobalt with a higher specific activity than is yet possible in this country. There are several advantages gained from loading a unit with this very hot cobalt. The physical size of the source is smaller. In consequence the amount of self-absorption is reduced and,

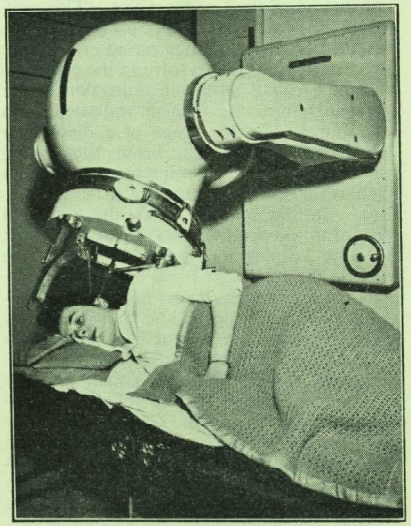

Fig. 3

more important, the penumbra of the beam after passing through the diaphragm is smaller.

The maintenance of the unit makes astonishingly few demands upon the physicist. Corrections are necessary for the decay of the source, but apart from this, faults occurring during its operation are infrequent and trivial.

In the past, megavoltage therapy has been reserved for those cases in which there is a reasonable chance that the tumour can be controlled. One notable exception to this rule was the treatment of recurrent rectal carcinomas in the Sassoon Department. Pain which is a distressing symptom in these cases can often be relieved by a six-weeks' course of supervoltage therapy. It is unlikely that the principles deciding case selection for megavoltage therapy will change appreciably, but I would regard the relief of severe pain a challenge worthy of megavoltage treatment. The pain of spinal metastases from carcinoma of the breast and bronchus can usually be relieved by deep therapy equipment, but failure is often encountered when the primary tumour belongs to the radio-resistant group. There is less likelihood of relieving the pain from breast metastases in the spine when neurological signs are present. These signs include muscle wasting and areas of altered sensation, but I would not include depression of a tendon jerk as an unfavourable sign. A further example of pain which deep therapy apparatus invariably fails to control is the involvement of a plexus—the brachial plexus in a Pancoast's tumour, and the sacral plexus from an extensive pelvic disease. Here are three instances which justify the use of megavoltage apparatus.

Both surgery and radiotherapy are local agents in the attack on cancer. The use of supervoltage apparatus in the treatment of cancer of the breast and bronchus is unlikely to yield results any better than those given by present methods, because the incidence of concealed haematogenous metastases is so high and really decides the issue. The same criticism can be levelled against the trend to extending radical surgical procedures. Radiotherapists derive more encouragement from the treatment of squamous cell carcinomas, for the successful control of such tumours is less likely to be rendered valueless by the appearance of blood-borne metastases. The battle is fought at the site of the primary tumour. Thus the fate of patients with growths of the antrum and larynx is decided by the response of the primary tumour. It is true that lymphatic invasion is a common finding with epitheliomata of the tongue, pharynx and oesophagus, but this is still a local problem. It is nearly always possible to irradiate the primary tumour and its immediate lymphatic drainage area in a continuous block.

It was for these reasons that tumours which lie in the territory of the E.N.T. surgeon were selected for supervoltage treatment and over the last decade there has been a measurable improvement in the results. Now it is gradually becoming possible to extend the field of selection to include other sites. I would give preference to three sites—carcinomas of the bladder, oesophagus and ovary. The results in the past have been very poor and surgeons hesitate to refer such cases for radiotherapy, but the routine use of megavoltage apparatus such as the cobalt unit may bring about a similar improvement.

HEPATIC COMA

by **W. H. J. SUMMERSKILL**

NEARLY 2,000 years ago, Hippocrates described the case of a young man who became severely ill with jaundice. During the terminal phase of his illness he fell to his knees, frothed at the mouth and barked like a dog before losing consciousness. This behaviour was attributed to "madness on account of the bile," and the concept that "hepatic coma" is usually fatal and results from severe liver failure has only been challenged consistently in the last decade. Nevertheless, the problem of hepatic coma had attracted the attention of such authorities as Bright, Budd, Frerichs, Osler and John Abernethy himself, and all were aware that neuro-psychiatric disorders might occur in patients with liver disease independent of jaundice or other evidence of advanced hepatic failure, and alternative liver-brain relationships were postulated.

As a result of work carried out in the United States and in this country during the past ten years, the syndrome of "hepatic coma" has been elaborated and it has become plain that this nomenclature is misleading, as loss of consciousness may not occur, and as the syndrome can develop without deterioration in liver function. Adams and Foley, in the Boston City Hospital, carefully defined the clinical syndrome, emphasising that characteristic neuropsychiatric changes may occur before consciousness is lost and that these are associated with typical alterations in the electro-encephalogram. Later work in the same hospital showed that these clinical and electroencephalographic changes could be precipitated by the oral administration of excess dietary protein, urea and ammonium salts in some patients with liver disease. Ammonia could be derived from all these substances and it therefore appeared relevant that high blood ammonia levels were later reported in patients with spontaneous "hepatic coma." An identical clinical syndrome was also described in some patients following a portocaval anastomosis, even in the absence of liver disease, a situation which is comparable to "meat intoxication" in dogs withs Eck fistulae.

These considerations indicate that nitrogenous material in the diet, the presence of a portal colateral circulation and deranged nitrogen metabolism may be implicated in the genesis of "hepatic coma," in addition to the presence of liver disease. Support for this theory came from the demonstration that protein withdrawal had a beneficial effect in patients with acute "hepatic coma"

and from the description of patients in whom chronic, fluctuating "hepatic coma" was related to the amount of protein in the diet. Such patients had an extensive portal colateral circulation but little disturbance of liver function.

Clinical Features

The neuropsychiatric syndrome of "hepatic coma" includes varied and fluctuating personality changes which may progress ultimately to loss of consciousness. In the early stages, there are characteristic

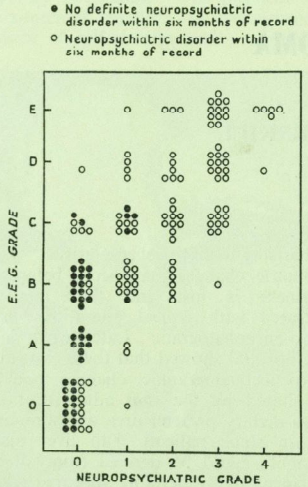

Fig. 1.

disorders of the motor system, of which a coarse "flapping" tremor of the outstretched hands, muscular rigidity, brisk tendon reflexes and ankle clonus are particularly common. These are associated with slow, slurred and impoverished speech, an altered sleep rhythm, sialorrhea and an immobile facies. Bilateral symmetrical changes occur in the E.E.G., a slow 6/second rhythm progressing to a 2/second rhythm as the condition deteriorates, but these features are not specific.

Although "hepatic coma" is usually an acute emergency following liver failure, gastro-intestinal haemorrhage or other precipitating factors, it may be present in varying degrees for weeks, months or, rarely, in patients with extensive portal colateral

DIAGNOSIS IN 110 PATIENTS IN HEPATIC COMA

CIRRHOSIS *		OTHERS	
ALCOHOLISM	56	VIRUS HEPATITIS	7
UNCERTAIN AETIOLOGY	33	ISCHAEMIC NECROSIS	3
BILIARY	4	CARCINOMATOSIS	3
HAEMOCHROMATOSIS	1	CHIARI'S SYNDROME	1
WILSON'S DISEASE	1	C cl 4 POISONING	1

*INCLUDING 3 HEPATOMA

Table 1

circulations, for years. A careful neurophychiatric assessment is therefore indicated in all patients with liver disease so that the more subtle changes are not overlooked. Moreover, in some patients, personality changes or neurological abnormalities are the predominant feature, and evidence of liver disease may be scanty. Assessment and progress in mild or equivocal cases is best judged by asking for a daily specimen of handwriting in the form of a journal, or by the daily construction of a five-pointed star. The former, by the character of the writing and by the subject matter, constitutes a valuable guide, whereas the time taken to construct the five-pointed star with matches elicits the constructional apraxia exhibited by patients with hepatic coma and other organic

FACTORS CONTRIBUTING TO HEPATIC COMA

(1) LIVER FUNCTION

"Failure"	60
"Decompensated"	39
"Compensated"	11

(2) ADDITIONAL FACTORS

MASSIVE G.I. BLEEDING	18	PARACENTESIS	6
NITROGEN INTOLERANCE	16	DRUGS	6
SURGICAL OPERATION	9	PERIPHERAL FAILURE	3
INTERCURRENT INFECTION	8	PORTAL VEIN THROMBOSIS	3
		TRAUMA	1

Table 2

dementias. Where doubt exists, the electroencephalogram is of assistance and the

degree of abnormality correlates well with the clinical severity of the condition (Fig. 1).

This evening I would like to discuss

TABLE 3

PROTEIN ADMINISTRATION

	Total	Survived	Died	
			Total	Temporary Improvement
All Patients	30	2	28	7
+ Glutamic Acid	10	-	10	3
+ Lipoic Acid	5	1	4	-
+ Cortisone	10	1	9	4

Table 3

certain findings in 110 patients in hepatic coma that were studied with Dr. Sheila Sherlock at Hammersmith Hospital, with Dr. Charles Davidson at the Boston City Hospital, and with Dr F. Avery Jones at the Central Middlesex Hospital (Table I). It is plain that "hepatic coma" may complicate any type of liver disease, but the majority of cases had cirrhosis, which includes the commonest types of severe liver disease. Similarly, many factors may contribute to hepatic coma (Table 2). 60 patients were classified as being in "hepatic failure," as they had serum bilirubin values above 5 mg%, with or without ascites; 39 had "decompensated liver disease," indicating either less severe jaundice or ascites; and in 11 patients there was no clinical or biochemical evidence of jaundice and no ascites was present. Severe derangement of liver function is not therefore necessary for the

PROTEIN DEPRIVATION AND ANTIBIOTICS

	Total	Survived	Died	
			Total	Temporary Improvement
All Patients	88	42	46	28
+ Glutamic Acid	17	3	13	-
+ Aspartic Acid	3	-	3	1
+ Lipoic Acid	6	-	6	-
+ Cortisone	6	-	6	-

Table 4

production of "hepatic coma." Factors frequently precipitating coma included massive gastro-intestinal bleeding, usually from oesophago-gastric varices, and intolerance of nitrogenous substances, either high protein diets or "therapeutic" agents, such as methionine and ammonium chloride. Several other factors, however, were occasionally responsible, thus emphasising that many patients with liver diseases are so delicately poised that minor adversity may precipitate neuropsychiatric disturbance.

The Metabolic Basis of Hepatic Coma

In view of the varied clinical manifestations and precipitating factors in hepatic coma and the multiple functions of the liver, it is hard to conceive that any single biochemical disturbance could account for the disorder. Evidence accumulates, however, to incriminate ammonia intoxication as one important causal factor. Ammonia is derived from nitrogenous contents of the diet

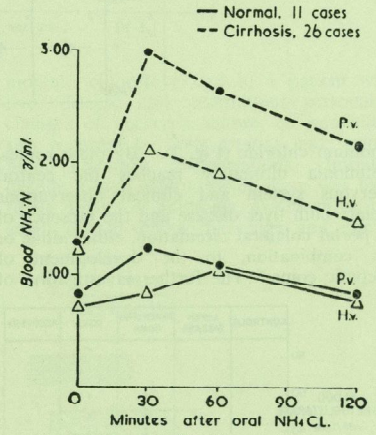

Fig. 2

by bacterial and non-bacterial enzyme activity in the intestines, and levels in portal vein blood are high. In the normal subject, this ammonia is metabolised to urea in the liver by the Krebs cycle, and little ammonia escapes into the peripheral circulation. In contrast, studies in patients with liver diseases have shown that peripheral blood ammonia levels often become raised, and that two mechanisms contribute to this. Impaired metabolism by a diseased liver may permit ammonia to reach the peripheral vessels through the hepatic veins, while the presence of portal collateral vessels may shunt portal blood, rich in ammonia, directly to the systemic circulation. This is illustrated by

serial hepatic and peripheral venous blood ammonia estimations during hepatic vein catheterisation after an oral dose of ammonium chloride (Fig. 2). By these routes, ammonia ultimately reaches the central nervous system and clinical observations relate both liver disease and the presence of a portal colateral circulation, either alone or in combination, to the development of hepatic coma. The further investigation of

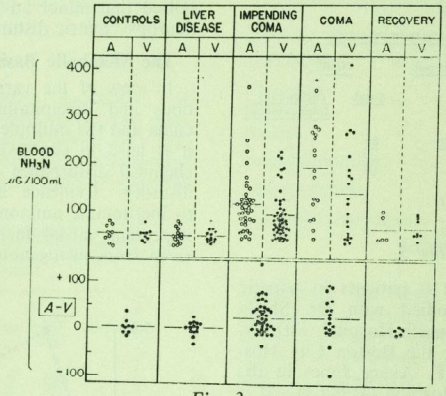

Fig. 3

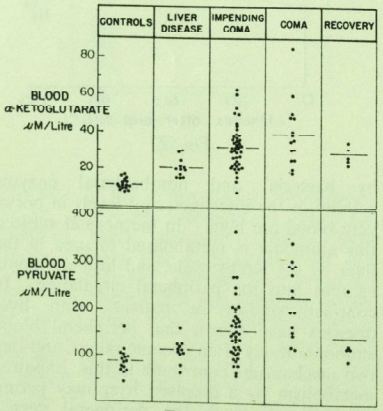

Fig. 4

the relationship between deranged ammonia metabolism and "hepatic coma" illustrates the complex demands of clinical research and certain aspects are worth emphasis.

In patients with uncomplicated liver disease, peripheral blood ammonia levels may fluctuate in relation to dietary nitrogen intake, but they are within the normal range in the fasting state. In contrast, patients with hepatic coma frequently, but not invariably, have high peripheral blood ammonia levels (Fig 3) and values are higher in the artery than in the vein. This arterial-venous ammonia difference occurs both at the periphery and in the brain, suggesting that ammonia is taken up both by the peripheral tissues and by the central nervous system, but the "efficiency" of such ammonia utilisation is impaired in patients in hepatic coma, sometimes to the extent that there is no significant arterial-venous ammonia difference. Two factors must therefore be taken into account when considering any causal relationship between ammonia intoxication and hepatic coma, namely the actual height of the arterial ammonia concentration and also the efficiency of its removal from the blood, as shown by the arterial-venous difference. Thus, if the arterial level is very high, or if utilisation by various tissues is impaired, intracellular ammonia intoxication in the brain may occur. The relatively normal blood ammonia concentrations in some patients with hepatic coma, and the imperfect relationship between arterial, venous or cerebro-spinal fluid ammonia concentration and the degree of coma or E.E.G. abnormality, may to some extent, be explained on this basis. In addition, the potential toxicity of ammonia may be affected by blood pH and oxygen saturation.

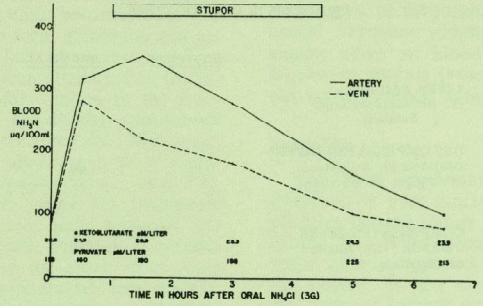

Fig. 5

High levels of blood α-ketoglurate and blood pyruvate occur in hepatic coma (Fig. 4) and these are compatible with a defect in intramediary metabolism, particularly in final glucose oxidation in the citric acid cycle. The abnormal blood keto-acid concentrations can be related, at least in part, to deranged ammonia metabolism by the intravenous infusion of ammonium chloride in patients with liver disease and in control subjects. In the latter, no appreciable alteration in keto-acid levels occurs following ammonium chloride infusions, but in patients with liver disease there is an immediate rise in blood pyruvate and, to a lesser extent, in blood α-ketoglurate concentrations. These findings can be explained on the basis of depression of intermediary metabolism by ammonia intoxication, and the entire sequence of these biochemical changes, with their relationship to neuropsychiatric disorder, is shown in Fig. 5. Following the oral administration of ammonium chloride (3.0g.) in a patient with liver disease and intermittent personality changes of uncertain nature, an immediate rise occurred in both arterial and venous blood ammonia concentrations. Initially, despite a high arterial level, there was little tissue uptake of ammonia, as shown by the small arterial-venous difference, and shortly afterwards the patient developed transient hepatic coma. Subsequently, tissue utilisation of ammonia improved, arterial and venous ammonia levels fell, and the patient returned to normal consciousness. During the infusion, there was a striking increase in blood pyruvate concentration and a small elevation in the blood α-ketoglurate level. Ammonia, which can be derived from the various nitrogenous substances shown to precipitate "hepatic coma," can therefore

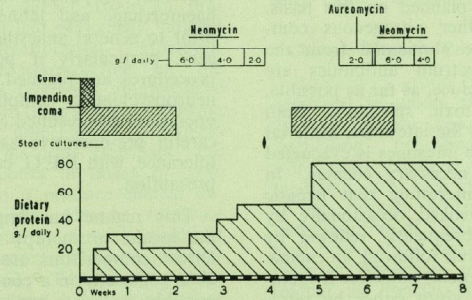

Fig. 6

account for many of the clinical, E.E.G. and biochemical features of the syndrome. Additional factors are doubtless important, although at present less clearly defined.

PROGNOSIS IN HEPATIC COMA

	PATIENTS	SURVIVAL
LIVER FAILURE (S. Bilirubin > 5 mg% ± Ascites)	60	8
DECOMPENSATED LIVER DISEASE (S. Bilirubin 1 - 5 mg% + Ascities)	39	25
COMPENSATED LIVER DISEASE (No Ascites or Jaundice)	11	11
Total	110	44

Table 5

Treatment

The contribution of ammonia, and possibly other nitrogenous substances originating from the intestines, in the genesis of "hepatic coma" is sufficiently well accepted for treatment to be planned on this basis. Protein and any other nitrogenous compounds are therefore eliminated from the diet, and broad-spectrum antibiotics are given by mouth to reduce, as far as possible, the production of toxic substances from nitrogenous matter in the intestines. Material already present in the intestines is evacuated by purgation and, if necessary, enemas. In this respect, it is interesting that hepatic coma has been provoked occasionally by constipation and subsequently relieved by evacuation of the bowels following an enema. In the absence of protein, nutrition is maintained with glucose, given either by intragastric or intravenous drip. To this basic regime must be added specific treatment of any cause which can be found for the precipitation of coma. This may involve the passage of a Sengstaken-Blakemore tube, or even surgical operation, to arrest bleeding from gastro-oesophageal varices; the treatment of intercurrent infection; the administration of steroid drugs to patients with severe hepatitis, or other measures. In acute hepatic coma, complete protein deprivation is indicated until consciousness returns. Subsequently, 10 g. supplements of protein should be added on alternate days, unless deterioration dictates a return to the earlier regime, until the diet is normal.

The regimen of protein withdrawal, enemata and oral broad spectrum antibiotics is sometimes indicated as a prophylactic measure in circumstances under which coma may reasonably be anticipated. This applies especially to patients with gastro-intestinal haemorrhage and jaundice or ascites, and prior to general anaesthesia with major surgery, particularly if portal-systemic shunt procedures are planned. The likelihood of neuropsychiatric complications after such operations has resulted in the suggestion that careful pre-operative assessment of protein tolerance, with E.E.G. control is a necessary precaution.

This regime has improved considerably the results of therapy in "hepatic coma." Direct comparisons are notoriously unreliable, especially in a condition with so many possible causes, but experiences in the Boston City Hospital on similar groups of patients, managed under identical circumstances, are relevant. The first group were treated with various agents, but protein withdrawal and broad-spectrum antibiotics were not employed. Of 30 patients, 2 survived and 7 showed temporary improvement (Table 3), results in keeping with more general experience at the time. A second group of 30 patients in the same hospital had a 40% recovery rate when treated with antibiotics and protein withdrawal, and additional experience with this management (Table 4) has confirmed these results.

In neither group was there any striking response to certain drugs recommended in hepatic coma. Glutamic acid and aspartic acid were initially used because they can take up ammonia to form glutamine and asparagine, and their lack of success in larger series of cases has been attributed to the instability and temporary nature of the reaction. Lipoic acid assists the transfer of pyruvate into the tricarboxylic acid cycle, but has now been abandoned, as a therapeutic agent in hepatic coma. A.C.T.H. and adrenal steroid drugs are invaluable when coma complicates acute hepatitis, but their action on hepatic function is seldom sufficient to influence the issue when coma is associated with more chronic liver disease. Recently there have been encouraging reports on the efficacy of arginine in small series of cases, but it is difficult to understand how this enzyme can significantly improve the metabolism of ammonia to urea in the liver in the presence of hepatocellular failure.

The antibiotic used in the majority of these patients was chlortetracycline (2.0g/daily), a drug which was shown to protect patients with liver disease from an oral nitrogen load which had previously induced neuropsychiatric deterioration. However, the action of chlortetracycline on the intestinal flora was relatively unimpressive in patients with liver disease and, following a report by Fisher and Faloon, Neomycin was substituted. This drug "sterilises" the stools within 48 hours in doses of 2.0g. t.d.s. Not only did it produce clinical improvement in patients already receiving chlortetracycline, but a protein intake of 20-40g. daily was compatible with recovery from coma (Fig. 6). Temporary protein withdrawal is harmless in the majority of patients, but it may be an adverse factor in subjects with liver disease associated with malnutrition, such as cirrhosis in the alcoholic, or when coma is prolonged. Neomycin is therefore the drug of choice and further studies may demonstrate that it often renders protein withdrawal unnecessary. Neomycin does not affect nitrogen balance, but chlortetracycline has the disadvantage of causing increased nitrogen catabolism by a mechanism which remains unsolved.

Biochemical studies during the course of protein deprivation and antibiotic therapy in hepatic coma have shown that this regimen results in a fall in blood ammonia levels in the mapority of instances and that such a response is of favourable prognostic significance. Protein withdrawal alone has a similar effect on blood amonia levels and Neomycin permits protein to be given without a rise in blood ammonia levels.

Prognosis

The most important factor influencing prognosis is liver function, and coma complicating hepatic failure is an ominous event (Table 5). When coma occurs in the absence of any apparent precipitating factor, the outlook is less satisfactory than when the disorder follows gastro-intestinal bleeding or some other catastrophe amenable to therapy. Cirrhosis in the alcoholic is more difficult to treat than other types of cirrhosis because of the greater frequency of hepatic failure and the associated nutritional defects. Somewhat surprisingly, the depth of coma at the time treatment is initiated has little relationship to the outcome, but the duration of coma is important and failure to recover after 7 days' treatment is particularly grave.

"Chronic Hepatic Coma"

Recently a group of patients have been described in whom the characteristic syndrome of hepatic coma presents as a chronic fluctuating neuropsychiatric disturbance which may continue for years. Although relatively rare, such patients are important, as they provide information relevant to the understanding of "acute hepatic coma," and also because the predominance of nervous disorder sometimes results in them being treated as hopeless psychiatric or neurological cases.

The 17 patients studied in this group all had certain features in common. Clinical or biochemical evidence of liver disease was usually scanty, thus accounting, perhaps, for their long course. All had splenomegaly and hepatic fetor, suggesting the presence of a portal colateral circulation, although the demonstration of portal hypertension by the radiological demonstration of varices or the presence of elevated intrasplenic or occluded hepatic vein pressures was relatively un-

rewarding. However, radiological definition of the portal circulation by transplenic portal venography revealed the presence of a very extensive portal circulation in every patient. Portal vein thrombosis was most commonly associated with the syndrome, but a patent umbilical vein, massive enlargement of the inferior mesenteric vein or multiple smaller channels was sometimes found. The same syndrome occasionally follows surgical construction of a portalcaval anastomosis.

As with patients in acute hepatic coma, the degree of neuropsychiatric disorder was related to the amount of nitrogen in the diet, a situation similar to meat intoxication in the Eck fistulae dog and due to the shunting of toxic nitrogenous substances from the intestines direct to the systemic circulation through portal collateral vessels. Dramatic improvement followed restriction of dietary protein, patients previously under restraint at home or in mental hospitals being able to resume relatively normal lives. In most instances a diet containing 50 g. protein was compatible with mental and nitrogenous equilibrium. More severely affected patients required greater restriction, with a consequently poorer prognosis, but the addition of daily Neomycin may improve protein tolerance in such cases.

In conclusion, there follows a list of general references: followed by a list of references to the work discussed this evening. The latter includes the names of those with whom it has been my great pleasure and privilege to co-operate over the years in this study and I gladly acknowledge my debt to them.

Figures

Fig. 1

Independent clinical assessement and E.E.G. grade of severity in hepatic coma.

Fig. 2

Ammonia tolerance in control subjects and patients with liver disease. H.V.=Hepatic vein; P.V. — Peripheral vein.

Fig. 3

Arterial and peripheral venous blood ammonia levels in patients with liver disease, with and without hepatic coma, and in control subjects.

Fig. 4

Blood α-ketoglutarate and pyruvate concentrations in control subjects and patients with liver disease, with and without hepatic coma.

Fig. 5

Neuropsychiatic state, arterial and peripheral venous ammonia levels and blood pyruvate and α-ketoglurate concentrations after ammonium chloride administration in a patient with liver disease.

Fig. 6

Neuropsychiatric state and protein intake in relation to therapy with Neomycin and Aureomycin in hepatic coma.

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EXAMINATION RESULTS

UNIVERSITY OF LONDON

Special Second Examination for Medical Degrees, March, 1958.

Al-Khedheri, S.
Banky, E. J.
Beckett, P. R.
Bootes, J. A. H.
Collingwood, R. E.
Drake, R. M.
France, R.
Hall, J. M.
Janosi, M.
Lines, A. J.
Millington, M.
Pagan, W. H.
Shand, D. G.
Stone, B. E.
Thomson, W. H. F.
Amponsah, F. I.
Banky, P. I.
Bishop, M. B. J.
Boothroyd Brooks B. G.
Davies, J. D.
Edmondson, R. S.
Gandy, R. H.
Herbert, D. C.
Kajtar, T.
Macdonald, A.-M. E.
Orr, M. M.
Perriss, B. W.
Shaw, A. B.
Telfer, A. C.
Visick, J. H.
Anthony, P. P.
Barton, M. T.
Bonn, A. J.
Christian, P. B.
Davies, N. M.
Fell, R. H.
Gill, B. V.
Hore, B. D.
Knight, C. R.
Manchester, K.
Padfield, A.
Russell, A. L.
Shaw, B. N.
Therkildsden, L. K. H.
Weeks, S. K.

The following candidates have completed the examination for the Diplomas, M.R.C.S., L.R.C.P.:

Stephenson, C. G. Martin, J. Bench, J. T.
Farren, P. Yip, S. Y. Godrich, J. E.

UNIVERSITY OF OXFORD

SECOND B.M. EXAMINATION

HILARY TERM, 1958

Forensic Medicine & Public Health

Burfoot, M. F. Chong, I. K. K.-H.
Cook, R. C. McMaster, A. B. M.
Price, J. S. Silverstone, J. T.
Smith, R. G. L. Woolrych, M. E.

Special & Clinical Pathology

Chong, J. K. K.-H. Smith, R. G. L.
McMaster, A. B. M. Cook, R. C.
Silverstone, J. T. Price, J. S.
Woolrych, M. E.

The following completed the examination for the Degree B.M., B.Ch.:—

Burfoot, M. F.

CONJOINT BOARD

FIRST EXAMINATION

MARCH, 1958

Pharmacology

Gould, A. M. Patterson, M. J. L.
Wills, G. T. Birt, A. M.
Dymond, G. S. Bonner-Morgan R. P.

FINAL EXAMINATION, APRIL, 1958

Pathology

Stephenson, C. G. Gould, A. M.
Seeman, H. M. I. Bannerman-Lloyd, F.
Price D. J. Simpson, R. I. D.
Cawley, M. I. D. Pilkington, R.
Ridsdill-Smith, R. M. Davies, D. J. C.
MacAdam, D. B.

Medicine

Rowlands, D. F. Bench, J. T.
Martin, J. Hedley-Whyte, J.
Farrow, L. J. Ridsdill-Smith, R. M.
Ball, P. J. Farren, P.
Stephenson, C. G. Matthews, T. S.

Surgery

Stephenson, C. G. Godrich, J. E.
Farren, P. Bench, J. T.
Savage, D. C. L. Yip, S. Y.
Martin, J.
MacAdam, D. B.

Midwifery

Rowlands, D. F. Farrow, L. J.
Farren, P. Bench, J. T.
Ellison, A. J. H. Simpson, R. I. D.
Martin, J.

SPORTS NEWS

Viewpoint

It is hoped, having been both the awarder and the receiver of colours and honours, that a few remarks on the subject will not cause offence. What follows is not intended as criticism, merely soliloquy, written for want of anything better to say.

The award of colours is purely the responsibility of the various clubs. It is probably true to state that in general they are given for a full season's play in the first team. Should this automatically be the case? Obviously, with those such as the Rugger club, where a place in the first XV is a coveted honour, the answer is yes. Not in all, however, is such a position as difficult to attain. It would seem at least a pity, if not wrong, that from these the same honours can be obtained for less meritorious effort.

Perhaps the existing order of things is the only one which allows for recognition of services rendered. One club, though, has overcome the difficulty by introducing its own tie for just such a purpose.

If these colours mark service to the club as opposed to distinctive performance, a state of affairs to which probably few objections are valid, what criteria should govern the award of honours. Here again the responsibility devolves on the club, for although such an award is theoretically the prerogative of the Students' Union council on the recommendation of the club, in fact there is no recent record of such a recommendation being rejected. Is the criterion here to be similar but more prolonged service, or is the award to be reserved for truly outstanding performance? The latter would seem preferable, the former more common. It may be thought that one club, which although active, did not recommend the award of honours for a period of five years, was too strict. Was it?

SPORTS CALENDAR

June

Wednesday, 4th
Golf v. King's College at South Herts.
Saturday, 7th
Tennis v. St. Thomas' (H).
Sports Day.
Wednesday, 11th
Golf v. U.C.H. at South Herts.
Saturday, 14th
Tennis v. St. George's (A).
Sunday, 15th
Cricket v. Horlick's (A). Start 11.30.
Wednesday, 18th
Golf v. U.C. at Stanmore.
Saturday, 21st
Cricket v. Royal Dental and Charing Cross Hospital (H). Start 2.30.
Tennis v. U.C.H. (A.).
Sunday, 22nd
Cricket v. O. Cholmeleians (H). Start 11.30.
Saturday, 28th
Tennis v. Middlesex (H).
Cricket v. Jesters (H). Start 2.30.
Sunday, 29th
Cricket v. Old Roans (H). Start 11.30.

July

Wednesday, 2nd
Golf v. U.C.H. at Denham.
Saturday, 5th
Cricket v. U.C.S. Old Boys (H). Start 2.30.
Tennis v. Dulwich School (H).
Sunday, 6th
Cricket: Past v. Present (H). Start 11.30.
Wednesday, 9th
Golf v. St. Thomas' at West Hill.
Saturday, 12th
Cricket v. Incogniti (H). Start 11.30.
Tennis v. London Hospital (H).
Sunday, 13th
Cricket v. Hampstead (H). Start 11.30.
Wednesday, 16th
Golf v. Guy's at South Herts.
Saturday, 19th
Cricket v. Nomads (H). Start 2.30.
Sunday, 20th
Cricket v. Dartford (H). Start 11.30.
Wednesday, 23rd
Golf v. Middlesex Hospital at South Herts.
Tennis v. R.M.A., Sandhurst (H).
Saturday, 26th
Tennis v. K.C.H. (A).
Sunday, 27th
Cricket v. R.N.V.R. (H). Start 11.30.
Wednesday, 30th
Golf v. K.C.H. at Dulwich.
Tennis v. West Heath (A).

SAILING CLUB

An apology is offered to the Sailing Club for not having included them in the list of club officers published earlier. The Secretary this year is M. Bunnemeyer.

SQUASH

Junior Inter-Hospitals Cup Final. Bart's v. Guy's. Lost 4–1.

The 2nd Team went a long way to fulfilling the hope that they would do well in the competition this year, by reaching the final. Here they encountered, and met their match in the holders, Guy's. The match was played on Monday, March 17th, on the very fast U.C.H. courts. This may or may not have been to our advantage.

The strength of the opposition did not cause any surprise. Guy's 1st side would probably beat most university teams, and one or two of our opponents would be an asset to most other hospital 1sts.

On the whole all the side played well, and early on there was a slight chance of a surprise win. It was thought that the match would probably be won or lost by the lower numbers, and so it proved. On court first were Seaton at No. 3, and Nouri at No. 4. The former played steadily in losing, but put down one or two vital shots. The latter fought very hard, but was unable to clinch the match, and finally went down when he developed cramp in the 5th game. He must have felt very frustrated to lose, for a few more killing shots would have settled the matter in the previous game.

Haslam at No. 1 followed Seaton, and proceeded to play well above himself. He came close to what would have been the best result of the evening. He seemed however to lose heart when told before the last game that the match was already lost. The courts seemed to suit his style, and his was certainly the most intelligent squash in the side. He played with a certain finesse the others lacked.

Meanwhile on the other court, Bowles at No. 2 suffered a rather quicker defeat. He appeared never quite to get the pace of the court against an opponent who started well. He is not the first to whom this has happened.

It remained for Sugden at No. 5 to achieve Bart's only win. After trailing disastrously at 2-0 very quickly he improved sufficiently to win 3-2. The squash was not outstanding, and his win was due mainly to the power of his well exploited fore-hand smash.

A general impression was that the Bart's players were inclined to be content with getting the ball up. Had they hit a little lower and harder, the result might have been different. However may we congratulate our very sporting opponents, and hope we will again be in the final next year to take the cup from them.

SQUASH RETROSPECT

The season followed the course predicted at its beginning, namely a weak first team winning more matches than last year and a strong second V winning most of its matches.

We were glad to welcome The Jesters, The B.B.C. and the Inter-Varsity Club as new opponents, as well as several new second five fixtures.

A printed fixture card proved an essential and long overdue innovation.

A match against St. Catherine's College gave us an excuse to go to Cambridge which we hope to make an annual event with a return game after the Varsity rugger match.

At first string T. B. Duff has fearlessly, though not always victoriously, faced a savage onslaught from Blues, internationals and other distinguished company, whilst the indefatigable Randle has run to ground several technically superior opponents.

The credit of the season must go to the second team in reaching the final of the Hospitals Junior Teams cup in which they lost to a strong Guy's team, having defeated St. Thomas's and St. Mary's on the way. Throughout the season J. Sugden has been the mainstay of the team both on and off the court.

The season ended with the Staff match in which we avenged last year's defeat. We are grateful to Dr. Shooter and his team for the enjoyable entertainment which they provided afterwards.

Colours

The Captain has awarded the following players their colours for this season: T. C. Hindson, D. Lyon, G. Randle, K. Bowles, and D. Godwin.

RUGBY FIVES CLUB

End of Season Report

With a return match v. the Rugby Fives Association Club last Saturday (8th March), the Fives season as far as Bart's is concerned, ended.

Our first season has shown quite good promise. Only the secretary M. T. Haslam will have left next year, the rest of the team still being present. The team hopes to use Hampstead courts if the Bart's court has by then been commandeered.

Regular members of the team were:
T. C. Hindson (Capt.), D. A. Birkett, M. T. Haslam.
K. MacKenzie-Ross, R. Fell and N. Smyth also played. T. C. Hindson awarded colours to D. A. Birkett and M. T. Haslam.

Match Record:

Won	v.	Clove Club	79—77
	v.	Old Thorntonians	103—75
	v.	Emmanuel College, Cambridge	104—69
Lost	to	R.F.A. Club	71—117
		and	69— 97
		Westminster Bank	82—102
		Clare College, Cambridge	90—120
		Old Strandian's (1 pair match)	60— 12

Matches v. College of St. Mark and St. John and a return v. Old Strandian's were cancelled.

FENCING

The club has recently completed a more active if not more successful season than of recent years. Since the departure three years ago of several experienced fencers headed by Nye, who won a University Championship, we have had to rely almost entirely on members who only took up the sport at Bart's. This year, having previously acquired something of the art of fencing, they have been arduously learning the equally difficult one of fighting, a very different technique. On the whole, the results have been encouraging.

The Captain, McGrath, can look back with satis-

faction on a successful season as such. For he has been almost entirely responsible for the club's increased activity, having almost doubled the fixture list. His results in matches have been a little disappointing, but his previous lack of match practice must be remembered. He seems now to be gaining confidence in his ability to win, and next season should do so more consistently.

The Secretary, Parker, is an exception in that he had considerable experience before reaching us. He is always useful as a match winner, and his results have been good, if not quite as good as last year. For, although he has a beautiful style, some lack of practice has taken the edge off his fighting.

Thompson is another who is Bart's trained. His fighting is forceful rather than stylish, but has been quite effective. Some reduction in the width of his movements and a steadying of the point of his blade would help him.

Townsend has a more pleasing style than our other fencers, excepting Parker, but he has not yet had much match experience. His attacks have consequently not yet acquired the penetration they need. A further season should make him much more consistent.

Our best results this year have come from Sugden, last year's captain, for he has lost only four fights in ten matches. He has a rather untidy style, being a good fighter rather than a good fencer. He again fights with too much force, and width of movement, but his unorthodox attacks coupled with speed and the steadiness of his point, have baffled many opponents. There has probably been an element of luck in his results being quite so good.

Since last writing two matches have been fought. The results were:—

4 Foil v. Imperial College (A): Lost 14—2.
3 F.S. v. Guys (A): Foil won 6-3. Sabre lost 4-5.
These bring the season's totals to:—
Foil: Fought 12, Drawn 1, Won 6.
Sabre: Fought 5, Won 2.

Colours

Honours have been awarded to K. J. Sugden, and Colours to J. Parker and A. J. Thompson for their services this season.

LAWN TENNIS

As usual, the season began with a trial on the not too good Charterhouse courts. The attendance was encouraging, especially by pre-clinicals, and new blood from Cambridge.

The first fixture of the season (a new one) against London House, was cancelled because of rain. The first one played, also a new fixture against the London School of Pharmacy, proved little more than a practice, and they were defeated 8—1, with the loss of only 3 sets. The Chislehurst courts were a delight to play on.

With the continuance of the fine weather the next match was played against Westminster, again being won 8—1. In each of these two matches the only defeats were of the Bart's 3rd pair playing our opponents' 1st pair.

The next matches are against Charing Cross and the Royal Dental Hospital, and against Keble College, Oxford. For these we hope to call on last year's captain, now qualified, in preparation for the match against Guy's in the United Hospitals doubles tournament. Guy's have held the cup for the past seven years, and we hope they may at last be deposed.

CRICKET

1st XI v. London House at Chislehurst, Sunday, April 27th. Match drawn.

Bart's 169—4 dec. (Merry 37, Funseta 32, Mitchell 30*, Abell 29*).
London House 161—9 (Harvey 4-42, Garrod 3-61).

This season many of last year's regulars will not be playing due to examination commitments. Despite this, the Hospital, batting first, scored well against mediocre bowling. Two newcomers, Merry and Funseta were impressive with their attacking stroke play. The Hospital declared, leaving London House to score 170 in just over two hours. The main brunt of the bowling was borne by Garrod and Harvey, and with a little more accuracy, and a much higher standard of fielding, the match could easily have been won. A fine hard-hitting innings, and obstinacy by the later batsmen, however, denied the Hospital victory.

1st XI v. University College Hospital at Mill Hill, Saturday, May 3rd.

U.C.H. 43 (Garrod 5-6, Harvey 4-17).
Bart's 44—2.

Against a very weak batting side the opening attack of Garrod and Harvey found little difficulty in dismissing U.C.H. in just over an hour. Once again the standard of the Bart's fielding left much to be desired. One bright feature was a brilliant diving catch by Pagan in the gulley. The Hospital had no trouble in scoring the necessary runs for the loss of 2 wickets.

1st XI v. Putney Eccentrics at Chislehurst, Sunday, May 4th. Match lost by 56 runs.

Putney Eccentrics 203 (Johnson 96), Juniper 4-48, Pagan 4-36).
Barts' 147 (Abel 51, Robson 24*).

On a perfect day for cricket, and with an easy paced wicket, Putney won the toss, and elected to bat first. Accurate bowling and improved "ground" fielding prevented the batsmen scoring quickly, but several catches were put down. After lunch several batsmen forfeited their wickets by attempting to force the pace against the slow bowling of Pagan and Juniper. Pagan, bowling a succession of proved the more effective.

After a long day in the field, the earlier batsmen lacked concentration, and 4 wickets fell for 33 balls of variable width and length, surprisingly runs. Abell proceeded to play an attacking innings of 51 with good support from the middle order batsmen, especially Robson, who was undefeated with 24 at the close.

BRIDGE

Bridge, although for long played by numerous schools in the A.R. has not until recently been taken too seriously at Bart's. This year however, for the first time, a team from the Hospital entered for the Interhospitals competition, and have so far enjoyed particular success. They have now reached the final, having played and won three preliminary rounds.

In the first round they met a relatively weak team from the Royal Free who they beat by the considerable margin of 62 match points. Next followed a match against the holder, the London. They again were convincingly, if not so spectacularly beaten by 28 match points.

Lastly came a very close match against King's College Hospital, who were just beaten by 5 points after a half way deficit of 4.

The duplicate pairs system on which all these matches are played makes for very exciting play to watch. Each set of hands is first played, and then defended by pairs of the same team at different tables. One hand in the match against King's demonstrated this well. At one table the Bart's pair bid and made 7 Hearts, with little bidding from the opposition. At the other table the King's pair only bid the same hands to 6 Hearts, largely on account of extensive nuisance bidding by the defenders.

On Friday, March 14th, Bart's played Guy's in the final of the Inter-hospitals Bridge cup. This mach was played over 32 boards, 4 more than in the earlier rounds, and Bart's won by 28 match points.

This was not the most difficult of the matches played, and the result was in little doubt when Bart's led by 41 match points half way through.

The winning of this cup, in fact a rather handsome Rose-bowl, at the first attempt was a fine effort. May we congratulate the team, which throughout has been: A. W. Gould, and G. F. Abercrombie. M. J. Tyrrell, and J. M. Laurent.

RIFLE CLUB

The following are the results of smallbore competition shooting undertaken by the Rifle Club during the 1957-58 winter season:—

U.H. Lloyd Cup Competition (Inter-Hospital League)

Round 1.—v. St. George's: Won 485/475.
Round 2.—v. Westminster: Lost 482/491..
Round 3. v. Guy's A.: Won 490/489.
Round 4.—v. St. Mary's: Won 488/485.
Round 5.—v. London: Lost 488/489.
Round 6.—v. Guy's B: Won 482/472.
Round 7.—v. St. Thomas's: Won 489/473.

Final Order: 1 Westminster, 2 St. Bartholomew's, 3 London, 4 Guy's A, 5 St. Mary's, 6 St. Thomas's, 7 Guy's B, 8 St. George's.

U.H. Tyro League, Division 1 (Clinical)

Round 1.—v. London: Lost 366/458.
Round 2.—v. St. Mary's: Won 482/455.
Round 3.—v. Westminster: Lost 475/477.
Round 4.—v. St. Bart's (Pre-clin.): Lost 382/476.
Round 5.—v. St. Thomas's: Won 483/450.

Final Order: 1 London, 2. St. Mary's, 3 Westminster, 4 St. Bartholomew's, 5 St. Thomas's.

U.H. Tyro League, Division 2 (Pre-clinical)

Round 1.—v. St. Mary's: Won 483/426.
Round 2.—v. Guy's: Won 469/366.
Round 3.—v. London: Lost 478/481.
Round 4.—v. St. Bart's (Clinical): Won 476/382.
Round 5.—v. St. George's: Lost 466/468.

Final Order: 1 St. George's, 2 London, 3 St. Bartholomew's, 4 St. Mary's, 5 Guy's.

University of London Inter-Collegiate Pistol League, Division 2

Round 1.—Bye
Round 2.—v. Queen Mary Coll.: Won 399/344.
Round 3.—v. Imperial College: Won 445/407.
Round 4.—v. Northampton Engineering Coll.: Won 475/396.
Round 5.—v. King's College: Won 449/380.

Final Order: 1 St. Bartholomew's, 2 Imperial College, 3 Q.M.C., 4 Northampton Engineering Coll., 5 King's College.

U.L. Standing and Kneeling League, Division 2

Round 1.—v. Queen Mary College C: Lost 229/273.
Round 2.—v. St. George's Hospital: Won 228/220.
Round 3.—v. Queen Mary College B: Lost 260/322.
Round 4.—Bye.
Round 5.—v. University College: Lost 235/279.
Round 6.—v. London Hospital: Won 267/220.
Round 7.—v. King's College: Lost 267/276.

Final Order: 1 Q.M.C. B, 2 University College, 3 Q.M.C. C, 4 King's College, 5 St. Bartholomew's, 6 St. George's, 7 London.

U.H. Individual Competition

Class A (Average above 96).—G. R. Hobday placed 2nd, R. P. Ellis 3rd.
Class B (Average above 93).—R. B. Church placed 3rd.

Friendly Matches

Nov. 15th.—v. Westminster: Won 573/568.
Feb. 26th.—v. Guy's: Won 573/559.
Mar. 10th.—v. St. Mary's: Won 583/558.
Mar. 10th.—v. Alderbarts: Won 570/544.
Mar. 21st.—v. London: Won 1062/1042.

Club colours were awarded to R. B. Church for consistent shooting in the Lloyd Cup competition.

The Club is once again grateful to Dr. Francis for his kind gift of spoons for the monthly competitions.

The Committee are pleased to announce that Mr. E. A. J. Alment has accepted their invitation to become a Vice-President of the Club.

BOOK REVIEWS

CHILD HEALTH AND PAEDIATRICS *by* R. McL. Todd. Published by Heinemann, Medical Books Limited. Price 21/-.

To be asked to review this book, together with the City of London Health Visitor, who not only geographically exists in Bart's Out-Patients Department, but who is becoming more and more firmly installed in the minds of Bart's . . . as "Bart's Health Visitor" . . . is pleasant, for it shows an ever-increasing interest in the healthy child growing in our midst, but most pleasant of all is the book itself.

It is a most remarkable book in many ways. It covers a great deal of ground dealing with the whole child who is a healthy person, but who may have phases of sickness. It also spends some of its space defining health, and one definition is "A state of being hale, sound, or whole in body, mind, and soul." It covers most of these aspects adequately and yet extremely briefly and simply. It also deals with the care of the premature and newly born, with feeding and management problems and the diagnosis and management of the sick child in some of the childhood illnesses.

Of some of the above aspects, I am not qualified to judge, and Miss Preston is, so she will supplement my knowledge. With the general treatment of child care and management I am in agreement, and my only criticisms are that :—

(1) Gessell is too definite in his allocation of ages to milestones. I would say it is not possible to state definitely that a child does this or that at any specific age, let alone at any specific number of weeks. Also children differ in their rate of development from one country to another, and even from one social strata to another. All that one can say is that most children do it at this age and if they are much later, they may be a defective . . . or a genius ! . . . and many other factors have to be taken into account before you can assess which.

(2) I consider this book excellent for the aspiring G.P. and indeed for all medical students who ever expect to be confronted by a child, also for the Nursing and Health Visitors, members of the Medical Profession. However, unless the modern vintage of Social Workers have changed alarmingly since I joined their ranks in 1945, I would think this book is too technically a medical one to be of much help or comprehension to them.

This is one of those books which one hopes very soon to see in a cheaper paper-backed edition and so within the reach of all.

M. L. E. Desbottes.

It was a great pleasure to review such an excellent little volume. As with all textbooks on child care, the writer has his own ideas on the average child, whose acquaintance I have yet to make. If, however, the tables, etc., are regarded as rough guides and not as a deadline, they are of value.

Altogether the book has much in its favour, the layout is clear and easy to follow and the information is concise and of practical adaptability.

It is also most refreshing to read a book on Paedriatrics which devotes so much of its early chapters to the healthy child, the prevention of disease and normal growth and development. The chapters devoted to the diseases of children do not go into great detail, but the main facts are clearly shown in both diagnosis and treatment.

This could be a handy pocket-size book for all those who deal with children whether in the nursing or medical field.

S. Preston.

ELEMENTARY BACTERIOLOGY AND IMMUNITY FOR NURSES (3rd Edition) *by* Stanley Marshall. Published H. K. Lewis Co. Ltd. Price 9/-.

This 3rd edition, of just over 100 pages of well set out, clear type and coloured plates, should continue to prove most helpful in introducing Nurses to Bacteriology.

Apart from the occasional use of long words, in order to be scrupulously correct, the book is very easy to read and contains many practical observations of use to the Nurse in the Ward. The pages concerned with sterilisation and different types of immunity should be of particular value and interest to the Nurse in training.

J.M.J.

LETTERS TO THE EDITOR

Sir,—I should be grateful for the courtesy of your columns in connection with the formation of a Rahere Dining Club in the East Midlands and South Yorkshire region. For three years a dining club limited to 25 Bart's men has met in Derbyshire annually. The members have been drawn from Sheffield and Nottingham, and it is now felt that the club should be enlarged, drawing members from a wider area and meeting in the larger cities in rotation. In fact, following the practice so successfully established in the West County by the Wessex Rahere Club.

I should be grateful if any Bart's men interested in joining such a club, and resident in South Yorkshire and the East Midlands, would get in touch with me.

I am,
Yours faithfully,
Douglas Robertson.

287, Glossop Road,
Sheffield. 10.

Sir,—In the March edition of the "Journal," W. V. Cruden's monograph "Cough" proved to be interesting and amusing. I also thought it erudite, except for one curious error.

If "tissicky" is corrected to "phthisiky," the origin of the word becomes self-evident

I am, Sir,
Yours truly,
H. Winch.

Romford.

Sir,—I am grateful to Dr. Winch for pointing out that the word "Tissicky" comes from the Greek "Phthisis" rather than from the Latin "Tussis."

In my experience the word is always pronounced (using phonetic spelling "Tissicky" and never "Thighsicky." This is evidently an old custom, as Shakespeare uses the word "Tisick" for a consumptive cough.

I am, etc.,
W. V. Cruden.

Hove.

RECENT PAPERS BY BART'S MEN

*Badenoch, A. W. The surgery Hunter changed. *Trans. Hunterian Soc.*, 1956-7, pp. 72-89.

Bates, D. V., *see*, Marshall, R., and others.

*Bett, W. R. Arthur Thomson (1858-1935), an Oxford Worthy. *Med. Press*, 239, March 19, 1958, pp. 268-9.

*——. Benjamin Travers (1783-1858), F.R.S., F.R.C.S. Hermann Friedrich Stannius (1803-83) of "Stannius Ligatures." *Med. Press*, 239, March 12, 1958, p. 246.

*——. Ernest von Bumm (1858-1925), gynaecologist and bacteriologist. Lorenz Heister (1683-1758) of "Heister's valve." *Med. Press*, 239, April 16, 1958, pp. 372-3.

*——. Heinrich August Wrisberg (1739-1808), obstetrician and anatomist. Richard Pfeiffer (1858-1945) of "Pfeiffer's Bacillus." *Med. Press*, 239, March 26, 1958, pp. 291-2.

*——. Ismar Isidor Boas (1858-1938), pioneer of gastroenterology. *Alchemist*, 22, March, 1958, pp. 147-8.

*——. Joseph Clarke (1758-1834), Master of Rotunda. John Kearsley Mitchell (1793-1858), physician, poet and chemist. Albert John Ochsner (1858-1925), of "Ochsner treatment." *Med. Press*, 239, April 9, 1958, pp. 338-9.

*——. Poisons and poisoners from classical times to the renaissance. *Crookes Digest*, No. 29, Winter, 1957, pp. 19-24.

*——. William Withering of digitalis fame. *NAPT Bulletin*, 21, April, 1958, pp. 60-61.

*Brooke, B. N., (with Slaney, G.) Septicaemia in modern therapy. *Lancet*, March 8, 1958, pp. 504-6.

Butler, H. The development of certain human dural venous sinuses. *J. Anat.*, 91, Oct., 1957, pp. 510-526.

*Cave, A. J. E., (with Strauss, William L.). Pathology and the posture of Neanderthal man. *Quart. Rev. Biol.*, 32, Dec., 1957, pp. 348-63.

*Cohen, E. Lipman. Treatment of acne vulgaris. *British Encyclopaedia of Medical Practice, Interim Supplement*, 186, March, 1958, pp. 1-4.

*Cunningham, G. J. (and others). The frequency of tumour-like formations in bronchiectatis lungs. *Thorax*, 13, March, 1958, pp. 64-68.

*FFRENCH, G. Aconitine-induced cardiac arrhythmia. *Brit. Heart J.*, 20, Jan., 1958, pp. 140-142.

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*HADFIELD, GEOFFREY (and Young, Stretton). Mammotrophic hormone in serum of healthy women. *Lancet*, March 15, 1958, pp. 568-9.

*HARMER, M. H. The British clinical staging of breast cancer. *Brit. med. J.*, March 29, 1958, pp. 767-769.

*HUBBLE, DOUGLAS, and MORRIS, G. C. R. Potassium deficiency in liver disease causing muscular weakness and polyuria. *Lancet*, March 15, 1958, pp. 563-6.

HURT, R. L., (and Bates, M.) The value of quinidine in the prevention of cardiac arrhythmias after pulmonary resection. *Thorax*, 13, March, 1958, pp. 39-41.

JONES, F. AVERY, (and others). Effect of smoking on the production and maintenance of gastric and duodenal ulcers. *Lancet*, March 29, 1958 pp. 657-62.

*JOPLING, W. H. Schistosomiasis (Bilharziasis). *Brit. J. Clin. Pract.*, 12, March, 1958, pp. 151-9.

*KNOX, R., (and Penikett, E. J. K.). Influence of initial vacuum on steam sterilization of dressings. *Brit. med. J.*, March 22, 1958, pp. 680-2.

——, (and others). An outbreak of post-operative sepsis. *Brit. med J.*, April 5, 1958. pp. 812-4.

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*MARSHALL, R. Methods of measuring pulmonary diffusing capacity and their significance. *Proc. roy. Soc. Med.*, 51, Feb., 1958, pp. 101-104.

*——, (and others). Pulmonary function in sarcoidosis. *Thorax*, 13, March., 1958. pp. 48-58.

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OSWALD, NEVILLE. Chronic bronchitis. *Postgrad. med. J.*, 34, Jan., 1958, pp. 11-13.

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SCOTT, R. BODLEY. The surgical aspects of the lymphomata. *Ann. roy. Coll. Surg. Engl.*, 22, March, 1958, pp. 178-196.

*SHOOTER, R. A., (and others). Spread of staphylococci in a surgical ward. *Brit. med. J.*, March 15, 1958, pp. 607-613.

*TODD, IAN P. Common painful conditions of the ano-rectal region. *Med Press*, 239, March 26, 1958, pp. 274-6.

*URQUHART, M. E. Estimations of cholesterol in relation to tumours in man. *Brit. J. Cancer*, 11, Dec., 1957, pp. 545-549.

*VARTAN, C. K. Uterus didelphys with double pregnancy. *J. Obstet. Gynaec. B. E.*, 65, Feb., 1958, pp. 120-121.

VERNEY, E. B. Some aspects of water and electrolyte excretion. *Surg. Gynec. Obstet.*, 106, April, 1958, pp. 441-452.

*WENDELL SMITH, C. P., (and Williams, P. L.). Variations in axonal diameters of myelinated nerve fibres: apparent or real? *Nature*, 181, Jan. 11, 1958, pp. 125-126.

*WINNICOTT, D. W. Child psychiatry. *Modern trends in paediatrics*, 1958, pp. 250-262.

*——. Modern views on the emotional development in the first year of life. Parts 1-2, *Med. Press*, 239, March 12 and 26, 1958, pp. 228-31, 250-62.

*Reprints received and herewith gratefully acknowledged. Please address this material to the Librarian.

BASIC CARDIOLOGY *by* T. E. Gumpert (1958) Wright, Bristoe. 157 pages and Index, 72 illustrations: 25/-.

This book is intended to bridge the gap between monographs on cardiology and accounts of the subject in textbooks embracing the whole of medicine. The author describes himself as a general physician with an interest in cardiology. After reading it, the unkind but relevant comment is that works on specialist subjects are best written by specialists.

There are many good points, such as a description of the physiology of heart failure, an account of the heart in pregnancy and in anaemia, and chapters on chest pain and on systolic murmurs. These are however overshadowed by inaccuracies and misconceptions elsewhere. That obesity and gout are causes of heart disease is surely debatable. Films in angiocardiography are not, as the author thinks, taken at two-second intervals. Quinidine is correctly recommended for ventricular tachycardia, but discontinuance is advised should the QRS duration exceed 0.12 second; but, in true ventricular tachycardia, the QRS frequently does exceed 0.12 second. The dosage of penicillin given for bacterial endocarditis is minimal and the combination of this drug with streptomycin for resistant cases is not mentioned. The chapter on congenital abnormalities is particularly open to criticism. Pulmonary hypertension is not even mentioned; nor is surgical relief of the stenosis in Fallot's tetralogy. Other misconceptions in this chapter are the association of ventricular septal defect with heart-block and of right ventricular hypertrophy in uncomplicated patency of the ductus arteriosus.

The book is clearly written and the common diseases are well described. The work is plentifully illustrated, but the x-ray reproductions are rather small. Fig. 50 (left ventricular enlargement) and Fig. 61 (Fallot's tetralogy) bear a remarkable resemblance to one another, and are hardly typical. This book cannot conscientiously be recommended to undergraduate or postgraduate students.

D. WEITZMAN.

AN INTRODUCTION TO MEDICAL LABORATORY TECHNOLOGY. SECOND EDITION F. J. Baker, R. E. Silverton, Eveline D. Luckcock. Butterworths, 408 pp. 35s. Butterworths, 408 pp. 35s.

The foreword of this book informs the intending reader that it has been written to prepare candidates for the Intermediate Examination of the Institute of Medical Laboratory Technology. The book contains sections on all four branches of pathology and includes also chapters on blood transfusion technique and elementary physiology. In order to cover this wide range the subject matter must remain at a fairly elementary level.

The book is admirably suited for its intended purpose and would also prove of value to any medical student particularly interested in practical pathological techniques.

R. G. H.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXII **JULY, 1958** **No. 7**

EDITORIAL

A decade ago, on July 5th, 1948, our National Health Service was embarked upon. Like most other social inventions, the Health Service has been subjected to odious comparison with those conditions prevailing prior to its inauguration. During the coming decade a new generation of critics will arise. Younger members of the community will voice their opinions, which perforce will be subjective and not comparative. Upon this tide of opinion the future of the Service will be held in the balance; eventually to succeed or to fail.

Successful functioning of any service relies upon the cooperation of its operators and of the public. Yet the most delicate task is that of the General Practitioner who exists as a buffer or valve between the public on the one hand and Government, Hospital, Employer, Optician, Pharmacist etc. on the other. Upon the General Practitioner's shoulders has fallen the brunt of the additional work involved in working the Health Service. Not unnaturally in any review of the Service the spotlight lingers on General Practice, which has led to a wealth of criticism, some lamentably originating in our own profession.

The traditional brass plate announcing "Surgery 9—10 a.m. and 6—7 p.m." has become a mockery. For four or more hours people filter through a Practitioner's consulting room, mostly demanding the magic signature or '*open sesame*' to all other benefits of a State Service. Averaging approximately 3 minutes per patient, little wonder certain "odd cases" appear in hospital. However culpable the reference of a patient to his local Hospital, continued open condemnation of General Practitioners, particularly by those members of the staff in position to influence students,—most of whom find their way into General Practice—is to be deplored.

Doctors' remuneration problems remain as a potential source of trouble to the future of the Service. Within hospital walls there will be a cry always for more pay for the Junior members of the staff. Present reward for 5–7 years endeavour is pitiful when compared with (a) more fortunate graduates of other walks of life and (b) the present standard of living. Though the older heads may shake with disgust and disbelief the days of such incentives as hospital married quarters are not far removed. Soon the stark realisation will occur in high places, that outside the unnatural environment of a teaching hospital, there exists a shortage of suitable Medical and Nursing Staff, due almost entirely to financial reasons.

The General Practitioner is rewarded, not according to his skill, care or energy, but according to the number of patients on his panel. Capitation fees allied with the current system of taxation expenses transforms the General Practitioner into a businessman and not a professional gentleman.

No Government can build hospitals fast enough to meet with the approval of all,

irrespective of any system of financial allocation. A recent article in the popular press attacked the hospital building programme. However Bart's successfully emerged from this article, but alas with no mention of the new building on Little Britain, just praise for the proposed Nurses' Home.

What of the 2nd decade? More red tape and the slow moulding of the doctor into the civil service world. Perhaps a move to restore a vestige of self respect to the G.P. and more scope to perform the task for which he was trained. Many doctors may retire now that 10 years' service entitles them to a pension. Their place possibly to be filled by the bulge of doctors created by the cessation of Military National Service. Faces may change, buildings rise, but Bart's remains essentially unchanged.

★ ★ ★ ★ ★

ART EXHIBITION, 1958

Dr. Geoffrey Bourne has again kindly accepted chairmanship of the committee organising the Art Exhibition which will be held in the Great Hall from October 6th to 10th, 1958.

At the last Exhibition opened by Lady Kelly in 1955 there were 146 entries from past and present members of the Hospital and Medical College Staffs, Nurses, Students and Lay Staff.

This year it is hoped to have an even larger and more representative exhibition, so all those who draw, paint, sculpt, model, etc., are urged to share this pleasure with their friends.

The closing date for entries will be September 22nd. Details of arrangements for handing in works will be published later.

Visitors

We extend a welcome to C. F. Lipscomb and S. T. deGaris, two Bristol University Medical Students, who are spending 6 weeks at Bart's. May their stay be pleasant and their search for clinical material fruitful.

Excavators

For several months the hospital constructors have been firmly '*entrenched*' behind the East Wing. However there is now ample evidence of their intended rupture into the main square. There exist two theories for the purpose of this operation (a) construction of a steam conduit and (b) construction of a rain free passage between R.S.Q. and the Nurses' Home.

NOTICES

New Address

Dr. J. A. Williams to "Mayfield," Fortyfoot Road, Leatherhead, Surrey.

Journal Staff

J. Millward has succeeded M. J. L. Patterson as Editor to the *Journal*.

CALENDAR

July

Sat. 26 Dr. E. R. Cullinan on duty.
Mr. J. P. Hosford on duty.
Mr. C. Langton Hower on duty.

August

Sat. 2 Medical and Surgical Units on duty.
Mr. G. H. Ellis on duty.

Sat. 9 Dr. Geoffrey Bourne on duty.
Mr. J. B. Hume on duty.
Mr. F. T. Evans on duty.

Sat. 16 Dr. A. W. Spence on duty.
Mr. C. Naunton Morgan on duty.
Mr. R. A. Bowen on duty.

ANNOUNCEMENTS

Engagements

CARR-NICHOLAS.—The engagement is announced between Dr. Conor John Carr and Audrey Nicholas.

GAWNE-CARPENTER.—The engagement is announced between Dr. Edwin Gawne and Jill Margaret Carpenter.

Marriages

JOHNSON-LIST.—On June 7th, in New York, Dr. William Johnson to Ann Hilary List.

KNIGHT-LAWTON.—On June 14th, Surg. Lieut. Robert John Knight, R.N., to Gillian Mary Frances Lawton.

LANGTON HEWER-WOTHERSPOON. On June 21st, at the Priory Church of St. Bartholomew-the-Great, Richard Langton Hewer to Jane Ann Wotherspoon.

Births

CODY.—On June 19th, to Diana, wife of Dr. Terence Cody, a son.

FAIRBAIRN.—On June 20th, in Paris, to Meriel, wife of Dr. David Fairbairn, a son (Michael David).

FIELDUS.—On June 26th, at Kitwe, N. Rhodesia, to Raymonde, wife of Dr. Peter Logan Fieldus, a son.

GREEN.—On June 5th, to Doreen, wife of N. Alan Green, F.R.C.S., a daughter (Rachel Margaret), a sister for Kathryn and Sarah.

LAMMIMAN.—On June 16th, to Sheila, wife of Dr. David Lammiman, a son (Christopher).

MALPAS.—On May 27th, to Joyce, wife of Dr. James Spencer Malpas, a son (James Julian).

SHOOTER.—On May 30th, to Jean, wife of Dr. R. A. Shooter, a daughter.

TAIT.—On May 30th, to Janet, wife of Dr. Ian Greville Tait, a second son (Charles James).

TAYLOR.—On June 19th, to Josephine, wife of Dr. G. B. Taylor, a second son (Adrian Vincent).

Deaths

HAMPDEN-SMITH.—On June 23rd, Sir Rudolph Hampden-Smith, Bt., C.B.E., aged 89. Eldest son of the late Sir Thomas Smith, Bt., K.C.V.O., F.R.C.S.

STOTT.—On June 15th, Sir Arnold Stott, K.B.E., aged 72. Qualified 1909.

Appointments

University of Birmingham

Dr. D. V. Hubble has been appointed to the Chair of Paediatrics.

University of Leicester

Lord Adrian has been installed as Chancellor of Leicester University.

HOUSE APPOINTMENTS
1st JULY to 31st DECEMBER, 1958

Dr. G. Bourne	B. W. D. Badley C. J. Carr (until 31.9.58) J. E. Stark (from 1.10.58)
Dr. E. R. Cullinan	J. Q. Creightmore R. J. Mitchell (until 31.9.58) R. G. White (from 1.10.58)
Dr. A. W. Spence	J. B. Nichols J. Hedley Whyte (until 31.9.58) D. A. Birkett (from 1.10.58)
Dr. R. Bodley Scott	C. F. Allenby P. J. Ball (until 31.9.58) B. Richards (from 1.10.58)

Dr. E. F. Scowen	M. A. Newton	*Casualty H.P.*	T. W. Gibson
	R. B. Harcourt (until 31.9.58)	*Children's Department*	Miss S. Thomas C. G. Stephenson
	C. A. C. Charlton (from 1.10.58)	*E.N.T. Department*	C. C. H. Dale J. C. Rice
Mr. J. B. Hume	L. J. Chalstrey	*Skin & V.D. Depts.*	C. B. S. Wood
	J. E. Stark (until 31.9.58)	*Eye Department*	J. D. Salmon
	C. J. Carr (from 1.10.58)	*Gynae. & Obs. Dept.*	D. A. Lammiman
Mr. R. S. Corbett	V. T. D. H. Major		J. C. Mackenzie
	B. Richards (until 31.9.58)		—(Interns)
	P. J. Ball (from 1.10.58)		J. T. Bench (Junior H/S)
Mr. J. P. Hosford	T. D. Cochrane	*Anaesthesia*	G. B. Gillett
	R. G. White (until 31.9.58)		A. M. Hall-Smith
	R. J. Mitchell (from 1.10.58)	*Orthopaedic Dept.*	J. Martin
Prof. Sir J. P. Ross	M. E. J. Hackett	*Casualty House Surgeon*	A. Whitworth
	C. A. C. Charlton (until 31.9.58)	**(at Hill End Hospital)**	
	R. B. Harcourt (from 1.10.58)	*E.N.T. Department*	C. C. H. Dale J. C. Rice
Mr. C. Naunton Morgan	D. R. Dunkerley	*Orthopaedic Dept.*	D. F. Rowlands L. J. Farrow
	D. A. Birkett (until 31.9.58)	*Thoracic Department*	B. P. Harrold A. S. Tabor
	J. Hedley-Whyte (from 1.10.58)	*Dept. of Neurological Surgery*	J. C. Garnham Miss M. M. McKerrow

EXAMINATION SUCCESSES

UNIVERSITY OF LONDON

FINAL M.B., B.S. EXAMINATION
APRIL, 1958

Honours

Farrow, L. J. (Distinguished in Pathology)

Pass

Al-Adwani, A. R. M.	Bench, J. T.	Ellison, A. J. H.
Chinery, A. R. O.	Dale, C. C. H.	Marks, A. P.
Farren, P.	Johnson, P. A.	Rowlands, D. F.
Martin, J.	Norris, P. L.	Tallack, J. S. T.
Stephenson, C. G.	Tabor, A. S.	White, R. G.
Thwaites, J. M.	Townsley, B.	
White, S. J.	Charlton, C. A. C.	

Supplementary Pass List

Part I

Bannerman-Lloyd, F.	Cawley, M. I. D.	Davies, D. J. C.
Hall, J. M.	Neely, J. A. C.	Phillips, R. M.
Pilkington, R.	Price, D. J.	Richards, H. M.
Seeman, H. M. I.	Waters, W. E.	

Part II

Mann, P. E. — Simpson, R. I. D.

Part III

Cocker, W. J. B. — Fenn, P. J.
Simpson, R. I. D. — Marston, M. S.

Part IV

Cocker, W. J. B. — Evans, T. G. — **Fenn, P. J.**
Mann, P. E. — Nixon, T. C. P.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Primary F.R.C.S.
June, 1958

Hopkins, J. S. — Wickham, J. E. A. — Witt, M. J.

THE MANAGEMENT OF ACUTE LUKAEMIA

by **JOHN Q. MATTHIAS**

THE recognition of acute leukaemia depends first on the clinical picture, and secondly on the examination of the peripheral blood and aspirated specimens of bone marrow.

Acute leukaemia may arise de novo or may form the terminal phase of a number of other diseases of the haemopoietic system, notably chronic myeloid leukaemia, the myeloproliferative syndromes, such as polycythaemia rubra vera and less commonly, chronic lymphatic leukaemia. The designation "acute" rests on two main points. First on the clinical picture, and secondly, from a pathological point of view on the presence of a high proportion of stem or "blast" cells with nucleolated nuclei in the marrow and, more often than not, also in the peripheral blood. The clinical and pathological diagnoses usually coincide, but the changes in the blood may be observed before the development of the typical clinical picture.

The developed clinical picture of an ill pale febrile patient with ulceration and infection of the mouth and throat, hypertrophied and bleeding gums, slight icterus, widespread petechiae and echymoses, fundal haemorrhages, increased liability to infection and painful tender bones, suggests the diagnosis. However, the occurrence of fever with "joint pains" and a haemic cardiac murmur may suggest rheumatic fever or bacterial endocarditis, and cases may be mistaken for scurvy or nephritis with haematuria.

In the main, the clinical effects of acute leukaemia may be deduced from the alterations which follow, in the elements of the peripheral blood, namely erythrocytes, mature leucocytes and platelets. The hyperplastic, rapidly dividing, immature, malignant cells replace the normal marrow cells, resulting in a lowered output of the three main elements. In addition, the red cell life may be shortened, due either to the development of a plasma factor, which destroys red cells (an auto-immune process associated with a positive Coombs' test), or to their premature removal by an enlarged spleen (hypersplenism) or conceivably to the production of faulty cells by the diseased bone marrow. Similar reasoning may well apply also to the granulocytes and platelets. The total peripheral white cell count may be high, normal or low, but usually contains a proportion of nucleolated "blast" cells. This proportion is, in many instances, virtually one hundred per cent. These may resemble myeloblasts, lymphoblasts or monoblasts, or, quite as commonly, they are of indeterminate or intermediate types. In addition nucleated red cells may be present. Rarely, the peripheral blood may not show immature cells and then a specimen of marrow will confirm the diagnosis. The replacement of normally functioning mature granulocytes, together with other alterations in the defence mechanism of the body (nutritional deficiencies, delayed healing, altered immune mechanisms and anoxaemia), increase the liability of infection. The practically invariable peripheral thrombocytopaenia, particularly if less than 50-60,000 per cu. mm. together with increased capillary permeability and fragility due to other causes (nutritional deficiencies, anoxaema, septicaemia) produces the haemorrhagic diathesis.

If the rapidly dividing immature cells can be adversely affected, suppressed or destroyed, the normal marrow elements recover and, maybe, a remission will follow. The return of the peripheral blood to normal is spoken of as a partial remission and, if it includes the bone marrow, as a complete remission. This may follow the adminstration of a number of agents. To date the beneficial effects are only temporary.

Chemotherapeutic Agents

In the last analysis it is probable that all therapeutic agents are "chemotherapeutic"

in that they produce their effects by modifying normal or abnormal biochemistry of cells, bacteria, etc.

This term is however commonly reserved for chemicals usually of known structure and sometimes of known action, which can be synthesized, although, as with all rules in medicine, this is not invariable. A chemotherapeutic agent which is able to compete with, and thus replace, a building block essential in the physiological synthesis of a complex body material, for example, nucleoprotein, is known as an antimetabolite. It will be convenient here to examine some general considerations concerning these compounds.

It must be remembered that the cancer cell, except that it divides more rapidly than most other cells in the body and is not subject to the normal factors which control growth, differs in no other fundamental biochemical way that to date can be exploited in therapy. Thus the chemotherapeutic agents which interfere in various ways with cell division and therefore growth, will also, if given in large enough doses for sufficient time, interfere with the division of normal body cells, in particular those of the haemopoietic system, ovary and testicle, gastrointestinal tract and skin. Thus, sterility, amenorrhoea, gastrointestinal ulceration and depilation commonly accompany their use.

There is a great variation in the susceptibility of the cells of various tumours as compared with the sensitivity of the somatic cells. This is a definite limiting factor in therapy. It is important to follow the peripheral blood at frequent intervals to control therapy. Decreasing numbers of immature cells associated with, or followed by, increasing numbers of mature leucocyte and platelets, together with a rising haemoglobin are important signs of success. Once the "blast" cells have been eradicated from the blood it is usually necessary to control therapy by repeated examination of the bone marrow, as complete remissions are more commonly associated with the return of normal health for longer periods. Overdosage may result in marrow aplasia producing a pancytopaenia which may only be temporary. If chemotherapy is continued, permanent damage can occur.

The remission rate varies with the agent employed but under the best therapeutic conditions some 30 per cent. of adults and 70-80 per cent. of children will respond, approximately 50 per cent. of the remissions will be complete. The reason for the difference between the remission rate in children and in adults is unknown. The duration of remission when achieved, is very variable, lasting from a few weeks to over two years. Generally, life is definitely prolonged and a return to "normal" health can be achieved. Remissions are often slow in initiation, beginning in two to four weeks; therapy at full dosage levels may have to be continued for up to eight weeks before the maximum effect is obtained or failure conceded. The finding of a safe dose for maintenance therapy is probably the best way of ensuring a longer remission but this involves close clinical supervision and repeated blood examinations and therefore is more troublesome for the patient. As there are no definite figures available, as yet, on this point, maintenance therapy is often not put into effect. However, it has the advantage that if a relapse occurs while on a drug and fails to respond to increasing the dose, then resistance is demonstrated and the futility of continuing with this particular drug apparent.

The monoblastic type is usually much more resistant than the lymphatic type to all forms of therapy. Myeloblastic leukaemia occupies an intermediate position. Combinations of chemotherapeutic agents are commonly employed in an effort to produce a higher remission rate and to delay the acquisition of resistance. Perhaps an analogy may be drawn here with the emergence of resistant bacterial strains during antibiotic therapy (c.f. M. tuberculosis, Staph. pyogenes). As a rule, the resistance of a particular case of acute leukaemia to a chemotherapeutic agent implies resistance to all other agents with a similar biochemical action. On the other hand sensitivity to chemotherapeutic agents of different biochemical action may well still be present. Thus "cross resistance" is not usual.

It is worth noting that very occasionally, in common with many other drugs, the chemotherapeutic agents may themselves be the cause of fever.

Agents in common use

ANTIMETABOLITES

(A) Compounds presumably affecting the incorporation of purines and pyrimidines into nucleic acid.

Purine analogues

1. 6 mercaptopurine (6 M.P.). This is usually the first line of attack, producing less side effects than the folic acid analogues. It is administered orally in doses of 2.5 mg./Kgm. body weight daily.

2. 6 chlorpurine (6 C.P.). This may be used in the place of 6 M.P. in doses of 20 mg./Kgm. daily orally. If it has any advantage it is a slightly higher remission rate.

Both these agents by virtue of their site of action increase the output of uric acid and in the presence of oliguria, enhanced by difficulties in swallowing and high fever, may rarely be associated with deposition of uric acid crystals in the collecting tubules of the kidney which may be followed by renal failure. Therefore, it is wise to encourage a high fluid intake.

(B) Compounds presumably affecting the synthesis of purines and pryimidines, which are essential in the building up of nucleoprotein.

1. Folic acid analogues

(a) Aminopterin was the first of the effective antimetabolites to be discovered. It is a potent drug which easily produces severe side effects, and for this reason only rarely used. The dosage employed is 0.25 — 0.5 mg. per day given by mouth.

(b) Methotrexate (Amethopterin) is used in preference to Aminopterin, being more gentle in its action, more easily controllable and producing a remission rate which compares satisfactorily with the more toxic drug. The dosage is 1.25 - 5 mg. per day orally.

These drugs form the second line of attack. Both compete with folic acid in the body and induce a folic acid deficiency which may result in ulceration of the gastrointestinal tract, most obviously of the buccal mucous membranes, tongue and oesophagus but later occurring elsewhere, and commonly resulting in diarrhoea. These acute ulcers may be the site of considerable haemorrhage, particularly in the presence of a haemorrhagic diathesis. Ulceration is an indication for at least temporary cessation of therapy.

It is worth noting the similarity in the names Aminopterin and Amethopterin. As the dose of the former more toxic drug is one-tenth of that of the latter, the stage is set for mistakes which will have serious consequences. Thus, to avoid confusion Amethopterin is now known as Methotrexate.

The metabolic deficiency caused by these drugs, i.e. folic acid deficiency, can be favourably influenced by administering folinic acid (citrovorum factor) 3 mg. or more intravenously or intramuscularly, although it will have an adverse effect on the leukaemia. If folinic acid is not available, large doses of folic acid, 10-30 mg. daily may be tried.

Effective therapy with the folic acid analogues always produces marrow megaloblastosis comparable to that seen in the folic acid deficiency of some malabsorption syndromes.

These drugs, unlike purine analogues, do not produce an increase in the production or output of uric acid.

2. Glutamine analogues

Azaserine is thought to act in this way. The dose is 9 mg./Kgm. daily orally. By itself, remissions are much less frequent than with other chemotherapeutic agents but it is thought that combination with 6 M.P. produces a slightly higher remission rate than with 6 M.P. alone.

The *alkylating agents*, e.g. Mustine (nitrogen mustard or HN2), Tretamine (triethylene melamine or TEM), and Chlorambucil (CB 1348) and the *general cell poisons* such as arsenic, colchicine and its derivatives, have no place in the treatment of acute leukaemia.

HORMONES

ACTH and *corticosteroids* have a definite place in the therapeutic armamentarium. They are of most use in a very ill patient in whom a beneficial effect is required more rapidly than can be obtained with the chemotherapeutic agents. This is particularly so in the presence of severe haemorrhagic states in which life is in danger from gastro-intestinal haemorrhage or from haematuria, or if the risk of intracranial haemorrhage is judged great. These agents commonly reduce capillary fragility and may also in some measure protect the platelets present from premature destruction.

Similarly, they are useful for prolonging red cell life particularly in the presence of an auto-immune haemolytic factor. The remissions produced are commonly shorter than those following successful chemotherapy and so these agents are reserved mainly for the

types of illness enumerated and for later in the course of the disease when chemotherapeutic agents may be no longer effective. Also some cases of myeloblastic type, particularly in adults, may be adversely affected. As with the chemotherapeutic agents, the lymphoblastic type is probably the most sensitive and the mono- and myeloblastic types the most resistant.

Oral Prednisolone is at the moment the steroid of choice having less sodium-retaining properties than cortisone. ACTH requires the intramuscular route and is therefore best avoided in a patient with a haemorrhagic diathesis. In addition, ACTH has probably no therapeutic advantage over Prednisolone. The normal dose is 20-60 mg. a day given 6-8 hourly.

Recently Triamcinolone, a corticosteroid which has no sodium-retaining action and, in fact, is said to cause sodium loss, has been introduced. It is given orally in doses approximately two-thirds those of Prednisolone to produce at least similar results.

NON-SPECIFIC THERAPY

1. Anaemia of a profound degree demands correction by transfusion, particularly if haemorrhage is present. It is sufficient usually to attempt to maintain the haemoglobin in the range of 50-60 per cent. Occasionally cross matching may be made difficult or impossible by the presence of auto-immune panagglutinins in the recipient's serum. Then it is wise to give blood of the closest genotype under the cover of corticosteroids.

It is worthy of note that a remission of some sort will not infrequently follow transfusion. It is possible that these are related to some unknown immune mechanism.

2. Infection must be detected and treated adequately, concomittant with, and following suitable efforts to isolate the infecting organism and to determine its sensitivity to antibiotics. Septicaemia is not an uncommon complication and blood culture is often indicated. If no local infection is found on examination it is commonly our practice to give a broad spectrum antibiotic by mouth following the taking of a blood culture in the hope that we may be treating a septicaemia. If there is no response in 36-48 hours, in the absence of known infection, its continuance is controversial. Oral ulceration and infection may be tackled in two ways. First, the appropriate specific therapy, for example Chlortetracycline mouth washes for a predominating sensitive bacterial flora, 1% Gentian violet or Nystatin applied locally for thrush (candida albicans) or secondly, non-specific local application of hydrocortisone pellets to the ulcers. Other general measures such as the administration of gamma globulin have not as yet found a place in therapy.

3. Other measures: the administration of Vitamin C is probably worth while although the illness is not usually accompanied by true Vitamin C deficiency. The loss of appetite and dysphagia which are always present, together with the association of Vitamin C deficiency and capillary fragility, make its administration reasonable. For obvious reasons folic acid should be avoided when a folic acid analogue is being used in therapy.

Thus, management of a case of acute leukaemia calls for the application of a considerable degree of skill, knowledge, tact, patience and effort. It is less than ten years since the first anti-metabolite was shown to be effective. Progress is slow, but is definite and will continue.

A CASE OF A GIANT BENIGN RETROPERITONEAL NEURILEMMOMA

by **A. ANDAN**

Your profession offers the most complete and constant union of those three qualities which have the greatest charm for pure and active minds: novelty, utility, and charity."

—Sir James Paget.

THE retroperitoneal neurilemmoma reported here is of interest because of its rarity, because it is probably one of the largest tumours of its kind to be reported, and because of the major resuscitative problems that accompanied its surgical incision.

Case History

Mr. W. B., 29, married, and a clerk in a Firm of Timber Merchants, was admitted into Percival Pott Ward in September, 1957, under the care of the Surgical Unit, with a two year history of progressive increase of abdominal girth, and a six months' history of attacks of indigestion and vague feelings of abdominal discomfort. For the past four months prior to his admission, he complained of general weakness, listlessness and of dull, non-specific abdominal pains, unrelated to meals, but relieved after flatulence. He had lately had attacks of nausea, but had never vomited, and noticed that he was much more comfortable lying supine or on his right side, than on his left side.

There was nothing relevant in his Family and Social History. Apart from right sided frontal headaches which he had occasionally, and which had been diagnosed as migraine by his Doctor, there was nothing abnormal in his systems.

His Past History

He had scarlet fever, measles and whooping cough during his childhood, but had never undergone any major operation before. In 1944 and again in 1946, he had spontaneous synovitis of his left knee. In 1947 he was admitted into hospital for two weeks with bronchitis. Later on in the year he was posted abroad in the army to West Africa for a period of 14 months. He had no malaria, no yellow fever, or any other serious illness while out there.

On Examination

He was a healthy looking young man, asthenic in build, and was not anaemic. There was no scoliosis or other deformities of bone. On inspection of his abdomen, there was an obvious distension more to the left side, the skin was healthy with no dilated veins or scars, and there were no visible peristaltic waves.

An enormous abdominal mass was palpable, extending from the left hypochondrium across to the right iliac fossa. There was slight tenderness in the left loin only on deep palpation. It was not a displaceable swelling, but moved slightly with respiratory movements. The anterior free margin of the mass had a pronounced notch at about its midpoint. The percussion note was dull over the area occupied by the mass and the bowel sounds were predominant on the right side of the abdomen: rectal examination revealed first degree piles at three and seven o'clock. The abdominal

girth, six inches above the pubic crest was 33½ inches, and the mass measured about 10″ x 6″.

Further observations of other parts of the body revealed a single enlarged superficial inguinal lymph gland on the left side a left varicocele and bilateral long saphenous incompetence.

B. P 125/90 Pulse 70/minute.

A provisional diagnosis of massive splenomegaly was made but its cause was unknown. On 29th September, 1957, the patient was transferred to Harvey Ward, under Dr. Bodley Scott for further investigations to establish the cause of what appeared to be massive splenomegaly.

Investigations

His blood picture was normal.

The report on his sternal marrow showed that cellularity was normal, but erythropoiesis was of a somewhat increased activity. Leucopoiesis was normal and there was no eosinophilia. His serum electrolytes and bilirubin levels were all within normal limits.

A straight X-ray picture of the abdomen showed a greatly enlarged soft tissue mass in the left hypochondrium and lumbar region, extending down obliquely to the right iliac fossa, with no evidence of calcification. The displacement upward of the left cupola of the diaphragm was reported on as being due to a large spleen. Air in the gut could only be seen on the right side.

A barium meal follow-through showed no hold-up but there was considerable displacement of the stomach to the right (Fig. i). An IVP showed gross displacement of the left kidney downwards into the pelvis.

A plain chest X-ray picture (Fig. ii), taken about a year before the patient came to hospital, revealed that the left cupola of the diaphragm, normally lower than the right, was higher than the right, and apparently giving no symptoms then.

His pre-operative urine contained a trace of albumin, otherwise there was nothing abnormal discovered.

Despite full investigations, a certain diagnosis could not be made, and surgical exploration was resolved upon.

Operation

The patient was transferred back to Percival Pott Ward on 17th October 1957, and the operation was done by Mr. G. W. Taylor on the 18th October, 1957. General anaesthesia (Pentothal, Nitrous oxide, oxygen and Trilene) was used.

Procedure

The patient was placed in the right lateral position and a thoraco—abdominal incision was made from the posterior end of the 11th rib forward to a point 2″ below the umbilicus. The 11th rib was resected and the abdominal musculature divided to expose a huge highly vascular retroperitoneal tumour. The pleural cavity was entered through the bed of the 11th rib and the diaphragm was divided to provide maximum exposure. The surface of the tumour immediately beneath the very tense capsule bore very numerous large thin walled veins. These vessels, which reached a diameter of 1 cm., formed a tortuous plexus passing posteriorly and medial to the tumour mass. The normal anatomy of the region was completely distorted by the tumour ; the spleen was pushed up against the diaphragm, the stomach and colon to the right and the left kidney was displaced into the pelvis. The left suprarenal gland was recognisable however, and was fused with the mass. Despite its size, the tumour was slightly mobile and excision was decided upon. Mobilisation was commenced and was accompanied almost immediately by a torrential haemorrhage from the large friable veins. Because of the size of the tumour, mobilisation was of necessity a blind procedure and it was clear that haemostasis would not be achieved until the mass was removed. Despite vigorous blood transfusion the patient's blood pressure quickly became unrecordable and the radial pulse impalpable. Fortunately, mobilisation by then allowed the aorta, which was running through the tumour, to be palpated. A feeble aortic pulse was felt, and the vessel was compressed proximal to the tumour. This effectively reduced the haemorrhage and the compression was maintained while blood was given rapidly through three intravenous sites.

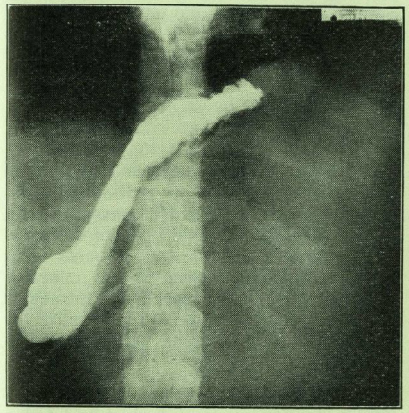

Fig. i

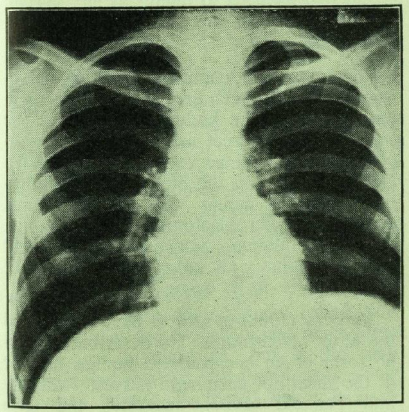

Fig. ii

Twelve pints of blood were required to restore the systolic blood pressure to a reasonable level. The tumour was then resected rapidly through a natural isthmus anterior to the aorta. A further nine pints of blood, making a total of twenty-one pints of blood were required before the operation was completed. It was thought unwise to attempt complete excision at this stage, and after haemostasis was achieved the wound was closed with intercostal drainage.

His post-operative course was initially stormy, and a reactionary haemorrhage on the first post-operative day necessitated a further blood transfusion. However the excellent nursing contributed to a relatively rapid recovery and he was discharged well three weeks later.

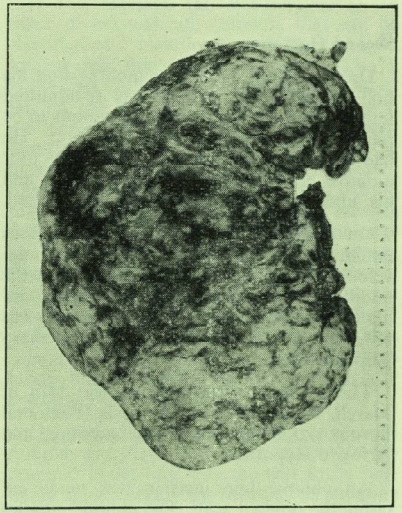

Fig. iii

Specimen Report (Fig. iii)

a. *Macroscopic Description.* "The specimen consisted of a coarsely lobulated mass weighing 4310 gms. The external surface showed some haemorrhagic areas and the cut surface showed the tumour to be well encapsulated with areas of firm, nodular, grey tissue intervening areas of cystic change with

superimposed haemorrhage. Attached to one surface of the tumour was a small plaque of suprarenal tissue measuring 2 x 2 x 0.3 cms."

b. *Histology*: "Sections of the tumour suggested that this was the world's record in neurilemmomas. The tumour seemed to be arising in nerves adjacent to the adrenal gland which is closely adherent to the capsule of the tumour but was not directly involved by neoplasm."

Second Operation

On 9th March, 1958, four months after his first operation the patient was re-admitted into hospital for the rest of the tumour to be removed. His general health was good. He had put on about one stone over the four months between his two admissions; and his abdominal symptoms had disappeared.

On examination: There was no obvious swelling of his abdomen, but he had developed a small incisional hernia about the middle of the scar. On palpation, the remaining retroperitoneal mass 4" x 2", was felt. It was firm and fixed and had a sharp palpable edge.

The operation was done on the 14th of March, under general anaesthesia (Pentothal nitrous oxide Oxygen-Trilene mixture, and Arfonad Hypotensin).

An oblique loin incision was made excising the original scar. The oblique muscles and the latissimus dorsi were divided and the 12th rib was resected.

The residual lobulated mass was situated mainly to the left of the midline, but there was an extension to the right closely enveloping the aorta and inferior vena cava. Dissection of this part of the tumour led to haemorrhage from both of these vessels which was controlled by suture. The main bulk of the tumour was removed but it was found impossible to be certain of complete excision in the neighbourhood of the great vessels.

The use of the Arfonad hypotensin had helped to reduce haemorrhage and the amount of blood loss was estimated to be three to four pints. Three pints of blood were transfused into him in the theatre and a fourth in the Ward resulted in a mild urticaria. A corrugated rubber drain was put in and the wound was closed. The lowest blood pressure reached during the operation was 60 mm Hg. Systolic; on commencement of closure of the wound it was registering 95 mm Hg. and on leaving the theatre it had risen to 120 mm Hg. and he was discharged on the 26th of March 1958. 12 days after his operation. He has remained well and symptom free.

Specimen Report

a. *Macroscopic description*:— "The specimen consisted of multiple portions of lobulating tumour totalling 478 gms. The cut surface showed neoplastic tissue of dull greyish appearance and showing frequent areas of yellow liquefactive necrosis and numerous haemorrhages. One specimen showed a large thrombosed artery surrounded by fibrous tissue and some adjacent lymph nodes."

b. *Histology*:— "Sections showed a typical neurilemmoma, parts of which had undergone degeneration and haemorrhage. There was no evidence of malignant change."

Discussion

There are two common types of nerve-sheath tumour which are known to occur in many parts of the body, principally in the soft tissues, in direct association with peripheral or visceral nerves. One is called a Neurofibroma and the other by a bewildering variety of names such as Neurinoma, Peripheral fibroblastoma, Schwannoma, Peripheral glioma, Schwanno-glioma, and Neurilemmoma; all indicating a difference of opinion as to its origin.

Verocay (1908) is said to have introduced the term "Neurinoma" to describe a specific form of an encapsulated benign tumour of the sheath of peripheral nerves. Mallory and Penfield (1927), suggested the term "Perineurial fibroblastoma or fibroma" to indicate an origin from the fibroblasts of the connective tissue of the nerve-sheath. Masson and the French school called it "Schwannoma" contending that the tumour arises from the Schwann cells of the nerve-sheath. In 1940, Tarlov, by means of a special silver staining technique, differentiated between the

Schwann cells, and fibro-blasts of the nerve-sheaths and by this method apparently demonstrated that the tumour cells were derived from fibroblasts and not from the Schwann cells. He accordingly supported the term "Fibroblastoma". Murray and Stout on the other hand, in the same year, employing a tissue culture technique, showed that the tumour cells were derived from the Schwann cells, and hence called them Schwannomas.

In an attempt to avoid the difficulty over the nomenclature, and since it is generally agreed that this is a tumour arising from the neurilemmal sheath, Masson and Stout have introduced the term "Neurilemmoma", which appears now to be used for this specific nerve-sheath tumour almost exclusively, in recent literature.

One of the most complete reviews of this tumour was made by Stout and Carson in 1935, in the American Journal of Cancer, it dealt with 246 cases from a world-wide collection and states the sites of their occurrence clearly in all. Although found in widely different parts of the nervous system, these tumours have a predilection for certain sites, such as the roots of origin of the spinal nerves, the vestibular or cochlear divisions of the eighth nerve—(where it is often called an "acoustic neuroma"), on the nerves of the limbs, and from the sympathetic system, especially in the neck and the posterior mediastinum of the thorax; (L. Rogers 1953; Cullen and Munro 1952). Other rare sites such as the tongue (Robertson 1953), and in the bones (M. Jones 1953), have been reported. The abdomen is one of the rarer sites, and the retroperitoneal part of it is even rarer still. A search into the literature reveals that there are only a few instances of the actual occurrence of this kind of tumour in the retroperitoneal region. Stout states that when these tumours are found peripherally, they rarely reach a size much larger than 6 cm. in diameter; but in the mediastinum and retroperitoneal regions they may be much larger. Pack and Tabah have reported on only one case of a retroperitoneal neurilemmoma, out of a total of 120 cases of Primary Retroperitoneal tumours treated by them. B. A. Donnelly reported that out of 95 cases of Primary retroperitoneal tumours treated by him, only two proved to be retroperitoneal neurilemmomas. J. P. Herdman surveyed fourteen cases of Primary Retroperitoneal tumours from the Radcliffe Infirmary, Oxford; and in this consecutive series of cases collected over a ten year period, not one was a neurilemmoma. The nearest case in character to the present case, was a giant omental neurofibroma, reported by H. O. Thomas and D. B. Jelliffe of Ibadan, in a Nigerian male, aged 20; this had a record size of being 42 inches in circumference round its widest part; and weighed 17½ lb. (7900 gm.)

In this Hospital (St. Bartholomew's), 16 cases of nerve-sheath tumours that can be classified as "Neurilemmomas", have been treated over the past three years (1955-57), in the various Surgical Departments. Out of the 16, the present case under discussion is the only one that has occurred retroperitoneally (Table 1). Table 1 shows that the incidence of these nerve-sheath tumours treated in this Hospital is about equal in both sexes, though some authorities think females are more liable than males. The majority tend to occur in the 30 to 60 years age group, though they are by no means uncommon in the very young or very old. The table shows that they can occur in any part of the body in relation to the peripheral nerves. These tumours often present as a symptomless lump but in some situations secondary pressure effects may occur.

On clinical and radiological grounds this tumour was diagnosed as an idiopathic abdominal mass, and was thought to be probably splenomegaly by virtue of its situation only. The pathological report however, together with the history, left no doubt that the tumour conformed with all the characters of a neurilemmoma. These are:—

i. The tumour is of long duration when first seen; this case had a two year history.
ii. The most common and often the only symptom is the awareness of the presence of a tumour.
iii. The tumour is almost always single and circumscribed.
iv. The clinical course appears to be benign, and local removal appears to be adequate.
v. The tumour is not usually diagnosed clinically but on microscopical examination.
vi. Prognosis after removal appears to be good.

Pathology and Clinical Features

The histological diagnosis of nerve-sheath tumours presents a problem in as much as the elements forming the nerve-sheaths have a dual origin, i.e., from the ectoderm and mesoderm; the tumours arising from these elements may show varying histological characteristics, ranging from the true Schwann cell type tumour to those possessing dense collagenous fibres resembling ordinary fibromata. A brief histological description of a nerve-sheath will help to clarify this picture.

A nerve trunk is made up of a number of units, each unit consisting of a sheathed axone which is a protoplasmic process from a nerve cell situated in a spinal or sympathetic ganglion or elsewhere. Every axone outside the central nervous system is always covered with a Schwann sheath and it is sometimes myelinated and sometimes not. The Schwann-sheath is in turn covered by a fibrous sheath called the endoneurium. Several of these axone units with their sheaths are collected together and enclosed in another fibrous sheath called the perineurium, to form a nerve bundle.

Finally several nerve bundles are surrounded by a third fibrous sheath, the epineurium, to form the nerve proper.

The Schwann-sheath is derived from the neuro-ectoderm and since it has been demonstrated that the Schwann-sheath is capable of forming connective tissue fibres, it is therefore possible that the endoneurium could be of neuro-ectodermal in origin. The perineurium and epineurium together with the blood and lymphatic vessels of the nerve, are all mesodermal in origin.

The chief cleavage of opinion is as to which constituent of the sheath the neurilemmoma and neurofibroma arise from, as already mentioned in the the opening paragraph. Willis (1948), suggests that both components of the nerve-sheath, though derived from distinct sources, may form a unified system in which the cell properties vary according to their proximity to the nerve fibre; and that the adoption of this view would largely resolve the difficulties in interpreting the structure of nerve-sheath tumours. We might thus expect to meet tumours of distinctive Schwann cell type, others of non-distinctive mesenchymal type, and yet others of associated, combined, or transitional types. However until this system is accepted the most commonly recognised types of nerve-sheath Tumours are:—

1. Neurofibroma (associated with von Recklinghausens disease)
2. Neurilemmoma
3. Neurogemic sarcomas
4. Non-neoplastic types (the amputation or traumatic neuromas).

Histologically, nerve-sheath tumours in general are said to show the following common features: long, slender, wire-like fibres with elongated nuclei which have a tendency to be arranged in parallel or palisade fashion; in addition to the palisading, the nuclei may be grouped in eddies and streams. The more benign the tumour the more pronounced are these features. These features are said to be best seen in neurilemmomas and less so in the neurofibromas. In the more malignant forms these characters tend to be lost.

Stout differentiates between neurofibromas and neurilemmomas, on the ground that there are sufficient differences between the growth characteristics, the histological arrangement of the cells, the ease of successful removal and the chances of malignancy to warrant keeping the two forms separate. The two names, however, give a clue to the gross difference between them.

Willis says that the neurofibromatous lesion is not a true tumour but probably a hamartoma: i.e., a nodular or tumour-like developmental anomaly, and in many cases the growth remains stationary or increases in size only slowly over a period of many years or throughout life. The underlying developmental error being at least partly genetic.

In most cases the structure of the lesion is unlike that of the solitary neurolemmoma. The tumour tissue is not well-circumscribed or encapsulated, but mingles with the surrounding dermal or other tissues, or involves nerves diffusely for variable distances. Nerve-fibres are often to be found traversing the tumour. Whorls and fasciculi in the growth often clearly follow patterns determined by the inclusion of neurofibromatous nerve bundles within it. It is as if the entire nerve has suffered expansion, with

CASES OF NERVE-SHEATH TUMOURS TREATED AT THIS HOSPITAL (ST. BART'S) FOR A THREE-YEAR PERIOD

1955-57

Year	Sex	Age	Lesion	Part of Body	Presenting Symptom	Treatment
1955	Female	44	Neurofibromatosis	Pulp of finger	Local pain	Excision
,,	,,	40	Multiple neurofibromatosis	Forehead and shoulders	None	,,
,,	,,	35	Bilateral neurofibromatosis	Thorax	Retrosternal pain	,,
,,	,,	15	Neurilemmoma	Thorax; left T2	None	,,
,,	Male	54	,,	Thorax; right T2	,,	,,
,,	,,	45	,,	Parotid: 7th nerve	,,	,,
,,	,,	52	Acoustic neuroma	Cranium	Tinitus-deafness	,,
1956	Female	68	,,	,,	,,	,,
,,	,,	42	Neurilemmoma	Thorax; left T2	None	,,
,,	,,	38	Plantar neuroma	Right foot	Pressure symptoms	,,
,,	,,	25	Neurofibroma	Left 2nd intercostal	None; picked on mass x-ray	,,
,,	Male	35	Post-traumatic neuroma	Left forehead	Pressure symptoms	,,
,,	,,	22	Neuroma	Base of left patella	Associated with accident	,,
,,	,,	39	Multiple neurofibromatosis	Chest and back	None	,,
,,	,,	51	Neurilemmoma	Right ankle (for 15 years)	,,	,,
,,	,,	51	,,	Chest	,,	,,
,,	,,	66	Plexiform neurofibromatosis	Penis	,,	D.X.R.
,,	,,	47	Plantar neuroma	Right foot	,,	Excision
1957	Female	17	Recurrent ganglioneuroma	Neck	Displacement of trachea	,,
,,	,,	47	Neurilemmoma	Parotid	None	,,
,,	,,	31	,,	Right Ulnar nerve	,,	,,
,,	Male	56	,,	Left Vagus nerve	,,	,,
,,	,,	29	,,	Retroperitoneal	Abdominal discomfort	,,

TABLE I

separation of all its constituent fibres by a universal diffuse increase of all its sheath tissues.

The general structure and staining properties of the bulk of the tissue are usually similar to those of mesenchymal fibrous or mucoid tissue, but in some tumours or parts of tumours the staining properties of the fibres are indefinite and not characteristic of collagen.

Definite Schwann cells of the affected nerves can often be recognised in the growths, but it is often impossible to identify individual cells as either Schwannian or fibroblastic. However, Schwann cells do participate in these tumours in which characteristic regimentation is found (Willis).

The Neurofibroma is said to be always, a manifestation of Von Recklinghausen's disease: — a condition often characterised by multiple soft neurofibromatous skin nodules (molluscum fibrosum), and the skin is often pigmented in patches. It is claimed to be familial. The tumour develops by a diffuse proliferation of Schwann cells and can present in various forms. It can occur :—

i. either at the end of a nerve fibre, usually in the skin, producing a rather vague nodule or nodules—(Cutaneous neurofibromatosis) or :

ii. within a nerve-sheath, enlarging it and causing it to become tortuous—(giving rise to what is called a plexi-form neurofibroma , or :

iii. both of these processes operating together, may enlarge a whole area of the body producing an elephantaic growth — a condition called elephantiasis neuromatosa. Megacolon, giant appendix and similar lesions elsewhere in the body, resulting in terrible deformities, are manifestations of this condition. The tumours that develop on the deeper situated nerves are prone to undergo sarcomatous change, and this is said to be a frequent cause of death in Von Recklinghausen's disease.

The Neurilemmoma — on the other hand, is not a common tumour ; it occurs at any age and appears to occur more frequently in females rather than in males. Its commonest site is the 8th cranial nerve, where it is often called the " acoustic nerve tumour " or cerebello pontine angle tumour. It rarely occurs on the other cranial nerves, though cases of tumours on the 5th and 10th nerves have been reported. Neurilemmomas of peripheral nerves occur chiefly in the limbs, head and neck, thorax, tongue and in the abdomen. In most cases the tumour is solitary and unaccompanied by signs of generalised neurofibromatosis but in a few cases the tumours are multiple or are accompanied by neurofibromatiosis. Neurofibromastosis sometimes include bilateral acoustic tumours ; and bilateral acoustic tumours are sometimes the main manifestation of familial neurofibromatosis (Willis 1948).

Structurally, the tumour is usually rounded or ovoid, firm, well-circumscribed and if it arises from a large nerve, it shows the intact nerve bundles passing round it, or to one side of it—rarely through it—so that in some uncomplicated lesions they are easily enucleated with little damage to the nerve trunk. It is always encapsulated, and if it grows to a size greater than 2cms. it almost always has areas of softening in it due to degenerative changes which may go on to liquefaction, so that the tumour may be partly cystic. This is not found in the neurofibroma, even if it reaches elephantaic proportions, although surface ulceration and gangrene may occur in some cases.

The blood vessels of these tumours are peculiar since they have an extremely haphazard arrangement with broad avascular zones between areas where a large number of vessels are collected. Very often these vessels are surrounded by strikingly thick collagen sheaths.

Microscopically, it has the general appearance of a fibroma ; but its characteristic feature is the presence here and there or throughout the tumour, of bundles or groups of spindle cells arranged in orderly parallel ranks, with their nuclei all at a similar level across each bundle ; an arrangement aptly described as palisading, or tiger-striping. This is called the fasciculated or " type A " tissue. In between the cellular fibres is present a loose reticular tissue which in young tumours, stain somewhat differently from those of ordinary fibrous tissue, but which in older tumours become more plentiful, dense and hyaline, and stain just like mesenchymal collagen. This loose meshwork of cells of variable shapes, is called the Reticular or " type B " tissue.

A Neurilemmoma is slow growing and is non-invasive and apparently, it is one of the most benign forms of neoplasm, and very rarely undergoes a sarcomatous change. It is easily cured by local excision.

The Neurogenic Sarcomas are mentioned here because they are the malignant forms of neurofibromas and neurofibromatosis, as already mentioned above. Ewing believes that the great majority of what have formerly been regarded as fibrosarcomas of the soft parts are derived from nerve-sheaths and should be called neurogenic Sarcomas, although no connection with nerves may be demonstrable. They form single, slowly growing, infiltrating tumours, usually in the subcutaneous and intermuscular tissue of the arm and leg, the commonest location being the thigh. More rarely they occur in the viscera. (Boyd.)

Microscopically, the tumour consists of elongated cells or fibres arranged in interlacing bundles and whorls showing a " curly " arrangement, in contrast to the parallel disposition of the fibres of a fibroma, and appearance always suggestive of a neurogenic origin. There is not the palisading of a neurilemmoma ; the cells are more swollen, and there may be mitotic figures.

The Amputation or Traumatic Neuroma formed as a bulbous swelling at the end of a cut nerve is not a true nerve tumour. It is supposed to be formed by a connective tissue reaction in response to the growing raw ends of the cut axons which have escaped from their neurilemmal sheaths and thus behave like foreign bodies in the tissues. The coiled axons are capped by fibrous tissue to form a nodule at the end of the nerve.

The second interesting aspect of this case is its occurrence in the Retroperitoneal Region of the abdomen, and presenting as a typical Retroperitoneal tumour. I have attempted therefore, at reporting it in much detail in the history, in order to emphasize how this Retroperitoneal tumour was managed and treated.

The diagnosis and management of retroperitoneal tumours have received disproportionate neglect in Textbooks and medical journals. In seeking information about the primary retroperitoneal tumours, never more than a brief paragraph or two is found in standard medical textbooks. For more detailed information one must turn to the literature.

These tumours are admitted to be comparatively rare. Pack and Tabah, in their collective review of primary retroperitoneal tumours, have concluded that the inexperience of most Surgeons with any considerable number of these cases, and the paucity of information about them, account for the fact that these neoplasms are so often insufficiently considered in the differential diagnosis in the patient who presents himself with an unexplained abdominal mass.

They say that the location of these tumours has precluded many Surgeons from attempting the radical extirpation necessary in an attempt to cure. Their proximity to the kidneys, adrenals, pancreas, liver, spleen, stomach and colon often leads to the erroneous assumption that the tumour originates in one of these organs.

The adjacent location of these tumours to the aforementioned organs is a double-edged sword ; although the true nature of the lesion may be masked by symptoms and signs related to one or another of these organs, on the other hand this close association serves a very useful purpose because the distortion of the organs adjacent to the tumour furnishes a means of diagnosis through the medium of barium meals, and enemas, cholecystograms, and intravenous and retrograde pyelograms.

Early symptoms are characteristically lacking, because the retroperitoneal tumour growing in the loose areolar tissue may reach a large size before symptoms herald their presence. They are not restricted in the direction of their growth except posteriorly, and therefore they generally grow forwards in the direction of least resistance.

The late manifestations include the awareness of an enlarging abdomen, backaches, a sense of fullness or heaviness, vague abdominal discomfort or pain of an indefinite nature and rarely severe. The presenting symptom may be referable to one of the systems or organs because of direct pressure or

displacement by the growtth. The gastro-intestinal symptoms include nausea, vomiting, change of bowel habit, such as constipation or diarrhoea, and less frequently haematemesis, ascites and symptoms suggestive of partial or complete intestinal obstruction. Pressure of the tumour on the nerves may produce paraplegia and incontinence or pain, and the usual result is a mistaken diagnosis of primary spinal cord disease. Obstruction of venous and lymphatic systems may cause oedema and varicosities of the extremities.

Physical examination always reveals a mass, and the majority are said not to be tender : there may be an enlarged liver due to metastasis, ascites due to portal obstruction, lumbar dullness etc.

The retroperitoneal space is partly actual and partly potential in concept. It extends from the diaphragm above, down the posterior wall of the abdomen into the pelvis ; and extends further to include those regions lying between the peritoneal leaves of the various intra-abdominal mesenteries.

Apart from the organs, tumours may arise from fat, areolar tissue, fasciae, muscle, vascular tissue, somatic and sympathetic nervous tissue, and from lymph vessles and nodes that are contained in this space. There are other tumours of less frequency, such as the smooth-muscle tumours, complex teratomas, embryonic carcinomas and rhabdomyosarcomas and certain bizarre cysts of unknown origin. Some of these tumours are supposed to arise from the remnants of the urogenital apparatus. (Handfield-Jones 1924)

Lesions of the kidney such as hydronephrosis, hypernephroma, and polycystic disease, and tumours of the gastrointestinal track, pancreatic cysts and tumours, neoplasms of the liver, and splenomegaly are among the many abdominal masses that must be differentially diagnosed. Hormonally active tumours, e.g., the adrenal cortical adenoma and carcinoma, the pheocromocytoma of the sympathetic ganglia and functioning tumours of the ovary, generally simplify the problem of diagnosis. More difficult to diagnose are the physiologically non-active tumours of these organs, which reveal no features distinguishing them from other abdominal and retroperitoneal tumours. Within the pelvis ovarian tumours, pedunculated neoplasms of the uterus, tubo-ovarian abcesses, and lesions of the urinary bladder may simulate retroperitoneal masses. Aneurysm of the abdominal aorta is often diagnosed as a retroperitoneal tumour, because the latter is often found in the midline and may transmit aortic pulsation ; abdominal aortography may solve this question.

After the lesion has been diagnosed as a retroperitoneal mass, to determine the specific nature of the lesion pre-operatively, is always a much more challenging problem.

A presumptive clinical diagnosis can however be tentatively held by a consideration of such factors as the age, sex, location of the tumour, evidence of functional activities, together with the obvious physical signs and X-ray findings.

The most effective treatment for primary retroperitoneal tumours, which offers the greatest prospect of cure is operative intervention and surgical excision. However the operation may present unexpected complications because of their proximity to the vital abdominal organs, and abdominal surgery of considerable magnitude is often required.

Radiotherapy may play a part in the management of certain of these retroperitoneal tumours. Although it rarely cures, palliation may be achieved with resultant decrease in pain, increase in the sense of well-being, and prolongation of life.

I should like to thank Mr. G. W. Taylor for his advice and permission to report on this case ; Mr. Thornton, our librarian, for help in looking up the literature, and the staff of the Photographic Department for the photographs of the case.

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THE INFLUENCE OF UREMIA ON MONTAIGNE

by **D. O'SULLIVAN**

THE personal and self-descriptive nature of Montaigne's "Essais" and "Journal" leaves us a relatively clear clinical picture of the man himself. It is evident that all his life he had a generally poor renal function and probably suffered from a petite urémie chronique. This caused a light state of azotemic encephalosis (1) which strongly marked his mind and character and consequently influenced his life and particular genius.

Symptoms

Renal Colic.

Montaigne passed his first stone at the age of 45. See Essais: II, xxxvii, written in 1578. From then on the attacks became more and more frequent.

Megrims and Nausea.

A uremic constitution does not necessarily show any really pathological manifestations. However, it may produce at intervals attacks of megrim and nausea. Montaigne notes in his "Journal de Voyage" several such incidences of troubled metabolism which correspond with the symptoms of an acute phase periodic in chronic uremia.

> "Cete matinée j'eus une pesanteur de la teste et trouble de veue come de mes antiennes migrenes . . . Là je ne vousis pas disner et m'en repantis car cela m'eut aidé à vomir qui est ma plus promte guerison." (2)

Retinitis.

In the quotation above describing his megrims and nausea, Montaigne notes that these attacks coincide with periods of troubled vision. In a further passage he describes his visual troubles in more detail.

> "J'éprouvais encore quelquefois des éblouissements quand je m'appliquais ou à lire ou à regarder fixement quelqu' objet lumineux. Je sentois une pesanteur de tête sur le front sans douleur et mes yeux se couvroient de certains nuages qui ne me rendoient pas la vue courte, mais qui la troubloient quelquefois je ne sais comment." (3)

This is explicit enough for us to be sure that only the retina and the optic nerve were

involved (perhaps a stage 3 retinitis) and not the lens and the cornea which he shows to be in perfect condition when he writes at the age of 55:—

"J'ignore jusques à present l'usage des lunettes et vois aussi bien que je fis onques and que tout autre." (4)

Paralysis.

We possess no clinical details of Montaigne's death except an observation found in the letters of Etienne Pasquier.

"Montaigne fut atteint à ses derniers moments d'une paralyse de la langue de telle façon qu'il demeure trois jours entiers plein d'entendement sans pouvoir parler." (5)

This paralysis could have been of uremic origin for renal failure may have led to excessive blood pressure with consequent hemiparesis, asphasia and dysarthria. Also, the disturbed renal function could have, *per se*, by a lowering of the blood colloids, led to cerebral oedema with very similar consequences.

Heredity.

Montaigne's father suffered from frequent renal colics. Hence Montaigne probably had a diathesis to renal disturbances. It follows that Montaigne's renal function may have been weak all his life and not the result of disease at some period. Consequently he probably suffered from an attenuated form of azotemic encephalosis from his very earliest years. We can therefore conclude that azotemic encephalosis marked his *basic* psychological make-up.

Though none of these symptoms are conclusive in themselves, taken together, his heridofamilial background, megrims and nausea, renal colics, retinitis and final paralysis give a fair clinical picture of chronic uremia.

When the blood level of urea is too high it may cause azotemic encephalosis (1) which is a state of mental confusion touching principally the power of concentration and the memory. Note that it is an intellectual obnubilation, a form of cerebral torpeur but not a destruction of the mnesique base. This latter remains intact but the capacity for drawing memories out of it is attenuated.

Montaigne writes in detail about his memory troubles showing them to be typical of azotemic encephalosis.

"La memoire nous represente non ce que nous choisissons, mais ce qu'il luy plait." (6)

"C'est un outil de merveilleux service que la memoire, et sans lequel le jugement faict à peine son office: elle me manque du tout. Ce que me veut proposer il faut que ce soit à parcelles. Car de respondre à un propos ou il eut plusieurs divers chefs, il n'est pas en ma puissance. Je ne scaurois recevoir une charge sans tablettes . . . Or plus je m'en defie, plus elle se trouble; elle me sert mieux par rencontre . . . elle me sert à son heure et non pas à la mienne." (7)

The intellectual obnubilation caused by azotemic encephalosis would also trouble his faculty of memorisation, for if the reception by the mind is foggy it follows that what is registered in the memory will be foggy.

"Pour apprendre trois vers, il me faut trois heures." (8)

Montaigne also details his feeble power of concentration symptomatic of azotemic encephalosis.

"Outre le deffaut de la mémoire, j'en ay d'autres qui aydent beaucoup à mon ignorance. J'ay l'esprit tardif et mousse; le moindre nuage luy arreste sa pointe . . . l'apprehension je l'ay lente et embrouillée." (9)

"J'ay l'esprit tendre et facile à prendre à l'essor; quand il est empesché a part le moindre bourdonnement de mouche l'assassine." (10)

It is principally via bad memory and lack of concentration that uremia affected Montaigne's genius. The relationship between these defects and the particularly choppy style of the Essais is apparent.

"Il n'est rien si contraire à mon stile qu'une narration estendue; je me recoupe si souvent à faute d'haleine." (11)

Even his picturesque language could be in part due to his bad memory which would cause a frequent use of descriptive paraphrases in place of generic terms.

His scepticism also can be traced to the same sources. The constant uncertainness of his memory (12) would have sowed the seeds that later developed and shook his confidence in all the branches of human intelligence, thereby giving birth to his characteristic scepticism.

His positivism in philosophy would derive from the difficulty a thinker has in handling abstruse abstract conceptions when he suffers from bad memory and poor concentration. He would find, as did Montaigne, facts, direct correlations and down to earth moralisation more to his taste.

Azotemic encephalosis also tends to bring on a state of bradypsyche, cerebral torpeur and somnolence which seems to be the root of the lazy disposition to which Montaigne so frankly confesses.

"J'en suis là . . . extremement oisif, extrement libre et par nature et par art." (13)

"J'ay ainsi l'ame poltrone que je ne mesure pas la bonne fortune selon sa hauteur mais selon sa facilité." (14)

A natural psychologist, Montaigne himself remarked on the relationship between his laziness and his physiological somnolence.

"J'estois parmi cela si poisant, mol et endormi, qu'on ne pouvoit m'arracher de l'oisiveté, non pas pour me fair jouer." (15)

This laziness, caused by his bradypsyche of atozemic origin, was a preponderant influence in his life. It led him to give up public office and retire to his country estate, where he wrote the Essais.

"Il y a des complexions plus propres à ces preceptes de la retraite les unes que les autres. Celles qui ont l'appreciation molle et lache et une affection et volonté delicate, et qui ne s'asservit ny s'employe pas aysément, desquels je suis et par naturelle condition et par discours." (16)

"Ce n'est pas un mespris philosophique des choses transitoires et mondaines; je n'ay pas le goust siespuré et les pris pour le moins ce qu'elles valent; mais certes c'est paresse et negligence inexcusable et puerile." (17)

Montaigne's conservatism in politics may have had its roots in his laziness. An ergophobic disposition will automatically prefer the status quo. His religious outlook also reflects this attitude. In a time when passions were roused by the reformation and counter-reformation, Montaigne remains remarkably cool. His neutrality was such that there has been much discussion as to what were his true religious beliefs. Strowski, Dreano, Plattard and Moreau take him to be a sincere Catholic; others, Armaingaud, Elie Faure and André Gide believe him to be a Protestant, while Buisson and Lanson hold that he was a convinced rationalist and free thinker. (18)

We do not wish to add another personal interpretation of Montaigne's religious beliefs to all those that exist already, but merely to indicate how uremia could have affected his basic religious attitude. We have already seen how azotemic encephalosis blunts cerebral reactions, thus any psychological shock or conflict liable to give rise to a neurosis will be cushioned and the neurosis attenuated. The sense of sin upon which Christianity is largely constructed is a form of neurosis (19) (a guilt complex, a variety of Oedipus complex with God as the father figure). Now, the most notable thing in Montaigne's religious attitude is that he had no sense of sin. It follows that whatever his beliefs may have been, he was incapable of being emotionally religious, i.e. he was not a "religious" man in the usual sense of the word. It could be that this lack of sense of sin, this lack of guilt complex, was partly due to the buffer effect of azotemic encephalosis on neurosis described above.

It is interesting to speculate on what Montaigne would have been like without azotemic encephalosis. Unhampered by a physiological lethargy, his intelligence might have manifested itself in a more violent manner. He might have risen to political heights or even lost all in the religious war that was ravaging France. One thing is cer-

tain, the production of his genius, had it turned to literature, would have been very different. Gone would be the haphazard style of writing and the liveliness that ensued from it, gone also the evocative images which give Montaigne's work so large a part of its originality. Had he possessed a good memory, he would have had, at his constant disposition, a heavy vocabulary and a formidable baggage of erudition, and in these conditions the Essais would probably have been as inflated, abstruse and pedantic as was the work of most of his contemporaries.

NOTES

(1) Azotemic encephalosis (not to be confused with azotemic encephalitis) is a state of mental confusion touching principally the power of concentration and the memory.
Cf. Delay (J.): Les maladies de la mémoire —p. 73-75.
Lemierre (A.): Azotemie et troubles psychiques dans Bull. et Mem. Soc. Med. des Hop. de Paris—1923, p. 1377.
Tardieu, Lemierre, Delay: Azotemie et troubles psychiques, l'encephalose azotemique dans La Presse Médicale—Juin 1941, pp. 617-619.

(2) Montaigne: Journal de Voyage en Italie — p. 273.
"This morning I had a heaviness in the head and troubled vision as in my old migraines . . . This time I refused to dine and was sorry for it would have helped me vomit, which is my quickest cure."

(3) Montaigne: Journal—p. 323.
"I would sometimes get dazzled when I tried to read or looked fixedly at some luminous object. I felt a heaviness in my forehead, painless, and my eyes were covered by a kind of cloud which though it did not shorten my vision troubled it sometimes I don't quite know how."

(4) Montaigne: Essais: III.
"I still do not use glasses and see as well as I used to and as well as anyone else."

(5) Dr. Paye: Bulletin du Bibliophile—1862, p. 1292.
"On his deathbed Montaigne suffered from paralysis of the tongue in such a manner that though fully conscious for three days he was unable to speak."

(6) Montaigne: Essais: II, xii.
"Memory presents us, not with what we choose, but with what it pleases."

(7) Montaigne: Essais: II, xvii.
"Memory is an instrument that renders great service, and without which judgment can barely function: I myself completely lack the former, I can only learn things in bits. To reply to a speech which puts forth several different points is beyond my capacity. I cannot take on a case without notes . . . The more I worry about my memory, the more confused it becomes, I remember better accidentally . . . it serves me, not when I choose, but when it wants to."

(8) Montaigne: Essais: II, xvii.
"To learn three lines takes me three hours."

(9) Montaigne: Essais: II, xvii.
"Apart from my bad memory I have other weaknesses which aid my ignorance. My mind is slow and vague; the slightest cloud stops its course . . . I learn slowly and confusedly."

(10) Montaigne: Essais: III, xiii.
"My mind is delicate and easily stimulated but when it is distracted the least buzzing of a fly will finish it off."

(11) Montaigne: Essais: I, xii.
"There is nothing more contrary to my style than a long narrative; I keep cutting myself off through lack of breath."

(12) Montaigne: Essais: III, xiii.
"Les faux pas que ma mémoire m'a fait si souvent, lors même quand elle s'asseure le plus de soy, ne sont pas inutilement perduz; elle a beau me jurer à cette heure et m'asseurer, je secoue les oreilles; la première opposition qu'on faict à son témoinage me mets en suspens et n'oserons fier d'elle en chose de poix ny le garantir sur le faict d'autruy."
"The mistakes that my memory has so often made, even when it was full of assurance, have not been entirely lost on me; nowadays it can even swear to me and assure me but I remain sceptical; any opposition made to it halts me and I don't dare trust myself to it in weighty matters nor guarantee its evidence on other people's affairs."

(13) Montaigne: Essais: II, xvii.
"I am thus . . . very lazy, very free both by nature and by art."

(14) Montaigne: Essais: III, vii.
"I have so lazy a soul that I don't measure good fortune by its greatness but by its easiness . . ."

(15) Montaigne: Essais: I, xxvi.
Referring to his childhood: "I was, with all of that, so heavy, soft and sleepy, that it was impossible to drag me from idleness even to play games."

(16) Montaigne: Essais: I, xxxix.
"There are some natures more suited to retirement than others. Those whose understanding is soft and loose, with weak concentration and willpower, and who cannot get down to business. I am thus, both by nature and by philosophy."

(17) Montaigne: Essais: III, ix.
"It is not a philosophic disdain of transitory and worldly things; my taste is not so pure, and I appreciate these things at least for what they are worth; but it is truly inexcusable, puerile laziness and negligence."

(18) Strowski: Montaigne.
Dréano: La Pensée réligieuse de Montaigne.
Plattard: Montaigne et son temps.
Moreau: Montaigne, l'homme et l'oeuvre.
Armaingaud: Etude sur Michèle Montaigne. (Introduction Oeuvres Complètes, Paris, Conard, 1924).
Faure: Montaigne et ses trois premiers-nés.
Gide: Essai sur Montaigne.
Buisson: Les Sources et développement du rationalisme dans la littérature française de la Renaissance
Lanson: Les Essais de Montaigne.

(19) Freud: Moses and Monotheism.
Totem and Taboo.
Otto Rank: Will therapy truth and reality.

LETTER TO THE EDITOR

Sir,—I know a Dr. R. W. P. Hall who is in practice in Windermere. There have been at least four consecutive generations of the Hall family in practice in that part of the world, and my friend, of the third generation, has sent me the enclosed letter dated 12th July, 1845, written by Edward Rigby, a surgeon at Bart's, who taught William Hall his surgery. The letter contains some interesting information concerning the flourishing condition of St. Bartholomew's Hospital and how a surgeon on the staff there was treated for an acute infection in the middle of the last century. You might like to publish the letter in the Bart's JOURNAL.

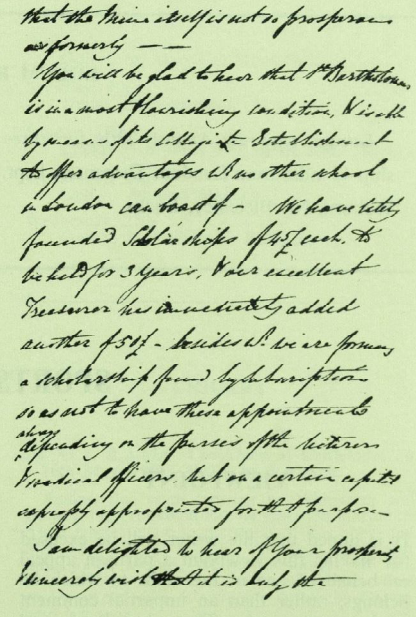
Yours sincerely,
ALAN HUNT.

28, New Street,
Spring Gardens.
12th July, 1845

My dear Sir,—Nothing affords me more sincere pleasure than to hear of, & still more from, my old pupils every now & then; I wish it were so with more of them than with the few who like yourself kindly favour me with an occasional line.

I had been long wishing to know something about our good friend Alexander. I am sorry to find that he has gone through such troubles & difficulties, although I hope that he is at last securely established. I will ascertain from the Mining office the proper direction to him, & also enquire how it became necessary to reduce his salary so considerably: he gave, as far as I understood, full satisfaction, but I fear that the Mine itself is not so prosperous as formerly.

You will be glad to hear that St. Bartholomew's is in a most flourishing condition, & is able by means of its Collegiate Establishment to offer advantages wh. no other school in London can boast of. We have lately founded Scholarships of 45£ each, to be held for 3 years, & our excellent Treasurer has immediately added another 50£. Besides wh. we are forming a scholarship fund by Subscriptions so as not to have these appointments always depending on the purses of the lecturers and medical officers, but



PHOTOSTAT OF ORIGINAL LETTER

on a certain capital expressly appropriated for that purpose.

I am delighted to hear of your prosperity and sincerely wish that it is only the forerunner of further success. The case of twins is both rare & interesting but not unique, as there are several on record—after you have collected a number of interesting cases you should record them in some good medical Journal. I have been lately giving a series of reports on the diseases of females in the Medical Times, & illustrating them with a large number of cases. I commenced in September and have still a good deal of ground to go over —but I have been sadly knocked about of late by illness, from wh. I am only now recovering. I badly poisoned my hand in a case of abortion where the retained placenta was in a most putrid state. I saved the Lady but nearly lost my own life—they drew an awful ring of caustic round my shoulder at St. Barthm's, where I became very ill, & that seemed to be (together with a 10 grain dose of calonel) what saved me. I had scarcely recovered from that, when I was attacked with severe rheumatic fever, the effects of wh. I still feel. Remember me kindly to Mr. & Mrs. Harrison. & with sincere wishes for Your health & happiness believe me Yours very truly

EDWARD RIGBY.

Wm. Hall, Esq. jun.,
Surgeon,
Lancaster.
Saturday.

The Mexican secretary says that he believes Alexander is still in the Service of the Company. Please send your letter for him to me by the 28th of any month & I will forward it free to Mexico. E.R.

SPORTS NEWS

VIEWPOINT

IT is hoped that the writer will be excused for making this viewpoint a partisan appeal on behalf of one of the clubs to which he belongs, rather than an impartial comment as is more usual. There has been, and probably still is, a tendency for pre-clinical students to regard certain Bart's teams as closed to them. A continuance of such a view would seem to be the only way of explaining their persistent absence from certain fields of sport.

The club which at present suffers most from such a lack of support is the Golf Club. Unfortunately, all its best players are of approximately equal seniority. This has two implications, firstly that if one cannot play, as often as not several cannot, and secondly that all will qualify simultaneously, we hope. Even more unfortunate is the fact that the other golfers of the club, many of them beginners, are their contemporaries, and will be unable to fill the gaps.

It is unreasonable to suppose that none of the students at Charterhouse are either players or prospective players. It is therefore urged upon any pre-clinicals who are interested to make themselves known. The facilities offered by the South Herts club are very generous, and even total beginners can become quite reasonable exponents of the game after two seasons. The club must thus say to the at present more junior members of the hospital that although it could doubtless get along without you, it would much prefer to get along with you.

SPORTS CALENDAR

July

Sunday, 20th
Cricket v. Dartford at Chislehurst. Start 11.30.

Wednesday, 23rd
Tennis v. R.M.A. Sandhurst at Chislehurst.
Golf v. Middlesex Hospital at South Herts.

Saturday, 26th
Tennis v. K.C.H. (A).

Sunday, 27th
Cricket v. R.N.V.R. at Chislehurst. Start 11.30.

Wednesday, 30th
Tennis v. West Heath (A).
Golf v. K.C.H. at Dulwich.

August

Wednesday, 6th
Golf v. St. Mary's at Moor Park.

Saturday, 9th
Tennis v. Roehampton (A).

Sunday, 17th
Cricket v. Bromley (A). Start 2.30.

Wednesday, 20th
Golf — Summer Meeting.

Wednesday, 27th
Golf v. St. Georges at Dulwich.

ATHLETICS

Sports Day

Sports Day was held this year at Chislehurst on June 7th. Compared with recent years, the weather was favourable, and despite the bus strike there appeared to be more people than usual present. The general standard was not markedly better nor worse than in the past, but there were one or two outstanding performances. The Captain, C. P. Roberts, set a new High Jump record at 5ft. 10½in., and P. Drinkwater, not one of the Club's regular athletes, improved the Javelin record by some 11ft. to around 184ft

In general, the favourites won, so to speak, although a few of the trophies were carried off by rank outsiders. On such occasions, when the sport is not taken too seriously, and the novelty events probably give most pleasure, it is amusing to see this happen. In retrospect, however, it is sobering to contemplate how much the Hospital's performances in the field could be improved by the presence of all the available talent.

On the whole the afternoon and evening probably went off as smoothly as at any time recently, and the committee of the Club are to be congratulated and thanked for this. The problem of maintaining the spectators' interest is, however, constant and, without criticism—for the writer had himself once to undertake their task—a few suggestions are offered. The essential would seem to be constant action with no gaps—easy to say and very difficult to achieve. This year senior students acted as judges to make up the numbers. Although this represents a departure from previous policy it must be almost essential that it should continue. In addition it would have been helpful if the judges for each event, especially the field events, had been appointed before the meeting began, if they had been supplied with a prepared list of entries, and if competitors had been more strictly limited to those who had entered before the day. Lastly, it would have saved much time had the starter been instructed to keep to schedule regardless of the absence of certain contestants.

That the committee itself is not oblivious to the problem is shown by the fact that the introduction of side-shows is contemplated for next year. It is hoped that it will not be upset by these suggestions, for it does an unenviable job.

CRICKET

1st XI v. R.A.M.C. Crookham at Chislehurst on 10th May, 1958. WON by 7 wickets.

Against fine seam bowling by Whitworth and Harvey, the Crookham batting was soon in trouble. Apart from Hellawell, the standard was poor, and they were all out for 52. Although Bart's lost three quick wickets, Whitworth and Tabert had little difficulty in scoring the necessary runs, thus reversing our own catastrophic defeat by Crookham last year.

R.A.M.C. Crookham 52 (Whitworth 5 for 7, Harvey 3 for 21).

1st XI v. Hampstead at Hampstead on 11th May, 1958. WON by 18 runs.

This was a very welcome victory for the hospital in view of Hampstead's run of successes in pre-

vious years. Bart's were asked to bat and proceeded very steadily, thanks to a fine innings by Whitworth and Harvey. The early Hampstead batting capitulated more easily than had been expected on the easy paced wicket and several feared batsmen were dismissed playing rather unorthodox strokes. The later batsmen raised the total to respectability but Bart's won more comfortably than the margin of 18 runs would suggest.

Bart's 173 (Whitworth 54, Harvey 48).
Hampstead 155 (Harvey 3 for 20, Whitworth 3 for 20, Juniper 3 for 20).

1st XI v. Balliol College, Oxford at Oxford on 17th May, 1958. LOST by four wickets.

Fielding a much weakened side, the hospital were lucky not to be defeated more easily. Only a do or die effort for the last wicket by Chapman and Garrod carried the total above 100. A few of the side played confidently against the spin of Tourkys on a turning wicket. The bowling, as on many occasions lacked penetration and Balliol passed 90 for the loss of one wicket. We redeemed ourselves slightly by taking five wickets for the next 20 runs but only temporarily averted an almost inevitable result.

Bart's 119.
Balliol 120 for 6 wickets.

1st XI v. Romany at Chislehurst on 18th May, 1958. LOST by 8 wickets.

Having won the toss, Bart's decided to bat on a wicket which was full of runs. However against a moderate attack the batsmen began to find hidden vices in the pitch and returned in a steady stream to the pavilion. It is hoped that some time will elapse before such a batting display is again produced by Bart's. Romany had little difficulty in scoring the runs.

Barts 51.
Romany 53 for 2 wickets.

1st XI v. Charing Cross Hospital at Chislehurst on May 22nd, 1958. 1st Round Cup Match. WON by 5 wickets.

The Hospital won the toss and put Charing Cross in to bat. They started well, but the opening attack particularly Whitworth and Harvey bowled well and the wickets began to fall. By lunch Charing Cross were 110 for 8. If the fielding had been better Charing Cross might well have been all out for fewer than this. After lunch the Bart's bowling and fielding deteriorated and with intelligent hitting the last two Charing Cross wickets put on 70 runs. The Bart's batting was not too successful and with 86 runs for 5 wickets the situation looked dangerous, but an excellent stand between Abell and Harvey of 93 brought us the required runs. To do better in the Cup Bart's must field better and press home any advantages they have gained.

Charing Cross 172 (Whitworth 5 for 56, Harvey 3 for 36).
Bart's 177 for 5 (Abell, 51 not out; Harvey, 41 not out).

1st. XI v. Queens' College, Cambridge at Chislehurst on 24th May, 1958. MATCH DRAWN.

On a perfect wicket Queens' won the toss and elected to bat. The Queens' opening batsmen started very strongly against the Bart's bowling and kept scoring quickly until just before lunch when the first wicket fell at 117, due to a run-out. After lunch Queens' scored even faster and declared at 3.30 p.m. with 259 for 3 wickets. The opening bat Hewitt being unbeaten at the finish for 113. Bart's started well, the first wicket falling at 40. Nerry then came in and batted very strongly for 47. But the scoring rate was not fast enough as 140 runs were needed at two a minute. Abell batting very quickly scored 58 and kept the rate up, but when he was out the Queens' total could not be reached, despite fast scoring by Harvey.

Queens' 259 for 3 dec. (Hewill, 113 not out; Mills, 64).
Bart's 233 for 8 (Abell 58, Nerry 47).

1st XI v. Wimbledon at Chislehurst on 14th June, 1958. WON by 8 wickets.

Wimbledon were put in to bat and on a wicket helping the three Bart's seam bowlers, Whitworth, Garrod and Harvey, the Wimbledon batsmen were soon in trouble. None of them coped with the medium paced ball turning off the pitch and they were all out for 46 before tea. The Bart's batsmen easily overtook the small Wimbledon total.

Wimbledon 46 (Whitworth 5 for 22, Harvey 3 for 6).
Bart's 48 for 2 wickets.

1st XI v. Horlicks at Slough on 16th June, 1958. LOST by 44 runs.

On a very hot day Horlicks decided to bat, and on a fast wicket the opening batsmen scored slowly but steadily until at 30 Garrod had a devastating spell taking 3 wickets in four balls. But Hartley then came in and by judicious hitting scored 145 during which he was dropped six times! the first when he was 20. The Bart's innings started well, Davies scoring 49. This was followed by 53 from Abell, who helped by Drinkwater put on a stand of 70 but the tail then collapsed leaving Bart's 44 runs short. Horlicks must again be thanked for the samples of their products for each member of the team.

Horlicks 240 for 9 dec. (Garrod 4 for 42).
Bart's 196 (Davies 49, Abell 53, Drinkwater 39).

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*Reprints received and herewith gratefully acknowledged. Please address this material to the Librarian.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXII AUGUST, 1958 No. 8

EDITORIAL

—Lord Moran said he was not happy about the quality of the entry of students in the medical schools. "Not long ago, middle-class parents paid for all medical students' fees. Now, two-thirds of the students are maintained by the State and they are selected by examination without any test of, or regard to, character.

"That can only end in disaster, and there are signs of the effect of it already. You cannot select solely on examinations for a profession like Medicine, which requires the human touch more than anything else."—

Daily Telegraph.

Among many things spoken and written on the occasion of the 10th anniversary of the National Health Service, the above report of Lord Moran's speech has aroused no little interest amongst medical undergraduates. This constitutes no condemnation of the student, who chooses neither his parents nor his election to a medical school, but, nevertheless, he is entitled to examine the validity of the hypothesis. Perhaps the findings of our own Questionnaire—which should be available in the near future—will elucidate various aspects of this problem.

"Maintained" implies full financial support by the State or other public body, but it is very doubtful whether even 10% of students receive a full emolument. Furthermore, it is very unlikely that, even on receipt of a full State award, a student is wholly self-sufficient. Since many scholarships are subject to a parental financial means test, the majority of Lord Moran's 66% receive only a portion of the maximum award, which may mean as little as one-quarter of the hospital fees. The inference that this 66% is now derived from different classes in these State aided days, is probably erroneous, because the entry still may be derived from essentially the same sources as previously, but now receive some State financial aid. Financial awards are assessed on gross income, and the difference between a maximum award is to be met by the parents. The standard income of the professional class parent has increased in proportion far less than that of most other occupations; thus, combined with the higher cost of living and the present taxation system, such parents may be comparatively less fortunate than in preceeding years.

Examinations constitute an inescapable part of medical undergraduate life. A certain educational standard has been demanded always of potential doctors. The general opinion regarding pre-medical school education, is that it is far too narrow. Fortunately, there exists within the ranks of medical students a few who have had a

broader education in the classics and other arts. Although examination successes must play an essential part in the selection of potential medical students, it is hoped that testimonials and personal interview count in some measure. If only written and practical work counts in election, then selection committees are to be condemned, and this must include Lord Moran himself, a former Dean of a Medical School. Perhaps a more comprehensive system of interviews and personal selection could be instituted by the initiative of the medical schools. If the quality of applicants is below standard, then the medical schools should reduce their intake, and not increase it as various schools have done in past years.

An individual's possession of the " human touch " may be of importance, but cannot be assessed except over a long period of time. The many years of training in the art of Medicine provide ample opportunity to ascertain character, possession of the " human touch " and determination of technical ability. However, it is doubtful whether the possession of these three qualities can be pre-determined by examinations, social origin, nor whether or not a fee payer.

Lord Moran does not elucidate his " signs of disaster." Maybe they are early signs, for the time of ascent to the top of the profession is long. Perhaps a day will dawn when an elder generation in any sphere of life will accept the possibility that a succeeding generation could measure up to their own high standard.

★ ★ ★ ★ ★

INTERNATIONAL CANCER CONGRESS

The Hospital acted as host to members of the International Cancer Congress on July 16th. Their programme included :—

Morning.

1. Demonstration of research work carried out by the Linear Accelerator Research Unit. **(Prof. J. Rotblat and staff.)**
2. Demonstrations by the Biochemistry Department.
   (a) Zinc and cancer tissues. **(Prof. A. Wormall and staff.)**
   (*b*) Action of radiations on some fatty acids. **(Dr. E. D. Wills.)**
   (*c*) Actions of radiations on complement, enzymes and trypanosomes. **(Prof. A. Wormall and Dr. E. D. Wills.)**
3. The first Gordon-Watson Memorial Lecture—" A Pioneer in the Attack of Cancer," delivered by **Mr. R. S. Corbett.**

Afternoon.

A series of demonstrations in the Great Hall :—

1. Tumours of the glomus jugulare. **(Mr. F. C. W. Capps and Dr. R. A. Kemp Harper.)**
2. Tumours of the thymus. **(Mr. I. G. Williams and Dr. R. A. Kemp Harper.)**
3. Breast cancer: correlation between clinical follow-up and oestrogen studies. **(Dr. E. F. Scowen and Mr. G. J. Hadfield.)**
4. Myelomatosis. **(Dr. R. Bodley Scott and Dr. J. Q. Matthias.)**
5. Retinoblastoma : treatment by radio-cobalt applicators. **(Mr. H. B. Stallard and Dr. A. E. Jones.)**
6. The clinical significance of malignant cells in the sputum. **(Dr. G. Canti.)**
7. Investigations of ketosteroids in malignant disease. **(Dr. A. M. Robinson, Miss A. Dimoline and Miss D. G. Jones.)**
8. Uterine cancer : a preliminary study of the value of colposcopy in the diagnosis of early cervical carcinoma. **(Mr. J. Beattie and Mr. J. D. Andrew.)**
9. A demonstration of the archives of the Hospital, and of some writings on cancer by Bart's men. **(John L. Thornton,** Librarian and the Hospital Archivist's Office.)

Members were guests of the Board of Governors to lunch and tea.

RADIOLOGISTS A.G.M.

The Annual General Meeting of the Faculty of Radiologists was held on June 13th, 1958, in the Royal College of Surgeons, during which a Symposium on Retro-peritoneal Tumours was presented to a joint meeting of the Diagnostic and Radiotherapy Sections. The speakers were all members of the staff of St. Bartholomew's Hospital. **Professor J. W. S. Blacklock** discussed the widely varied pathology of these tumours and illustrated his remarks from a large collection of material gathered during his career in teaching hospitals in Glasgow, as well as those in St. Bartholomew's Hospital. **Mr. R. S. Corbett** discussed the surgical problems involved in these tumours, and quoted cases encountered by himself and his surgical colleagues. **Dr. Kemp Harper** described the problems which arise in Diagnostic Radiology and illustrated the diverse manner in which radiological features were found and demonstrated. **Mr. I. G. Williams** drew on his experience in St. Bartholomew's Hospital and the Hospital for Sick Children, Great Ormond Street, to present the difficulties and results of Radiotherapy treatment of such tumours. The meeting was very well attended, and the presentation of each of the speakers' personal experiences in relation to these tumours, rather than a formal presentation, was much appreciated.

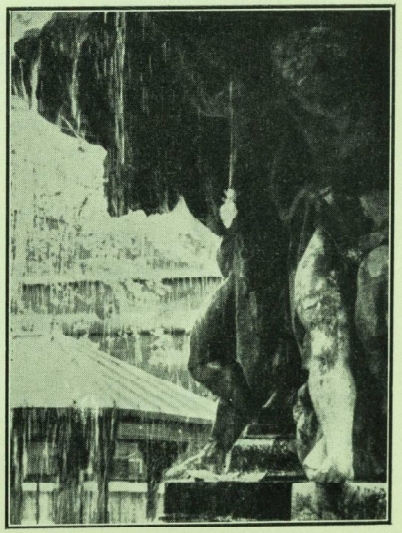
GORDON-WATSON MEMORIAL LECTURE

Mr. R. S. Corbett, M.Chir., F.R.C.S., gave the first Gordon-Watson Memorial Lecture —" A Pioneer in the Attack of Cancer "— on July 16th, in the Physiology Lecture Theatre at Charterhouse. Amongst the audience were members of the International Cancer Congress.

FACELIFT TO FOUNTAIN?

The already begrimed fountain is now threatened by evergrowing vegetation. Several public-spirited nurses have offered to give the stonework a " spring clean." Closer inspection reveals the possible need for structural repairs.

Nocturnal Cleaner or View Day Hoaxer ?



CHANGE OF PRINTERS

This edition of the *Journal* is the first to be completed by our new printers, Groves, Brodie & Co. Ltd., of Slough. We look forward to a long and successful association with this firm.

CALENDAR

August

Sat., 2nd.—Medical and Surgical Units on duty.
Mr. G. H. Ellis on duty.

Sat., 9th.—Dr. Geoffrey Bourne on duty.
Mr. J. B. Hume on duty.
Mr. F. T. Evans on duty.

Sat., 16th.—Dr. A. W. Spence on duty.
Mr. C. Naunton Morgan on duty.
Mr. R. A. Bowen on duty.

Sat., 23rd.—Dr. R. Bodley Scott on duty.
Mr. R. S. Corbett on duty.
Mr. R. W. Ballantine on duty.

Sat., 30th.—Dr. E. R. Cullinan on duty.
Mr. J. P. Hosford on duty.
Mr. C. Langton Hower on duty.

ANNOUNCEMENTS

Engagements

ANDREWS—SMITH.—The engagement is announced between Allon R. Andrews and Helen E. A. Smith.

HALL-SMITH—STODDART.—The engagement is announced between Dr. Michael Hall-Smith and Dr. Hilda Stoddart.

LANE—NEWMAN.—The engagement is announced between Donald J. Lane and Audrey M. Newman.

TABOR—WHITE.—The engagement is announced between Dr. Arthur S. Tabor and Dr. Shiona J. White.

Births

CARRICK.—On July 4th, to Muriel, wife of Dr. David Carrick, a daughter (Eugenie Sarah Anne).

DUFFY.—On May 23rd, to Juliet, wife of Dr. Thomas Duffy, a daughter (Nicola Mary), sister to Christopher.

SINGER.—On July 7th, to Mary, wife of Dr. Geoffrey Singer, a son (David Everett), a brother for Alison.

TIMMINS.—On June 28th, to Lorna, wife of Dr. W. L. Timmins, a daughter (Sarah Margaret), a sister for Louise.

Marriage

STEVENS—OWEN.—On June 23rd, Dr. John Henry Stevens to Noreen Catherine Owen.

Deaths

ATTERIDGE.—On June 8th, Wing-Commander Terence John Doyle Atteridge. Qualified 1921.

CRAWFORD.—On May 27th, Dr. Robert Crawford. Qualified 1907.

NOTICES

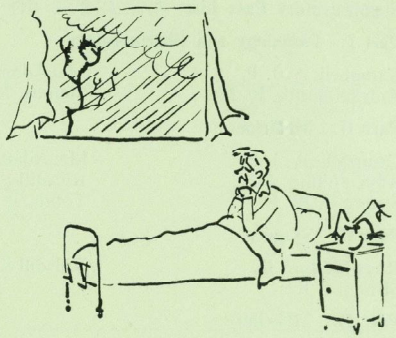
Changes of Address

DR. NOEL CHILTON, c/o World Health Organisation, Palais des Nations, Geneva, Switzerland.

DR. W. MCLAREN THOMSON, 268 Sandy Bay Road, Hobart, Tasmania, Australia.

Appointment

Professor K. J. Franklin has had the title of " Professor Emeritus of Physiology in the University of London " conferred upon him, in recognition and appreciation of his distinguished services to the University and to his subject.



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EXAMINATION SUCCESSES

UNIVERSITY OF OXFORD
SECOND B.M. EXAMINATION, TRINITY TERM, 1958

Pass

Woolrych, M. E.

Supplementary Pass List

General Pathology and Bacteriology

Fuge, C. A.

UNIVERSITY OF CAMBRIDGE
FINAL M.B. EXAMINATION, EASTER TERM, 1958

Pass

Ball, P. I.
Birkett, D. A.
Carr, C. J.
Davies, N.
Gibson, T. W.
Godrich, J. E.
Harcourt, R. B.
Hedley-Whyte, J.
Humphreys, Y. P.
Mitchell, R. J.
Parker, J. D. J.
Rice, J. C.
Richards, B.
Savage, D. C. L.
Stark, J. E.
Whitworth, A.

Supplementary Pass List

Part I. Pathology and Pharmacology

Campbell, A. J. P.
Ridsdill-Smith, R. M.
MacAdam, D. B.
Simons, R. M.
Rhys-Phillips, D.
Strong, J. R.

Part II. Medicine

Campbell, A. J. P.
Rhys-Phillips, D.
Strong, J. R.
MacAdam, D. M.
Ridsdill-Smith, R. M.
Tooth, J. S. H.
Matthews, T. S.
Roles, N. C.

Part II. Surgery

Rhys-Phillips. D.
Strong, J. R.
Ridsdill-Smith, R. M.
Simons, R. M.

Part II. Midwifery

Campbell, A. J. P.
Roles, N. C.
MacAdam, D. B.
Simons, R. M.
Matthews, T. S.

CONJOINT BOARD :—Final Examination, July, 1958

Pathology

Lewis, J. H.

Medicine

Savage, D. C. L.
Seeman, H. M. I.
Cawley, M. I. D.
Simons, R. M.
Simpson, R. I. D.
MacAdam, D. B.
Bannerman Lloyd F.

Surgery

Simpson, R. I. D.

Midwifery

Savage, D. C. L.
Seeman, H. M. I.
Matthews, T. S.
Simons, R. M.
Hedley-Whyte, J.
Pilkington, R.
MacAdam, D. B.
Ridsdill Smith, R. M.

The following have completed the examination for the Diplomas M.R.C.S., L.R.C.P. :—
Savage, D. C. L. MacAdam, D. B. Simpson, R. I. D.

UNIVERSITY OF LONDON

M.D. Examination, July, 1958

Bouton, M. J.

M.S. Examination, July, 1958

Griffiths, J. D.

Examination for the Academic Postgraduate Diploma in Public Health, June, 1958

Barwood, A. J. White, M. W. L.

ROYAL COLLEGE OF SURGEONS

Final F.R.C.S., May, 1958

Fuller, A. P.
Currie, J. C. M.
McKluskey, K. A.
Girling, J. A.
Rohan, R. F.
Ross, J. Graham

Primary F.R.C.S., June, 1958
Faculty of Anaesthetists

Bush, G. H.
Voysey, M. M.
Elliott, C. J. G.
Whittard, B. R.
Lodge, A. B.

THE HEALTH SERVICES OF VICTORIA AUSTRALIA

by **A. DOBBIN**

In order to understand the arrangements for health services in Victoria, it is necessary to remember that Australia is composed of six State Governments and a Federal Government. Victoria is in the south-east area of Australia, with a population of 2½ million.

The responsibility for health services in Victoria is divided between public bodies on the one hand, and private enterprise on the other. We shall deal with the activities of the public bodies first. These are :—

1. The Commonwealth Health Department, centred in Canberra.
2. The State Health Department.
3. The City or Shire Health Departments.

There is, of course, some overlapping of responsibilities.

The Commonwealth Health Department is financed from the Federal Budget. Its duties are limited to the following :—

1. Maintenance of supervision of immigrants to exclude the entry into Australia of tropical diseases, especially smallpox and psittacosis. Medical officers visit each ship and plane when it arrives and inspects the immigrants. Those who have contacted known cases of smallpox or other tropical diseases are quarantined in isolation stations situated near each port.
2. This Department is also responsible for supervising the immunisation of intending overseas travellers.
3. For the last four to five years the Commonwealth Health Department Pharmacy Section has been arranging the free distribution of life-saving drugs to those people whose doctors prescribe them.

No hospitals are run by the Commonwealth Government, but through the States it allocates money for the partial support of hospitals. This money is paid to the hospital by the local State Government, on the basis of a certain sum per day per occupied bed. As these sums of money are not equal to the cost, the patients are charged a fee as well, varying with their ability to pay. Even

thus, the cost of running the hospital is not met, and most hospitals in Victoria are making every effort to economise.

The Federal Government Health Scheme is a form of voluntary insurance against medical and hospital expenses. A citizen arranges for an insurance policy with an insurance company, and pays a regular weekly sum. When he, or a member of his family, have an illness, he pays the doctor and hospital out of his own pocket, obtains receipts, which are then submitted to the insurance company. After a period varying from two to nine months, the insurance company reimburses him with a proportion of the sum paid. Half of this reimbursement comes from the Federal Government.

For example :—John Smith is examined by a doctor at his surgery. Smith pays the doctor a fee of 17s. 6d., gets a receipt which he promptly sends to his insurance company. After a while he receives a cheque for 12s. reimbursement. Of this latter sum, the insurance company pays 6s., the other 6s. being paid by the Federal Government through the insurance company.

The State Government Health Department is responsible for providing hospital services for epidemic infections, tuberculosis and the mentally ill.

The only free ambulance service is that provided to convey children to the Infectious Diseases hospital.

A special hospitals commission handles the allocation of State funds for hospital subsidies, and has considerable influence in decisions of local communities concerning their hospital needs and management. The Hospitals Commission, however, does not manage any hospital directly. The management of Victoria's hospitals is in the hands of management committees, which are composed of representatives elected by Life Governors of the hospital. (A life governor is one who has contributed over a certain fixed minimum sum at one time, this minimum sum varying from one hospital to another, but it is usually a large sum.)

These Hospital Management Committees usually complain of financial difficulties. Recently these complaints have been louder and more emphatic. The business manager of the Royal Alfred Hospital, Melbourne, said at a public meeting recently, that his hospital (800 beds) was so short of money that it could continue its operations only by borrowing money from private trading banks, that he was constantly increasing the amount borrowed from them, and that there was a limit to the time that this policy could continue.

Other hospital managers have made similar statements in their annual reports.

The population of Victoria has increased rapidly in post-war years and, despite the building of some suburban and country hospitals, there is a grave shortage of hospital beds. Recently, the chairman of directors of the Royal Melbourne Hospital stated, regarding this shortage of beds, that " the hospital position is so bad that it cannot possibly be exaggerated."

Owing to shortage of money, the salaries of nurses are inadequate compared with salaries in industry, and this is considered widely to be one of the main reasons for the shortage of trained nurses. This shortage is so acute that several hospitals have wards unused because of their inability to staff them.

The disparity in comparative salaries is such that the Matron of Victoria's largest hospital is paid less than many cooks. As a result, there is also a grave shortage of applicants for vacancies as matrons or charge sisters and, occasionally, management committees have no choice but to appoint unsuitable persons to responsible positions.

The State Government maintains a number of services such as a Free Mass Chest X-ray Service. This is part of its campaign against T.B. The Government T.B. Bureau also employs doctors who act as consultants, and maintains an Out-Patient Department to which suspected cases of T.B. are sent by local doctors.

This T.B. Bureau also sends nurses and doctors to schools to do Mantoux skin tests on the pupils, X-rays positive reactors and to immunise negative reactors against T.B. by injecting B.C.G. Vaccine.

The State Epidemic Infectious Hospitals are adequate and well run, and enjoy a good

reputation. As mentioned before, there is an efficient ambulance service associated with these hospitals.

There are also a number of tuberculosis sanatoria run by the State Health Department. These are also well run, some of them have ex-patients' associations, who assist in running the sanatorium in which they have been patients. The ex-patients assist by attending to some needs of the patients, organise entertainments for them and supply tasty extras for their diet. They also supply reading material and visit the inmates from time to time.

The State Government has paid more attention recently to the problem of the treatment of Cancer. A new cancer clinic and hospital is now operating. There is also a good home nursing service, whose members visit cancer patients in their homes after their discharge from hospital where they have been treated, either surgically or radiologically, or both.

The State Health Department is also responsible for providing hospitals for the treatment and care of the mentally ill.

The standards in these hospitals, of which there are many, had not kept pace with the advances in Psychiatry until some senior staff changes were made recently. Now strenuous efforts are being made to improve the mental hospitals, both in accommodation, amenities, nursing services and therapeutic facilities. Much more remains to be done, however.

Among the State Health Department's interests is that of industrial medicine. In this section, a small group of doctors do good work in investigating working conditions, especially in noxious or dangerous trades. As a result of this work, the State Government, from time to time, issues enactments of laws which are added to the Health Act, concerning the proper safeguards necessary for the protection of workers.

The State Education Department employs a number of doctors, dentists and nurses who do regular examinations of schoolchildren, but there is a marked shortage of skilled personnel available.

The City Council of Melbourne maintains a Health Department employing a number of doctors and nurses whose duty is preventive work, such as immunising children of pre-school age against pertussis and diphtheria. This department also supervises the Infant Welfare section, which is staffed by specially trained nurses. The City Health Department also supervises a small number of creches and kindergartens in the city area.

Country town councils and rural area councils each have a Health Department which is staffed by a minimum of a Health Inspector (usually with some sanitary training) and a part-time Medical Officer, whose duties are limited in most cases to minor tasks, and the issuing of an annual report on the health of the local community.

This office of part-time Medical Officer of Health is very widespread, and what duties he performs are dependent on what knowledge he has of preventive medicine, and what time and energy he has after the exigencies of his private practice are fulfilled. Most councils instruct their Medical Officer to arrange the immunisation of local children at least against pertussis. He also, with the help of the Health Inspector, is responsible for the administration of the State Health Act in his own locality. He may also supervise the work of the local Infant Welfare Centre.

The General Health Services

Most of the medical attention in Victoria is provided by doctors, self-employed, working in their own homes in a locality. Some have offices in a central district and live in an outlying area. Most of these private doctors work long hours, or are available on call 24 hours a day for months at a time. This is an old tradition in Victoria.

When a private medical practitioner needs a holiday, he must employ a locum tenens who will do his work for the period of the holiday, which is usually two to three weeks. When a medical student qualifies, he generally takes employment as a resident medical officer in a General Hospital for one or two years. During this time he will work for six months in a medical ward. For the next six months he will work in a surgical ward. If he continues working in hospital, he may

either go on to an obstretic hospital or a children's hospital as a resident medical officer. He may, on the other hand, decide to specialise in some branch of medicine, and apply for a position as a senior resident medical officer or registrar, after which he will study intensively in order to sit for examination for a senior degree.

Most doctors, however, after working for one or two years in a hospital, will obtain a position as an assistant to an older general practitioner, and after a short period (one or two years), will become a partner to the older man, or will purchase the goodwill of an established medical practice in another district.

Specialists

Those doctors who decide to become specialists, after having obtained senior qualifications, must apply for a position as a junior consultant in a large teaching hospital.

Having obtained such a position, they work for at least one whole day per week in the hospital without remuneration. For an income they depend on the patients who are sent to them by general practitioners for a specialist opinion. Such patients are seen and examined by the young specialist in his office, which is usually centrally situated in the City of Melbourne. The majority of specialists will spend at least one year studying overseas, usually in London Hospitals. Thus we see that the senior staff of the general hospitals is composed of specialists who work one day a week each in the hospital without remuneration.

The Superintendent of the hospital, the senior anaesthetist, the senior pathologist, the bacteriologist and the biochemist on the other hand, are usually full time employees of the hospital, and are paid by the hospital.

There is no provision by the Government in Victoria for sick pay or retiring pensions for doctors. This is left to the medical people themselves, who must try to earn enough money to provide for their old age or for periods of inactivity due to ill-health.

Research

There is not much research activity in Victoria. The main hospitals publish few papers. A number of specialists will publish short papers on clinical material in the A.M.J., which they have gathered during their work.

There are some research activities in the Melbourne University, and also in the "Walter and Eliza Hall" Institute and the Baker Institute.

The Colleges of Physicians and Surgeons publish archives, as do also some other branches of medicine. In the whole of Australia, there are approximately eight medical journals, published by various bodies. Here are their names and source of publication :—

1. The Bulletin of the Post Graduate Committee in Medicine.
   Published by the University of Sydney, N.S.W.
2. The Australian and New Zealand Journal of Surgery.
   Published by the Royal Australian College of Surgery.
3. The Australasian Annals of Medicine.
   Published by the Royal Australian College of Physicians.
4. The Australian Medical Journal.
   Published by the Australian Medical Association.
5. The Australasian Journal of Experimental Biology and Medical Science.
   Published by the Librarian, University of Adelaide, S.A.
6. The Australian and New Zealand General Practitioner.
   Published by Butterworth & Co., 6-8 O'Connell Street, Sydney, N.S.W.
7. The Australian Journal of Dermatology.
8. The Transactions of the Ophthalmological Society of Australia.

Domestic Nursing Service

There is, in the inner suburbs of Melbourne, a nursing service known as the Melbourne District Nursing Service. On the request of a doctor, this group will send a nurse to look after a patient in his own home. The fee for this service varies with the ability of the patient to pay.

In the outer suburbs, there are a number of nurses, self-employed, who visit homes on the request of the patient or doctor. Some nurses are qualified in obstetrics and attend women during their home confinements which are sometimes not attended by a doctor.

Country Hospitals

In the large country towns, the hospitals are organised on the same basis as the main city hospitals. For the smaller country towns and rural areas, however, there is a different arrangement, known as the Bush Nursing and Hospital Service, which has been in existence for many years. (Note :— "Bush" is the Australian word for country areas. When someone says he is going "bush," he means he is going to the country.)

When the people of the newly settled areas want a hospital, they hold a public meeting to discuss the project, and ways and means to achieve it. The community then start to raise money by holding functions such as concerts, dances, parties, etc.

A house is then bought, or, if none is available or suitable, a building is erected to house the hospital, usually designed to accommodate anything from four to twelve patients.

Much of the work in building and painting the hospital is done in the spare time of the men of the community. During the preparatory period, the local committee, which was set up by the general meeting, writes to the Secretary of the Bush Nursing Hospital Service in Melbourne, informing him of the project and requesting guidance and technical assistance. This is always granted, but no financial assistance is given as a rule. The central body arranges for the purchase of equipment, beds, sterilisers, theatre table and light, linen, uniforms, etc., and the supply of nursing staff.

When the Bush Hospital is functioning, the local people help to maintain it by gifts of fruit, eggs, firewood and labour, etc. The labour is given in a special way ; e.g. working bees are arranged when some job needs doing, a number of people gather at the hospital and together they tackle jobs such as clearing and tidying the garden, chopping firewood, painting the wooden building or erecting an extension, etc.

Financially, the hospital is maintained through a Hospital Scheme. A local committee collects a sum of money, say sixpence a week from each family. In return for this weekly contribution, any member of the family may receive hospitalisation for a reduced fee. This Bush Hospital Scheme has been very successful, and there are few country towns without a hospital.

When the towns become larger, the nature of the hospital changes, and it is run more on the lines of the city hospitals.

Pharmacy Services

When a patient receives a prescription from his doctor, he takes it to the Pharmacist, who is usually a qualified person, self-employed, who has rented a shop in the main shopping area of the town or suburb. The pharmacist makes up the prescription and sells the medicine to the patient. There is usually more than one pharmacist in the same street, but they observe the usual shopping hours of 9 a.m. to 5.30 p.m. Some are resident in the premises behind the shop, and are able to give service after hours.

Friendly Societies

In Victoria there exist a number of organisations known as Friendly Societies. These are organisations, mainly of workers, which negotiate agreements between themselves and the local doctors about rates of payment, usually on the basis of an annual capitation fee. The societies also run pharmacies which dispense medical prescriptions for its members. Most members of the working and lower middle class in Victoria belong to one or another of such societies, of which there are about twenty-six in number.

Since the advent of the Government Health Scheme, mentioned above, the character of these societies has changed and, while they still run their pharmacies, the method of paying the doctor has changed, and the societies are now acting more as insurance companies, assisted by the Federal Government, in paying back portion of the fee paid by their members to the local doctors.

Pensioner Medical Services

People receiving pensions, because of inability to work due to chronic ill-health, men over the age of 65 and women over the

age of 60 years who are in receipt of the Old Age Pensions, are entitled to free medical attention and free medicaments. Doctors are paid for this attention on a fee for service basis, the fee being approximately two-thirds of the standard private fee. This scheme is financed by the Federal Government.

Repatriation Medical Services

Former members of the Australian armed services suffering from illnesses or disabilities accepted as being due to war service, are entitled to treatment for those conditions at the expense of the Repatriation Department of the Commonwealth Defence Ministry. Local medical officers are appointed from among the general practitioners in the area, and are paid for their services on a fee for service basis, at the rate of 75 per cent of the standard fees. The Repatriation Department also maintains its own specialist and diagnostic services, an Out-Patient Clinic and a hospital in each capital city. These hospitals are very well equipped and have ample beds.

Summary

While there are still many difficulties to be overcome, the health services of Victoria have functioned well to date. Its personnel, in the main, work conscientiously and well for long hours. As a result, the health of the people is good, the infant mortality rate is one of the lowest in the world, and the gross death rate is also one of the lowest in the world, being 9.44 per thousand people in 1953. For comparison, the death rate in that year in the U.S.A. was 9.3 per thousand, Great Britain 11.6 per thousand, Egypt 33 per thousand and the U.S.S.R. 8.9 per thousand.

LOCUMING IN AUSTRALIA

by **R. J. KNIGHT**

In January I was able to take some leave in Australia. I went to Melbourne, and found that I had much more time on my hands than I had expected. As the registration of doctors is conducted by the Medical Board of the State of Victoria, which meets on the second Tuesday of each month, I had to wait three weeks before I could be registered. When I had paid the fee of three guineas, and deposited a passport photograph of myself with the Secretary to the Board, I went to see the three medical agents and left my name with them. I learnt a lot about the prospects in Victoria from them, one of them was the best advertiser for Victoria that I have met. My visit lasted an hour and a quarter, and I hardly said a thing. In spite of the demand for locums, no jobs materialised, and I was resigned to settling in the anaesthetic department of the Royal Melbourne Hospital, which was a very interesting and instructive place, but which would not repair my finances, which were weakened as a result of flying from Singapore. One morning I was called to the telephone and asked if I would be willing to start a job that afternoon, as a doctor had just died and his wife wanted to keep the practice going.

The practice was in a large country town. The house and surgery were in the same building, and had been built within the last

nine years. Brick built, the house had two storeys, with the surgery in the usual bungalow style of the Australian house. I have not seen a better designed surgery, though I have read about them. This had been built for two doctors. It had one consulting room, with an examination room kept for X-ray, ultra-violet and infra-red ray work, leading off one side, and a treatment room, leading off on the other. The other consulting room had a treatment room attached. There was a large waiting room and an office, an X-ray darkroom, and a patients' lavatory. Carpets, with a good pile, were on the floors, except in the treatment rooms, which had linoleum. The building was light and airy, the rooms being high. It was a pleasure to work there and, except for the basins being a few inches too low for my lumbar comfort, I had few faults to find with the equipment. It was a very well equipped practice, and there was even the apparatus for tubal insufflation with CO_2.

As an introduction to general practice it would be hard to find a better. The news had got round that the doctor was dead, but it was also going round that there was a young English doctor looking after the practice. I was broken in gently, eight to fourteen patients a day, so I had plenty of time to examine and treat them, and have a bit of social chat. The patients were paying for a consultation in the surgery, so they were entitled to the more leisurely methods of private practice. As there is no other sort of practice in Australia, it is not often that the doctor can spend time on the frills. It was very interesting to me, brought up in the "No Payment" era, to see notes being pulled out of the hip pocket as we shook hands and I saw him to the door. Most of the patients were New Australians, European migrants, Italian or German for the most part. It would be a great advantage to the emigrating doctor to be able to speak Italian and German, as most of those who were displaced persons after the war, learnt to speak one or other of these languages. The New Australians are good patients at paying, very few wait for the bill to be sent, they seem to like to pay as they leave. In the days that I was there I saw two women who I am sure had thyrotoxicosis. To get the B.M.R. done at the local hospital was easy, but, as I was not going to be there long, I referred them to the local consulting physician, another G.P., who arranged for them to be admitted when it suited them. The X-ray plant was really a large portable, but it would take chests and was adaptable for screening. I doubted my ability to read accurately chest films, as I had only seen a dozen in the last two years, so the young man worried about his chest was referred to the local X-ray firm, two G.P.'s, for his X-ray. I did use the machine for the broken bones that came my way, a child with a partly slipped lower humeral epiphysis, which had been strapped a week before, and which I immobilised in plaster of paris, an eleven-year-old at school needs a solid protection, and an old lady with a Colles' fracture. I had to give an anaesthetic for tonsils, but that was beyond my surgical experience, so the practice had to be content with the fee for the anaesthetic and not for the operation. I only had to turn one patient away, an old man who wanted his hydrocoele tapped, and I had no wide bore needles. Naturally enough there were some pregnant women to be seen and advised. Luckily, none of them decided to go into labour while I was there. In a strange hospital in a strange town in a strange country would not have been the best way to catch up after a four year gap.

One side of the practice was a trial to me, the records. The doctor's memory must have been phenomenal. He kept a large desk diary with the names and addresses and notes of the patients he saw each day. As his handwriting was not easy to read, I was always in trouble, especially when the patient could not remember when they had last come, and I had to thumb back through several days. Though there were long periods without patients, I was never bored, as his professional library was excellent. In it I found Dr. S. Taylor's *Report on Good General Practice*. This excellent book, written for the English G.P., needs to be bent a bit for Australian conditions, where the practitioner does everything he feels he is able to cope with. As the locum, I officially filled the doctor's place in the local hospital, though I backed out from any surgery, and attended his private patients in the private wing. All the G.P.'s in the town were on the staff. When I felt that I was beginning to turn the tide and holding the practice together, the Navy called me back to Melbourne. It was a blow to leave such a pleasant practice, but the thought of

getting home soon, after two years out of England, was a great consolation.

But my journey did not go as smoothly as it might have done. The Royal Air Force Hastings that I was to fly back to England from Adelaide in, was four days late. I was getting a bit short of cash, staying in an hotel. So I went to the Medical Board of South Australia to see about registering. It is one of the snags of Australian travel, that you have to register in each State, there is no reciprocity. The secretary was charming, and suggested that I would be wise to find a job before I paid my guinea for a year's registration, and perhaps waste it. Once more, illness came to my rescue. I walked into an agent's office within half an hour of him being asked to provide a locum immediately for a doctor who had just had his second coronary at the age of 45. My previous job had been caused by the same disease, a third at the age of 55. So the diseases of doctors are the same on the two different sides of the world. I was registered that afternoon, having shown my original degrees to the President of the Medical Board.

This practice was suburban. The surgery was newly-built in a growing suburb. Laid out for one doctor, it had a consulting room, with an examination room leading off, which had a door into the waiting room and one into the large office, which held the X-ray machine and a couch. There was an X-ray darkroom, and also male and female lavatories, the former with a shower. The building was run by a secretary and a nurse. Here the tempo was different. The news had not got round, and so the patients turned up in their droves. One afternoon I saw fifty-five people in five hours. I found that there was quite definitely a falling off in my efficiency and politeness after the first three hours. What can be done about that, except to stagger the surgeries, I do not know, but it is a very big problem. The surgery that afternoon was from 2 to 5 p.m. officially, but the patients had been booked by appointment from 1.30, and I was doing very well to be finished by 6.30. I would never have managed without the efforts of the nurse and the secretary, both pretty girls in their early twenties, who stayed on late everyday. This practice had a fair proportion of old age pensioners. One of these had a "little stroke," which left him troubled in his speech for a day or so. Attending him, I learnt my way round the pensioner medical service. This is paid for by the Federal Government, and costs the pensioner nothing. To get his money, the doctor gets the pensioner or his relatives to sign a form when they visit the doctor, and a different form is used when the doctor visits them. Their prescriptions are written on a special form in duplicate. Practically everything is free to the pensioner, but the free list is restricted to medicaments which have a monograph in the B.P., the general free list and a special pensioners' free list. More than once I had to rewrite a prescription so that the pensioner would not have to pay. The repatriation patients, returned servicemen and some dependants, are another Federal supported group, who have special prescription forms, in triplicate. The main bulk of the population have to pay for their medicines, except for life-saving drugs, which are laid down in a Commonwealth publication, and range from Butazolidin to Penicillin. But, so far, Penicillin V has not got on the list.

In spite of seeing far too many people, many of whom should not have been wasting a doctor's time, I enjoyed this practice, too. My only night calls in a fortnight of locuming were on my last night in Australia. I went to bed at 11, up at 12.15 to stitch a hand cut at a party, and could I remember the name of the woman accompanying the patient, who had brought her child in for me to see that afternoon. No. Then up at 5 to see a woman with biliary colic. Then up at 6 to catch my aeroplane. Both the girls and I were sad to end our work together. I would have been quite delighted to stay for three months or more while the doctor was off work, in spite of the dry and baked appearance of the city. Australia in the summer is brown, not green. The grass only grows where it is watered. The back streets of that suburb, like many other streets in Australia, were only tarmac in the middle with grit and gravel at the edges. I have never been dirtier or dustier when doing a clean job. There were fewer troubles here with the records. Cards were used, but visits were not entered on the cards. Though it is at times difficult to keep enough time to write the notes when many people are waiting to be seen, it is well worth the trouble. The human memory is not as good as some people like us to believe, and the locum has no clues, anyway. I loathed having to start by asking for a long history when the patient came in, expecting an injection of Vitamin B complex. But just sticking a needle in is a duty which a nurse can do just as well as a doctor. However, all the injections had to be given by me, except for two patients who preferred to have the nurse stick the needle in them.

My advice to those thinking of going to Australia is to brush up their midder, E.N.T., appendix and suchlike surgery, find a nice large sum of capital, building is terribly expensive, and houses for rent are almost unobtainable, choose their State and write to a medical agent or to the local secretary of the B.M.A. I can only speak from experience of Victoria and South Australia. I have seen Perth and Sydney, both lovely cities, though I prefer Melbourne. But I have never seen any city which looks as lovely as Perth at first sight from the heights down river through trees framing the view of the Swan River, the riverside playing fields, and the buildings beyond. All the States accept English qualifications, and the only thing one has to do is register. There are plenty of locum jobs available, but they usually mean more moving than in England. The competition in the capital cities is strong, but that is where the money is made, in the industrial practices. The Australian is a city bird, the legend of the bronzed horseman always herding sheep or cattle is a hangover from the last century, as about three-quarters of the population live in the capital cities. There are few people who have a higher social standing than doctors, and there are few people who have such an assured future. How long this will last, I do not know. The Labour Party, which is not in power in the Commonwealth, though it is in power in most of the States, is pledged to bring in a Health Service. What form it will take is not known, but I hope that it will be based on a payment for service, and not on a capitation fee. The recent agitation in England for more money for the G.P. shows the weakness of the capitation fee system, though the other can be abused too.

AN INTERESTING SURGICAL CASE

by **M. J. L. P.**

It is lamentable that still in this present age useful lives are still lost owing to the limited means of treatment in the surgeon's hand to attack the increasing scourge of cancer. Inevitably there occurs such an occasion soon in any student's clinical career which imprints itself for ever in the impressionable mind so unused to the tragedy of death. The following history was one of this kind which, in spite of every effort on the part of the surgeon, the nurses, and of the patient, the disease ran its slow and remorseless course, until death came as a merciful escape.

Case History

Mrs. A. T., aged 58. Occupation, Housewife.

The patient was referred to Out-patients by her doctor, with the following letter :—

"She has an abdominal tumour in the lower abdomen. She is anaemic and has

been having injections of B 12. From what she says, she may have passed some blood per rectum and per bladder. No pain now, but has persistent diarrhoea."
She complained of feeling lifeless and short of breath. The onset of these symptoms being some two months before, since when her doctor had treated her with intra-muscular vitamin B and oral iron.

With this treatment the patient improved symptomatically, though she developed a change of bowel habit with 6-7 dark, ill-formed stools being passed each day. Two days prior to her attendance in the out-patient department, she had noticed that her urine was dark, an increased frequency of micturition. There had been a noticeable falling off in her appetite and a weight loss of about 14 lb. in three months. She had occasional griping pains in her lower abdomen which appeared to be unrelated to any intestinal upset or exacerbation of urinary symptoms. Her menopause had been some seven years earlier, with no subsequent blood loss or discharge. There was nothing relevant in the past history or the family history.

On Examination

There was some exophthalmos and definite clinical anaemia.

Eyes : nothing abnormal, except for a positive Von Graefe's sign and pale conjunctival membranes.
Neck : there was a smooth, diffuse, soft and symmetrical enlargement of the thyroid gland. There were, nevertheless, no signs suggestive of pressure on the trachea.
Chest : nothing abnormal was detected.
Abdomen : there was no tenderness, guarding or rigidity. A large, irregular and hard mass was palpable above the pubis arising from the pelvis and equal in size to a 16-week pregnancy. Rectal examination revealed no abnormality.
Limbs : there was a fine tremor of the hands.
Urine : was cloudy, though no abnormal constituents were found.
Pulse : was strong and regular at 80 per minute.

It was felt that both the history and examination justified a multiple diagnosis of :

1. Anaemia of unknown origin.
2. Primary Grave's Disease.
3. Fibromyomata of the uterus.

The patient was referred to the physicians for their opinion on her further management. They noted her weight to be 7 st. 5½ lb., and suggested that she should be admitted for investigation of her "anaemia, toxic goitre and abdominal neoplasm." This was the first occasion that the nature of the abdominal mass was thought to be malignant, although the general practitioner may have suspected this, in view of his guarded letter.

The patient was admitted to a medical ward. The history taken in the ward showed no further attacks of haematuria, but there was an increased diurnal frequency of micturition with occasional dysuria and also a story of palpitations with rare giddy spells since the onset of the condition.
Examination : she was a thin and pale lady, but with a great sense of humour.
Eyes : no exophthalmos. Von Graefe's sign negative. Dalrymple's sign present.
Neck : as before, though a soft bruit was now heard over the left lobe of the thyroid.
The physical signs in the abdomen were unchanged and, apart from a mild bilateral pes cavus, nothing more was noted.

The following investigations were performed :—

Hb.	38%
R.B.C. count	2,750,000 per c.mm.
P.C.V.	20%
MCHb.	20.1 micromicrograms
MCHC	28%
MCV	72.7 c.microns

Group O positive
B.M.R. was plus 34%
E.C.G. showed a sinus tachycardia within normal limits
Chest X-ray was normal
Stools were strongly positive for occult blood
Protein bound iodine 8.0 micrograms per 100 mls.

W.B.C. count	9,000 per c.mm.	
Neutrophils	5,760	64%
Eosinophils	270	2%
Basophils	90	1%
Lymphocytes	2,790	31%
Monocytes	90	1%

In view of the severe microcytic hypochromic anaemia, the patient was transfused with four pints of blood during the next week and the haemoglobin level was raised to 78%.

A sigmoidoscopic examination showed that the anal mucosa had collapsed and the rectal mucosa was normal up to 18 cms. At 18 cms. there was a friable mass which bled easily, and which was thought to be a carcinoma of the colon. Surgical advice was sought and the sigmoidoscopy repeated. A biopsy was taken which on section proved to have been of the normal bowel wall. A laparotomy was recommended. Two pints of blood were transfused into the patient in an attempt to improve her condition before operation and the patient's thyrotoxicosis was adequately controlled by 5 mgs. Carbimazole b.d.

A course of succinylsulphathiazole was initiated (4 grams, 6 hourly) as a pre-operative measure and an exploratory laparatomy and cystoscopy were performed. On opening the peritoneum there was a small quantity of pus free in the cavity with a large mass arising from the pelvis. This mass appeared to involve the colon, the uterus, the bladder and some small gut, all these structures being bound together by dense adhesions which may have been growth. The whole area was red and inflamed, and it was decided to relieve the partial obstruction with a transverse colostomy, in the hopes that this would lessen the pelvic inflammation. A transverse colostomy was therefore constructed and a drain left into the abdominal cavity through a stab incision. The cystoscopy revealed a possible recto-vesical fistula. The diagnosis was still in doubt following the operation, for the appearances of the mass were consistent with diverticulitis or a neoplastic mass, and the biopsy taken at the operation showed only non-specific changes of an inflammatory type with no evidence of neoplasia. The swab of the pus from the abdominal cavity produced only a scanty growth of coliform bacilli.

The post-operative progress of the patient was uneventful until six days later when the drain was removed and the stitch line examined. There was a tender indurated area below the stitch line that was thought to be a localising abscess, with profuse faecal-like discharge from the lower part of the wound. A swab was taken from the discharge, when cultured showed a proteus infection which cleared up without any chemotherapy after ten days.

After a further two weeks, a sigmoidoscopy, cystoscopy and defunctioning of the colostomy were performed. The sigmoidoscopy findings were as before, but this time the biopsy was successful, the pathologists reporting a poorly differentiated columnar cell adenocarcinoma which was probably a primary growth of the bowel. The cystoscopy confirmed the previous findings of a large fistula in the vault of the bladder, which both looked and felt neoplastic. The ureteric orifices were normal. Vaginal examination showed a mass mainly on the right side, there was one lymph node palpable in the posterior fornix, the uteris being anteverted and the cervix appearing normal. The colostomy was defunctioned, which was entirely successful, although faeces were passed quite normally per rectum for a time following this operation.

Two weeks later a pelvic exenteration and transplantation of one ureter was performed. A large mass of growth was found ulcerating into the bladder and involving the colon, uterus and small gut, so that the exact origin of the growth was in doubt. The mass was friable and extended to the pelvic walls. The lower end of the left ureter was embedded in the growth and the left kidney was hydronephrotic, both the right ureter and right kidney appeared normal. There was no evidence of metastases in the liver or in the peritoneum itself. The tumour was stripped from the pelvic walls and a few fleshy glands were found. The pelvis was dissected and the mass mobilised. The left ureter was ligated and divided high up. There was a complete pelvic clearance of bladder, uterus with ovaries and the upper portion of the vagina, the sigmoid colon and some small gut. The continuity of the gut was restored by a series of end-to-end anastomoses between the ends of the small gut and between the colon and rectum. The right ureter was transplanted into the colon about one inch above the recto-colic anastomosis. The old colostomy was left untouched and no attempt was made to cover the pelvis with peritoneum, since too much had been removed during the operation to make this possible.

During the operation, which lasted five

hours, the patient was transfused with five pints of blood and one of saline. On her return to the ward the patient was in a fair condition and had a blood pressure of 120/60. Later that day she appeared to be holding her own and the wet colostomy functioning well.

Pathologists's report on the specimen from the theatre : " there was a poorly differentiated adenocarcinoma (Grade III. Broder) of the rectal wall which had infiltrated into the adjacent structures. The uterus showed menopausal atrophy of the endometrium and myometrium."

Following the operation the blood urea rose to 88 mgs. per 100 mls., but the condition of the patient remained satisfactory until one week later, when she produced some blood-stained sputum which was found to contain a coagulase postive staphlococcus. This responded to treatment with chloramphenicol. The drains were shortened ten days after the operation, and the drip taken down : although the abdomen had burst partly open, the patient was eating and drinking well with a good action of her wet colostomy.

Three weeks post-operatively, she suddenly developed a pyrexia of 102° F., and the only abnormal physical sign was tenderness extending into the left loin and renal angle. There was no guarding or rigidity. Penicillin and streptomycin were prescribed. A swab taken from the vaginal remnant was overgrown with proteus. The pyrexia soon subsided but signs of consolidation, collapse and effusion were still evident at the left lung base. Aspiration of the chest was attempted and a small quantity of a blood-stained fluid was obtained. The discharge from the vagina improved.

The transverse colostomy was closed on February 3rd, 1957, and a sigmoidoscopic examination was performed which showed a satisfactory healing of the recto-colic anastomosis.

For two weeks following the closure of the colostomy there was a diffuse swelling on the right side which was taken to be an attack of sub-acute obstruction in view of the concomitant vomiting and failure of bowel action. This, however, improved. After this, the last incident in her stormy illness, the patient slowly recovered, and was discharged to a home for the chronic sick. Her condition on discharge was very weak and frail, though her morale was, as it always had been, enormously high ; there was no evidence of bony metastases, but she complained of a constant low back pain in spite of a negative radiological examination of her spine. She managed to control her urine satisfactorily with her rectal sphincter. Her thyrotoxicosis was still adequately controlled with carbimazole.

The patient died at the chronic sick hospital and the certified cause of death was carcinomatosis, but no post-mortem was performed.

Discussion

There was a triad of features which were obvious and yet were difficult to inter-relate, hence the differential diagnosis was both large and varied. This triad was : severe anaemia, loss of weight and the abdominal mass. Diverticulitis, neoplasm and degenerative fibromyomata were some of the possible diagnoses tentatively offered at different times during her treatment.

It was felt when the patient first attended out-patients that the loss of weight was due to her toxic goitre, that the anaemia was an enigma and the mass a fibroid.

The diagnosis of a uterine fibroid of such size in a post-menopausal woman with her symptoms is unusual, for they commonly occur earlier (35-40) and are, to some extent, hormone dependant tending to arrest at the menopause which is later than normal. The physical signs of a uterine fibroid are of a hard, smooth lobulated swelling rather than " a hard irregular swelling." Anaemia with loss of weight can be the cardinal presenting symptoms of a fibromyoma, but it never appears without severe menorrhagia.

Whilst she was in the care of the physicians a diagnosis of carcinoma of the bowel was made, but it was impossible to prove this by biopsy for some time. However, this is the classical diagnosis for a disease presenting with slowly progressive wasting, unresponsive anaemia when actively treated and an abdominal mass. This is supported by the change in bowel habit, which persisted after the oral iron was stopped.

A possible diagnosis of diverticulitis was considered after the laparotomy when pus was found in the peritoneal cavity and the fistula (recto-vesical) was discovered, for diverticulitis may present with a history of diarrhoea with the passage of mucous and blood with a tender mass in the left iliac fossa and fistula formation. The associated peri-diverticulitis forms dense adhesions and may produce an acute or sub-acute obstruction. On laparotomy there are often enlarged glands due to inflammation, which may confuse the issue further. However, some neoplastic disease of the bowel was the safest diagnosis since it concurred with all the features of the illness, and made some form of laparotomy inevitable.

The truly remarkable thing about the whole of this case was the enormous courage which the patient showed and managed to transmit to all concerned in her care. Without this factor, it is doubtful whether such a major operation would have been attempted on what was a hopeless case, but she refused to give up hope, and so all joined in her zest for life and struggled to prolong it.

Summary

A female patient of 58 years was operated on for carcinoma of the colon. The presenting symptoms were those of anaemia and loss of weight. The presenting signs were those of anaemia with a large abdominal tumour. A colostomy was first fashioned to alleviate the urinary infection from the recto-vesical fistula, and this was followed by a pelvic exenteration and transplantation of the right ureter into the colon.

The convalescence was stormy, with bouts of wound sepsis and also respiratory infection. The colostomy was eventually closed and the patient discharged. She died some three months after discharge.

ACKNOWLEDGEMENT

I should like to thank Mr. G. W. Taylor for his advise and helpful criticism.

THE OPSONIC INDEX

by **R. FOSTER MOORE**

Having recently been under the care of one of our Surgeons, to whom I have every reason for being profoundly grateful, as indeed I am, I fear lest it may seem churlish of me to utter even the faintest whisper of complaint, for I was subjected to every sort of investigation which seemed to promise any useful information—except one ; my Opsonic Index was not investigated !

I hesitated to speak to my surgeon direct, and so, behind his back so to speak, I approached his Senior Registrar as to the reason for the omission. He was quite polite about it, but admitted, to my surprise, that he hadn't a notion what the Opsonic Index was.

Later, I had a visit from a contemporary colleague, whom I told of my experience ; he murmured something about " abysmal ignorance " and " highly reprehensible,"

which fortified me in my feeling of duty to expose such ignorance in high places.

The Opsonic Index is ancillary to the curative vaccines, so that a short enquiry into the history of these becomes necessary, but I should say that this tale has neither the permission, nor necessarily the approval, of either Professor Garrod or Dr. Brewer.

The curative vaccines were introduced at the beginning of the century, and my first knowledge of them was acquired at a meeting of the Medico-Chirurgical Society, which Society was afterwards merged into The Royal Society of Medicine.

On this particular occasion a member reported six cases of varied ailments, all of which, he stated, were due to pyorrhoea ; they had been treated by vaccines prepared from the mouth which, surprisingly, as it seemed to me, were also administered by the mouth, and he claimed that all the cases were " favourably influenced by the exhibition of the vaccines " : Oh ! that dreadful cliché, a compound, as it is, of wishful thinking and wilful self-deception.

The vaccines were on their way, and what a vogue they were to become.

The Profession, naturally, was very ready for what might prove a successful line of treatment : patients were anxious to talk about and advertise the fact that they were under, what they took to be, a highly scientific form of treatment, and the drug houses rose to the occasion, and found it highly remunerative : all the omens were favourable.

The vaccines were supplied in alluring looking phials of various colours ; they were packed neatly, and were identified by a combination of figures and letters with a show of most meticulous accuracy, and, as treatment consisted of a course of injections, often followed by subsequent courses, ample time was provided for many patients to recover.

After the first impetus had a little subsided, it was discovered that the vaccines must be autogenous ; a definite advance ; the second stage was reached ; vaccines were in full flood.

As time went by, and lest interest in vaccines should flag, it was announced that it was essential that the dosage be accurately controlled, and to this end, the " Opsonic Index " was introduced.

The Opsonic Index, in short, was arrived at by treating the blood with a suspension of a culture of the causative organism and counting the average number of the organisms which were ingested by a stated number of the large mono-nuclear leucocytes : the third stage was arrived at, where the vaccines were autogenous and the dosage was accurately controlled ; it was felt that the treatment was now placed on a secure scientific basis, and so things continued. But again, in due course, it came to be realised that the results were not so good as could be desired, some further modification was called for, that in fact the vaccines should be sensitised ; and again an improvement in the results was claimed ; but again, when the treatment was all but moribund, it was put forward that detoxication was essential ; but it was too late, a definite recession had set in, this, the fifth modification, was in vain, the curative vaccines faded out, and with them, the Opsonic Index ; both are, I believe, defunct. I remind myself how often I had predicted that the time would come when they would have to be made on a Monday afternoon and stirred with a wooden spoon before they did good.

Of the Opsonic Index, the very name of which seems to be forgotten, I think we may adopt, what our own Betsy Prigg of St. Bartlemy's said of Mrs. Harris, to our purpose, and say, " We don't believe there's no sich an Index." Dr. Gee used to say, " Make haste to use your new remedies before they lose the power of working miracles." I wonder how many of the new remedies of these times will, in the course of a quarter of a century, have survived, and how many have been relegated to the limbo of forgotten miracle workers.

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SPORTS NEWS

VIEWPOINT

An apology is offered to readers of the *Journal* for the fact that the article on Bridge, printed in June, made rather confused reading. As they will have realised, this was due to the fact that two paragraphs intended to appear in separate journals were printed together.

Croquet, a rather more sedate pastime than the energetic ones usually associated with students, seems to be very popular at Charterhouse at present. Much hard practice is put in on most fine evenings by prospective winners of the Magnum of Champagne, offered by the Warden, for a doubles competition. The state of the lawn will, however, probably ensure some surprising results.

The Cricket Club appear to be doing well in the Inter-Hospitals competition again this year. They have so far reached the semi-final. Last year they reached the final, but were then unfortunately beaten by Guy's. It is hoped their run of success will continue.

SPORTS CALENDAR

August

Wed., 6th.—Golf *v* St. Mary's at Moor Park.

Sat. 9th.—Tennis *v* Rochampton, away

Sun. 17th.—Cricket *v* Bromley, away, start 2.30 p.m.

Wed., 20th.—Golf. Summer Meeting

Wed., 27th.—Golf *v* St. George's, at Dulwich

★ ★ ★

LAWN TENNIS CLUB

The results of the season have been most encouraging so far; out of seven matches played, only one has been lost. Unfortunately, this was the most important U.H. Cup match against Guy's. It is the third year running that we have met them in the first round, and they have won the competition for the past seven years! On an afternoon of threatening weather and strong wind, our first pair (Duff and Richards) excelled themselves by winning all three of their matches. The rest of the team was unable to follow the lead. The progress of the match was assisted by a spot-diagnosis of a Meibomian cyst in the eye of Devereux, their No. 1 player; but this was offset by Seaton's pyrexia!

Team :—**E. G. Cantrell, D. A. Richards, T. B. Duff, A. J. Gordon, A. T. Seaton, J. Pennington.**

The Cambridge tour was most enjoyable, but unfortunately spoilt by rain, which was responsible for cancelling the match against Emmanuel. This might have been a match to really test our gut, since they were the 1958 winners of the Senior League and the singles and doubles cuppers.

Rain did not stop play against Clare, whom we beat 7—2. Dr. C. S. Goodwin joined us for the match, but, unfortunately, the Clare team was somewhat depleted by Tripos. After a very cold shower, we all piled into a rather small car to take Richards to Addenbrookes to receive attention (he said for a boil on his leg!).

Team :—**E. G. Cantrell, D. A. Richards, T. B. Duff, C. S. Goodwin, A. J. Gordon, A. T. Seaton.**

Other 1st VI matches have been quite easy and undistinguished.

The 2nd VI have also had some good matches, and there are signs of promising talent that should be ready to distinguish itself in later years with more experience.

Results

1ST VI

		F	*A*
Guys (U.H. Cup)	L	2	—7
Clare College (Cambridge)	W	7	—2
St. Mary's Hospital	W	8½	—½
St. Thomas' Hospital	W	9	—0
St. George's Hospital	W	9	—0
2ND VI			
Middlesex Hospital	L	3	—6
London Hospital	W	6	—3
Charing Cross Hospital	W	6½	—2½

E. G. CANTRELL

★

RIFLE CLUB

N.R.A. United Hospitals' Cup Competition, July 11th.

One team of four competed for this cup, which has been held by Guy's for some years. Despite an exciting match, we failed to take it from them by a narrow margin, and were placed second.

The match was fired over 200, 500 and 600 yards in perfect weather, with a variable wind which became more difficult to judge later in the afternoon, and at the longer ranges. We were very grateful to Mr. E. J. Elgood for his aid as a wind coach, and only regret that we were unable to produce a standard of shooting comparable to that which he himself accomplished when at Barts. At the completion of firing at 200 yards we were five points down on Guy's, and this lead was increased at 500 yards to one of seven points. Victory was placed within our grasp at 600 yards, when Guy's dropped five points with a bullseye fired at the wrong target, but our own shooting proved erratic at this range, and we only held them to their seven point lead. F. A. Strang is to be complimented on his steady performance through the ranges, particularly as he has not fired on many previous occasions.

Scores

	Yards 200	500	600	*Agg.*
F. A. Strang	30	32	32	94
G. R. Hobday	31	31	31	93
R. P. Ellis	31	32	30	93
J. D. Hobday	30	33	27	90
			TOTAL	370

Guy's A, 377
London and Guy's B, 356
St. Mary's, 354

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ATHLETICS

The United Hospitals' Athletics Championships

These were held on Saturday, June 14th, at Motspur Park, the heats for certain events having been completed the previous Wednesday.

The most striking feature of this year's meeting, after mentioning that the weather was fine, which, needless to say, is not always the case, was the generally poor standard of performance, compared with recent years. In view of this, the marked absence of Bart's competitors was all the more unfortunate. Even allowing for a regression from our former greatness on the athletics field, we could easily, with a full team, have been placed in the first three. As it was, only four people from the hospital competed on the Saturday, and few more on the Wednesday. One gentleman put up the best performances in two events, as a non-competitor, having failed to appear for the qualifying rounds, and several others who might have done well were not present at all.

Of those from the hospital who did compete, all did well.

C. P. Roberts won the High Jump, and was third in the Steeplechase; J. Stephens was second in both the Shot and Hammer; C. Craggs was third in the Shot and sixth in the Hammer: and J. Sugden was third in the Pole Vault.

It was indeed a sad day for Bart's, which saw so few representatives of the hospital present for a meeting at which our past record is bettered by only one other hospital.

One point might be worth the attention of the committee of the club. At least one person was unable to compete, because he only distinguished himself at Sports Day the week before, by which time the entries had to be in. It may be advantageous to arrange Sports Day at such a time as to allow for such a contingency in future years.

LETTERS TO THE EDITOR

Sir,

The provocative Editorial in June's *Journal*, suggesting that the "masters" might be out of step with the "men," was refreshingly frank and sensible. Controversial subjects, especially those in connection with Authority, are rarely dealt with in the *Journal* and, today, when feelings against disciplinary anomalies run high, it is apt that the Editor of the *Journal* should use his column as the mouthpiece of opinion in the Hospital.

In this matter the *Journal* echoes current opinion—a welcome change from the reports of functions and sporting events which are, invariably, printed many months later.

I am, etc.,
R. BONNER-MORGAN.

Abernethian Room,
St. Bartholomew's Hospital.

Sir,

Is it really "increasingly obvious that the masters are becoming more and more out of touch with the views of the men" or, indeed, "that students' feelings are not respected" by the masters? This is certainly an inaccurate and unjustified generalisation

If this sad state of affairs were true, surely it would be as much a self-condemnation of ourselves, as a criticism of our masters. When a student feels strongly about anything, he will not hesitate to express his feelings. What is to prevent him from discussing his opinions with his master? Undoubtedly a wise man will respect those views *if* the views are wise also.

The sparsity of letters from Students in the *Journal* recently would indicate either a deep apathy amongst students over "important decisions which concern their future," or else—more likely—that they are fairly satisfied with the present status-quo. In either circumstance, "regular and uninhibited discussion between the Dean's staff and students" would be very pleasant, but might go no further in bridging a void which does not exist.

Yours, etc.,
PIERS RECONDON.

Abernethian Room,
St. Bartholomew's Hospital.

Sir,

Students do express themselves forcibly in the Abernethian Room, in the canteen and in the square, but not through letters in these columns, nor in direct representation to the staff.

EDITOR.

BOOKS REVIEWED

AT DOCTOR MAC'S: A DOCUMENTARY ENTERTAINMENT by Peter Quince. **Published by J. M. Dent, London.** 277 pp. Price 15/-.

Readers of *Left-handed Doctor* by this author will anticipate with pleasure the enjoyment of this new publication. The pen-name of its author conceals the identity of a well-known Bart's man, and it is obvious that the writer is more than vaguely acquainted with the setting of his latest book. Peter Quince was medical superintendent of a private sanatorium for over twenty years, and his superb craftsmanship enables him to present a remarkable pen picture of life in such an establishment. Readers feel that they are living with the inhabitants, sharing their problems and experiencing the strange atmosphere of life in a sanatorium.

Medical men, patients and the general public will enjoy this entertaining novel, which might favourably be compared with a documentary of the highest class. It instructs while it entertains, and deserves the same success as its predecessor.

PURBECK MARBLE. Illustrated by Grace Lodge. By Llewellyn Pridham. **Published by Hutchinson & Co.** 140 pp. Price 10/6d.

Several Bart's men have achieved distinction in subjects outside medicine, and Dr. Pridham's book for children of all ages adds to these contributions in the literary field. A Dorset man, the author applies his local knowledge of the quarries that produced the famous Purbeck marble for building some of Wren's London churches, to produce a fascinating story. The ingredients include two teenagers and their adventures with pirates and highwaymen in an endeavour to secure a contract to supply the marble for Sir Christopher Wren's buildings.

Attractively produced, this book is a welcome addition to the juvenile bookshelf, and the author is to be congratulated on achieving success in that most difficult task of writing for children.

Ann Thornton, aged twelve, writes: "*Purbeck Marble* is a very exciting novel for children of the ages from nine to fifteen, and even older. It is based on an historical setting, and for children who like a little about the sea, a little about horses, and a little of mystery and thrills, *Purbeck Marble* is the ideal book."

THE MEDICAL PRACTITIONERS' HANDBOOK. British Medical Association. **Published by B.M.A., London, 1958.** 285 pp. Price 12/6d. Members of B.M.A. 10/-. Final year students and graduates in first 3 months after qualifying 5/-.

The new edition of this useful reference book contains a wealth of information, much of which is difficult to trace elsewhere. Sections are devoted to Registration; National Health Service; Entry into Practice; Contracts and Agreements; Post-graduate Education; Individual Medical Defence, and other topics. Appendices provide details of appliances and chemical reagents; the duties of doctors under the Dangerous Drugs Acts; Industrial medical officers; and some useful addresses.

This is but a sample of the features rendering this *Handbook* a source of information that can be consulted to advantage by all medical men. Concise and authoritative, it is of particular interest to the newly qualified, but will be appreciated by all engaged in medical practice.

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EDITORIAL

'Holiday fever' has been endemic, for the last three months, amongst all sections of the Hospital Staff. Symptomatically this disease is more severe than 'Skiingitis' which affects annually a minority of people during the latter winter months. Long and humid hours have been brightened by the anticipation of pleasurable days spent in this, or some other country, and yet unclouded by the documentation so recently declared an essential prelude to the medical undergraduates' vacation.

With the completion of the holidays, many refreshed and active minds have begun to assess the opportunities presented by the future months. The Journal—which receives always its share of criticism—is itself taking stock of its literary assets and contemplating its future policy.

A Journal must be neither complacent nor conservative regarding the type, quality and quantity of its material. This Journal exists—it is hoped—to provide pleasurable and informative reading for its fifteen hundred or more subscribers. Potential authors are derived almost entirely from the ranks of our readers, yet the medical undergraduates, who constitute one of the largest sections, contribute the least. To improve upon its present standard and punctuality, the Journal requires a selection from larger quantities of literary material.

Recent allegations of student apathy are amply justified when applicable to the present undergraduate attitude towards the Journal. Although more student authors of the longer type of article are required, other equally important contributions are necessary. To instil more light relief and life into the Journal we urgently require more letters to the Editor, more quotes, candid cameramen, poets, cartoonists, artists, etc. Several sports clubs make little or no effort to report their activities. No publication can adequately report or advertise any event without the co-operation of all those concerned.

The Publications Committee is very grateful to all those people who conscientiously completed the Questionnaire. In this manner these people will have contributed to a future series of articles based upon the results of this survey. Perhaps these anonymous contributions will be augmented in the near future by more personal efforts.

All sections of readers must feel entitled to contribute to *their* Journal. With the reintroduction of a Nurses' Representative (Miss P. R. Skinner) we look forward to more contributions from the Nurses Home. Recent letters to national newspapers and advertisements in the *Nursing Times* and *Mirror* for Staff Nurse positions at Bart's may stimulate a literary response.

The Fountain will celebrate shortly its centenary. Although it is hoped to publish a short history of this structure, it is felt that this would do scant justice to so important a part of Bart's life. The Fountain has witnessed many amusing, romantic and tragic scenes. It is hoped that some of our older readers will share their anecdotes relating to the Fountain.