

## ST. BARTHOLOMEW'S HOSPITAL GOLFING SOCIETY

The Thirty-second Summer Meeting was held at Sunningdale Golf Club on 8th June, 1966.

Twenty-nine Members attended and we were fortunate in having a perfect day, and were able to play on the two courses. The competitions were held in the afternoon on the Old Course, under the Stapleford method of scoring.

**Gordon Watson Cup**

Winner:

N. W. Smyth—Handicap 20, Points 20.

Runner-up:

J. O. Robinson—Handicap 16, Points 35.

J. Wilson—Handicap 11, Points 35.

**Gillies Trophy**

Winner:

H. Bevan Jones—Handicap 6, Points 32.

**Corbett Cup**

Winner:

L. P. Garrod—Handicap 18, Points 34.

**Sealed Holes**

Winner:

B. C. Hale—Handicap 24, Points 10.

The Corbett Cup, which is awarded to the player with the maximum score and handicap over 18, was in fact won by N. W. Smyth, but, as it is a rule of the Society that no player may receive more than one award at a meeting, the prize was given to Professor Garrod, who had been the Runner-up at last year's meeting.

After tea, several members played informal foursomes whilst others drank and ate at the Wanshead Hotel.

The next Autumn Meeting will be held at Porters Park Golf Club on the 6th October, and it is hoped that as many members as possible will turn out on this afternoon.

J. O. Robinson (Secretary)

## TENNIS CLUB

Despite several cancellations, June has been a full month for the Tennis Club with the Cambridge tour, a further round of the Hospitals' Cup, the Singles Competition and a fair sprinkling of friendly matches.

We started off on June 1st with a close match against St. George's which we just won 5-4. On June 4th, the day after the Barbecue Ball the whole team were complaining of the effects of the previous night's revelries, but we managed to beat the Middlesex Hospital 9-0; this is either a compliment to our stamina or a reflection on the ability of our opponents. Warmed by this success we went off to play Charing Cross in the second round of the Hospitals' Cup, and this we won narrowly 5-4, to challenge St. Mary's for a place in the final.

Next day we left for the annual tour to Cambridge, with a team of Setchell, Ireland, Garrard, Ussher, Johnson and Wenger. May Week, glorious sunshine, punting, riverside drinking and some good tennis, could not fail to make the tour its usual success. We beat Caius 7-2, lost 7½-1½ to Pembroke and beat an under-strength Clare team.

When we played The London Hospital on June 15th we only fielded five players, but as half their team were anxious for a five o'clock finish, it mattered little and we just played some informal games. On June 22nd we played Wanstead Lakeside Club who proved far too strong for our team which was weakened by holidays. Although we lost 8½-½ Edelsten and Setchell being responsible for the fraction, it was a pleasure to play against such experienced players.

The Bart's Singles Competition was begun on June 25th, interrupted by rain and completed on the 29th. Disappointingly there were only nine entrants. Davies thoroughly upset the applearc by defeating the second seed Savage in three tense sets; he then went on to lose in the semi-final to Setchell 5-7, 0-6. New-comer Ussher, seeded number one, beat Garrard 6-2, 6-3 and then beat Ireland in the semi-final 6-2, 6-3. In a final of patchy tennis Ussher's athletic play was too much for Setchell, who went down 4-6, 5-7.

M. E. Setchell.

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## ON MEDICAL EDUCATION

Medical Education is on the move. While it used to be said that Britain has produced more reports and recommendations, and implemented less actual changes than any other country, it has been pointed out that this, latterly, is untrue. A glance at any of a number of medical publications shows how much this subject is in the air. This summer the Association for the Study of Medical Education (A.S.M.E.) has started the Journal of Medical Education, which will appear quarterly. Also published recently, was the Report on Medical Education by the Committee of the B.M.A. reporting to the Royal Commission on Medical Education. This has studied the whole field under the following sub-divisions: Education at school; student selection; undergraduate education; pre-registration education; vocational training for General Practice and the specialties; continuing Medical Education. In this, less was said about pre-registration education than might be expected, but it welcomed the diversity of programmes and suggested that the A.S.M.E. might make an objective study of the methods employed. An interesting suggestion was that the successful Newcastle scheme of allotting students in their final clinical year to rotating appointments of the super-numerary House-Officer type, should be copied elsewhere.

Students and the student press have, quite naturally, been vociferous in this field. This month the Journal adds its contribution, which includes a report on the Royal Free "Teach-In" on Medical Education—which represented an enterprise of the most commendable initiative. The summer edition of the British Medical Students' Journal is full of items on the subject. It includes an article on training for General Practice, and one entitled 'Medical Education—as I would like to see it', by R. F. M. Wood, which contains some striking and original ideas. The Lancet of 16th July, published another interesting article written by a student, R. F. Heller, entitled 'Director of Education'. This outlines a scheme intended to integrate and increase the efficiency of both teaching and learning procedures in the clinical years. By instituting the office which gives the title, it is hoped that heads of departments will be supervised in the type and quality of instruction given, thus reducing the variability in standard, and incoordination now encountered.

In the June Journal Mr. Ellison Nash gave insights into the complexities of medical administration, and the restrictions which beset the most progressively-minded in this work. It is easy for one not involved in the intricacies of administration to propound revolutionary views, and it is noteworthy that most schemes involve great increases in staff and money. It may seem a modest suggestion to draw attention to something which is widely practised throughout British Medical Schools, though not at Bart's. In this month's section on Medical Education are two items concerned with elective periods. From both points of view given—that of three Americans who studied here, and that of a Bart's student who did his Paediatrics in Canada—the value of the system is seen. On entering a little more deeply into matters, one discovers that Hospitals like Guy's, St. Mary's, U.C., and the Middlesex, make time for elective periods by having a more concentrated teaching course. This in itself is no bad thing. How often one feels that the leisurely programme, including the mornings of six months devoted to Out-Patient clinics, is too slow a pattern of formal teaching. Of course, this permits one to explore other paths at the same time, but nonetheless a reduction in the amorphous nature of the course and the inclusion of elective periods of study would be an innovation widely appreciated.

## LETTERS TO THE EDITOR

### ARMY EXERCISES

Sir,—Your note on Stallard's retirement tells us a lot about his wonderful achievements as a middle-distance runner but is incomplete, for it makes no mention of the fact that, when on active service in Egypt in 1939 or 1940, he RAN up the Great Pyramid. Try it for yourself, Mr. Editor, and see how you feel after the first step with two Arabs helping you. You should have written not "somewhat", but "completely" unorthodox Major, R.A.M.C.

Yours sincerely,

R. OGIER WARD,  
Cuckmere Cottage,  
Chyngton Lane,  
Seaford, Sussex.

18th July.

*In reply to Mr. Ward's Letter, I would like to say how right he is, for in July 1965, I did manage to struggle up the Great Pyramid. However, this was very far from being performed at the run, the whole hot and tiring journey up and down taking nearly 1½ hours.*  
Ed.

### MISS RUSSELL'S RETIREMENT

Sir,—It was with great interest that I read E.C.H.'s remarks regarding the retirement of Hilda Russell, and if I may be allowed, I would like to add my best wishes to those of others, for a long and healthy retirement.

I was employed as Theatre Technician to the Plastic Unit off Ward F.G.I., where Sister Russell was working, and was often called upon to act as liaison between the two. This led to my being found the odd nursing jobs, such as placing patients in saline baths, and helping out in general. Sister Russell was never one for idleness, and in consequence, a nice relationship was built over the last two years of my working in the Theatre.

In conclusion, may her retirement years be long, sunny and memorable.

Yours sincerely,

L. COATES,  
Hill End Hospital,  
St. Albans,  
Herts.

16th August.



View from the Great Pyramid

**Engagements**

ABELL—BATTLE.—The engagement is announced between Dr. Edward Abell and Miss Susanne R. Battle.

BARKER—WILLIAMS.—The engagement is announced between Michael J. M. Barker and Miss Lynne M. Williams.

CAGGS—HUDSON.—The engagement is announced between Dr. John Christopher Craggs and Miss Vanessa H. Hudson.

**Marriage**

GRAY—SCHULTZ.—On June 27, Dr. A. J. Gray to Miss Mary Veronica Schultz.

**Births**

FRANK.—On July 21, to Elizabeth (née Marr) and Dr. Alec Frank, a daughter (Susannah Louise), sister for James.

GREENWOOD.—On June 27, to Jennifer (née Gordon) and Dr. Raymond Greenwood, a son, brother for Sarah.

MARSH.—On June 29, to Jacky (née Brown) and Dr. Brian Marsh, a son (Adrian), brother for Carolyn.

SCOTT.—On June 27, to Judith (née Baker) and Dr. Michael Scott, a daughter, sister for Jonathan.

**Deaths**

GEORGE.—On June 9, William Frederick Thomas George, M.B., B.S., D.Obst., R.C.O.G., aged 59. Qualified 1931.

GILL.—On July 22, John Frederick Gill, F.R.C.S., aged 90. Qualified 1906.

GREGORY.—On July 14, Charles Hebden Gregory, M.A., M.D. (Cantab.), aged 87. Qualified 1902.

HIND.—On July 16, Harry Godfray Hind, L.M.S.S.A., aged 63. Qualified 1931.

HODSON.—On June 29, John Mark Hodson, M.A., M.B., B.Chir., aged 41. Qualified 1950.

JOHNSTONE.—On December 25, John Gordon Johnstone, M.A., D.M., D.P.H., D.T.M. & H., aged 72. Qualified 1921.

**Appointment**

Dr. W. Linford Rees, Lecturer in Mental Diseases has been appointed to a new Chair of Psychiatry at the Hospital.

**Changes of Address**

Mr. John Cambrook to Owlsbrook, New Pond Lane, Cross in Hand, Sussex. Telephone No.: OHE 25 2851.

Dr. Geoffrey Poole (Deputy M.O.H. Waltham Forest) to 12, Chiltern Way, Woodford Wells, Essex.

**Announcement**

The Thirtieth Dinner of the Tenth Decennial Club of St. Bartholmew's Hospital will be held on Thursday, November 10th, in the Great Hall at 7 for 7.30.

Dr. Norman Smith will be in the chair. Cost of the dinner, including aperitif, wines and port or brandy, and club subscription, £2 12s. 6d.

Will those wishing to attend please contact Dr. Geoffrey Bourne, 73 Harley Street, W.1.

**Errata**

We apologise that the photographs of Figs. 4 and 5 of *Orthopaedic Problems of Diffuse Malignant Disease*, by P. J. Stiles in the July Clinical Supplement appeared in the wrong order, and that in *Thirteen Years of Cancer Registration*, by R. M. Vick, the area of the South Western Regional Board should have read, 'covers Cornwall, Devonshire, Gloucestershire, Somerset and part of Wiltshire and the County Boroughs of Bath, Bristol, Exeter, Gloucester and Plymouth.'

**Retirement****Mr. E. Austin**

The Edwardian adage stated "Never get between a woman and a shop window, and a man and his motor car". Cars rather than shop windows have been the problem for Mr. "Bunny" Austin who now retires having spent much of his twenty years service at the Hospital in looking after the parking problem. Urbane, courteous and unflappable he was equally at ease in directing a scaffolding lorry through an XVIII century Gateway, or persuading the owner of a "two-stroke" to start up outside the walls.

A former patient of the Hospital, he would not allow his physical disability to interfere with his work.

Many still remember the cheerful and friendly way his wife conducted the distribution of mail within the Hospital, for many years, and will want to wish them happiness in their retirement.

J.G.

# The Treatment of Epistaxis

by R. F. McNab Jones

A great variety of treatments have been recommended for this common complaint. In the past reflex vasoconstriction was much in vogue. It was applied in many different ways from the traditional large iron key slipped down the back of the neck to the more drastic treatment recommended by William Buchan in 1769—"If the genitals be immersed for some time in cold water it will generally stop a bleeding of the nose: I have seldom known this to fail". This article is intended to give guidance in the light of the author's own experience, to the most practical methods of treating the condition.

**Stopping an acute epistaxis**

The presentation may be dramatic and confusing. The doctor is usually called to the patient's home at an inconvenient time and on arrival the sight of even fifty c.c.s. of blood distributed on multiple handkerchiefs is alarming and the attendant relatives are naturally anxious. The patient's systolic pressure reacts to these circumstances by rising sharply, increasing the bleeding and a physiological vicious circle is established. The doctor should appear completely confident of his ability to control both the epistaxis and the situation and this is not difficult if he has a *modus operandi* ready to put into practice. The room should be cleared of all but the calmest relative and a bowl and cool damp cloth obtained. The patient should then be seated in the upright position and leaning slightly forward so that his head is over the bowl. The end of the nose should then be firmly compressed between the thumb and fingers. The pressure should ideally be applied to the whole *alae* and the corresponding area of the septum. The commonest site of origin for an epistaxis is Little's area of the septum which is rich in anastomoses and liable to recurrent trauma.

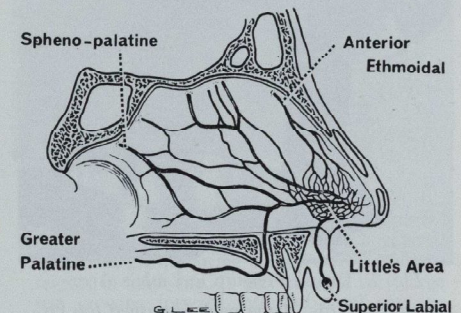


Fig. 1. Little's Area of the Septum

Pressure applied as described above if maintained for five minutes will effectively stop most bleeding from Little's area. Surprisingly it is often necessary to explain to the patient that they must breathe through the mouth during this manoeuvre.

Should this measure fail it usually means the bleeding is arising from somewhere other than Little's area. The walls of the nasal cavities being largely rigid, effective pressure can be exerted on the lining membrane by packing the lumen. The best packing material is ribbon gauze impregnated with B.I.P.P. (Bismuth Iodoform Paraffin Paste). The paraffin lubricates the gauze and minimises damage to the delicate ciliated respiratory epithelium, and the iodoform and bismuth keep the pack fresh so that it can be left in situ for up to a week without becoming offensive. After trying many substitutes I find B.I.P.P. is the only substance which will remain fresh under these circumstances. The gauze should be packed firmly into the anterior two-thirds of the nasal cavity building it up from below upwards and from



Fig. 2. Digital Pressure to Little's Area

behind forwards. If the pack is pushed too far back movements of the soft palate will cause it to fall into the oropharynx and the patient will reject it. An alternative method of applying pressure generally throughout most of the nasal cavity is to insert a balloon made from a finger stall and a rubber catheter.

This is inflated until pressure holds it in the nose. Such a balloon can be left in situ for up to forty-eight hours but "slow punctures" often

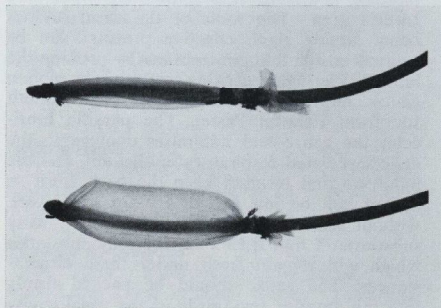


Fig. 3. Intra-nasal Balloon

lead to difficulties.

Some of these patients will require bed rest and sedation before the bleeding is properly controlled and in a few the blood loss is sufficient to warrant transfusion.

A very small percentage of patients continue to bleed in spite of the treatment just described and in these the bleeding may be coming from the posterior third of the nasal cavity or from the postnasal space. To apply pressure to these areas, a postnasal pack must be inserted and this can be done under general or local anaesthesia. The pack should be made of a wad of one or two inch B.I.P.P. gauze large enough to fill the postnasal space without depressing the soft palate more than necessary. The ends of the pack should be sewn together to stop them unravelling and one foot of quarter inch tape is then tied around the middle of the pack leaving two equal ends. A well lubricated rubber catheter must be passed down each nostril and its further end drawn out through the open mouth. After tying one tape to the oral end of each catheter the pack should be pulled into place by drawing on the nasal end of the catheters until the tapes have emerged from the nostrils and the pack is lodged in the postnasal space. If the tapes are now tied firmly together over a dental roll of compressed cotton wool placed over the columella the pack will be kept in place and cannot fall downwards into the oropharynx.

The side which is bleeding should now be packed from in front and in this case the pack can be pushed backwards to the fullest possible extent so that it impinges on the postnasal pack and pressure is exerted over the whole nasal

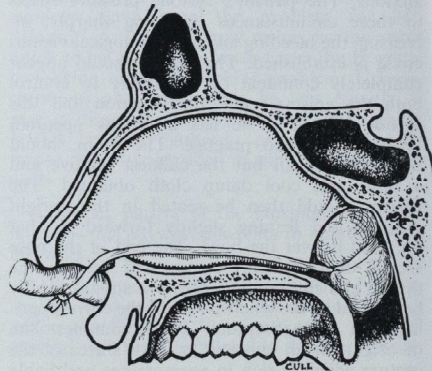


Fig. 4. Postnasal Pack in situ

cavity. A postnasal pack is extremely uncomfortable and the patient may require morphia in order to tolerate its presence. In addition, due to interference with the function of the Eustachian tube and the presence of infected blood clot in the postnasal space, otitis media may develop so that all these patients should have antibiotics in full dosage while the pack is in situ. No postnasal pack should be left in longer than forty-eight hours. To remove such a pack one should cut the tapes across the columella and grasp the pack through the open mouth with suitable angled forceps. Pack and tapes are then withdrawn from behind the soft palate.

Perhaps two or three times a year our department is faced with the problem of a patient whose epistaxis persists even after the insertion of a postnasal pack or one in whom the bleeding recurs as soon as the pack is removed. For such cases ligation of the external carotid, anterior ethmoidal or terminal part of the maxillary artery may be required.

#### Recurrent epistaxis

The patient is usually a young adult who suffers intermittent bleeding from one nostril. Examination often reveals a dilated blood vessel in Little's area and this is most easily seen after blanching the surrounding mucosa with a vasoconstricting solution such as an aqueous solution of cocaine hydrochloride ten per cent and ten per cent of one in a thousand solution of adrenaline hydrochloride. The cocaine produces sufficient surface anaesthesia to permit immediate sealing of the vessels with an electric cauter. Patients who frequently rub their nose should be warned that the habit may perpetuate the tendency to bleeding.

#### Uncontrollable epistaxis

This is fortunately a very rare occurrence and should arouse suspicions of a general bleeding tendency such as haemophilia or of one of two local conditions in the nose namely (1) Hereditary telangiectasia (2) Juvenile angiofibroma.

Bleeding and clotting times and a full blood count will reveal any general bleeding tendency or other contributory blood condition and appropriate general treatment must be given in addition to local measures in the nose.

Hereditary telangiectasia is an interesting and fortunately rare condition, behaving as a Mendelian dominant, in which there is capillary dystrophy. This causes telangiectatic areas

scattered throughout the head and neck and in the viscera. It is usually those in the nasal mucosa which bleed and they are very difficult to control often being the eventual cause of the patient's death.



Fig. 6. Juvenile Angiofibroma

Juvenile angiofibroma is another rare condition being a benign growth found almost exclusively in boys. It originates in the post-nasal space and grows during adolescence tending to regress in adult life. It may reach a very large size growing forward into the nasal cavities, sometimes widening the nasal bridge and causing a frog faced deformity and even extruding from the nares. Recurrent epistaxes are the principal symptom and nasal obstruction and infection also occur.

The epistaxes can be severe as the growth is extremely vascular consisting of blood vessels in a fairly loose fibrous stroma.

Ill advised attempts at biopsy result in torrential haemorrhage. These growths should be removed surgically via an incision which detaches the soft from the hard palate and gives a good view, through the open mouth, of the area from which the growth originates. Large quantities of cross matched blood should be ready to hand and an intravenous drip started before excision is attempted. Some authorities recommend preoperative radiotherapy to reduce the vascularity of the growth.

This is mainly a "do it yourself" article. It is my hope that, after absorbing the advice given above, the reader will only occasionally need the help of an E.N.T. surgeon in dealing with this emergency.

Fig. 6. Reproduced from Diseases of Nose & Throat, 6th edn. by Thomson & Negus, by permission of Baillière, Tindall & Cassell Ltd.

# When Water turns to Wine

## A Case of Acute Porphyria

by A. J. M. Brodribb

### Introduction

Acute intermittent porphyria is a relatively rare disease. However, it does present a diagnostic challenge and the following case illustrates how it may simulate other medical, surgical or psychiatric conditions. The illness of King George III, now thought to be a classical case of porphyria (*Macalpine and Hunter, 1966*), was never satisfactorily diagnosed by his physicians who included the Willis, Baillie, Heberden, Baker and Halford. Even John Hunter, surgeon extraordinary to the King, was perplexed.

### Case History

A clerk, aged 28 years, had always been in good health apart from diphtheria at 2 years and appendicectomy at 9 years. He became anorexic with acute colicky abdominal pain, nausea, vomiting and a localised tenderness in the right iliac fossa. An emergency laparotomy was performed 5 days after the onset of symptoms and his obstruction was relieved by clearing adhesions in the area of the previous appendicectomy. Postoperative recovery was uneventful until the fourth day when he started experiencing peculiar tingling, numbing sensations all over the body and cramping abdominal pain. No organic cause was found. He was reassured and discharged on the twelfth post-operative day.

While at home his arms and legs felt stiff and sore. The tingling pains and the 'numbing pain in the pit of the stomach' became worse. He felt weak, lethargic and uncomfortable. He would fall asleep readily at night but would then keep waking up fitfully and be unrefreshed in the morning.

He had been happily married for two years but relationships had been difficult for two months. He now reverted to a childhood habit of transvestitism. It was largely because of this that he was admitted, after four days at home, to Whipps Cross Hospital under a psychiatrist.

He was constipated but apart from this there were no other relevant symptoms and his

appetite was fair. Abdominal examination showed a minor degree of distension and generalised tenderness but no guarding or masses. Bowel sounds were hyperactive. His pulse rate was 110/min. and his blood pressure 140/100 mm. Hg. Otherwise physical examination was normal. Chest and abdominal X-rays were normal and his haemoglobin was 103 per cent.

Psychiatric examination showed that he was of fair intelligence with no past history of mental disease. He wet his bed till 18 years old and had had nine jobs since leaving school. He was anxious and depressed and tearful for most of the interview but could be distracted from his gloom. He felt very guilty about the transvestitism. No history of hallucinations, delusions or compulsions were elicited and memory, orientation, attention, concentration and insight were good. He was given a nightly hypnotic of 200 mg. butobarbitone and was observed.

For the first five days of his admission he became progressively more anxious and depressed. He moaned and complained both of the cramping pains and of the flitting cutaneous hyperaesthesia and paraesthesia. This was worst at night, when he became so restless, even after 5 mg. diazepam (Valium; Roche), that on the fourth night he was given 400 mg. amylobarbitone. At the same time he was started on 25 mg. amitriptyline t.d.s. He slept well that night. Repeated physical examination revealed no neurological abnormality or other probable cause for his complaints. The normally sympathetic houseman was irritated by his continual tale of woe and increasingly irrational and unco-operative behaviour.

On the fifth day he was much quieter and very depressed. He was weaker and felt dizzy. By the evening his voice was reduced to a whisper. He slept well with another 400 mg. amylobarbitone but awoke next morning (three weeks after the operation) looking very ill. He was very feeble, drowsy and distressed, speaking in a low whisper. His respiration was shallow and rapid. He was pale but not sweating

and had a thready pulse of 140/min. and blood pressure of 90/65 mm. Hg. His abdomen was flaccid and not distended but faeces could be felt filling the ascending and descending colon. Bowel sounds were active. His pupils responded normally to light and accommodation and there was no cranial nerve impairment apart from a general weakness. His limbs were weak and hypotonic especially distally, and with extensors of the upper limb more involved than the flexors. No tendon reflexes could be elicited, plantar reflexes were flexor. Sensation to routine testing was unimpaired. It was noticed that some urine had leaked on to his sheets and stained them pink. A diagnosis of acute porphyria was made.

On urine analysis uroporphyrin was identified spectroscopically, free porphyrins were detected with a fluorescence technique and porphobilinogen was identified with Ehrlich's reagent. The serum electrolytes were chloride 103mEq/l.; sodium 144mEq/l.; potassium 3.9mEq/l.; calcium 9.0mg./100 ml.

He was transferred to a special care unit and was given 1 g. potassium chloride in 2 litres of saline and 1 litre 5 per cent glucose intravenously over the next 24 hours. Being too weak to move in bed he was turned hourly and his limbs moved passively. He required catheterisation for painless retention for several days and his constipation responded to 'Dulcolax' suppositories. Prophylactic penicillin was given.

His speech improved within 24 hours and his pulse became stronger at a rate of 130/min., with a blood pressure of 130/70 mm. Hg. Swallowing became very difficult and when the drip was removed he was fed by nasogastric tube. The flaccid paralysis of distal muscles became complete, with considerable facial involvement of a lower neurone type with ptosis and a myasthenic facies. Ocular movements were unaffected. The trunk muscles were involved but never sufficiently to require artificial respiration. The abnormal sensations persisted and his muscles became very tender. He slept poorly, waking disorientated and confused, sometimes delirious. Chlorpromazine relieved this but tended to cause hypotension. His anxiety and depression were severe. He had cutaneous sensory hallucinations and illusions, particularly of specific objects touching him. Whenever his limbs had not been moved for a while he began to imagine them floating around. Movements restored the position sense again. His urine now became the classical 'port wine' colour on standing.

After a week in this state there was some improvement. Swallowing was better and voluntary movements of the left leg were possible. His depression improved but he remained anxious. Muscle tenderness also decreased though fasciculation became more noticeable.

At the time of writing, four months later, he can walk but still has considerable muscle weakness and wasting especially of the upper limbs. Small muscles of the hand are most affected. Bowel habit has not returned to normal, constipation occasionally being replaced by diarrhoea.

There was no past history of exposure to lead or sulphonamides, of previous milder episodes or of passing red urine. He had never been unduly photosensitive. There was no family history of porphyria, though his mother often suffered from ill health. Investigation of his family has revealed no further cases.

### Discussion

The clinical features of acute porphyria were reviewed by *Goldberg and Rimington (1962)*. There is evidence that the condition is transmitted as a Mendelian dominant and is associated with an enzyme deficiency in porphyrin synthesis. Symptoms usually occur in the third decade.

The pathological changes in the nervous system in fatal cases include degeneration of anterior horn cells, sometimes of the posterior horn cells, patchy demyelination of peripheral nerves and oedema and glial changes in the brain. Attacks are often precipitated by barbiturates, sulphonilamine or 'Sedormid', and occasionally by alcohol. These may act by impairing acetylation (*De Matteis and Rimington, 1962*).

The initial symptoms are usually colicky abdominal pain, vomiting and constipation, followed by muscle pain, tachycardia and sweating. Restless insomnia is a frequent complaint. Psychological disturbance can include emotional instability, confusion, hallucinations, delirium or frank psychosis. Severe involvement of the nervous system results in extensive paralysis, dysphagia, aphonia and epileptic fits. The paralysis usually includes bulbar muscles and is often asymmetrical and more proximal than distal, the appearance of a neuromyelitis rather than a peripheral neuritis. Respiratory failure is a serious risk. Hyperaesthesia and paraesthesia may occur but sensation is otherwise unimpaired. Cutaneous manifestations are seen in some cases (South African) but not in others (Swedish type).

The differential diagnosis must include diphtheria, poliomyelitis, acute infective polyneuritis, botulism and lead poisoning. The last mentioned may simulate the condition closely, with porphyrins detectable in the urine.

The presence of colourless porphobilinogen is considered pathognomic of acute porphyria. It is detected with Ehrlich's reagent and distinguished from urobilinogen by the magenta colour being in the aqueous fraction and absent from the chloroform fraction. The red colour of the urine on standing is due to the conversion of porphobilinogen to free porphyrins.

No effective specific treatment is known. Phenothiazines have proved more useful than any previous agent or method (Watson, 1963). The mortality rate is given as approximately 25 per cent in the first attack for the Swedish type. Recovery after the attack may be rapid but often is not complete.

This case shows many of the typical features. The attack was probably precipitated by thiopentone induction for the laparotomy and aggravated by the large quantities of barbiturates given for insomnia after his second admission (a total of 1.6 g.). The paralysis was of rather peripheral distribution. Hypotension is unusual, the blood pressure being commonly

raised. Urinary colour changes are usually maximal before the onset of paralysis. It is impossible to know how significant either unstable character traits or the history of two months deterioration in stability are in this case. Psychic abnormalities can precede the acute attacks by many years and some disturbance ranging from emotional instability to gross psychosis is almost invariable.

#### Summary

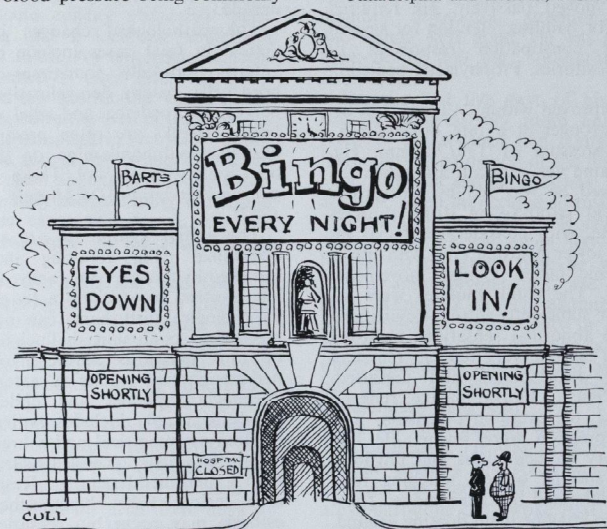
A case of acute porphyria is described with both psychiatric and neurological involvement. The clinical features of the acute attack are discussed.

#### Acknowledgments

I would like to thank Dr. Eric Smith for permission to describe this case and Dr. P. Turner for helpful criticism.

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"I BOUGHT THE WHOLE PLACE DIRT CHEAP, JUST AFTER WILSON PUT THE FREEZE ON DOCTORS' SALARIES"

## Intermittent Positive Pressure Nebulization

### A Review of Two Years' Experience in St. Bartholomew's Hospital

by D. W. Bethune

Intermittent positive pressure nebulization therapy involves the intermittent use of a ventilator to deliver nebulized inhalational therapy as part of the treatment for obstructive airway disease. The title given to this therapy in the U.S.A. has been Intermittent Positive Pressure Breathing (I.P.P.B.) therapy.<sup>1</sup> The objection, in this country, to the use of the term I.P.P.B. to describe the therapy is that "intermittent positive pressure breathing therapy" is normally understood to refer to all forms of ventilator therapy where a positive pressure is applied to the airways. A more suitable name would be "intermittent positive pressure nebulization"—I.P.P.N.

#### Spontaneously Inspired Aerosols

Spontaneously inspired aerosols carrying adrenaline were first used in 1919 in Germany.<sup>2</sup> Developments in aerosol therapy included portable hand bulb nebulizers and nebulizers for ward use driven by cylinder pressure.<sup>3</sup> Nebulization therapy was initially used with bronchodilators alone but, when antibiotics and corticoids were introduced, they were also administered in this way. Antibiotic nebulization therapy has become less important since the introduction of the broad spectrum antibiotics.<sup>4</sup> Aerosol therapy has also proved useful in aiding expectoration using 1-2 per cent saline and a mucolytic, and as an aid to diagnosis where strongly hypertonic saline can be used to cause an outpouring of secretions to facilitate culture for the tubercle bacillus and cytology for carcinomas of the lung.

#### Intermittent Positive Pressure Therapy

The first description of the clinical use of a mechanical device for positive pressure breathing therapy appeared in the Presbyterian Hospital reports in 1896.<sup>5</sup> Humidification, by instilling water into the "endotracheal tube",

is mentioned in one case report. In this type of therapy the adverse circulatory changes which may occur when a positive pressure is applied to the airway were recognised in early reports<sup>6</sup> as having a relationship to hypovolaemia.

The combination of positive pressure respirators and nebulization therapy was started in America in 1948.<sup>1</sup> The technique has been publicised in the U.S.A.<sup>7</sup> as a means of long term treatment for patients with obstructive airway disease. In St. Bartholomew's Hospital we have not been concerned with the long term or outpatient use of I.P.P.N. therapy but have employed it in the treatment of inpatient with obstructive airway disease during acute exacerbations and to cover similar patients during the pre- and post-operative period. It has been of value in treating fungal infections of the lung with nystatin<sup>8, 9</sup> and pyocyanous infections with polymyxin.

The patients with obstructive airway disease may have one or all of a triad of reversible features, viz., inflammation of mucous membranes, bronchospasm and excess bronchial secretions.

The advantages claimed by others for I.P.P.N.<sup>10, 11</sup> in the treatment of these patients are that it gives a fine control of the inspiratory flow rate which leads to better expansion of the lung facilitating an increase of tidal volume and deeper penetration of the nebulized medication into the lungs. A greater volume of gases is then available to assist in the expulsion of the secretions. We have found that there are additional advantages: the technique has proved of assistance to the physiotherapist in re-educating the patient's breathing habits, there is psychological benefit to the patient because it is a "new treatment", and finally I.P.P.N. may serve to focus the attention of the ward staff both medical and nursing on the respiratory problems of the patient.

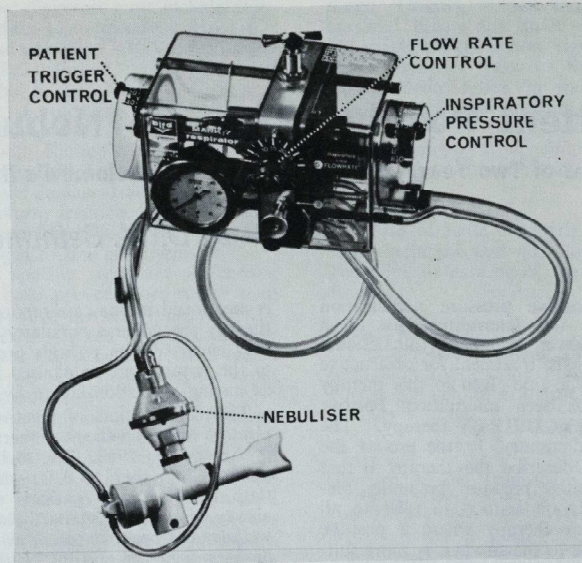


Fig. 1. Bird Mark 7 Respirator

#### Apparatus

We routinely use the Bird Mark 7 ventilator (Fig. 1). This has the following desirable features:

1. Patient—triggered for use on conscious patients.
2. Variable inspiratory flow rate.
3. Variable inspiratory pressure.
4. Nebulizer capable of delivering particles in the 2-4 micron range.

The nebulizer must always be working correctly and contain sufficient fluid.

#### Drugs

Drugs used in the nebulizer are either suspended or dissolved in normal saline.

**Bronchodilators:** Isoprenaline 1: 10,000.

Adrenaline 1: 1,000.

**Antibiotics:** Penicillin and streptomycin  
Nystatin for fungal infections  
Polymixin for pyocyanous infections

**Mucolytics:** Hypertonic saline.  
Ethyl alcohol  
Ascoxal

The dispensary supplies the correct dilution of most drugs in normal saline ready for use.

#### Administration

Following suitable instruction most patients can manage their own treatment with minimal supervision. Treatments are normally given 3-4 times a day and last 10-15 minutes. The ward physiotherapists are usually present for two of the treatments each day. The nursing staff dispense the solution required by the patient. The Resuscitation Registrar is available to assist with the therapy and to give instruction to interested members of the Junior staff; he is responsible for supervising the sterilisation of the apparatus after use.

#### Results

From the record of the Resuscitation Registrars' activities during the last two years the cases in table I have been collected.

#### Case Histories

Mr. H., aged 46, was admitted with a five week history of breathlessness on exertion and a productive cough. He had no previous history of chest illness of any sort. Following investigation a diagnosis of pulmonary aspergillosis was confirmed and he was treated with 4 hourly I.P.P.N. with nystatin 400,000 units

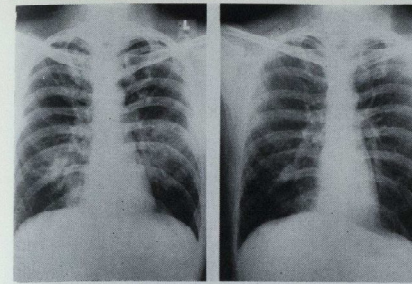


Fig. 2a and b. X-Rays of Case 1

for each treatment. Within 24 hours he was apyrexial and after 4 days his breathlessness improved. The X-ray changes can be seen in Fig. 2, film 2a being taken prior to I.P.P.N. and film 2b after 6 days I.P.P.N. He had a total of 2 week's I.P.P.N. by which time he was symptom-free. He was then discharged to take no drugs and has remained well over the last 18 months. This case has been reported by Dr. Stark<sup>8</sup>.

Mr. B. (case 2), aged 58, was admitted with a Pott's fracture and chest injuries following a road traffic accident. A chest X-ray taken the day after admission (Fig. 3a) shows the fracture of the left fifth and sixth ribs and clouding in the right lower zone. He was having considerable trouble with sputum retention and following general anaesthesia for reduction of his Pott's fracture a Lee epidural catheter was

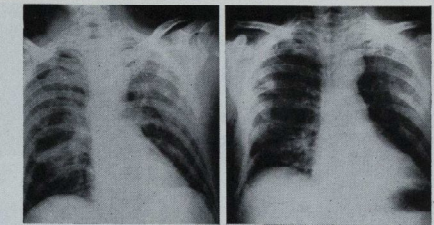


Fig. 3a and b. X-Rays of Case 2

inserted with a Cole syringe set attached to provide analgesia over the area of his fractured ribs. He was given I.P.P.N. and film B shows his chest X-ray two days later. It is interesting to note that the pneumothorax on the right side has improved during this time on I.P.P.N.

Mr. F. (case 3), aged 73, was admitted with an abdominal aortic aneurysm with a view to surgical correction. He was known to be a chronic bronchitic; a forced expirogram was taken on the day of admission (tracing a, Fig. 4) and the MRC questionnaire was completed. He was assessed as a group 2 chronic bronchitic. He was not in an acute exacerbation at the time but seven days of I.P.P.N. produced subjective improvement and the expirogram is shown in tracing b on Fig. 4.

He was seen by the cardiologists who considered that his myocardial ischaemia provided a contraindication to major surgery and he was consequently discharged with an aerosol to use at home.

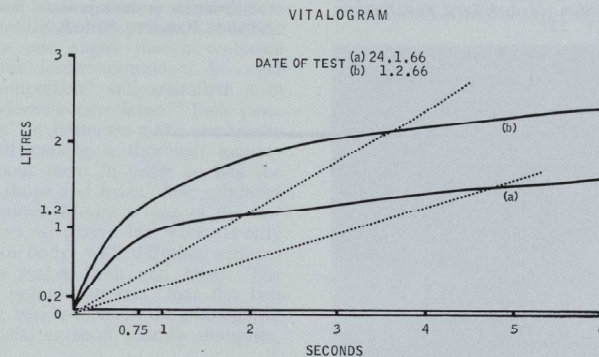


Fig. 4. Vitalograph tracing from Case 3  
Trace (a) on admission Trace (b) following 7 days I.P.P.N.

TABLE 1

Number of Cases April 1964 — March 1965	...	...	...	...	...	23
Number of Cases April 1965 — March 1966	...	...	...	...	...	51
Total Number of Cases	...	...	...	...	...	74

Number of cases receiving I.P.P.N. during the period covered by the resuscitation records in St. Bartholomew's Hospital.

#### Summary

The history indications and technique of Intermittent Positive Pressure Nebulization therapy have been outlined. Three illustrative case histories have been presented.

#### Acknowledgements

I would like to express my thanks to Dr. N. C. Oswald, Mr. J. N. Aston and Professor G. W. Taylor for permission to quote the case

histories; to Dr. J. Edmonds-Seal and Dr. R. W. Gabriel for help in cases 2 and 3; to Dr. T. B. Boulton for encouragement and help in preparing this paper; to Miss Wareham and the physiotherapists for invaluable assistance in the administration and running of this I.P.P.N. service; to Miss J. Goodwin for secretarial assistance; and to the Joint Research Board for a grant for the Vitalograph; to Goddard C.P.I. for the loan of 3 ventilators during the latter period of this trial.

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Henry Moore: *Two Piece Reclining Figure*

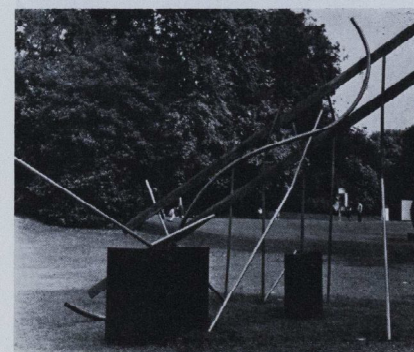
This summer has seen an open-air exhibition under the trees of Battersea Park. It includes works of many of the most important sculptors working in Britain today.

To begin at the beginning, there is Henry Moore. At 68 he is still very important as father and sheet anchor to present developments and trends. It was he who helped to break away from the academicism and traditions which had kept sculptors busy making marble nymphs for country mansions, tombstones and memorials to heroes and statesmen. He realised that as sculpture is three-dimensional it need not necessarily present a complete "picture" from one angle; that a sculpture should draw the looker around it in order that he can comprehend and assimilate it in its entirety. Moore's two large "Two piece reclining figures" at Battersea make one realise the necessity of making a thorough journey around and about them in order to feel the whole of their shape and mass, their subtleties of line and texture. Moore is one of the few modern sculptors to derive his work directly from the human body; with differing surfaces and shapes he makes flesh and bone. The figures are so organic, in fact, that the two people standing beside them in the photograph appear as artificial as shop window dummies, by comparison.

The hole in sculpture is a device used often by Moore and in this exhibition it can be seen

## modern sculpture in Battersea

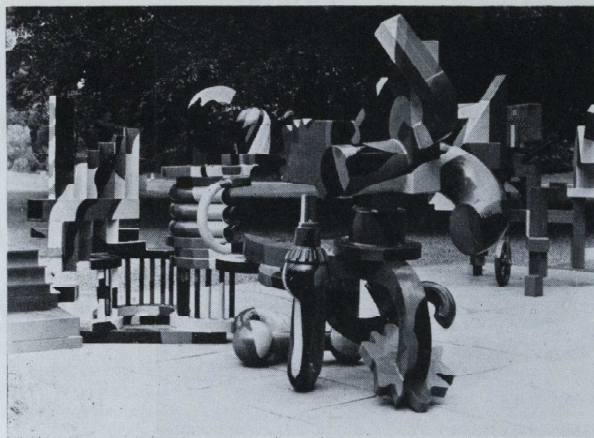
by Gill Nickell



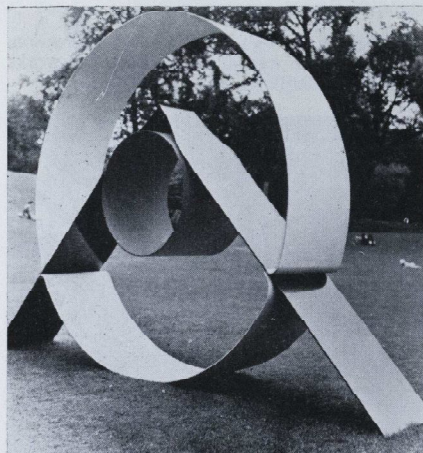
Antony Caro

Month of May



Eduardo Paolozzi: *Hamlet in the Japanese Manner*

Paolozzi makes landscapes of machine-like pieces, painted in arbitrary patches, like wartime camouflage. They are environments or descriptions of small worlds which might so easily be a playground of excitement, but seem to carry a threat of the deceptions and machinations of a big city (or life?).

David Annesley: *Big Ring*

Antony Caro makes less earthly statements; his arrangements of brightly painted girders, tubes and sheet steel defeat any attempt to order them into a tactile or definable shape or into any literary analogies; and yet they are never arbitrary. The pieces are fresh and poised as if they might take flight and, in the case of "Month of May" one feels with it in such a way as to be clear-headed and civilised in the best sense of the word. There is a group of young sculptors who might almost be said to form a school or movement. Without exception they work in the simplest of shapes usually cut out of sheet steel and always painted in three or less different colours. Their aim is towards a purity of shape which excludes connotation; they are discovering new harmonies and new approaches to aesthetics.

Phillip King's "Slant" is a beautifully simple idea and the overlapping rose-red boards have a lovely swaying movement. King is very keen to move away from European influences in art and speaks of "non-European art" which makes one feel he might do better to call it "universal", for any European will enjoy such a free sculpture as King's is, within the context of his European culture, as might a Chinaman viewing it with thousands of years of porcelain and stone camels behind him. For today, with so much insistence on the individual, aesthetics have become more and more a matter of personal choice and one must almost instinctively

judge the integrity of the artist. This state of affairs, although it is ideal in one way, brings about the unfortunate position where foolish people accept anything rather than be un-with-it.

There are several sculptors, who, like the Op artists make statements about empirical facts of vision and the physical world. Tim Scott's "—for cello" shows how a shape can take the form of line, a surface and mass but it has no beauty or grace in itself. David Hall makes something like a cardboard box with the perspective gone wrong and it is an intriguing thing but it is the inspiration behind both these pieces that seems to be their limitation.

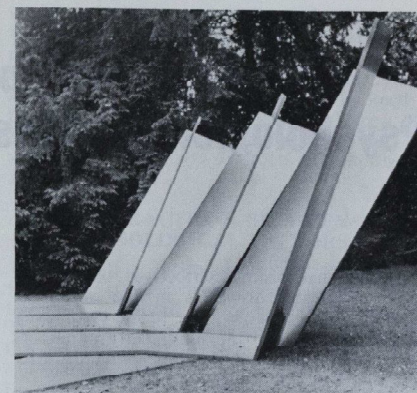
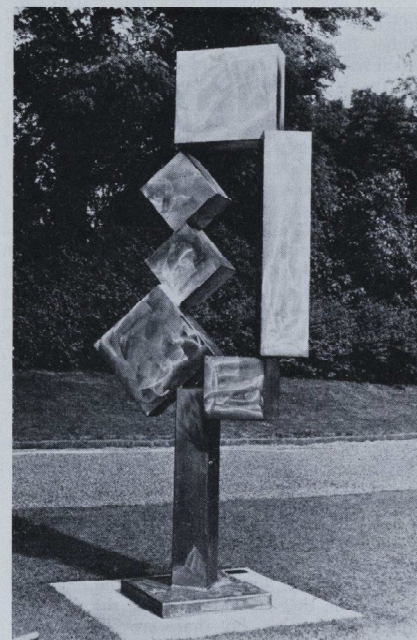
David Annesley's "Big Ring" is beautifully conceived and does indeed have a kind of purity which is not dependent on its cool white green and blue colouring. The breaks in the hoop where the angle enters and leaves it give a subtle difference to the way one reads the whole.

William Turnbull and his wife Kim Lim make horizontal sculptures. Hers is very Eastern, like a subject for meditation but is almost too simple. His are better, and the combined movements of "3/4/5" are exciting and vivid.

Although there has been a general trend towards total abstraction for several years in England there is still a tradition of die-hard academics. Most of them are no longer young and their work is looking dated—which is the worst condemnation; for fashion should not pervade good work.

These sculptors use a literal human situation upon which to extemporise with form as does Bernard Meadows with his mother and child. He derives many of his forms from Brancusi but the greatness is missing because he has left no mystery and tried to play God by saying it all. It is all too pat for he has left no surface or mass that is not almost geometrically resolved. Michael Ayrton and Reg Butler are showing nothing in this exhibition and their work is very similar to that of Meadows.

There have always been the proficient academic artists and they are usually the teachers (except in Russia where they are the only artists allowed): their importance lies in the fact that their pupils eventually reject their ideas and start off on something new. It is very possible that one or two of the younger artists at Battersea will one day fulfill this same function. It will be interesting to see in which direction their pupils break away. The logical conclusion seems out of sight, but it is interesting to speculate.

Phillip King: *Slant*David Smith: *Cubi XII*

# Interrelationships of Physical and Psychological Factors in Asthma and Allergy

by W. Linford Rees

Asthma has been described as one of the most perplexing disorders in the whole of medicine. This is largely due to the complexity of the disorder and the multiplicity of factors which may operate at the onset of the disorder and influence its course and outcome.

Advances in our knowledge of asthma would have proceeded more rapidly had it not been for certain inadequacies of methodology in past investigations. Physicians and allergists have tended to devote exclusive attention to physical factors, whereas psychiatrists often paid insufficient attention to physical factors. Many studies have dealt with one particular feature which was the special interest of the investigator, and few studies have attempted to assess comprehensively all main aetiological factors. Many studies were based on selected groups of patients which gave misleading results. Furthermore, control groups were rarely used for comparison.

The data presented in this paper are derived from studies of random samples of asthma, vasomotor rhinitis, hay fever and chronic urticaria patients, by a team of investigators consisting of a physician, who is a specialist in allergy, a paediatrician, an otorhinolaryngologist and a psychiatrist. Control groups were studied by the same team using similar methods. (Rees, L., 1956, 1957, 1963, 1964.)

### AETIOLOGICAL CONCEPTS

There are innumerable possible causes to any event, including an illness. In clinical practice we are concerned with the investigation of factors which are both causal and relevant in the disorder, and we are especially interested in any factors which are amenable to modification or control because on this will depend the feasibility of applying effective treatment and prophylaxis. Some causes may be regarded as *essential*, that is, without these the disorder would not develop, but there are other causes which are equally important which are termed *sufficient* causes because these are the factors

which may enable the primary cause to be manifested in illness at a particular time. Causes may also be classified as predisposing and precipitating. We may describe an aetiology of the onset, an aetiology of the course of the illness, and an aetiology of its outcome.

### Assessment of Aetiological Factors

The relative importance of different causes: if a particular factor was found to be the precipitant of the majority of attacks during the course of the illness, it was designated the dominant factor. A factor was designated as subsidiary if it had a demonstrable precipitating role when some other factor was dominant. A factor was assessed as being unimportant if there was no clear evidence of any precipitating role.

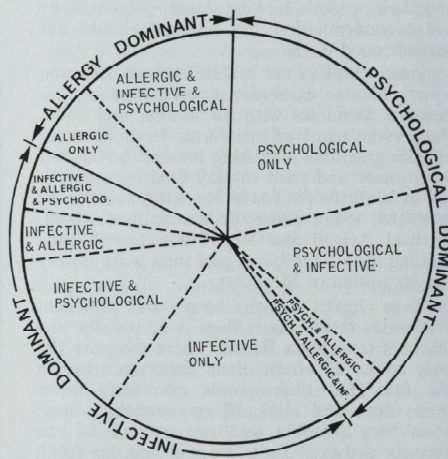


Fig. 1. Combinations of aetiological factors in Asthma.

### RESULTS

**Asthma:** Multiplicity of causal factors is the rule in all age groups in men as well as in women. Allergic, infective and psychological factors occur in varying combinations, sequences, and relative degrees of aetiological importance (see Fig. 1)

**Vasomotor Rhinitis:** Fig. 2 shows the distribution of aetiological factors in vasomotor rhinitis.

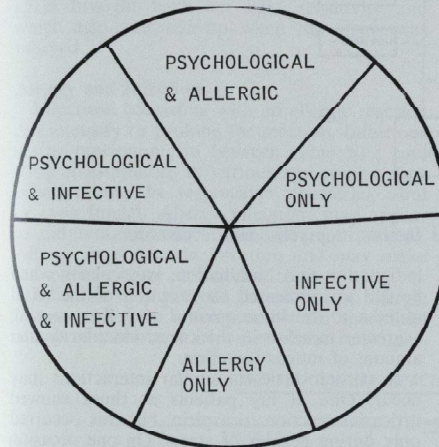


Fig. 2

**Chronic Urticaria and angioneurotic oedema:** Allergic factors were found in 35% (dominant 22%, subsidiary 13%). Infective factors were found in 15% (dominant 4%, subsidiary 11%). Psychological factors were found in 68% (dominant 39%, subsidiary 29%).

**Stressful Life Situations:** The term "stress" is variously used in this paper. It is used in the sense of an external stimulus or force which is

strain-producing or potentially strain-producing to the person to whom it is applied. Anything may be considered a stress if it threatens the biological integrity of the organism directly by its physical or chemical properties or indirectly because of its symbolic meaning. Types of psychosocial stress occurring at the onset of various psychosomatic disorders are shown in Table I.

### INTERACTIONS BETWEEN AETIOLOGICAL FACTORS

**Allergy:** The prerequisites for an allergic state are (1) increased sensitivity of cells, tissues or organs to one or more allergens. (2) The presence of the allergen or allergens in the immediate cell environment or within the cell membrane in sufficient quantity to disturb function. (3) A third factor is the autonomic control of cellular and organ function which may exert marked influences on the severity of the allergic reaction.

The functional disturbances in the allergic state involve tonic changes in the visceral musculature, in the vascular system and also changes in the glandular secretion. The phenomena of allergic reactions are similar to those of increased cholinergic activity.

### Interaction of Allergy and Psychological Factors

Individuals do not always respond to the same degree to the same exposure to an allergen. Sometimes the response is more marked, and at other times less prominent. Trousseau many years ago observed relationships between his emotional state and exposure to allergens and the severity of attacks of asthma. He recounts that one day he arrived home unexpectedly early and heard a noise in the loft, climbed up the ladder and found his coachman in the act of shovelling oats in a sack with

	Adult Asthma	Vasomotor rhinitis	Hay Fever	Urticaria	Thyrotoxicosis	Peptic Ulcer
Bereavement	9	6	2	5	10	5
Threat to security of loved person	9	4	2	3	6	5
Family & Marital problems	3	6	2	13	10	5
Sex conflicts	4	2	2	7	3	2.5
Sudden traumatic experiences	4	2	0	3	3	7.5
Work & Financial	2	2	0	9	6	17.5
Miscellaneous conflict situations	4	8	2	11	6	5
Total	35	30	10	51	44	47.5

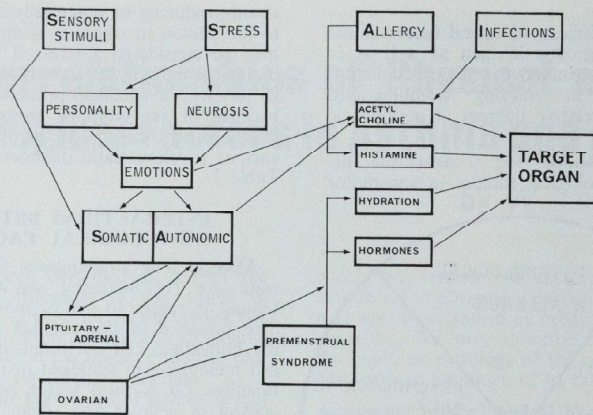


Fig. 3. Interaction of different causal factors in psychosomatic disorders

the intention of stealing it. Trousseau was so angry with this man whom he had trusted but was unable to tell him off, and was seized with the most severe attack of asthma that he had ever experienced. When writing about this later, Trousseau stated that it must have been the combined effect of his emotional state plus exposure to dust in the loft which caused such a severe attack, as he had previously been exposed to similar amounts of dust in the loft and in the streets of Paris without having such a severe attack.

In recent years experimental evidence has provided scientific validation for Trousseau's personal observation. In asthmatics, we may measure the degree of ventilation by means of a spiograph, and an allergen to which the patient is sensitive may be introduced into the air he breathes by means of an aerosol; it has been found that when a person is relatively relaxed the reaction to the same amount of the allergen is much less than when he is in a state of emotional tension. Similarly, Holmes et al. 1950, by direct observation on the nasal mucosa, were able to demonstrate that in a series of subjects exposed to a standard amount of pollen the reaction of the nasal mucosa was greater if the person was emotionally disturbed. The reaction of the nasal mucosa was measured by colorimetry which gave an index of vascularity and also by measuring thickness and amount of mucous secretion. It was found that certain emotional states such as resentment,

indignation and humiliation, particularly when bottled up, increased the reaction of the nasal mucosa to the same amount of pollen, causing a greater increase in thickness, vascularity and amount of mucus secretion.

In chronic urticaria similar interactions may occur. One of my patients at times showed urticarial reaction to aspirin, but this occurred only during periods of stress. On one occasion he was in a state of considerable distress as his girlfriend had become pregnant—he was keen to marry her but she was unwilling. During this period if he took aspirin he developed a generalised urticaria. Eventually the girl succeeded in obtaining termination of pregnancy and when the stress was relieved the patient was able to take aspirin without any allergic reaction. If this were an isolated incident it would be difficult to discount the possibility that it was merely a chance association, but some time later he developed similar problems with another girl, but this time she wanted to marry him and he did not want to marry her. During this time he again developed urticaria if he ingested aspirin, and when this period of stress was over he was able to take aspirin without any reaction. This observation is particularly important because of the fact that acetyl salicylic acid combines with one of the serum proteins to constitute the allergen.

Another patient developed urticaria on exposure to light only during periods of stress. It was possible to demonstrate that she was sensitive to light by covering one arm with

titanium oxide which acts as a light shield and exposing both arms. The urticaria only developed in the arm which was not covered by the light shield. The first period of stress was due to the fact that her husband was posted missing during his army service, and she continued to be sensitive to light until he was eventually found to be quite safe. She remained free from sensitivity to light until a further stress, relating to her father's will, which again brought back her light sensitivity and which again cleared up when the stress was relieved.

**Allergy and Infections**

Infections coexisting with an allergic reaction can intensify or prolong the reaction. Infections act as precipitants in between some 50% and 70% of asthmatics in various age groups. Any infection may be responsible: bacterial, viral or even fungal. Allergy infections may appear in different sequences with different patients. Allergy may precede infection and may make the patient more vulnerable to it.

Infection may precede the advent of allergic factors and may be responsible for the initial attack of asthma at its onset. Infection super-

vening after allergic factors may become chronic and may continue to perpetuate the disorder even though the origin is no longer in evidence. Hay fever subjects who develop infections which persist beyond the hay fever season can develop perennial rhinitis.

It is believed that infections can make a sub-clinical allergy into an allergic reaction manifested in clinical symptoms. The changes in the tissue produced by infections are similar to those produced by allergic reactions, namely, hyperaemia, swelling and hypersecretion. The mechanisms involved in the interaction of infection and allergy are complex and dynamic, involving chemical mediators such as histamine and acetylcholine and may also disturb enzymatic homeostasis locally or may result in a general disturbance of homeostasis. Allergic reactions can in turn intensify infections, resulting in a vicious circle producing a continuous disease.

**Emotions and Infections**

The interrelationships between emotions and infections include both additive and predisposing effects. Holmes et al. (1950) demonstrated that certain emotional states such as resentment,

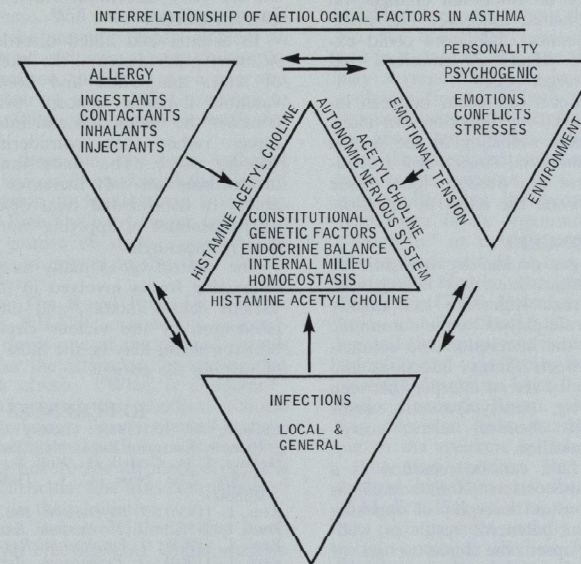


Fig. 4. Interrelationship of Aetiological Factors in Asthma

anger, hostility, etc., produce swelling, hyperaemia and hypersecretion of the nasal mucosa. This reaction is mediated by the parasympathetic as shown by the fact that a stellate ganglion block on one side is followed by hyperaemia, hypersecretion and swelling of the nasal mucosa of the ipsilateral side.

Prolonged action of emotional tension results in a boggy swollen nasal mucous membrane which impairs ciliary activity and causes lymphatic stasis. These changes are conducive to the occurrence of a superimposed infection. In some patients the initial attack of asthma or recurrence of attacks during the illness are the result of the combined action of infections and emotions. An example of this is provided by a girl aged 7 years who had frequent attacks of bronchitis over the years without asthma, and who developed her first attack of asthma when she had bronchitis and when a burglar broke into the house.

Infections produce similar local tissue changes in the nasal mucosa as emotions, viz. hyperaemia, swelling and hypersecretion. It is believed that both acetylcholine and histamine are involved in these changes. Acetylcholine is also released by the parasympathetic which mediates the effect of emotional changes on the nasal and bronchial mucosae. The interaction of such chemical mediators could explain the additive effects of emotions and infections on the target organ.

Vicious circle effects can occur between infections and emotions. An infection can interfere with the general wellbeing of the person and increase his emotional tension and frustration which, in turn, can produce local tissue effects which aggravate the effect of infection.

#### A UNIFYING CONCEPT

Emotional changes evoked by stressful life situations and allergic states may be regarded as reactions to stress. Reference has already been made to the role played by the autonomic nervous system in the interaction and summation of effects between allergy, infections and emotions. We can also see an interplay between opposing forces, e.g. parasympathetic versus sympathetic or, in chemical terms, acetylcholine versus adrenaline.

All disease, in fact, can be regarded as a disturbance of homeostasis. Homeostasis is achieved by the constant interplay of opposing forces which, when balanced, result in wellbeing and, when upset, the force or set of forces results in dysfunction or disease. Cannon (1915), who introduced the term homeostasis,

emphasized the important role played by the autonomic nervous system in reactions to stress.

Neurohumoral mechanisms also play an important role in adaptations to stress as described by Selye (1950). The organism reacts to stress, according to Selye, by the General Adaptation Syndrome (G.A.S.) which goes through phases of shock, countershock and adaptation and, if the stress is continued sufficiently long, to the stage of exhaustion.

Both the autonomic nervous system and the adrenal cortex play important roles in these reactions. The adrenal cortex produces two groups of hormones. One group is pro-inflammatory and includes desoxycorticosterone and aldosterone which cause salt and water retention. The other group, which includes cortisone, is anti-inflammatory. Prolonged stress tends to cause an imbalance in function of the pro-inflammatory hormones.

Finally, at cellular level homeostasis may be regarded as a failure of the organism's mechanisms of enzyme adaptation. In achieving enzyme balance a feedback mechanism exists in which excessive substrate stimulates enzyme production while excess of the product has the opposite effect.

#### CONCLUSION

In asthma and allied disorders, as well as in many other diseases, the integrating concept of stress adaptation and homeostasis is a valuable dynamic concept which makes us consider the interaction and interplay of many forces rather than considering one single specific cause. The understanding of these mechanisms not only increases the physician's ability to control and treat disease, but opens up possibilities of applying more effective preventive measures.

The control of as many as possible of the interacting forces involved in the operation of various causal factors, and the resolution or prevention of the vicious circles interplaying between them, may be the most effective means of helping the patient.

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## Aspects of Medical Education

### 1. Report of the Royal Free Teach-In

by Robert Colby

Medical Education, it is widely recognised, lies in the grip of a serious problem. It has functioned to a set, and largely unalterable pattern for around thirty years, and has been only little different for the last hundred years. Yet the demand for medical personnel, and the changing role of the doctor, have been proceeding with an acceleration that the institutions of medical education have not matched. Change and development are imminent. They are discussed everywhere. Will future systems remain as inflexible as the present? Departing from an established system requires a new philosophy of medical education, that is to say a new and realistic definition of aims. What are they to be? What provision will there be made for future change?

In the past there has not been sufficient informed and serious discussion of the aims of Medical Education to tackle these questions; and the Royal Free Students' Union decided to make a wide gesture of student interest and involvement. So in answer to this the "Teach-In" was conceived.

The Dean of The Royal Free, Dr. Frances Gardner, M.D., F.R.C.P., opened the proceedings, and laid down one of the general themes of discussion for the afternoon, by stating that we had to ask afresh: "What is a doctor?" She herself considered that medical schools should aim at training a "multipotential embryo doctor"; that vocational training was too long, and that it did not do for all medical schools to have fixed curricula. She also complimented the organisers on their initiative.

The chairman Robert Williams, the President of the Royal Free Students' Union, went on to explain the nature and purpose of the meeting. His own Students' Union had published

an article in the *Lancet*, which Sir Robert Platt, of the Royal Commission on Medical Education had criticised on the grounds of incorrect data. Yet the Royal Free students had found it impossible to find a source of valid information. At this point they began preparations for a "Teach-In" by senior administrators, and authoritative individuals concerned with medical education. The object: to enable the students in particular to acquire accurate and reliable information about the present situation. No one could deny that Medical Education was in a state of flux, and that students should play a responsible role in examining ideas of evolution from it. There were to be thirteen speakers, who would each outline their views for about ten minutes, and answer questions from the assembled company for a further ten minutes. In response to a question the chairman replied that the format was that of a symposium in its organisation, but that of a "Teach-In" in its informality—everyone was free to come and go as they pleased during the afternoon. Finally, the chairman wished to thank the CIBA Foundation, CIBA Laboratories, and Peto Scott Ltd., for providing backing and the equipment necessary for televising, recording and videotaping the whole of the proceedings. Questions from the refectory, and the Senior Common Room, which had only one-way television links, would be collected and put to the speakers by telephone.

The first speaker, Dr. Edwin Clarke, a medical historian, described the development of Medical Education up to the present century, but, perhaps more usefully traced the origin of certain methods used in Medical Education. The lecture, he claimed, was a remnant from the time when there was a paucity of books.

I was impressed by Dr. Byrne of the College of General Practitioners who discussed very forthrightly the relevance of undergraduate teaching to General Practice. Amongst many enlightened ideas, and interesting information, he claimed that attachment to a G.P. was not enough. Practices must be selected for "peripheral teaching" while a permanent teaching staff must run a university department constituting "central teaching". For the purpose, G.P.'s must receive some assistance in the way they tackled the teaching; and "central teachers" would have to be trained, and helped to define aims. Dr. Byrne then both astonished and delighted me in particular by informing us that a course in teaching method and content, has been started in Manchester for prospective teachers of General Practice.

The view of Dr. R. Ibbotson from Adelaide—we do not want two types of doctors, G.P.'s and medical scientists, all doctors must have more training in mechanical sciences—I felt could claim only dubious relevance, since it was a discussion of content alone; while he showed little understanding of its place in real educational problems. However, it was at least a discussion of aims. There were few questions.

The rather paternal Sir Robert Platt then charmed the assembly by saying that the Royal Commission on Medical Education, of which he is a member, had not made up its mind about most of the problems confronting it, and that he would appreciate this opportunity to seek students' views, after he first presented the problems. These were framed as four composite questions to the audience. Briefly:

1. How long can Medical Education go on without fragmenting vertically, or horizontally?
2. Are you taught too much, or too little science?
3. Have other values in Medical Education been obscured, especially psychiatric, sociological etc., and is instruction adequate?

Question four handled the problems of pre-clinical degrees, and the number of compulsory pre-registration years.

After each question he submitted his own views. The most telling followed question three, where he described the way in which one observed the majority of new students in certain schools, though enthusiastic at first, become increasingly indifferent, until they reach a state of boredom characteristic of the fifth year. This he personally ascribed to a failure of teaching. An eager discussion brought Sir Robert's time

all too soon to a close.

Prof. Hill of the Royal Free, and Prof. Cranston of St. Thomas's contributed two exciting talks on Medical Education in developing countries, and the New Medical School at Nottingham, respectively. Each gave rise to much questioning.

These were followed by two particularly poor contributions. One on "Progress in Medical Education" by Prof. Milnes Walker of Bristol, who had not thought enough about the meaning of education to be able to comment on it. (His title should have been: "Staffing problems for the last twenty years.") The other on teaching machines and programmed learning, by Dr. Denis Burley of Westminster, and CIBA Laboratories. It is too early, in my view, for medical educators, who know all too little about the mechanics of teaching, to start thinking about teaching machines, which, like similarly advanced techniques in medicine, require a background of professional skill, to be used satisfactorily. Dr. Stafford-Clark, who was due to speak next on "The need for more Psychiatric teaching in the Medical School Curriculum" said that the "book form" of teaching machine irritated him. He preferred straightforward reading matter. When Dr. Burley replied that it was obviously a matter of personality, nothing was heard while the Junior Common Room shook with laughter. In another question Dr. Stafford-Clark referred to "someone of equable disposition . . . like myself".

In his own talk he deliberately narrowed the scope, and established how many psychiatric beds there should be per student, in a teaching hospital, and why.

Mr. D. J. Carter then spoke on the future of television in medicine. Apart from far distant speculations in medicine itself, which were undoubtedly interesting to senior clinicians, I considered this to be thoroughly irrelevant to medical education.

Dr. Michael Day of Middlesex won my interest at first, by insisting that the curriculum must be carefully scrutinised: The preclinical subjects must be taught only where they were "ruthlessly relevant". Medical Education must be a continuous process, and time is ripe for a rethink. I did not welcome Dr. Day's proposal so readily since he failed to relate them to his more sensible aims. The way he argued for a nine term preclinical B.Sc., with an (admittedly) revised curriculum reflected a serious neglect of the conditions under which the students are best able to learn. He seems to expect revision

in curriculum alone, and not in the approach to teaching. No satisfactory proposals can be made with such an educationally unsound attitude. Learning is not likely to last, or find any application, unless the student wishes to learn in response to an impulse or desire to know. Untrained staff often do not realise that creating this urge in individual students, through discussion and activity, is of far greater value to them, than simply imposing a syllabus—the hitherto unquestioned method.

The afternoon ended with two talks by students. The first was a praiseworthy attempt by Spencer Johnson of Dublin Med. School, to put his ideas into action. By a series of, perhaps too simple, cartoons, each depicting a basic question, he discussed who, where, when, and how to teach. The *doctor* he emphasised, is the future product. Amongst many worthwhile points, he claimed that medical education has failed to apply the psychology of learning but now must do so, that reevaluation of admission was necessary since selection for the best doctor is frankly a matter of guesswork.

The second student, Stephen Bates, Vice

President, B.M.S.A., was disappointingly uninspired, and did not seem, to my mind, to understand basic ideas behind the B.M.S.A. Report on Medical Education, which it was his task to present. The report itself is a sane and sincere examination of Medical Education, but it has not been venturesome enough. "The principal objective of Medical Education", it states, "is to provide a basically educable doctor."

And what finer champion could this objective boast, than the most influential educational philosopher of the twentieth century, John Dewey:

"Perhaps the greatest of all pedagogical fallacies, is the notion that a person learns only the particular thing he is studying at that time. Collateral learning, in the way of enduring attitudes of likes and dislikes, may be, and often is, much more important than the spelling lesson, or lesson in Geography or History that is learned; for these attitudes are fundamentally what count in the future. The most important attitude that can be formed is that of desire to go on learning."

## 2. A View of the British and U.S. systems of Medical Education

by B. M. Swope, I. L. Humphrey, W. R. Sullivan  
University of Pennsylvania, Philadelphia

Initially, a brief description of the structure of our system seems in order. Medical School, being a Graduate school, begins after one obtains an Undergraduate Degree, either a B.A., or a B.Sc. This degree generally takes four years to acquire and therefore most Medical Students are 22 years old before they begin their Medical education.

There are approximately 90 Medical Schools in the U.S., some state supported, others privately endowed. Any student from any state may apply to any school. Acceptance is based largely on one's scholastic performances in Undergraduate school and on one's M.C.A.T. (Medical College Aptitude Test), which is a nationalised standard test of one's general knowledge.

Medical school lasts four years, the first two being devoted to the Basic Sciences, the second two to Clinical Medicine. Most Schools give periodic examinations over course material as

it is being taught, and there are final examinations in each subject at the end of the first two years. One has the option of taking "National Boarder" which covers all Basic Science courses, but everyone must take the National Board Clinical medicine at the end of the four years. One's score on this test has no influence on graduating, but is used primarily to obtain a licence to practice in a particular state later. (Most students require the passing of a State Board before a licence is granted).

The school year runs from September to June with the summer of the Third year free to spend on one's own pleasures. However a minimum of 6 weeks between the third and fourth year must be spent doing something medically orientated. (We spent our six weeks here). At the end of the fourth year, one receives an M.D. Degree and immediately begins a year Internship after which one becomes a G.P. or continues training as a Resident

(Registrar). The trend is markedly toward the latter. All men are obliged to spend 2 years in the Armed Forces and they may do this at any phase of their training they desire.

It costs each of us approximately 3,500.00 dollars per year to attend the University of Pennsylvania. 1,600.00 dollars for tuition, the rest for board, books, food and travel. If one attends a school in one's own state tuition is much cheaper. Scholarships are available for those who are unable to meet these expenses.

Now to our impressions of Bart's and more specific comparisons. One is immediately struck by the very relaxed, relatively slow pace at which patients are worked up, and by the very low pressure atmosphere the student experiences. A typical hospital day would run as follows. Bloods are drawn and b.p.'s taken before 8 a.m., from 8 to 10 a.m. rounds are with the houseman or Registrar (seeing all firm patients), and from 10 to 12 a.m. several patients are presented to the consultant, and the patients discussed. Afternoons are spent working up patients and doing Lab. work (Hgb, Hct, RBC and WBC). In the evenings rounds are again made on the patients, and each student is "on call" every fifth night, including weekends.

Students are required to have a rather extensive History-Physical written, and on the patients chart written within 24 hours of the arrival of the patient. The write-ups are carefully gone over with the student by the Consultant and they become a permanent part of the Hospital's records.

The teaching rounds mentioned above are much less orientated toward the teaching of Physical Diagnosis and much more toward the latest journal article on experimental work on the subject under discussion. This sort of

### 3. Study Abroad

The Children's Hospital at Montréal (a Gallicised rendering of "Royal Mount"—the name given in 1535, by Jacques Cartier, to the mountain that still dominates the city) has 314 beds, and houses the Department of Paediatrics of McGill University. I arrived there in the middle of March to take a break from my Bart's course and to experience North American medicine and teaching methods. The teaching was all in English, although two-thirds of the

schedule leaves us far less time than the English student.

Teaching is done largely on ward (Firm) patients, who are generally composed of lower socio-economic groups. These patients may be approached by students at any hour of the day or night, where here they are vigorously "protected" by the sister. All in all we have found the teaching rounds, although less frequent, excellent, the calibre of the Housemen and Registrars equivalent to their counterparts in the U.S., the work nicer and the ward nursing better than at home.

We were able to spend this 6 weeks at Bart's, through our Election Programme, a programme which you do not have, despite the fact that you have 3 clinical years to our 2. In our curriculum the first three years are pretty standardised, but as many as 24 weeks of election may be taken during the fourth year. One may do anything from individual research, to very specialised branches of Clinical Medicine and there pursue one's particular interest, or sample fields on which one may be interested. Election may be done in any part of the world, as long as they are approved by the school. Travel expenses for Clinically orientated programmes abroad are paid by the student, whereas money is readily available for research projects. Research is stressed much more at Pennsylvania than at Bart's and students are urged from their first year on to engage in research under a qualified sponsor.

In closing, we would like to express our gratitude to Dean Cope, Professor Seowen and Dr. Besser for their special interest in us, to the House and nursing staff on our Firm, and to the many students whose hospitality and genuine friendliness will long be remembered.

by Philip B. Wood

patients were French. Montréal contains the second largest French speaking population of any town in the world. However, I managed with the aid of some stalwart interpreting, my "O" level French and a little broken English from my patients.

In retrospect, it was an extremely worthwhile time. I saw a wide range of clinical material, from Letterer-Siwe's disease, to the eighth reported case of Rubenstein's syndrome. I was



The Children's Hospital, Montréal

studying with students who were just about to qualify and that kept me on my toes. Also I was subjected to a very intensive course involving four weeks of 'inpatient' work (two of these spent living in and admitting every patient who came into one ward), three weeks of outpatient work and one week of special clinics, which involved visits to a fevers hospital and the newborn nursery of a large maternity hospital. As to my daily timetable, I can probably best illustrate this by a typical Monday on the inpatient service: 7.45-8.15 a.m. Venepunctures; 8.15-9.00 Ward Round; 9-11 Ward teaching with an assigned instructor; 11-12 Metabolism Rounds; 12-1 Genetics lecture; 1-2 lunch; 2-3 Cardiology case presentation; 3-4 Radiology seminar; 4-5 Coffee with the teaching staff. However, I feel the most beneficial aspect of my visit was more profound than this. Canadian medicine is much more scientifically orientated than the 'clinical' medicine we are taught at Bart's. Much more emphasis is laid on laboratory investigations and data. This seems to lead to a greater stress being laid upon research work and we were constantly being referred to the current literature for up to date methods of diagnosis and treatment. Whilst not fully agreeing with this coldly scientific approach, I feel we could benefit from a little more of this spirit in British medicine, and I hope that I personally will be able to practise medicine from a more balanced outlook.

Although it was a profitable time, I feel it would have been even more so if I had been able, amongst other things, to have done some Paediatric study in this country first. This is impossible in Bart's at the moment, since, until now, students have only been released in order to do a section of their clinical course elsewhere. Many Hospitals and Universities have now started a system of elective periods, whereby, during a two or three month period, teaching is stopped and the student can pursue any branch of medicine that interests him, in any Hospital that will accept him. Obviously this system is open to abuse by perfunctory students and this has led the University of Wales to shorten the length of its elective period, but I am sure that the difficulties could be overcome. Also, as the system becomes more widespread, it is becoming more difficult for a student to obtain a scholarship to enable him to go abroad during this time. In my experience there are still a number of untapped sources open to the enterprising student who wants to go abroad, as well as some interesting specialist hospitals here, that have given students short-term appointments.

I hope that the staff of the Medical College will seriously consider introducing a programme of elective periods here, in Bart's, and if such a system were introduced, I hope they might be able to actuate a system of exchanges with foreign students who come here for their elective periods.

## record reviews

Once upon a time the earth was inhabited by races whose conservative little minds reacted vigorously against that which was new or that which challenged their traditional sense of values: politicians, artists and scientists were all either revered as stalwart pillars of an archaic society or else branded as heretics or charlatans. Today, verbal stones are no longer hurled; instead strangely oblique references attempt to utter mild disapproval but in fact do little more than mask a total ignorance of anything which might remotely be termed as progress. Nowadays, for example, Stravinsky's *Rite of Spring* would, if heard for the first time, cause a few murmurs and possibly even an occasional hiss (except, of course, at the Garden where manners are too genteel); but in 1913, when it was first performed, it caused a riot. The harsh dissonance and stark rhythms, borne, it seemed, out of the basest animal instincts, offended the propriety of even the French; never before had melody and harmony been so completely subjugated to that most primitive element of music—rhythm. This month from Supraphon I have chosen four records from their complete catalogue (no new releases being available at the time of writing), and the first of these is **STRAVINSKY's** *Rite of Spring*, played by the **Czech Philharmonic Orchestra** under **Karel Ancerl** (SUA 10487). Rival versions (notably by Monteux, Ansermet and the composer) are formidable both in quantity and quality. However, since the concept of a definitive interpretation of the work is almost certainly vitiated by the fact that Stravinsky himself has changed his view of it over the years, the choice becomes a highly personal one. The performance here is warm in the characteristic Czech manner and is perhaps not 'brutal' enough for some, but the price—much lower than all others—gives it a definite advantage.

Another ballet, performed by the same orchestra and conductor, is the next choice. From the original score of that great Bolshoi success *Romeo and Juliet*, its composer

**PROKOFIEV**, extracted two suites. On SUA 10104, we hear part of the first suite and the whole of the second. Incidentally, the record omits to tell you that one of the numbers, *Juliet The Little Girl*, has been included—apity since it happens to be one of the most attractive and characteristic. The recording leaves much to be desired, presumably because it is now somewhat old. However, if you don't mind a certain loss of clarity (a fault, let me hasten to add, not found on newer Supraphon discs which are excellently recorded), then there is much here that is pleasing. The music is attractive, particularly after you have heard it a few times if you are not already familiar with it, and it receives a sensitive and well-poised performance.

The distinguished French flautist, **Jean-Pierre Rampal**, has recorded a **Flute Recital** (SUA 10302) comprising *Sonatas for flute and harpsichord* by **Benda** and **F. X. Richter** and **Prokofiev's Sonata for flute and piano, Op. 94b**. Possibly a connoisseur's item, the baroque pieces are nevertheless pleasant, and the same can be said for the Prokofiev sonata (perhaps better known in its arrangement for violin), though this has always seemed to me a rather ineffectual, if not trite, work. The performances are fresh and the disc is definitely worth hearing, but be warned that this famous flautist refuses to part with the excessive vibrato that has unfortunately always characterised his playing.

Finally, a record that will surely appeal to almost everyone: an old recording (to judge by its sound—in fact, the sleeve describes it as an "historical recording") of **DVORAK's Cello Concerto in B minor, Op. 104**, played by **Mstislav Rostropovitch** with the **Czech Philharmonic Orchestra** under **Vaclav Talich** (SUA 10125). Rostropovitch is considered by many to be the work's interpreter *par excellence*—the position previously held by Casals. The performance is at once majestic and eloquent, much as one would expect from the

great Russian artist, though I must admit that for my tastes he plays much of the work too slowly: the cello's first entry, for example (quite the slowest I have ever heard it done), feels as though it will never lift itself off the ground. The slow movement, however, is quite, quite ravishing, and the finale is full of youthful vigour and vitality. Incidentally, the same

soloist has made a more recent recording of this work under the baton of Sir Adrian Boult, but the difference in label would cost you more than twice as much in price, which makes this Supraphon disc a decided bargain.

MICHAEL SPIRA.

The above Supraphon records are available in mono or stereo versions and are priced 17s. 6d.

## ASPECTS: \* \* \* \* \*

Axe-grinders aside, the relative importance of genes and environment in causing schizophrenia still seems to be quite uncertain. "Society: Problems and Methods of Study" (Ed. A. T. Welford, 1962) remains one of the best guides to the general position. Christopher Wardle concludes his essay: "No evidence is found that a patient's socio-economic status plays a part in the aetiology of schizophrenia or the affective disorders. Though patients with typical schizophrenia were much more isolated from their fellow-men than other patients before their illness, this is not the result of any difference in socio-economic origins, and seems to be a way of life chosen by these people because of some constitutional factor. It is not clear whether this constitutional difference from "normality" is genetically determined or acquired, but if it is acquired there is certainly no evidence that socio-economic or ecological factors play any part in determining it".

In the essay following this, Russell Davis argues for the aetiological factor of a "disturbance in inter-personal relationships during early childhood, leading to alienation": "In the last few years a number of pieces of information have been fitted together, and a fairly clear picture of the family environment of the schizophrenic patient during childhood and adolescence is beginning to emerge".

Thus far, the way is still open for a synthesis, but the gap widens when one compares Wardle's "Patients who had been discharged from hospital with a diagnosis of schizophrenia were least likely to be readmitted if they went to live in lodgings or with distant kin on discharge and most likely to be readmitted if they went to parents or wives . . . It may be that a measure of social disengagement is salutary for schizophrenics in the community" with Davis's "Recovery comes through reintegration into a social group".

The importance of a "poly-recessive" con-

genital predisposition is generally agreed upon, whether biochemical or metabolic, hormonal or viral; but the problems inherent in Kallman's 1946 figures remain—since 50% of patients have a schizophrenic or schizoid parent, and both schizophrenic and schizoid people have a much lower reproduction rate than the rest of the population, an extraordinarily high rate of fresh mutations is implied; and to take another example, it is odd that 20% of the children of marriages in which both partners are schizophrenic apparently escape without even a schizoid personality.

As Peter Hays says in "New Horizons in Psychiatry": "The more that psychiatrists and workers in allied fields pursue the will-o-the-wisp of the causation of schizophrenia, the more distant it seems to become".

The recent discovery (cf. for example, "Roman Vergil" by W. F. Jackson Knight) that Vergil, Horace and several other poets obeyed the Golden Ratio (21:13) in their paragraph lengths raises interesting possibilities. If it was done consciously, one is more or less forced into accepting the idea of a "secret" art of poetry (unknown to contemporary critics, for they did not comment on it). It may well be, therefore, that a great deal still remains to be discovered about this art. Was there, for example, some mystical reason for the Greek obsession with the Golden Ratio in addition to the acknowledged aesthetic and mathematical reasons? If, on the other hand, it was done unconsciously, speculation becomes even more metaphysical—but then, throughout the history of western philosophy, the music of the spheres has never been far off, distracting the dialecticians and consternating the cartesians, drawing old men from the anaconda and young men from one dance to this other.

As it moves in perichoresis,  
Turns about the abiding tree.

## MEDICAL BOOKS

### Biochemistry

**Vertebrate Biochemistry in Preparation for Medicine**, by M. W. Neil. Pitman Medical Publishing Co. Ltd. 2nd Edition. Price 45s.

The enormous growth of biochemical knowledge in recent years inevitably produces a conflict between medical students and their teachers, the former endeavouring to restrict their intake on the plea that much of biochemistry appears irrelevant to medicine, if not to the 2nd M.B. examination, and the latter maintaining that many aspects of biochemistry are important as indicating the potentialities of the subject and may well become relevant to medicine in a very few years.

Dr. Neil's book is a masterly effort at reconciling these two views. It is comprehensive and up-to-date, yet compresses a vast amount of material into a mere 369 pages. Inevitably much of the subject is dealt with somewhat briefly, and its brevity may in certain instances cause the student to have difficulty with passages dealing with those aspects which he finds difficult of understanding, but there are few biochemical topics of direct interest in relation to vertebrates which are not dealt with at all. In many cases, such as the biosynthesis of purines, pyrimidines, and steroids, the outline is surprisingly complete for a book of this size.

The arrangement is unusual. Dr. Neil plunges straight into his subject with a chapter outlining the scope of biochemistry, which deals with biochemical techniques and indicates the close relationship existing between the function and the chemical composition of tissues, cells, and their constituent parts. He then proceeds to a consideration of enzymes and coenzymes, energy metabolism, the biochemistry of blood and the alimentary canal, and the common oxidative pathway, before dealing with the chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids, and porphyrins. Kidney function and acid-base balance are dealt with last.

This arrangement may frequently irritate the reader by its continual requirement to refer forward to subjects not yet dealt with, but at the same time the stimulating style whets the appetite to delve more deeply into each subject as it is first met.

Clinical applications are stressed throughout, and pathological conditions and drug actions having a biochemical bearing are mentioned frequently.

The book is well produced and has very few misprints, though the reference on page 69 to biological reactions with a free energy change of more than two or three thousand kilocalories may cause the thoughtful reader some heartburning!

At 45 shillings the book is moderately priced, and within the limits imposed by its small size it serves its purpose admirably.

G. E. Francis

### Gynaecology

**Gynaecology**, by J. M. Holmes, Concise Medical Textbooks. Published by Ballière, Tindall and Cassel Ltd.

Mr. Holmes writes in the preface to this book that he has omitted those conditions which are rarely encountered in General Practice. Had this admirable objective been achieved it would have greatly enhanced the value of this book. The fundamental principles of gynaecology in General Practice could be condensed into something less than these 200 pages. Obvious targets for omission would be descriptions of the rarer ovarian tumours, technical details of operations such as how to avoid the ureter when removing a broad ligament cyst or how to close a vesico-vaginal fistula.

Most of the gynaecological problems seen in General Practice will be disturbances of menstruation. Surely a method of approach to such problems should be classed as one of the fundamental principles? One has to hunt around to find references to dysfunctional uterine haemorrhage—a subject not as exciting, perhaps, as gynandroblastoma but of considerably more practical importance. On the credit side, this book contains useful chapters on marital problems, contraception, hormones and intersexuality, and in general, the description of surgical operations is quite sufficient for student purposes. It will therefore have a place for revision purposes for final exams, when the irrelevant matter on conditions such as chronic metritis and dysmenorrhoea can be omitted. The student, however, who wants to learn a fundamental approach to the subject as seen in General Practice will have to look elsewhere.

C. N. Hudson

### Otorhinolaryngology

**Diseases of the Ear, Nose and Throat**, by Philip Reading, M.S., F.R.C.S. 4th Edition. Published by J. and A. Churchill. Price 36s.

The 4th Edition of this book shows many improvements both in material and production. It covers the field very adequately for students and housemen but is definitely Hospital orientated. The advocacy of several days of intramuscular penicillin and the condemnation of broad spectrum antibiotics for acute tonsillitis would occasion great difficulty for the general practitioner who sees and successfully treats 99% of these cases.

It must be extremely difficult to bring a book such as this up to date, but the rather endearingly old fashioned saline purges, prolonged convalescence by the sea and the amount of space given to Diphtheritic and Syphilitic conditions could well have been

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**The Royal Air Force**

reduced and a few pages devoted to the increasingly important psychosomatic aspect of the subjects.

In spite of these criticisms the book is well worth reading and the printing and illustrations are excellent. In particular the "white on black" X-ray drawings, instead of the more usual indecipherable reproductions of the actual films, are first class.

The index is adequate for a book of this size but I feel that the Bibliographies should contain more of the 1960's and less of the 1940's and 50's.

L. N. Dowie.

### Pharmacology

**Clinical Pharmacology**, by D. R. Laurence. Published by Churchill. 3rd Edition. Price cloth 45s., limp 32s. 6d.

Once more it is a pleasure to read Professor Laurence's latest edition, now like other good things lying snugly between soft covers. This is a loquacious, chatty, stimulating, amusing but none-the-less highly informative book. As before there are many quotations, apposite, droll and sometimes frankly risible. There are jolly jingles and cheerful cartoons. The bibliography ranges from Reports of the Royal College of Physicians to the New Yorker.

Yet the pleasure is not unalloyed. Since the first edition this book has steadily grown and following

the general adoption of the metric system, it is now too big by 0.5. But which half should be omitted? There is now a torrent of new drugs, accompanied by a rising flood of toxic reactions, and daily through the letter-box pours the cascade of unsolicited literature from the drug houses. Which of all these miraculous cures can safely be ignored? Fortunately, the answer requires no more than a moment's thought. It may be impossible for a Professor of Clinical Pharmacology to believe, but I have sometimes managed to go all the week without prescribing lachersine, membervine or khellin. Incredibly as it may seem to a Director of a Department of Clinical Pharmacology, it is more than 15 years since I have used tetraethylammonium, veratrum or even hydralazine in the treatment of hypertension. Psilocybin is also of limited use, since the development of visions of fundamental truth and beauty, although indispensable to a clinical pharmacologist, would pass unrecognised by my patients, unless clearly labelled. A generous application of the blue pencil, deleting the useless, the outmoded and the unwanted would quickly remove half this book, with great therapeutic benefit to the reader.

There are many new or expanded sections on such topics as drug hazards, drugs and the foetus, the thalidomide disaster, the development and scientific evaluation of new remedies, and the metabolism and mode of excretion of drugs. The chapters on chemotherapy, the treatment of hypertension and several others have been revised and brought nearly up to date. The index works. This is learning with a laugh—a jolly good idea.

A. G. Spencer.



# SPORTS NEWS

## Editorial

The tone of this column in the July Journal was distinctly deprecatory; the events of the last week of that month now induce a tone that is laudatory but not adulatory. This column must like many others offer delighted apologies to Mr. Ramsey and the F.A. The World Cup, incredibly, was a success; more people than ever before attended the matches and paid more money than ever before to do so. The total audience, due to TV, must have been of the order of several hundred millions, and may well have exceeded that of the Tokyo Olympics, for nationalism is the unfortunate keynote in this competition, whereas in the Olympics the focus is more on individual talent.

The ultra-defensive, aggressive style used by some of the teams is due to their nationalist fear of defeat. This at one stage of the tournament threatened to destroy the game as an exciting spectacle. But there were teams which were able to play with a strong defence without precluding the use of attacking football, and jingoism will be excused, if England is singled out as the best exponent of this game. The bulk of the credit must go to the much-maligned Alf Ramsey; he emerged as the hero of the hour and one would excuse an understandable smugness after all was over. Some three years ago he was brave enough to prophesy that England would win the Competition; this became something of a standing joke to the footballing public and anyone suggesting anything so outrageous was instantly derided.

But he persevered in his own fashion defending himself against the most vehement criticism and slowly finding a team to play his system.

## CRICKET CLUB

### BART'S v. PAST (Sun. 3rd July). Match Won.

Bart's won the toss and elected to bat. Three wickets were quickly lost for only 23 runs before Gately and Furness took command. Their stand was followed by a fine undefeated innings by Husband which enabled Griffiths to declare with 173 runs on the board.

The Past were soon in trouble with Griffiths' bowling. This combined with some excellent fielding inspired by Pope left the Past side with 74 runs, 9 wickets down and Colin Richards to face the last ball of the game off Savage.

With the whole side closed in around the bat,

preparing them physically and mentally for the final matches by an unprecedented four-match tour of Scandinavia and Poland, a tour which was also heavily criticised.

This general attitude of derision was endemic before the cup started, yet suddenly in the first match against Uruguay, the crowd began to encourage rather than jeer, to chant rather than whistle. This change in attitude, which culminated after the final whistle of the final in the most patriotic rendition of the National Anthem ever heard at Wembley, must have been a crucial incentive to the team.

Team spirit was most noticeable and in the final it was this spirit that proved crucial in that most exciting match. One spectator mentioned El Alamein and the metaphor is surely apt for real courage was needed to survive that sickening equalising goal from the West Germans just on the stroke of full time.

Thus the success may be summed up as application, dedication and team spirit aided by appreciation from their supporting public. This formula may be generally applied in sport, even in this Hospital, and one need look no further than the Boat Club for a good example. They have been by far the most successful club this year and the reasons are as above, yet it is doubtful if their efforts for the Hospital are widely known and it is to their credit that this has not become a source of bitterness to them.

Although sport here is strictly amateur and indulged in for pleasure only, it is indisputably more pleasant to win than to lose, and it is to be hoped that all the clubs with winter fixture lists will perhaps enjoy more success in the forthcoming season. But success needs interest from the non-playing majority.

Richards missed the ball and was given out l.b.w.

Bart's Present	173—4	(P. Furness 60 dec. D. Husband 50 n.o. J. Gately 30)
Bart's Past	74	(Griffiths 5/19)

*Bart's Present:* D. Bostock, N. Griffiths, G. Hopkins, J. Gately, P. Furness, D. Husband, M. Britton, P. Savage, P. Curry, K. McKintyre, D. Pope.

*Bart's Past:* Thomas, Stark, Phillips, Letchworth, Bucknill, Ross, Parrick, Delany, Whitworth, Richards, Tomkinson, Juniper.

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### BART'S v. INCOGNITO (Sat. 9th July at Chislehurst). Match Won.

Incognito	109	(Bostock 3/23).
Bart's	109 for 6	(S. Thomas 38 P. Furness 20 N. Griffiths 23 n.o.).

*Team:* N. Griffiths, S. Thomas, J. Gately, P. Furness, D. Husband, C. Vartan, M. Britton, P. Savage, S. Baumber, C. Grafton.

### BART'S v. HAMPSTEAD (at Chislehurst). Match Lost.

Hampstead	187 for 9 dec.	(Munro 102 P. Savage 4/55)
Bart's	75	(P. Savage 36).

*Team:* N. Griffiths, S. Thomas, J. Gately, P. Furness, D. Husband, J. Gately, D. Bostock, C. Vartan, P. Savage, K. McKintyre, S. Baumber.

### BART'S v. ROYAL COLLEGE OF SURGEONS, IRELAND (Wed. 13th July). Match Drawn.

This was a hastily arranged match against a touring side from R.C.S. Dublin. The visitors included a group of West Indian students intent on playing as lively a match as their seniors.

Bart's batted first and apart from Gately and Savage were unable to master the accurate, though negative, bowling. The innings closed just before tea 115 runs having been scored.

The visitors batting was of rather a mixed type ranging from very good to very bad. Luckily those of the former category were never able to master the bowling of Griffiths and the match ended with them just scraping a draw.

Bart's	115	(J. Gately 42 P. Savage 28)
R.C.S.I.	69 for 9	(N. Griffiths 5/26)

*Team:* N. Griffiths, G. Hopkins, C. Vartan, J. Gately, P. Furness, D. Husband, P. Savage, S. Baumber, D. Pope, P. Curry, C. Grafton.

**BART'S v. NOMADS** (16th July at Chislehurst).  
**Match Drawn.**

A dark cloudy day welcomed the Bart's batsmen to the wicket, luckily only to face medium pace bowling. Runs came reasonably easily to most of the batsmen and Griffiths was able to declare with 149 for 6.

Nomads started well 30 runs being scored before the first wicket fell. Savage and Griffiths then demolished the batting but were just unable to remove the last batsman before time ran out.

Bart's	149 for	(C. Vartan 21
Nomads	6	D. Husband 38
		P. Furness 21
		G. Hopkins 21 n.o.).
	98 for	(Savage 3/29
		(Griffiths 3/14)

*Team:* S. Thomas, C. Vartan, N. Griffiths, D. Husband, P. Furness, P. Savage, G. Hopkins, T. Bucknill, P. Curry, T. Bates, S. Baumber.

**BARTS v. DARTFORD** (17th July at Chislehurst). **Match Drawn.**

For a change the visitors batted first and on a fine batting wicket runs came easily. The pace bowling of Savage was sadly missed and

Vartan and Husband were called upon to bowl a mammoth number of overs. Dartford declared at 251/4 leaving us a reasonable time to get the runs. A shower of rain then intervened and delayed the start of the Bart's innings for  $\frac{3}{4}$  hour making a home victory almost out of the question.

Nevertheless a fine opening partnership by Delany and Thomas had 70 runs on the board in just over the hour. Delany was the first to fall after an aggressive innings but Thomas went on to complete his half century. Husband then came to the wicket and delighted the few spectators with an undefeated swashbuckling innings, he was later joined by Vartan who played in similar style, each batsman hitting two sixes.

However, time ran out with this score of 215 runs for 6 wickets. An excellent match for both spectator and player alike.

Dartford	251 for 4	(Husband 4/95).
Bart's	215 for 6	(S. Thomas 73
		D. Delany 32
		D. Husband 47 n.o.
		C. Vartan 31).

*Team:* N. Griffiths, S. Thomas, D. Delany, G. Hopkins, P. Furness, D. Husband, C. Vartan, M. Britton, T. Bucknill, D. Pope, K. McKintyre.

**GOLF CLUB****June 21st v. Chislehurst Golf Club Won 8-2**

Our annual match against Chislehurst Golf Club was played this year on a glorious evening in contrast to the continuous rain of last year. We had a strong team playing, whereas Chislehurst were not as strong as last year, so we won by eight matches to two. Afterwards we were entertained by the Chislehurst captain and members to an excellent dinner. Fortunately this year our captain managed to get himself and his car home in one piece, having disposed of a car on his way home from the same match last year.

Michael Bowen.

**June 25th v. Hadley Wood Golf Club. Lost  $\frac{1}{2}$ -3 $\frac{1}{2}$** 

When for the first time, we enjoyed Hadley Wood's generous hospitality, we set a new trend by playing better ball fourball matches instead of the usual singles or foursomes.

Mike Bowen and David Grieve began the 6,421 yard course in good form. Mastering the deceptive slopes of approaches and greens, they were soon 2 up. However, in the following ten holes their opponents took only twelve putts, leaving a bewildered Bart's pair two down.

We lost 3 and 2 despite a better ball score of 74.

John Sadler and Richard Begent were 4 down to the two-under-par score of their opponents at the turn, but as the rain waxed torrential, their resolution hardened. John Sadler engineered two exquisite birdies and we were soon only one down. The coup de grace came on the 16th when a Hadley Wood player steered an astonishingly accurate iron, from behind a tree to secure a hole-winning birdie. Our pair lost 2 and 1, also with 74.

Dick Atkinson and Angus Hoppe played extremely well to hold their opponents until the 17th hole. Although they lost 3 and 1, our pair played a really fine game on a course new to them and against powerful opposition: for one Hadley Wood player equalled the course record.

Mark Hares and John Reid achieved a half in a really tense match, which brought out the very best in the Bart's team. Though our team did not win any of the games, all were hard fought, and valuable experience for forthcoming Hospital Cup Matches.

Richard Begent.

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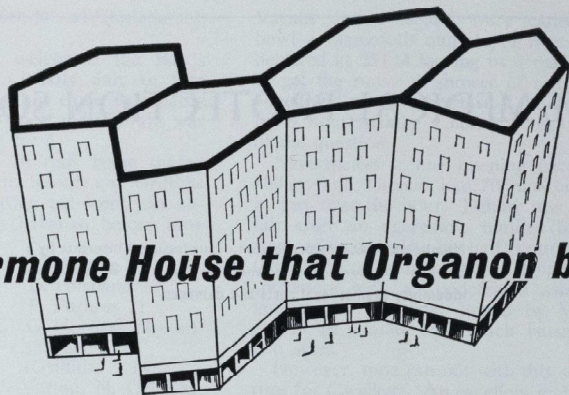
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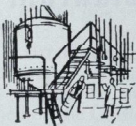
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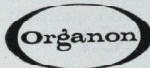
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### CANOE CLUB

The Canoe Club is having another successful season. Adrienne Huskisson is a much more mature performer, after a hard winter training programme, and won a number of long distance races early in the season. Recently she has been concentrating on sprinting, and has had wins at Maidenhead and Richmond regattas, and been placed on several occasions. She is now in Dusseldorf, and is stroking the Dusseldorf Canoe Club's ladies K4. Germany started competitive canoeing, and it is now a very large, well organised and well financed sport. For a British paddler to stroke a Four for a major German club is quite an achievement.

Mark Castleden has made remarkable pro-

gress as a paddler and on 17th July won his class, and a fine cup, in the Orwell Long Distance race. The conditions were very tough with a stiff breeze blowing against the tide in the estuary, and he did very well to defeat the more experienced opposition. He could go a long way in canoeing, we hope he will.

Charles Evans was not able to maintain his retirement from canoeing for long, and is again representing Great Britain, as team captain in the Sella River Race in Spain on 6th August. Paddling Senior K1, he has not been beaten in Long Distance racing this season. We wish him good luck abroad.

C. Evans and S. J. Phillips.

**STOP PRESS:** We have just learnt that Charles Evans has won the Sella River Race, which is the top major international long distance canoe race.

### JUDO CLUB

The first Inter-Hospitals Judo Competition was held on July 2nd in the Gymnasium at the University of London Union. Only three Hospitals entered this inaugural contest; Bart's, St. Thomas's and University College Hospital. Each fielded a team of four and the competition was held on a pool system of fighting. The other Hospital teams each had a belt one grade higher than any of the Bart's men but their other fighters were of lower grades. Thus Bart's with a moderate team featuring strength in depth proved to be too good for both the other teams and did not lose a fight. The team in order of battle was:—

P. D. Clarke (Green Belt), A. Boatman (Green

Belt), A. Ruddle (Green Belt), R. Thrush, (Green Belt).

As we had been pressing for an Inter-Hospitals Competition for some time, we were particularly pleased to have won this first contest. It should now have firmly established Judo among the sports of the Hospitals. We hope this will encourage interest in the sport in this Hospital, especially as we have now secured facilities at College Hall for fighting and training.

There is thus an invitation to anyone who has little spare time, but who would like moderately hard exercise with the added spice of being able to toss an opponent afterwards to contact the Judo Club.

P. D. Clarke.

### LADIES' SQUASH CLUB

The Ladies' Squash Club is an active club and has a fair number of keen, if not very expert players.

Every year we compete for the Inter-Hospitals Ladies' Squash Racquets Cup, and also play several friendly matches against other hospitals and colleges.

Coaching is given on Wednesday afternoons during the Autumn Term. We hope that this year senior students, as well as freshers, will take advantage of this coaching to learn the

basic points of play, or to increase their proficiency.

We would welcome non-student squash players from the hospital or medical college who would be willing to play for us in our friendly matches.

Squash is a game which it is possible to enjoy even when one is very inexpert, and it is a pity more of the women students do not take advantage of having courts so near at hand.

S. James.

### THE RIFLE CLUB

#### Smallbore

This section has had a very full season, although completion of some of the postal leagues in February was hampered by the shadow of impending exams.

We ran six weekly teams: the Engineers' Cup 'A' and 'B' enjoying some splendid afternoon clashes with other colleges, in spite of the interchangement of team members (19 people filling places in two teams of six) and the disappointing results of 5th and 4th places for the 'A' and 'B' teams in their respective divisions. Two 'Postal League' teams and two 'Novices' teams shot each week, again with disappointing results, although it is worth noting that the Postal 'B' team shot very well winning 9 out of 12 matches on scores, but losing a further three of these on heavy handicapping to bring the team down from 2nd to 4th. The shooting by the Novices teams was very creditable, although teams were let down by the erratic shooting of a few members. In the Novices 'A' team, the performance of M. J. Rymer and M. R. D. Barnham should be noted, both having averages of 94.0. The 'A' team came 5th and the 'B' team did well to come 3rd in its division.

In the United Hospitals League, Bart's 'A' was 4th in the Lloyd Cup and the 'B' team 3rd in the Tyro Cup.

The season also saw the Whistle-stop Tour of Nottingham and Leicester Universities where both beer and shooting were enjoyed equally, and gave Nottingham a narrow win, but our revenge was obtained by an equally narrow defeat of Leicester. There were two clashes between Whitbreads and Bart's—again one match to each team, both being well lubricated in the appropriate (Whitbreads) fashion.

This very full season concluded with the London University Knock-Out Championships: our large entry produced only one success, that of S. G. Crocker who found his way into the final to beat M. Hambly and thus win Division 3.

We hope that more shooting will occur in the new season aided, no doubt, by the fact that the range should no longer be pulled down and patched up about our very telescopes.

#### Full-Bore

The full-bore section of the Club has had an active and successful season. There have been three practices and a club championship, all well attended considering that we are con-

finned to weekend shoots and transport down to Bisley is inclined to be erratic.

In the Pafford Cup the club were placed second to Imperial College; however, since then, it has won the Armitage Cup and the United Hospitals Cup and beaten Westminster Hospital in our only shoulder-to-shoulder match. Individual successes included the 200<sup>x</sup> range prize in the United Hospitals meeting, won by I. Battye and R. Thompson who equalled top score in the same meeting, Thompson being placed 2nd on a count out.

The B team won their division in the United Hospitals meeting very convincingly, the success of the team being due to P. Ciclitira, who not only arrived at Bisley in time to prevent disqualification, having missed transport from Charterhouse, but also shot top score.

A Staff v. Students match has been arranged at Bisley on Sunday, September 18th. All who would like to attend will be welcome.

I. Battye won the Club Championship.

The following have represented the hospital in the various matches:—

P. Tatham, R. Thompson, C. I. Franklin, M. Hambly, M. Rymer, D. Griffiths, O. Smailes, A. Bacon, I. Battye, P. Ciclitira, J. Turner. S. Crocker has shot for the University of London.

#### Pistol Section

This year the pistol section has had an excellent following, being able to run two teams in the London University Leagues, as well as entering two National Competitions.

In the University Leagues, consistently good shooting by the 'A' team, brought us second to University College 'A' team, and the 'B' team was 4th in division 2.

For the first time, four of our members entered for the Tiger Trophy: an individual National competition; P. C. Cobb and I. McLellan shooting well to average 84 each over 3 cards and be equal 9th.; with P. Cheetham 15th and J. M. M. Turner 18th.

The season has also seen the entry of Bart's into the National Summer League: as the year progresses, the team is gradually working its way up the league and is currently lying 4th, with the members of the team—I. McLellan, P. Cheetham, P. C. Cobb and J. M. M. Turner all averaging over 80.

We look forward to another successful season and with the increasing interest in this section, should be able to run three teams in the University Leagues.

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## TENNIS CLUB

July has been an unfortunate month for the tennis club. Many matches have been cancelled, either due to rain or the failure of one or other side to raise a team, and we were defeated in the semi-final of the Cup.

On **Wednesday, 6th July**, we met up with the strong arm of the Law for a mixed match. **The Metropolitan Policemen and Policewomen** proved too good for us and we lost 8-1; perhaps we shall do better next year.

**King's College Hospital's** bumpy courts at Denmark Hill took some getting used to, but despite this and the wind, we managed to beat them 5½-3½ on **Wednesday, 13th July**.

We had been waiting for many weeks to play the **semi-final of the Cup** against the **London Hospital**. Finally on **Saturday, 16th July**, we went off to Walthamstow full of hope and enthusiasm. After the first round it looked as though these hopes might be fulfilled, but soon they were to be sadly dashed. Ussher and Edelsten at No. 1 played with skill to beat their second and third pairs; Ireland and Garrard did creditably to beat their third pair, draw with the second and lose to the first. Setchell and Savage did less well to lose all three, so that the result was a defeat by 5½ matches to 3½. It may be that subtler pairing would have paid off.

It is some years since a match has been played against **the Staff**, so we were very pleased that the match had been arranged again this year. We went down to Chislehurst on **Sunday**,

## LADIES' TENNIS

Disastrous is the only word which is descriptive of the Ladies' Tennis this season. We started the season badly at the beginning of May with an Inter-hospital cup match against Charing Cross. Halfway through we were rained off and so arranged to continue the match on the Saturday. Even though we continued with a stronger team we still lost badly. The following week we were due to play a University Cup match against the Royal Holloway College—this had to be cancelled as we could not raise a team. This has been the trouble throughout the season, and though we had three or four stalwart players always willing to play—support anywhere else was completely lacking.

The advent of pre-clinical exams at the end of the first year seems to have dampened any enthusiasm at Charterhouse, which is a great pity, as it is so often the pre-clinicals we need to make up the teams

**24th July**, prepared for a good afternoon's tennis. In the first round "Jock" Dowie and Rupert Courtenay Evans lost to Wenger and Johnson, and John Lumley and Ted Carden beat Spenser and Davies. Tony Edelsten and John Pilling drew 1 set all with Garrard and Setchell; then alas the heavens opened, so the match ended in an honourable, if somewhat unsatisfactory draw. All we could do was console ourselves with warm showers and cool drinks. Let us hope for more clement weather next year.

The 2nd VI did well to beat the **Royal Free 7-2** on **Wednesday, 6th July**.

The **Annual Dinner** was held at the newly furnished **White Hart** on **Tuesday, 26th July**. We were sorry that neither our President nor Vice-President was able to come. About a dozen tennis players were supplemented by a similar number of non-playing but enthusiastic diners, all of whom appreciated Sam Johnson's efficient organisation of the Dinner.

The following (and several others) have given of their time to play for the teams during the season. We are grateful for their keenness and willingness to play, often at short notice.

M. Setchell, N. Ireland, A. Edelsten, C. Garrard, J. Ussher, M. Savage, S. Johnson, J. Wenger, M. Spencer, C. Hunt, N. Houghton, C. Roch-Berry, J. Davies, M. Madsen, D. Griffiths, T. Smith, R. Chesney, D. Baugh, H. Oxley and J. Trowell.

However, even though many matches have been lost and many cancelled, it would seem that raising teams twice a week is just as difficult at some of the other Hospitals.

There are still some more matches to play this season and we have some mixed matches to look forward to, one hopes the outcome of these will be a little brighter.

Diana Morley Evans.

## BADMINTON CLUB

The club will recommence playing on **Tuesday, 13th September**. All are welcome.

Carey Bowker

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*Photographic Sub-Editor:* J. H. Casson

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*Assistant Managers:* J. P. D. Reckless  
P. M. Quinn  
C. S. B. Roch-Berry  
*Charterhouse Representative:* P. Swain  
*Nurses' Representatives:* Miss E. Ferreira  
Miss P. M. Kilshaw

## NEW TO BART'S

It is a moot point whether adding to the welter of advice, exhortations and invitations with which the freshman is laden, would simply increase his initial confusion. The Journal, in adding its welcome, aims therefore to be brief. First a few general points, and then a little self-advertisement to encourage knowledge, interest and, we hope, participation in the activities of the Journal.

It must be stressed that all students form one corpus which should not be affected by the physical separation of the pre-clinical departments from the hospital. It is easy for a cleavage in student life to appear, but this is easy to mend: it merely requires a little effort on the part of the individual. Under the aegis of the Students' Union is a multitude of extra-curricular activities, and it is here that barriers are broken down. This is no pious hope for in sport, drama, singing and other collective activities, social contact is easily made.

The student coming down from Cambridge faces some special problems. One common to anyone entering the hospital for the first time is that of finding one's way around; inserted in this month's Journal is a map of the hospital which may ameliorate this problem. Thus armed, the first encounter with a bewildered patient desperately seeking his way out into the fresh air of Smithfield, may not be an occasion for acute embarrassment. It is quite natural that one should reach the threshold of clinical medicine with keen anticipation; yet this initial enthusiasm is balked as one is subjected to a course of potted pathology and bacteriology, which is largely an abbreviated version of part I pathology. However, if one can avoid the boredom which so easily sets in, then the Introductory Course is a useful opportunity to acquaint oneself with various departments of the hospital; for example one can quickly learn a great deal from the excellent teaching in the Diagnostic Radiology Department, and attend selected Ward Rounds. Also one should realise that the Charterhouse intake have known each other for years, and have an already established social life. Initially it is all too easy to feel one is deliberately being excluded from a very much "in group", but Cambridge students should also avoid giving the impression of being a tight little clique, and in a short while any unsought distinctions will be completely obviated.

After the homily, a few words about the Journal. It has been appearing monthly since October 1893 and is distributed free to students. Apart from advertising revenue, this is made possible by the loyal support of a remarkably high proportion of old Bart's men, who provide the bulk of the subscribers. We aim to serve a mixed fare, including medical articles, reporting hospital news and also quite general articles on virtually any subject that may prove interesting. Contributions by students will always be welcomed and indeed such active support is essential to the health of the Journal. All contributions are submitted to the Publications Committee, which meets every month under the chairmanship of Dr. A. W. Franklin. Another feature of the Journal is to be seen this month; the quarterly Clinical and Research Supplement, which makes room for some of the lighter material in the body of the Journal proper.

The home of the Journal is a converted cupboard on the stairs leading up from the library. Here the editorial and managerial affairs of the Journal are carried out, both entirely in student hands. The reliance on the students is thus obvious and anyone who is interested in this sort of work is most welcome to discuss anything with the Journal staff, whether with a view to writing or joining in with the work of running the Journal.

## LETTERS TO THE EDITOR

### EDWARD GRAHAM MEMORIAL

Sir,—The tragedy of the 1966 London to Brighton walk will be remembered by everyone connected with the Hospital, and in particular by members of the Cross Country Club, in which Edward Graham took such a tremendous interest.

Because of Edward's ability in and dedication to this field of sport, it has been decided to open a fund for the purpose of buying a trophy, to be named "The Edward Graham Memorial Trophy" and to be awarded annually "to the first member of the Cross Country Club in the United Hospitals Championship, who is in his first year of study at the Medical College of St. Bartholomew's Hospital." This is a position which Edward filled this year.

Although members of the club will be the main subscribers, we realise that others may wish to contribute to the fund; anyone who would like to remember Edward in this way is invited to send their contribution to the undersigned.

Yours faithfully,

H. B. LEE, President.  
R. J. THOMPSON, Captain.  
Abernethian Room,  
St. Bartholomew's Hospital,  
Charterhouse Square,  
London, E.C.1.

17th August

### TROPICAL MEDICINE

Sir,—A few of us had the privilege of attending a stimulating nine-day course in tropical medicine at the London School of Hygiene and Tropical Medicine. We learned of the increasing incidence of undiagnosed tropical diseases in this country, amongst immigrants and native born Englishmen, such as malaria filariasis, yaws and leprosy, etc. We were even told that some people had died of malaria in this

country, having contracted the disease during a night stay at a North African port on a Mediterranean cruise.

With the increased prevalence in this country of tropical diseases, the amount of foreign travel, and the number of medical students going abroad for short term appointments, should we not be more aware of and more knowledgeable in the commoner tropical diseases?

We suggest therefore, that there be included in the medical curriculum a series of lecture-demonstrations on this subject.

Yours faithfully,

ROGER COLES,  
DEREK BROWNE,  
Abernethian Room,

6th September St. Bartholomew's Hospital.

### OXFAM SUPPORTER

Sir,—I would like to add a note to J.G.'s article on Mr. E. Austin's retirement, in the form of a public 'thank you' on behalf of the Bart's Oxfam committee.

It is not well known that in his later years at Bart's, he organised and ran the Oxfam car-cleaning service here; he carried out this task unflinchingly in spite of poor health. I feel sure that Mr. Austin would be pleased if I also gave public thanks to his generous assistant "Maureen", who carried out all the cleaning single-handed, on her afternoons off.

Yours sincerely,

C. ASHBY,  
Treasurer,  
Bart's Oxfam Committee,

9th September St. Bartholomew's Hospital.

**Engagements**

- BEDFORD-TURNER—HAWKINS.**—The engagement is announced between Christopher Mark Bedford-Turner and Miss Shelagh Beatrice Hawkins.
- BETHUNE GOODWIN.**—The engagement is announced between Dr. Donald William Bethune and Miss Susan Fay Goodwin.
- STOODLEY—HILL.**—The engagement is announced between Dr. Brian J. Stoodley and Miss Monica L. C. Hill.
- SWAIN—PAYNE.**—The engagement is announced between Dr. Richard Swain and Miss Claudia Payne.

**Marriage**

- MACFARLANE—FRETWELL.**—On August 6, Captain Campbell MacFarlane, R.A.M.C. to Miss Jane Fretwell.

**Deaths**

- CLAUSEN**—On July 29, Dr. Raymond John Clausen, M.C., F.F.A., R.C.S., aged 76. Qualified 1913.
- GREGORY**—On July 14, Dr. Charles Hebeen Gregory, M.A., M.D., aged 87. Qualified 1902.
- LLOYD**—On August 29, Dr. David Thomas Lloyd, M.R.C.S., L.R.C.P., aged 66. Qualified 1924.
- MILLARD**—During August, Dr. John Leslie Millard, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P., aged 41. Qualified 1949.
- ROSE**—On August 29, Dr. Edmund Ernest Frank Rose, M.R.C.S., L.R.C.P., aged 63. Qualified 1927.

**Appointment**

Dr. Wallace Peters has been appointed to the Walter Myers chair of Parasitology at the University of Liverpool.

**Change of Address**

Dr. B. Buckley Sharp to 22, Wimpole Street, London, W.1.

**Announcements**

On Tuesday, 11th October, the Dramatic Society will present the Freshers' production "Out of the Flying-Pan", by David Compton. The play will take place in the Charterhouse Recreation Room at 5.30 p.m., and admission will be free.

Jacqueline Du Pré will be rehearsing with a special orchestra in Bart's this winter. Members of the hospital are very welcome to listen. Further information will be posted.

**OUT-PATIENTS CLINICS AND WARD ROUND TIME-TABLE**

Some further corrections to the time-table, circulated with the May Journal, are listed below.

**Out-Patient Clinics**

1. Medical Unit Follow-up, Tuesday p.m., *not* Endocrine Clinic.
2. Endocrine Clinic, Thursday 2 p.m. *not* 4.30 p.m.

**Teaching Ward Rounds.**

1. Mr. Hunt, Thursday 2 p.m. *not* 10 a.m.

**Erratum**

We regret that in Two Vestigial Organs and their Disease, by Peter Borrie, in the August Journal, figure 1, showing the Hair Cycle, appeared upside down.

**October Duty Calendar**

Sat. & Sun., 8th & 9th

Sir Clifford Naunton  
Morgan  
Dr. Black  
Mr. Manning  
Dr. Ballantine  
Mr. McNab Jones

Sat. & Sun., 15th & 16th

Mr. Badenoch  
Dr. Hayward  
Mr. Manning  
Dr. Jackson  
Mr. Dowie

Sat. & Sun., 22nd & 23rd

Mr. Tuckwell  
Dr. Oswald  
Mr. Aston  
Dr. Boulton  
Mr. Fuller

Sat. & Sun., 29th & 30th

Prof. Taylor  
Prof. Scowen  
Mr. Burrows  
Dr. Cole  
Mr. Cope

Physician Accoucheur for October is Mr. D. Williams.

**Obituary****Mark Hodson**

Dr. Mark J. Hodson, General Practitioner in Camden Town, died at the age of 41 on June the 29th. He came to Bart's from King's College, Cambridge, and qualified in 1950. It was at Bart's that he developed an interest in writing. He held office as Editor of this Journal and contributed regularly to it. This taste for writing continued all his life and for several years, as medical correspondent to a well known weekly, he produced week after week, well turned-out articles on medical and social topics. He took considerable pains in writing them, not only to check thoroughly any scientific data but also to work from his experience, thought and dialogue with his colleagues, what he felt could help his readers, weighing carefully which medical problems with all their social implications—they should be made aware of.

It was also as a clinical student at Bart's that he began to formulate an approach to his patients, which was afterwards to make of him an exceptionally good General Practitioner. As he afterwards reminisced in writings and conversations, it was at the time of his first contacts with patients through taking histories and watching their behaviour during ward rounds, that he became aware of the effect the illness, the doctors, the hospital and the treatment had on the patients' emotions and thoughts; an effect which he realised could in some cases contribute considerably to their misery and worry. Thanks to this awareness, afterwards in his practice he always took these psychological factors into account, and without sentimentality or pseudo-Freudian interpretations. It also accounted for his interest in Psychiatry—at the time of his last illness he was Clinical Assistant to the Psychiatric Department at Bart's. His interest in Psychiatry was a purely practical one: he wanted to become a better General Practitioner, he was not at all interested in becoming a half-baked psycho-therapist. This same drive to offer better treatment to his patients had impelled him previously to hold a Clinical Assistantship at the Royal Ear, Nose and Throat Hospital—he always maintained that a sound knowledge of Paediatrics, E.N.T. and Psychiatry was essential in General Practice.

The most striking feature of Dr. Hodson was his high concept of General Practice which he expressed in the great practical interest he took in his patients. Running his practice on very efficient lines—he once even got a Time and Motion expert to sit in his Surgery for a few days to see how things could be improved—he would reduce the superfluous to the minimum in order to be able to give all the necessary thought and time to a patient when required. Though an individualist and convinced that the General Practitioner should be responsible for the overall care and follow up of the patient, he knew when to seek the advice of his Hospital colleagues. He gave considerable thought to the problem of relations between General Practitioners and Hospital Consultants, always using as a yardstick what was in the best interest of the patient. On this problem he carried out some Operational Research studies and at the time his illness overtook him, he was preparing further research into this field of communication between General Practitioners, Consultants and Patients.

Dr. Hodson became ill about a year before his death and was fully aware of the prognosis of his illness from the start. For years he had been wanting to write a book on General Practice and had been collecting notes, experience and ideas with this in mind. In the enforced rest of the last months of his life he was able to write this book; at the end it was a fight against time: when he could no longer use an ordinary typewriter he switched over to an electric one, and he welcomed another transfusion or another course of therapy mainly as an opportunity to complete another chapter. The book is being published and will probably come out this Autumn.

The greatest compliment one can pay Dr. Hodson was that he took his profession seriously, putting into it all his intelligence, imagination and drive. He was the kind of practitioner to whom one would gladly refer one's own relatives and friends, confident that he would assume full responsibility for them while under his care and that he would use every available means to get them well.

R. de A.

## FINALS RESULTS

### University of Cambridge Final M.B. Examination Easter Term, 1966

#### Part I: Pathology & Pharmacology

Bowker, M. H.  
Brackenbury, P. H.

#### Part II: Medicine

Bolson, P. F.  
Boston, J. R.  
Gately, J. F.  
Purcell, J.  
Whitehouse, J. M. A.  
Bowker, M. H.  
Brackenbury, P. H.

Gravatt, D. B.  
Tudor, J. C.  
Edwards, C. R. W.\*  
Dent, V. A.  
Kerrigan, G. N. W.  
Walter, A. J.

\*Distinction

#### Part II: Surgery

Bolson, P. F.

Brackenbury, P. H.

Edwards, C. R. W.  
Kerrigan, G. N. W.  
Whitehouse, J. M. A.  
Boston, J. R.  
Chapman, G.  
Gately, J. F.

Tudor, J. C.  
Bowker, M. H.  
Dent, V. A.  
Gravatt, D. B.  
Walter, A. J.

#### Part II: Midwifery & Gynaecology

Bolson, P. F.  
Brackenbury, P. H.  
Edwards, C. R. W.  
Kerrigan, G. N. W.  
Walter, A. J.  
Boston, J. R.  
Chapman, G.  
Gately, J. F.

Purcell, J.  
Whitehouse, J. M. A.  
Bowker, M. H.  
Dent, V. A.  
Gravatt, D. B.  
Tudor, J. C.  
Wood, T. A.

### The following have completed the examination for the Degree M.B., B.Chir.:-

Bolson, P. F.  
Brackenbury, P. H.  
Edwards, C. R. W. (Hons.)  
Kerrigan, G. N. W.  
Whitehouse, J. M. A.

Boston, J. R.  
Chapman, G.  
Gately, J. F.  
Tudor, J. C.  
McArthur, F.

Bowker, M. H.  
Dent, V. A.  
Gravatt, D. B.  
Walter, A. J.

### Conjoint Board Final Examination July, 1966

#### Pathology

Kelly, C. J.  
Morgan, B. L.

Bolton, J. C.  
Day, C. J.

#### Medicine

Kelly, C. J.  
Vartan, C. P.  
Castleden, W. M.  
Morison, S. R.  
Gilmore, O. J. A.  
Bailey, A. R.  
Ayers, A. B.  
Chesney, D.  
Corvette, D. P. L.  
Sadza, D. M.

Macdonald, A. M. S.  
Graham-Pole, J. R.  
Billington, T. R. M.  
Sturgess, R.  
Brackenbury, P. H.  
Merrill, J. F.  
Nicola, A. K.  
Brodrick, A. J. M.  
Atkinson, R. E.

#### Surgery

Brackenbury, P. H.  
Bacon, A. K.  
Edwards, C. R. W.  
James, S. L.  
Phillips, S. J.

Kerrigan, G. N. W.  
Castleden, W. M.  
Peek, I. M.  
Whitehouse, J. M. A.

#### Midwifery

Chesney, D.  
Whitehouse, J. M. A.  
Clayton, R. J.  
Church, C. G.  
Barnett, R. J.  
Browne, D. S.  
Warkins, C. J.  
Holt, A. A.  
Griffiths, M. J.  
Pope, D. C.  
Royds, R. B.  
Mathur, V. K.  
Sadza, D. M.  
Rendall, C. M. S.  
Coltart, D. J.  
Coles, R. W.  
Blackburne, J. S.  
Etheridge, R. J.  
Kennedy Scott, J. P.  
Thomas, W. O. H.  
Rawlinson, K. F.  
Evans, G. A.

Jennings, J. A.  
Higgs, R. J. E. D.  
Pindred, I. R.  
Rousseau, S. A.  
Morris, R. H.  
Foulkes, J. E. B.  
Roberts, M. E.  
Barber, E. R.  
Church, J. J.  
Coulson, J.  
Burgess, E. M.  
Allen, C. L. O.  
Hillen, H. A.  
Harfitt, R.  
Porcherot, R. C.  
Riddell, R. H.  
Newbold, M.  
Foster, E. A.  
Thompson, R. S.  
Ferguson, A.  
Sykes, E. E.

### The following have completed the examination for the Diploma:-

Brackenbury, P. H.  
Edwards, C. R. W.

Merrill, J. F.  
Peek, I. M.

Whitehouse, J. M. A.  
Kerrigan, G. N. W.

## More than meets the eye

Some less frequently encountered aspects of medicine

### I. OCCUPATIONAL MEDICINE by W. E. Broughton

Senior Medical Adviser, Shell International Petroleum Co. Ltd.

Men and women spend one-third of all their waking hours actually at work. During this time they are exposed to many influences from their working environment and the particular type of job they do. The study of these influences and the remedial measures which may be necessary when adverse affects on health can be anticipated or found, comprise the speciality of Industrial Medicine.

Industrial Medicine—now known more descriptively as "Occupational Medicine"—is no new speciality of our profession. The Italian Ramazzini, at the end of the 17th Century, studied the effects of certain trades on men employed in them and our own Percival Poit described chimney-sweepers' cancer of the scrotum in 1775. In 1898 Thomas Legge became the first Medical Inspector of Factories, and crystallized the thoughts of doctors and the Governments of the day alike on industrial hazards. It was he who enunciated the famous five aphorisms on the protection of persons employed in dangerous processes. Legislation in the U.K. in the form of The Factories Act, Shops and Offices Act and the various orders and regulations empowered by them, The National Insurance (Industrial Injuries) Act and kindred Acts have helped to mould similar legislation in many other countries.

Medical Officers and other Inspectors, by their advice, bring the spirit of these Acts into every place of employment and their work is assisted by appointed Factory Doctors of whom currently, there are some 1,500. These latter are usually family G.P.'s who carry out certain specified duties on a part-time basis and these duties are mainly the examination of young persons and the periodic examination of men employed in lead and certain other hazardous processes. The whole question of the necessity for so many examinations, however, has recently been reviewed and changes are envisaged. Suffice it to say that in the U.K. much of the health and welfare protection enjoyed but not always

appreciated by young and older workmen and women alike, is due to legislative control and the vigilance of the Officers of the various Ministries concerned.

Notwithstanding the legal requirements for health, welfare and safety in work places, the bulk of the practice of occupational medicine is carried out by the industrial medical services within industry itself. All the State enterprises and the larger companies provide such services at their own cost and under their control; services which are outside the N.H.S. or any Ministry. The doctors are either part-time or full-time but most of the nurses and ancillary medical personnel are full-time.

The role of the industrial doctor and the medical service he operates depends on the particular nature of the industry concerned—the requirements in an Atomic Energy establishment are obviously different from those in light engineering or food processing companies. Nevertheless, certain responsibilities are common to all and briefly and basically are as follows:—

1. Casualty care by emergency first aid.
2. Initial treatment of employees presenting illness during working hours.
3. Re-settlement on return from sickness absence.
4. Estimation of fitness for particular types of work and periodic health checks when such work may be hazardous.
5. Inspection of work places and amenities, and advice on safety and hygiene.
6. Investigation and appraisal of potential or actual toxic hazards and advice on precautionary measures.
7. Study and research on individual and group health at work and advice to management when necessary.

All this requires not only common clinical sense but a knowledge of the particular industry in which the doctor works, its organisation and processes.



You may feel that occupational medicine is an isolated speciality. This is not so and before its role in relationship to medical care and the medical services generally is discussed, it may be useful to outline the means by which these doctors have invoked assistance and collaboration.

In the U.K. industrial doctors have formed themselves into an organisation now called the Society of Occupational Medicine. There are over 1,000 members both full- and part-time who meet regionally and in London, and publish their deliberations in the "Transactions" of the Society. The British Medical Association publishes the *British Journal of Industrial Medicine* which keeps interested doctors up to date with research and experience in industry generally. The Royal Society of Medicine now also has a Section of Occupational Medicine. An increasingly important speciality of industrial medicine is occupational hygiene and the hygienists in their own right whether they be doctors or chemists or engineers, have created a very live society called the British Occupational Hygiene Society. This Society also produces its own publication, "*The Annals of Occupational Hygiene*". There are other allied British societies with their own publications, such as "The British Industrial Biological Research Association" which publishes a most interesting and informative Bulletin.

By no means is this subject a prerogative of Britain. In the United States, France and Holland for instance, there are very active Associations and even far away Thailand has a society of some 100 members. The American Industrial Medical Association has 4,000 members and there are several first class U.S. journals of Toxicology and Industrial Medicine. Indeed the industrial doctor has much information to draw upon.

But back to fundamentals. Where does all this "fit in" to Medicine generally? Why are there now three Professorships in Occupational Medicine in the U.K. medical schools and why is this subject included as part of the medical student's curriculum? The humanitarian, the historical and the acclaimed field of our profession is diagnostic and curative medicine. This is however, only half the full spectrum of our responsibility or the national requirement of us. The logical, the undramatic and the less appreciated other half is that of preventive medicine. For the community, this is embodied in what we term Public Health and its allied

and voluntary organisations. Legislation in the Public Health Act and the International Sanitary Regulations, give the M.O.H. the necessary enforcement powers to fulfil his protective tasks. Supplementary to Public Health is Occupational Medicine. They act hand in hand, as it were, in the care of the public at work and at home. Together they constitute the fullness of the discipline and practice of Preventive Medicine, or as it is often termed, Social Medicine.

This concept that there are only two main divisions in Medicine, curative and preventive, is of course too simple. There is a third division: that of early diagnosis or screening, though some say this is a branch of curative medicine and others that it is essentially preventive. Diabetic surveys, epidemiological studies, mass X-ray, urinary and cervical cytology, are relatively new and very important examples of this "new" branch.

However, and this is most important, Occupational Medicine is itself no longer confined to the care of the worker at his job for we live in a chemical age and the products of industry now go out to and are used by the general public. To-day, there are actual, potential or feared risks to the consumer whether from air pollution, attractively coloured medicinal tablets, household cleansers or off-the-shelf chemicals for the garden. The toxicological import of these drugs, once the sole concern of the industrial doctor and his management within the manufacturing industries is now the concern also of the M.O.H., the hospital doctor and the G.P. Acute accidental poisoning or the long term effects of repeated exposure to these chemicals constitute a very small percentage of the illnesses and injuries which beset the population, but every doctor must be aware of such possibilities. The questioning of any patient with an unexplainable cause for his symptoms must include the nature of his job or the household or industrial chemicals he has recently been handling. The National Poisons Information Service of the Ministry of Health operates from four centres in the U.K., and is increasingly used by G.P.'s and hospitals for advice on symptoms and treatment in cases of suspected poisoning from any pharmacological or domestic product.

There are three recent illustrations worth relating of how doctors outside industry have, by their vigilance or by painstaking history taking, discovered chemical causes for diseases in patients they treated or who have come to their notice.

Every winter, G.P.'s spend much of their time treating respiratory infections and in early 1962 a man with bronchitis was referred to the Edgware Chest Clinic because he had an interesting tale to tell. The bronchitis from which he had suffered in January had recurred, he said, as soon as he returned to work and he thought that his symptoms were due to fumes. Two physicians at this Clinic took up this clue and discovered that twelve other bronchitic or asthmatic cases had recently worked at a local factory where a known respiratory irritant, Toluene Di-isocyanate (TDI), was used. (Trenchard and Harris, 1963). It soon became evident that the symptoms of other patients in the area, who were thought, at the time, to have influenza by their own doctors, were in fact being caused by TDI.

Here then was a chemical irritant causing symptoms which mimicked a common infectious disease, but if it had not been for the alertness of the G.P. who had referred the first case and the staff at this Clinic, the relationship in all these cases might have been missed.

For many years it has been known that there was an association between exposure to asbestos and lung cancer. More recently, there followed the observation in South Africa that there was an increased frequency of mesothelioma in workmen mining crocidolite or blue asbestos. In 1965 a survey was published on 83 patients who had been treated for mesothelioma in previous years at the London Hospital (Newhouse and Thompson, 1965). Following a study of their occupational histories, it transpires that in 76 of these cases, 50% had during their lives been either exposed to asbestos or had lived in the same houses as asbestos workers. Of the remainder, who had no exposure, 30% lived within half a mile of an asbestos factory. Thus was discovered an occupational hazard which had, as it were, spread out to people not strictly concerned with that occupation.

The last illustration comes from Turkey. In 1964 I was in Diyarbakir, a very old city in south eastern Turkey. The centuries had passed it by and the fine wall round the city, originally built by the Hittites, had not, one felt, been renovated since Roman times. For many miles around the city, the land was poor and on it the local peasants made their living by cultivating cereal crops. At the State Hospital in the city, I met Dr. Camm, the Medical Superintendent. This most remarkable man had, between 1954 and 1959, seen, treated and diagnosed a most dramatic disease, Porphyria cutanea tarda, which had literally erupted in his area in

epidemic proportions. He reckoned that there must have been 3,000 people affected during this period and with barely adequate facilities and limited medical assistance, he cared for 600 of them in his hospital. In severe cases, chiefly children, the clinical picture was of "monkey disease"—the skin being blackened, the fingers atrophied and the body covered in hair. Dr. Camm investigated the cause, decided this was not a congenital or endogenous metabolic disease and soon found the toxic chemical which, by interfering with the porphyrin metabolism in the liver, had caused the outbreak. His investigations revealed that during this period, the Turkish Government had distributed wheat for planting which had been treated with the fungicide hexachlorobenzene (not to be confused with the insecticide benzene hexachloride, or B.H.C. a completely different chemical). Only the Diyarbakir area had received this wheat and the peasants, as so often happens in the Middle East, used much of the seed for food. The increased intake of hexachlorobenzene had caused the outbreak of toxic porphyria and was so proved later by laboratory experiments in animals. Dr. Camm told me this story through an interpreter but he has published his experiences and one of his articles in an American journal is well worth reading. (Camm, 1963).

Possibly, these three accounts of chemical diseases are exceptional or, at any rate, outside the expected experience of most doctors. Occupational dermatitis, barbitone poisoning, gassing accidents and the occasional lead poisoning in children with pica who chew lead painted objects, are more likely to be the examples seen during one's professional lifetime. The only excuse for relating them, even so sketchily, is to give colour to the subject and possibly stir the imagination of the clinically minded. Infections are almost mastered, constitutional disease is well understood, there is virtual perfection in surgical techniques and now spare part surgery is a reality. The accidental or ignorant abuse of the chemicals, the machines and stresses which may affect the lives of our countrymen at work and when not at work, deserves also the full interest and attention of our profession.

H. J. TRENCHARD and W. C. HARRIS. An outbreak of Respiratory Symptoms Caused by Toluene Di-isocyanate". *B.M.J.*, 1963, 1, 404.

M. L. NEWHOUSE and H. THOMPSON. "Mesothelioma of Pleura and Peritoneum Following Exposure to Asbestos in the London Area". *Brit. J. Ind. Med.*, 1965, 22, 261.

C. CAMM and G. NIGOGOSYAN. "Acquired Toxic Porphyria Cutanea Tarda Due to Hexachlorobenzene". *J. Amer. Med. Ass.*, 1963, 183, 88.

## THE SUGGESTED AETIOLOGY OF COT DEATH— A TYPE OF SUDDEN UNEXPECTED DEATH IN INFANCY

by P. B. WOOD

With the great diminution in child death a major problem in diseases of children is that of sudden and unexpected death, which has variously been described as "cot death" or "crib death". Statistics as to the frequency of this syndrome are at variance, thus Banks (1) concluded it accounted for 20% of the mortality in the 2 weeks to 2 year age group. Stowens (2) found a frequency of 4% in paediatric deaths. Undoubtedly much of this discrepancy results from the criteria used to select cases to be included in these studies. Thus Stowens (2) included only those who had been "ostensibly well until the last moment", while Banks was studying "all aspects of sudden death". Emery and Crowley (3) making a careful study of case histories of a consecutive series of 50 children reported to the Coroner as "sudden and unexpected death" found that over half had shown symptoms of some disorder for more than 48 hours prior to death.

Unfortunately it seems that many workers in this field have taken "sudden unexpected death" to be synonymous with "cot death", whilst many authors, including myself, would like to restrict the latter term to a particular syndrome which was first described in detail by Stowens (2). Cot death (from Banks' and Stowens' figures) probably accounts for about 20% of all cases of "sudden unexpected death" and other mechanisms account for the other 80%. At our present state of knowledge a cause of death can be found in one in four cases of sudden unexpected death—Min. of

Health (4). Valdes-Dapena (5) found a cause of death in 30 out of 109 cases of sudden and unexpected death but some of these were questionable, Cook and Welch (6) found a reasonable cause in a quarter.

### Pathology

Cot death is best defined in terms of the pathological picture it presents. Stowens (2) says the pathological changes are "sufficiently consistent to establish this as a distinct entity". Also in these cases (as discussed above) there is no prodromal illness and no cause of death found at post mortem suggesting a distinct disease. The pathological picture is one of macroscopically gross pulmonary oedema, found in 62% of Stowens' cases, and an increase in weight of the lungs in 91% of these cases. In all cases there is microscopic evidence of pulmonary oedema and overdistention. Stowens suggests that there is an interference with expiration, and bronchospasm seems the most likely explanation.

### Aetiology

Something should be done to try to prevent these cot deaths, but at present we are hampered largely because the exact cause of this syndrome is not definitely proved. Several suggestions have been made:—

(1) Two or three generations ago doctors were satisfied with the explanation that cot deaths were due to teething, and in 1839 the Registrar-General's returns ascribed 5,016 in-

fant deaths to this. A generation ago the deaths were ascribed to "status thymolympathicus" and doctors were presumably satisfied that they knew what that meant.

(2) There are still people who ascribe these deaths to suffocation. Probably several "sudden unexpected deaths" are due to this, and it is interesting that the Ministry of Health (4) found a statistically significant connection between unexpected death and the use of a soft pillow. However, post mortem findings are against the theory that 'cot deaths' are due to suffocation.

(3) A theory that is in vogue at the moment is that sudden unexpected death is due to a fulminating respiratory infection. Johnston and Lawry (7) studying 46 infants who died unexpectedly with no pathological cause of death isolated bacteria (*K. pneumoniae* and *Staph. pyogenes*) from the lower respiratory tract or middle ears or stomach in 67%. Viral studies were all negative. It is difficult to compare these results with other series because other workers have used different criteria to select cases to be studied and some included cases of sudden death where pathological conditions were found at post mortem. However Stowens (2) culturing the lung and blood of 116 of his cases (excluding those with any upper respiratory and gastrointestinal symptoms, but including some who had a definite pathological condition) found bacterial pathogens in 6% and viral studies in 41 cases were all negative. The two obvious reasons for this gross variation in results are (i) the relative paucity of organs cultured by Stowens and (ii) the differing criteria used to select the cases, but it suggests Stowens' 'cot death' cases were not due to an overwhelming infection.

The similarity of the pathology with acute infantile bronchiolitis has been noted but as mentioned above all virus studies have so far been negative. (2, 5, 7, 19).

(4) Barrett in 1954 (8) first suggested that cot death was due to the inhalation of re-gurgitated food into the lungs. He suggested either direct toxicity of the inhaled material or an anaphylactic type reaction from antigenic stimulation. Parish *et al.* (9) produced evidence to support the second suggestion and incriminated cows' milk as the antigenic substance. It is important to notice that these workers in this and subsequent studies have only used cases of sudden unexpected death where the pathologist's report was 'cot death'. They measured circulating antibody levels to whole cows' milk and found that the large majority of infants fed on

cows' milk showed some antibody and in most 'cot deaths' antibody levels were higher than the average, found in normal infants. They point out that levels of circulating antibody do not measure the degree of sensitization—since tissue-fixed antibody is of importance in an anaphylactoid (Coombs type I) antigen/antibody reaction—however they do indicate considerable antigenic stimulation. This high incidence of cows' milk antibodies, and the higher levels in cot deaths, has been questioned, particularly by Coe and Peterson (10), Gold and Adelson (11) and Collins-Williams and Salama (12). The failure of these workers to duplicate the results of Parish *et al.* (9) was probably due to two factors (i) a failure to distinguish between "sudden unexpected death" and "cot death" (as discussed above) and (ii) the use of less sensitive techniques. These workers used capillary tube precipitins, straight haemagglutination and micro double diffusion in agar whilst Parish *et al.* (9) used Boyden's tanned red cell technique.

In more recent studies using more refined techniques (i.e. the red cell linked antigen—antiglobulin reaction and using  $I^{131}$  labelled antibody complexes) Coombs *et al.* (13) and Rothberg and Farr (14) have shown *in vitro* IgA antibodies in infant sera, reactive with casein and lactalbumin and  $\beta$ lactalbumin. Thus E. Gold (15) has brought the two groups of workers together by stating that "there is no doubt that milk antibodies occur but a high proportion are without symptoms. The ideas about the syndromes these antibodies cause are interesting but so far are difficult to prove convincingly".

What is the evidence so far that cot death is due to a hypersensitivity to cows' milk?

(a) The evidence that experimental animals can die suddenly on the inhalation of milk. Ratner *et al.* (16) first showed that guinea pigs can be sensitized to cows' milk and when they subsequently inhale milk this leads to their sudden death. Parish *et al.* (17) confirmed this but showed that the post mortem picture most resembled cot death when the guinea pigs were lightly anaesthetized. It is interesting to note that cot death is only produced in infants, when they are asleep. The guinea pigs were sensitized by intravenous injections of milk and the animals were given a challenging dose of milk into the trachea from a dropper, some ten days later, when lightly anaesthetized. Recently the question has been raised as to whether this evidence in animals can be directly related to infants (Nut. Rev. (18)).

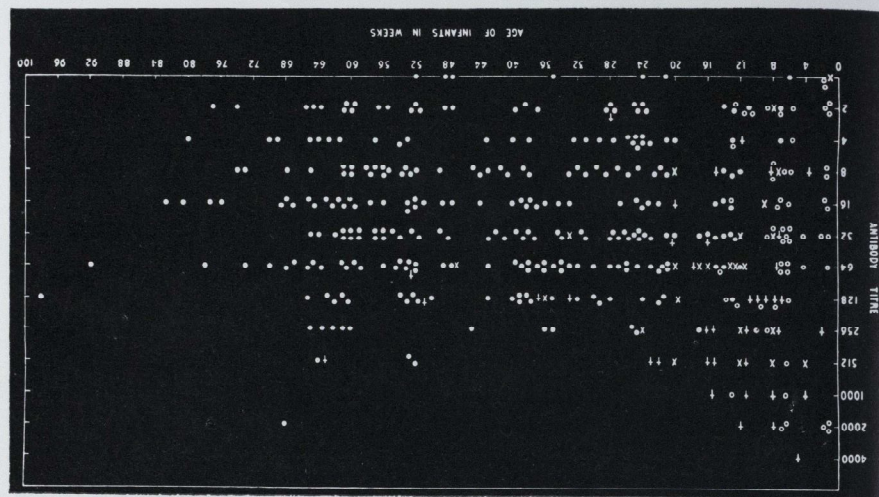


Fig. 1.—Serum antibody levels to cows' milk in normal human infants (circles) and in cases of suspected cot death (crosses). Titres estimated by antigen coated tanned red cell test. Closed circles = Healthy infants (Parish et al (9)). Open circles = healthy infants (Gunter et al (20)). x = suspected cot death (Parish et al (9)) + = suspected cot death (Parish et al (19)).

(b) Parish et al. (19) found milk in the lungs of 25 out of a possible 60 cases of cot death. Also they found evidence of milk proteins in the sera at death of 18 out of 111 cases. In none of 119 controls were any milk proteins found.

(c) Antibody titres to cows' milk are found in the sera of normal infants with higher titres, on average, in cases of cot death (see Fig. 1). The true levels may be higher in cot death because if milk is absorbed into the circulation it would neutralise some of the circulating antibody.

(d) The recent Ministry of Health report (4) found a small but significant increase of sudden unexpected death in infants who were artificially fed. However it has since been pointed out that there is more artificial feeding in the poorer classes, so there may be a socio-economic reason for this higher death rate.

Thus the evidence that cot death is due to a hypersensitivity to milk is strong. What conclusive evidence would be needed to prove this mechanism?

(i) The determination of raised blood and tissue levels of pharmacological mediators of this reaction, such as histamine, 5.H.T. etc. The difficulties of this determination stem mainly from the impossibility of getting material to a pharmacologist before at least 8 hours. Also the presence of milk in the bronchioles, where these substances are acting most, complicates the picture. Indirectly it is interesting that Stowens (2) reported copious faeces in 47 and vomiting in 97 of his 200 cases. He suggested a "mass autonomic reflex" which would be compatible with circulating cholinergic pharmacological agents.

(ii) The demonstration of changes in the mast cells of the lungs compatible with the release of the pharmacological substances they contain e.g. loss of granules or lysis of their cell membranes. This has been demonstrated by Parish et al (17) in guinea pigs but not by Parish et al (19) in infants.

(iii) The demonstration of bronchial constriction. This has been proven in guinea pigs by perfusion of their lungs with saline and by attempts at reinflating the lung with air, but

has not been proven in infants (Parish et al 19). However, this bronchial constriction could be just a transient phenomenon, and therefore not seen in the material normally available from these deaths.

#### Prophylaxis

The evidence is not conclusive but is highly suggestive that cows' milk antibodies are of importance. That they should develop should come as no surprise. At birth most animal's intestinal mucosae are able to absorb whole proteins. In particular they absorb antibodies from the colostrum. Although this mechanism is much less well developed in man, infants can absorb whole proteins. Schloss (21) and then Lippard et al. (22) showed the intestinal absorption of incompletely digested cows' milk protein. Thus we should avoid giving cows' milk to young infants as this is likely to provoke milk antibodies.

Even if these are not the cause of cot death, there is no reason why a mechanism,

like the anaphylactoid response outlined above, should not take place. Paediatricians should note with concern the decreasing number of mothers—especially in North America—who breast feed their babies (in a recent report from Boston [Salber et al. 23] only 22% of mothers attempt to breast feed their babies) and should do all in their power to encourage this practice.

#### Summary

Stress is laid on the differentiation of "cot death" from other causes of sudden and unexpected death in infancy, primarily on pathological grounds. In a review of the postulated aetiologies of this syndrome it is suggested that an anaphylactoid response to cows' milk best fits the evidence and suggestions are made as to how this mechanism can be finally proved. The decline in the numbers of mothers who breast feed is lamented and it is suggested that paediatricians should do more to encourage this practice.

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# Abernethian Society 1966-67

by Robin Williamson



*John Abernethy, Esq., F.R.S.*

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## COMMITTEE:

President: R. C. N. Williamson  
 Secretary: M. E. Setchell  
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*"John Abernethy deserves a foremost place in the history of St. Bartholomew's as the greatest teacher, the most lucid expositor, the most eloquent lecturer of his time."*

SIR NORMAN MOORE.

*"Mr. Abernethy is unquestionably a man of some talent, but his besetting sin is affectation: it is this sickening ingredient which pervades his language, his lectures and his professional practice; and he has yet to learn that quaintness is not originality, nor a disregard for the common courtesies of life, philosophy."*

THE LANCET.

DECIDEDLY Abernethy was a controversial man. He made many enemies among his colleagues, but was worshipped by the students. He could be alarmingly rude to his patients, certainly. "Mr. Abernethy," said one of these, "I have something the matter, sir, with this arm. There, oh! (making a particular motion with the limb) that, sir, gives me great pain." "Well, what a fool you must be to do it then," said Abernethy<sup>1</sup>. On another occasion a lady who brought her daughter, tightly corseted, for Abernethy's opinion was disconcerted to hear him say: "Why, madam, do you know there are upwards of thirty yards of bowel<sup>2</sup> squeezed underneath the girdle of your daughter's? Go home and cut it, let Nature have fair play, and you will have no need of my advice."

To his credit, Abernethy was scarcely more polite towards the eminent. When consulted by the Duke of York<sup>3</sup> he stood before his Royal Highness, whistling, with his hands in his breeches-pockets, as usual. The Duke, a little taken aback, said: "I suppose you know who I am?" "Suppose I do," said he, "what of that?" But his advice to the Duke was beautifully put: "Cut off the supplies, as the Duke of Wellington did in his campaigns, and the enemy will leave the citadel."

It seems that Abernethy often regretted his irritability of temper. He was a dedicated doctor

<sup>1</sup>I am indebted for this and other information to Mr. John L. Thorton, Librarian of the Medical College, the author of *John Abernethy, A Biography*.

<sup>2</sup>A pardonable exaggeration, in no way detracting from the excellence of the advice. Gray's Anatomy quotes the average length of the female bowel, from pylorus to anus, as eight yards.

<sup>3</sup>That same Duke who marched his men up and down the hill. The exercise would appear to have been insufficient for His Grace's corporation.

and no socialite, and preferred to devote his time to his hospital patients; for as he said: "Private patients if they do not like me can go elsewhere; but the poor devils in the hospital I am bound to take care of." As a surgeon he tended to be conservative. He disliked inflicting pain and was loath to amputate or perform other operations unless vital. But he was a competent operator, and indeed carried out the first successful ligation of the external iliac artery for aneurysm (1796).

As a student at Bart's Abernethy had sat at the feet of Sir Charles Blizard<sup>4</sup>, Sir William Blizard and Sir Percivall Pott. He was greatly influenced by his associations with John Hunter, and became a close friend of Edward Jenner. In 1787 he was appointed Assistant Surgeon at Bart's and began to lecture in anatomy. Such was the popularity of these lectures that in 1791 the Governors erected a new lecture theatre to accommodate the extra students. Extrovert, and with a quick incisive wit, he had a natural flair for lecturing. He even turned up to give a lecture on the day of his marriage (1800). "The fame of Abernethy's teaching spread far and wide," wrote Sir D'Arcy Power, "and he must be regarded as the true founder of the great school attached to St. Bartholomew's."

Professionally, his career was of the highest distinction. Elected F.R.S. as early as 1796, he declined a baronetcy in 1816. He was President of the Medical Society of London (1823), Hunterian Professor and afterwards Master of the Corporation (later Royal College) of Surgeons (1826). But he had to wait 28 years, until the eventual resignation of Sir James Earle in 1815, before being appointed Surgeon to the Hospital. He determined himself to retire at 60, and the Governors finally accepted his resignation in 1827. He was elected a Governor the next year, but died in 1831.

John Abernethy founded the Medical and Philosophical Society in 1795<sup>5</sup>; it was re-named the Abernethian Society the year after his death. One of the Society's first achievements was to found the Medical College Library. Members read papers and were fined for non-attendance. Splendid celebrations were held at

<sup>4</sup>Of whom Sir Norman Moore has somewhat unkindly remarked: "His chief claim to remembrance is that Abernethy was his apprentice."

<sup>5</sup>Thus making the Abernethian Society the third oldest students' scientific society. The Edinburgh Royal Medical Society was founded in 1735; the Guy's Physical Society in 1775.

the fiftieth and hundredth<sup>6</sup> anniversaries of the Society, and remarkably both John Abernethy Kingdon (the founder's godson) and Sir James Paget were present on both occasions. Though the Society's aims remain the same today, its meetings have taken on a somewhat different form. It is now the custom to invite speakers mostly from outside the Hospital to talk on subjects which are frequently not within the stricter confines of the curriculum.

The Committee has tried to arrange an interesting and varied series of lectures for the coming year. The Inaugural Meeting is to be given by Dr. Martin Ware, former editor of the *Bart's Journal* (in 1938) and the new editor of the *B.M.J.* This will be followed by a more informal evening with Bernard Miles, actor, director and raconteur. In November Dr. R. R. A. Coombs, F.R.S., of Coombs test fame, will be the guest of the Society, followed by Dr. Richard Hunter, author of the recent theories on King George III's madness. Professor Francis Camps will visit the Society to describe the new evidence that has come to light on the crimes of Jack the Ripper. Finally Sir Derrick Dunlop has promised to talk on the safety of drugs in the new year.

We welcome suggestions for speakers, and anyone who would like to meet one of our guests before or after the meetings should let the Secretary know. All Bart's students, whether clinical or preclinical, are members of the Abernethian Society, and all are most welcome at our meetings. We depend entirely upon your support.

\*A special *conversazione* was held, with the Grenadier Guards Band playing in the Great Hall, among other attractions.

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## MEETINGS IN OCTOBER:

**Thursday, 20th October**  
 INAUGURAL MEETING  
 5.45 p.m. in the Great Hall.  
 "The Rôle of Medical Journals in Clinical Medicine."  
 DR. M. A. WARE,  
 Editor of the *British Medical Journal*.

**Thursday, 27th October**  
 5.45 p.m. in the Physiology Lecture Theatre.  
 "Non-Address"  
 MR. BERNARD MILES,  
 Director of the Mermaid Theatre.

# CIRCADIAN RHYTHMS IN CHILDBIRTH

or

## The Mystery of the Early Morning Stork

by A. N. Crowther

After two months of disturbed nights, the Midder Clerk can have little doubt in his mind that babies take particular delight in arriving during the early hours of the morning. Having wondered about this distribution, and been assured by a night sister that she delivered many more babies than her daytime colleagues, I decided to analyse the times of birth of babies born at Thorpe Hall, Peterborough, over a two year period, to see if there was any foundation for this belief. I took a two year sample merely because the Midwives' Registers for this period were readily available, and excluding stillbirths and pregnancies ending at Caesarian section, the birth-times of 1331 deliveries were analysed.

The distribution of numbers of births expressed as a percentage of the total births against birth-time is recorded (Fig. 1(a)) The study of birth-time, and the recognition of a definite peak incidence in the early hours is by no means new—in fact Kaiser and Halberg recall that this unequal distribution has been 'rediscovered' no less than ten times in the literature since 1848, when Danz and Fuchs plotted 1000 normal birth-times. Since then, the total number of birth-times published has reached 601,222, and when this grand total is plotted (again as a percentage of total births against time—Fig 1(b)), there is a very obvious peak incidence between 0300 and 0400 hrs., and a

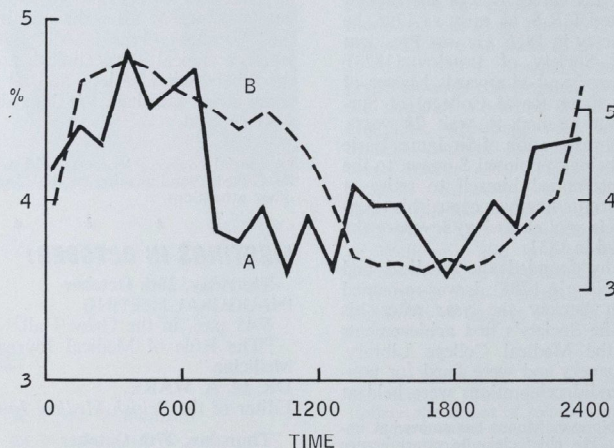


Fig. 1.—Number of births plotted against time.  
A. Present Series.  
B. 601,222 births from literature.

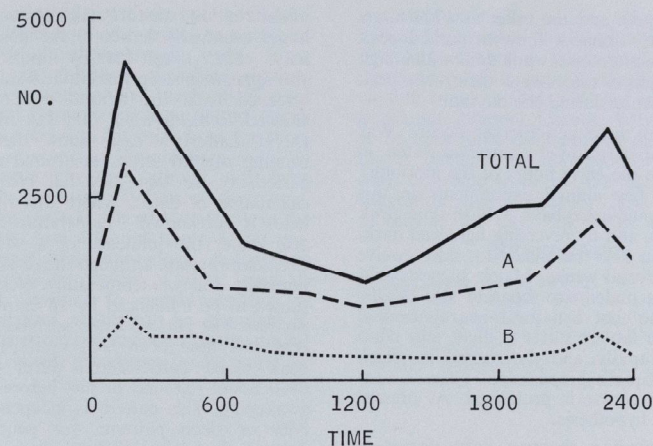


Fig. 2.—Number of births plotted against time of onset of labour. A. Onset of labour.  
B. Rupture of membranes

trough between 1700 and 1800 hrs. Although the vertical scale of the present series is only half that of the larger series, made necessary by the magnification of errors of distribution incurred by a small total number, the curves are very similar in character. Apart from the sudden drop in births between 0600 and 0800 hrs. in the present series, when the day's work starts, the peaks and troughs correspond quite reasonably. This is gratifying, since the published cases were all very carefully selected as absolutely normal, spontaneous deliveries, whereas my series was taken from a unit which dealt essentially with uncomplicated births, had a very low artificial induction rate, but included a few assisted deliveries. I left these in because I considered that in such a series, the delivery-times accelerated by intervention probably balanced the delayed deliveries requiring help.

The unequal distribution over 24 hrs. is considered to show a significant statistical variation, and establishes that birth is governed by a biological periodicity, which is known as the human circadian rhythm. The term 'circadian' was coined by Halberg to mean a 24 hour rhythm, owing to the ambiguity of the word 'diurnal'. Human circadian rhythms based on a 24 hour cycle of light and darkness determine a pattern of behaviour in our social organization, and in such diverse bodily func-

tions as sleep-wakefulness and intraocular pressure. The basic mechanisms underlying these fascinating rhythms are not fully understood, but they represent autonomous and self-sustained bio-oscillations, brought into relation with the external environment by photoperiodism, and social contact.

The mechanism of onset of labour is very complex. However, disregarding the actual mechanism, surveys from Eastern Europe, plotting the onset of labour as (A) the start of painful contractions, or (B) the spontaneous rupture of the membranes against time, have shown most convincingly that the time of onset of labour is also governed by a circadian rhythm (Figs. 2(a) and (b)). As expected, the peak incidence of onset precedes the peak incidence of delivery, but by only 2-3 hours, whereas labour lasts between 5-9 hours, on average, depending on parity. This discrepancy remains unexplained. Malek has shown that light probably influences the onset and duration of labour, for 1.5 times as many labours start in darkness as in light, and those starting at night tend to be shorter than those starting during the day. The need for scrupulous selection of cases in these series is underlined by the observation that abnormal labours show little or no apparent relation to the 24 hour circadian scale—in fact there are two peak incidences, one at 0900 hours (presumably

elective Caesars), and the other at 1700 hours (unexplained). Stillbirths show a marked peak during the late afternoon, while units with a high artificial induction rate create their own peak delivery incidence during the daytime.

Why should these periodicities occur? Was there once upon a time a survival value in giving birth in the early hours of the morning? Of the very few animal experiments in this field carried out, mice have a birth-time peak at 0200 hours, and by reversing light and dark, this peak can also be made to shift twelve hours after several weeks. Malek suggests that labour occurs under two separate sets of disturbances—the first a natural neurohormonal system, where labour starts at night and completes itself rapidly, and the second in which there is inadequate preparation, onset is random, and the course is prolonged. At present this is only a hypothesis.

Human circadian rhythms vary according to which part of the world one lives in; from year-round equality of equatorial day and night, to the Arctic, where the Eskimos apparently never establish circadian rhythms. Long distance air crews experience no regular 24 hour periodicity, for by flying East they experience a longer-than-24 hour cycle, and shorter when travelling West. Many physiological variables show circadian rhythms, and some periodic behaviour survives alterations of environmental periodicity, showing that the body possesses an endogenous, or living clock, rhythm. The evidence in favour of endogenous rhythm is (1) physiological rhythm persists even in constant conditions (almost impossible to attain), (2) the rhythm may retain its old phase when the phase of environmental rhythms is shifted—i.e. a change in longitude, (3) the rhythm retains its old cycle length when the environmental cycle length is changed—i.e., a change in latitude, and (4) human physiological rhythms may depart from the 24 hour periodicity if kept in constant but abnormal conditions—e.g., David Lafferty's recent sojourn in a cave. These rhythms persist for a time in the altered environment, but are slowly replaced by a new induced rhythm, which will likewise be retained for a short time on returning to the normal environment.

Periodicity in various different bodily functions emerges during the first year of life in human infants. Pulse rate changes, temperature control, and the distribution of sleep settle down to definite rhythms by six weeks. Changes in urine flow rhythms appear to show that an

initial rhythm, which is slightly longer than 24 hours eventually settles to the normal periodicity. This longer-than-24 hours periodicity also appears in sleep-wakefulness studies. People screened from the natural environment, and allowed to sleep when they felt like it—as in David Lafferty's case—show that the free-running rhythm settles at around a 24.5 hour periodicity, so that they fall behind in their calculation of dates. Where this rhythm originates is not known. Temperature regulation is also under the influence of a well-developed circadian rhythm, although the pulse rate, which normally follows temperature closely, can be shown to be influenced by an entirely separate rhythm. The periodicity in adrenal cortical activity has now been well established, with a peak blood corticosteroid level occurring at 0800 hours—around or just before the time of awakening. This pattern is independent of activity or sleep patterns, for people working through the night, blind persons, well adapted night nurses and nightwatchmen still show a peak incidence at 0800 hours, but the rhythm is absent in Cushing's disease. The possibility of cerebral cortical control arises, for corticosteroid levels can be influenced by social contact, and the rhythm is absent in delirium, or coma, where there is an altered state of consciousness. On the other hand, the clock could be situated in the reticular formation, which is concerned with control of the conscious state, and influenced by the cortex. However, E.C.T. disrupts cortical activity, but not circadian rhythm. Again, subjects isolated from the natural environment tend to settle into a longer-than-24 hour periodicity in relation to adrenocortical activity.

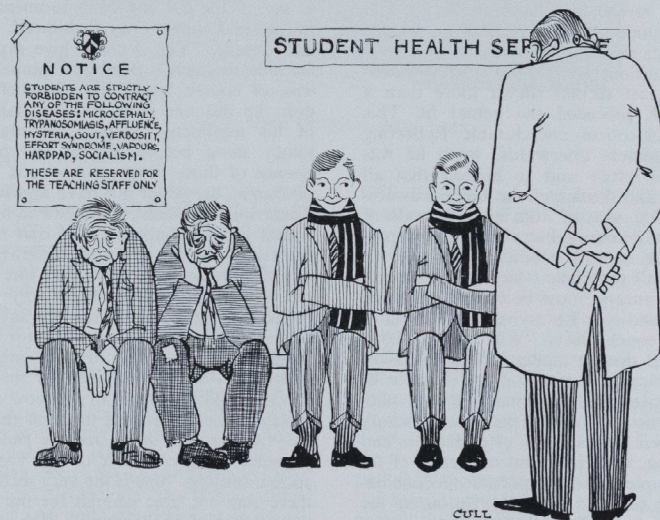
Renal excretion of water and electrolytes, eosinophil and lymphocyte counts, mitotic activity in human skin, and blood pressure can all be shown to be under the influence of circadian rhythms, but these may only be secondary rhythms influenced by adrenocortical steroids. Bizarre rhythms have also been found influencing pathological conditions; such as high temperatures, the vital capacity in asthma, the blood pressure in acute glomerulonephritis, intraocular pressure in glaucoma, the timing of haemoptysis, and a nocturnal peak for cerebral haemorrhage, pulmonary oedema, and cardiac asthma. Halberg suggests that disease processes may dissociate two or more rhythms, which are mutually beneficial when linked, but which cause further symptoms when dissociated. This interesting hypothesis has some corroboration in animal studies.

The fascination of circadian rhythms in man has led the discussion away from the timing of birth, but has shown that many bodily functions show an inherent circadian rhythm. Whether these endogenous mechanisms need environmental stimulus for their initial development is not known, but mice bred for three generations in constant illumination, with no known external circadian stimuli, still have demonstrable circadian rhythms of their own. The circadian clock is placed tentatively in the hypothalamus, and although there is no evidence of more than one clock, endogenous rhythmicity may be present at many levels of organisation, leading to synchronisation of different functions, which can be disturbed in disease. With rhythmic variation demonstrated in so many bodily functions, doubt must be

expressed as to the validity of certain pathological tests, unless the state of the regulating circadian rhythm is taken into account. The significance of a natural longer-than-24 hour rhythm is not understood, but it seems to be a genuine inherent feature. Why babies tend to be born more frequently in the early morning is likewise not understood, though there may be some truth in one of our teacher's suggestion that pregnancy lasts not only 9 months to the day, but to the hour as well.

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"Now which of you students are from the new intake?"

## medicine in literature

An Extract from Part Two of

# THE IDIOT

by *Fyodor Dostoyevski*

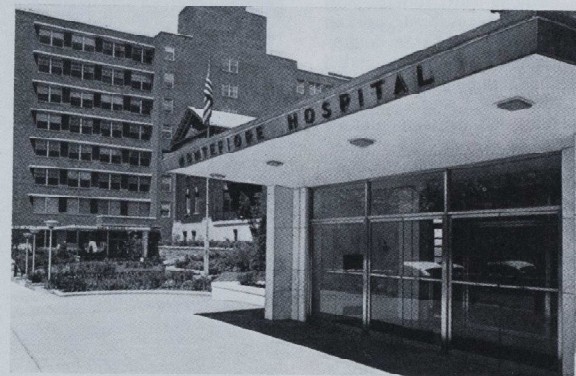
Translated by David Magarshack

He was thinking, incidentally, that there was a moment or two in his epileptic condition before the fit itself (if it occurred during his waking hours) when suddenly amid the sadness, spiritual darkness and depression, his brain seemed to catch fire at brief moments, and with an extraordinary momentum his vital forces were strained to the utmost all at once. His sensation of being alive and his awareness increased tenfold at those moments which flashed by like lightning. His mind and heart were flooded by a dazzling light. All his agitation, all his doubts and worries, seemed composed at a twinkling, culminating in a great calm, full of serene and harmonious joy and hope, full of understanding and the knowledge of the final cause. But those moments, those flashes of intuition, were merely the presentiment of the last second (never more than a second) which preceded the actual fit. This second was, of course, unendurable. Reflecting about that moment afterwards, when he was well again, he often said to himself that all those gleams and flashes of the highest awareness and, hence, also of "the highest mode of existence", were nothing but a disease, a departure from the normal condition, and, if so, it was not at all the highest mode of existence, but, on the contrary, must be considered to be the lowest. And yet he arrived at last at a paradoxical conclusion: "What if it is a disease? What does it matter that it is an abnormal tension, if the result, if the moment of sensation, remembered and analysed in a state of health, turns out to be harmony and beauty brought to their highest point of perfection, and gives a feeling, undivided and undreamt of till then, of completeness, proportion, reconciliation, and an ecstatic and holy fusion in the highest synthesis of life?" These vague expressions seemed to him very comprehensible, though rather weak. But that it really was

"beauty and prayer", that it really was "the highest synthesis of life", he could not doubt, nor even admit the possibility of doubt. For it was not abnormal and fantastic visions he saw at that moment, as under the influence of hashish, opium, or spirits, which debased the reason and distorted the mind. He could reason sanely about it when the attack was over and he was well again. Those moments were merely an intense heightening of awareness—if this condition had to be expressed in one word—of awareness and at the same time of the most direct sensation of one's own existence to the most intense degree. If in that second—that is to say, at the last conscious moment before the fit—he had time to say to himself, consciously and clearly, "Yes, I could give my whole life for this moment", then this moment by itself was, of course, worth the whole of life. However, he did not insist on the dialectical part of his argument: stupor, spiritual darkness, idiocy stood before him as the plain consequence of those "highest moments". Seriously, of course, he would not have argued the point. There was, no doubt, some flaw in his argument—that is, in his appraisal of that minute—but the reality of the sensation somewhat troubled him all the same. What indeed was he to make of this reality? For that very thing had happened. He had had time to say to himself at the particular second that, for the infinite happiness he had felt in it, it might well be worth the whole of his life. "At that moment", he once told Rogozhin in Moscow during their meetings there, "at that moment the extraordinary saying that there shall be time no longer becomes comprehensible to me. I suppose", he added, smiling, "this is the very second in which there was not time enough for the water from the pitcher of the epileptic Mahomet to spill, while he had plenty of time in that second to behold all the dwellings of Allah".

# Another man's medicine

by *DIANE GORVETTE*



Montefiore Hospital, New York

It was January 1st 1966—I was on my way to Montefiore Hospital and Medical Center in New York City, to take up a three months' scholarship awarded by that Hospital and the British Medical Students' Trust for study in Paediatrics and General Medicine.

Montefiore Hospital is a progressive 700 bed hospital in the Bronx, providing medical care in all fields except obstetrics. It is privately endowed, getting much of its support from the Federation of Jewish Philanthropists. It is located in a strong Jewish section of New York and has predominantly Jewish associations. Two years ago the Hospital announced an ambitious plan for expansion, likely to cost \$10,000,000 and to include new laboratories, libraries, diagnostic and treatment centres aimed at relieving demand for hospital beds, and a community health centre. When completed in

1970 the hospital complex will consist of 8 totally renovated buildings and 8 completely new ones and will have doubled its bed capacity. The encouraging factor is, that half of these projects are already near completion, but this merely serves to reflect the more widespread hospital building programmes being successfully carried out in the U.S.A.

The Hospital has a two year old affiliation with the Albert Einstein College of Medicine, and students from there are taught regularly on the Montefiore wards. I joined a section of these, first as a participant on a 5 week medical elective programme, and later for a similar period in the paediatric wards.

I soon discovered that teaching took a more concentrated form and that the students worked a much longer day than I had been used to, but I was gratified to discover the student being

accepted as part of the team attending the patient, thus emphasising his responsibilities and giving him authority with the patient. We were the first to see the patient and, as senior students, we were responsible, after discussion with the resident, for writing the orders on the patients we were allocated.

We were expected to be competent at minor laboratory tests, and to perform marrow aspirations, lumbar punctures and pleural taps as necessary. All this served to put the student into much closer contact with the *practice* of medicine, an aspect which is generally lacking in our own medical course in England.

The elective period in medicine gave time to attend the daily medical ward rounds, also a selection of other conferences being held in the hospital. I found the daily X-ray conference of great value, and in addition attended the weekly P.M. demonstration, E.C.G. lecture, clinico-pathology conference, and residents' seminar (held at the hour of 8 a.m. thus making my attendance a trifle erratic!). The elective course was limited to 6 students; we were spread over 6 wards, thus ensuring that we always had as much case-material as we could absorb. Three times a week, pairs of us would meet a tutor and over the space of 1½ hours we would each present and discuss a patient whom we had personally admitted and worked up. Once a week one of the students would present a paper to the rest of us upon a selected topic. These were always adequately laced with current research ideas.

The elective course was superbly organised and taught; though I often lacked in theoretical knowledge compared to the Americans who had no difficulty in quoting chapters of Cecil and Loeb, verbatim it seemed, my ignorance quickly stimulated me to try and catch up. The system of assessing the progress of the student in America is in sharp contrast to the English habit of using examinations. In the U.S.A. the students are aware of being constantly graded by all around them, including even the intern. This may be the reason for the vast amount of time devoted to book work by the students, but it also resulted in an atmosphere of competition and tension between individual students. I felt that too often people tried to make irrelevant contributions to discussions—just to indicate that they had been reading the latest journal the previous evening. Nevertheless the system engendered a continuous high standard of work.

You think that case histories were pretty much the same the world over but my early

attempts to interpret American notes were fraught with obstacles. For instance when you read "This is the 1st M.H.M.C. admission of this 40-year old W.M.," followed a little further down by "W.D.W.N.W.M." it is not surprising you did not realise that you were dealing with a case of a Well Developed, Well Nourished, White Male entering the hospital for the first time. When you have a thrusting apex beat in your side, that is your P.M.I., and if your big toe sticks out in the air, it is your E.H.L. that is at fault and nothing else. Despite all their love of abbreviations, I was politely asked to write histories that could be understood if I so much as tried out J.V.P., or A.B., and I was amazed to see all American doctors writing six weeks, or rectal out in full, where we would make do with 6/52 or P.R. However we seemed to agree about the B.P.!

Diagnosis rested more on the results of laboratory investigation than clinical appraisal and this was reflected in the manner of referral to differential diagnosis, which was always described in the notes as "Rule Out".

Intensive laboratory investigations were carried out on hospitalized patients, but these frequently saved sizeable bills for similar investigations as out-patients a few weeks later, the cost of which are not covered by the type of insurance most people hold.

The standard of nursing seemed generally lower than that in most English hospitals; many nurses disliked their jobs and their dress had a tendency to be slovenly. Since the ward was divided into a number of one, two or four-bedded rooms, looked after entirely by allocated nurses, it was very much relative to which nurse you got, as to whether you received good nursing as a patient. A start for improvement has been made by revising the training methods, and in Montefiore Hospital, T.V. cameras have been installed in some rooms, with T.V. monitors set up in an adjoining instructor's room. Without moving from her desk, the instructor is in constant visual and verbal contact with her nurse, for the latter wears a wireless receiver to permit two-way conversation. This way a nurse can be taught and observed in action, without the unnerving element of a head peering over her shoulder.

One of the particular features of Montefiore Hospital is the very active Division of Social Medicine, which has pioneered a variety of ideas to improve community health problems. The Division has four sections:

1. The Social Service Department—still a feature of only 30% American hospitals,



2. The Home Care Department.
3. The Montefiore Medical Group—a prepayment group practice Unit of salaried physicians.
4. The Family Health Maintenance Demonstration—an experiment to determine and then to provide health needs of families. The project thus includes health education, preventive medicine, medical care, etc.

I spent a week attached to the Home Care Department and was impressed by what they were achieving. The concept of home care was originally developed 19 years ago, to provide hospital type care in the home for selected chronically ill people. Its foundation was secondary to the recognition of the psychological effects of prolonged hospitalisation, the ever-increasing demand for beds, and the realisation that many of these beds were occupied by chronically ill patients no longer needing the

constant specialised services of the hospital, but who could not return to their home situation as it existed. Under the Home Care programme the patients are treated as hospital patients in an extra-mural location and nurses, physicians, physiotherapists, social-workers, etc., are made available to the patient as necessary. Besides being socially and medically as adequate as hospitalisation, it is important to note that the cost of home care to the patient is approximately one-quarter that of inpatient care. Communication between the staff caring for the patient is maintained by the keeping of full case notes and a weekly conference attended by all members of the team. More than five hundred patients have been cared for by the Hospital under this arrangement. There is no doubt as to the success of this scheme, and I did not have to look at the financial aspects to see this, though that also provided ample evidence. In one instance where the young mother was chronically ill, it was the means of keeping the family together. In other cases it allowed for the maintenance of terminal patients in relative happiness at home. Montefiore Hospital was the pioneer of home care back in 1947. Now there are over 55 home care departments in all parts of the U.S.A.

The Montefiore Medical Group is a unit offering hospital based medical care to families, through a pre-paid insurance scheme. Policyholders pay premiums into the wider Hospital Insurance Plan (H.I.P.) of Greater New York. The Group employs some 50 full and part-time salaried specialists, who work in a building in the Hospital grounds, serving some 30,000 patients. Each patient has his own physician, who is also on the staff of Montefiore Hospital. Children under nine are cared for by Paediatricians. Patients requiring hospitalisation enter Montefiore Hospital for treatment (Obstetrics excepted). The scheme has some parallel to the National Health Service with the added advantage that the physician can follow the patient on both the inside and the outside of the Hospital. Patient loads per doctor are sufficiently light (around 1,400) to permit this:

The H.I.P. at Montefiore Hospital is only one of several health insurance schemes available to the general U.S. population. Blue Cross and Blue Shield are two other prominent schemes. All of these offer a wide range of scale of health insurance coverage, the more that an individual wishes to be covered, the more he has to pay. Premiums are based largely on age and general health. But statistics





show that even in the most highly insured group, less than two-thirds of the patients have adequate coverage and in the low income group (\$2,000 per year) only one-third have insurance cover at all. There has been a lot of publicity in the past given to families being crippled by large hospital bills, but in general the quoted examples concern people who could have afforded to take out insurance, but who did not. Indigent patients can claim help from the State Public Welfare Agency. They then enter the hospital as welfare patients, the facilities accrued them once there are virtually the same as those given to private patients. A certain number of nurses are even made available by the State for a patient to be 'spiced', should this be necessary. Insurance holders whose policies have ceased to cover them can also appeal to the Welfare Agency for help but pride and reputation frequently prevent people from applying to the body and they try to bear the enormous bills themselves.

In 1965, in an attempt to relieve some of the financial burdens placed by this system on the older age group, President Johnson signed into law social security amendments which would establish a form of health insurance for the over 65's and would be known as Medicare. I spent a week in Washington, D.C. attached to the Federal Department of Health, Education and Welfare and I was able to study Medicare at close hand. There are two main parts to the scheme:

1. Hospital Insurance—this part is free to the over 65's, being financed by special contributions paid by people while they work, with matching contributions from employers. This covers hospitalisation of up to 90 days in a single episode of illness, paying all the bills in the first 60 days except the first \$40,

and thereafter all but \$10 a day. Also included are costs of out-patient hospital diagnostic services, home care and home nursing necessary after discharge. There is a lifetime limitation of 190 days on payments for treatment in mental hospitals. This in particular is going to put an added pressure on alternative programmes such as Home Care.

2. Medical Insurance—this part costs the individual \$3 monthly and primarily helps to pay bills for doctors' services outside the hospital.

Medicare took effect from July 1st only, this year, so it is too early to assess the results. It might be mentioned though that the scheme has not been well received by the doctors, who fear the effect of interference by people without medical qualifications; they also fear loss of earnings enforced by their own resultant inability to regulate their incomes. But this in part they have been forced to accept.

Many of these schemes are worthy of further thought and possible modification, and may well suggest the lines of future development in this country. This would be true not only for the patient but also the student would be able to take a much more active part in the actual practice of medicine and thereby assume greater responsibility at an earlier time in his training. All in all, I found the contrasts between American and the English systems most stimulating. If only there could be more exchange visits between students, these two systems could well become complementary.

I am most grateful to Montefiore Hospital and the British Medical Students Trust for providing me with this experience, and I should like to pay a special tribute to Dr. G. Silver, M.D., formerly Chief of the Division of Social Medicine, Montefiore Hospital, for his encouragement and help. I would warmly commend this annual scholarship scheme to other students.

## Contravention of the Oath?

by Elisabeth Macdonald

In recent years medical research has led to widely published progress in many fields. One direction of development has received little coverage. Biological warfare is the intentional employment of living organisms or their toxic products to cause death, disability or disease in man, animals or food supplies. The propagation of diseases such as botulism, plague, cholera, dysentery, typhoid and smallpox are being studied both here and in the United States and probably in Russia. Toxic chemicals are being developed whose effects range from temporary disablement to death within a few minutes. Vesicants cause not only severe blistering, and peripheral vascular shock but also delayed effects on the intestinal tract and bone-marrow. Nerve gases, colourless and odourless, interfere with the action of the C.N.S. leading to excess salivation, nausea, vomiting and death from respiratory depression. (The Lancet, July 23, 1966). Hallucinogens are being developed to produce transitory or permanent derangement.

There has been remarkably little public debate, especially among physicians, on the advisability of developing, stockpiling and using chemical and biological weapons. A new situation has arisen for the doctor, in that he is confronted with a decision he has never before had to face. Hitherto he has not been required to take an active part in methods aimed at the destruction of life. Now because of defence requirements he is being drawn into the preparation and testing of agents which could kill large numbers of civilians as well as soldiers. Information available on the current status of chemical and biological

weapons indicates that physicians can do very little about the effects of such agents once they are used. As in other fields of medicine the major emphasis must be on prevention.

Some physicians welcome this form of warfare as being more "humane" than napalm, saturation bombing or nuclear warfare. There are two main objections to this theory. Most of the agents now available are either benign and relatively ineffective, or are lethal or permanently crippling. "Even if a "humane weapon" is developed, its "humanity" will require the delivery, as in the laboratory, of a precisely measured dose to a standard victim. Both these requisites have thus far been impossible to attain in the field. Chemical and biological weapons are notoriously uneven in their dispersal and therefore in the amount absorbed by each recipient; to ensure that every person receives an incapacitating dose, some will have to receive an overdose. Furthermore, the young, the elderly and the infirm will be the particularly susceptible victims."\*

Through centuries physicians have laboured to eradicate the afflictions now being considered for release on alien populations. To condone such a prospect seems a tragic reversal of medical progress and a disquieting rejection of Hippocrates admonition: "... I will use treatment to help the sick according to my ability and judgement, but never with a view to injury. Neither will I administer a poison to anybody when asked to do so, nor will I suggest such a course."

\*New England Journal of Medicine: Jan. 6, 1966.

## record review

An excellent performance, moderately well recorded, of **MAHLER's Fourth Symphony** by the **Czech Philharmonic Orchestra** under **Karel Sejna** (SUA 10157) heads this month's selection, entirely symphonic, from Supraphon (once again, their complete list). A Bohemian Jew, who became a convert to Catholicism, whose intellectual ideals were firmly based in the Austro-German culture which he felt was his natural heritage; a composer who, like Beethoven, Schubert, Bruckner and Dvorak, numbered among his works no more than nine completed symphonies, and whose greatest output, like so many famous symphonists before him, stemmed from the period of his stay in Vienna. This was Mahler, the eclectic, the last heir to the long line of Viennese tradition, who assimilated the folk tunes of his native Bohemia and the youthful abandon of Austrian popular music. Yet in spite of his somewhat derivative sources his works are permeated throughout by his very personal brand of genius. The long melodic lines and rich harmonies combine to form works whose monumental structures seem to extend endlessly into time and unknown dimensions. It was as if the restless mind of the eternal doubter—for such he was—was constantly searching for the certainty that would finally bring an ecstatic peace to his soul.

The melancholic nature of Mahler is perhaps the key to the understanding of his music. It is useless to attempt to analyse his compositions in terms of the classical architecture of his traditional forebears; rather is it better to accept his creations as the eternal wanderings of a troubled spirit in some new and distant lands. To write a symphony was, in fact, for him, to construct a world.

Sometimes, however, he allowed himself to be released temporarily from his sufferings. On these occasions he recalled the raptures of his early childhood, finding inspiration in the famous collection of German folk poetry, *Des Knaben Wunderhorn* (The Youth's Magic Horn). It is from this book that he took a charming poem entitled *Der Himmel hängt voll Geigen* (The Heaven full of violins) and used it as the text of his fourth symphony. Here his extraordinary gift of lyricism led to the natural inclusion of a soprano voice in the last movement. The spirit and message of this most popular of Mahler's symphonies is simple, human Paradise.

The controversy over Berlioz seems to be

fading now. Both listeners and critics—two separate entities, note—seem to accept the genius, if not the talent, of this disordered arch-romantic. The *Symphonie Fantastique*, his most popular work, provides strong testament to this, and if it also underlines the unevenness and lack of self-discipline of the composer, it nevertheless remains as quite the most extraordinary and brilliant outburst of youthful capriciousness in musical history. It conjures up the romantic and, at times, blood-curdling story of a young man who, when rejected by the woman he loves, experiences a fantastic dream in which he is accused of her murder and is executed. At his funeral there is a diabolical orgy at which a wild dance is performed by witches and all manner of monstrous fiends. At the height of these black festivities his love enters (represented by her melody—the *idée fixe* which recurs throughout the five movements of the loosely-knit work): but now she is no longer the embodiment of all that is feminine and refined; instead she casts aside all inhibitions and thrusts herself into the vulgar dance, at the end of which the death-knell sounds—a burlesque parody of the melody, *Dies Irae*. The most tragic part about this work, subtitled *Episode de la vie d'un artiste*, is the fact that it was inspired by the rejected love of an Irish actress to whom Berlioz was later unhappily married.

The performance of **BERLIOZ' Symphonie Fantastique** by the **Czech Philharmonic Orchestra** under **Carlo Zecchi** (SUA 10103) is tasteful—a pertinent description since it is so tempting to overdo the dramatic, and this is one thing Zecchi avoids. Thus, although clearly no match for the great Beecham interpretations on record, this disc can be listened to afresh again and again, and for this reason is to be recommended.

Finally, a record that will surely be prized by many: **Martin Turnovsky** conducting the **Czech Philharmonic Orchestra** in *Symphony No. 29 in A major, K.201* and the **Brno State Philharmonic Orchestra** in *Symphony No. 40 in G minor, K.550* by **MOZART** (SUA 10512). These two masterpieces, the first displaying the composer's early maturity, and the second a melancholic and even pessimistic product of Mozart's last years, receive truly classical and memorable performances from the baton of a conductor who deserves to be better known over here.

Michael Spira.

Supraphon records are available in mono or stereo versions and are priced 17s. 6d.



## Penguin Reviews



### AWAKENING TO THE DARK

**Gorky:** My Childhood, Penguin Classic. Price 5s.

I found this book book depressing to read, at times almost tediously so, but in the end I was left with a clear and vivid picture of Gorky's childhood.

In this book, Gorky describes the early years of his life, starting with the death of his father when he was thrust into his grandfather's household, and his experiences of the "barbaric life in Russia" of that time which he is writing to expose. Certainly, cruelty and harshness are dominant themes.

The members of the household in which he was brought up, were, he says, "choked in a fog of mutual hostility". His grandfather beat him almost as often as he spoke to him, and they were beatings from which it took him several days to recover. His uncles were constantly fighting. His mother only appeared when she was desperate for help of one sort or another. Later there was an unwelcome stepfather. Almost every chapter ends with an account of a beating or some kind of cruelty, and one feels with Gorky, that this "life is one nightmare after another"—a dragging hopelessness with no way out.

The picture of gloom is relieved by one or two very sympathetic characters. Grandmother, with whom he shared the big bed in the attic, was a constant source of folk legends and fairytales, and would sit by him for many hours when he was ill, teaching him songs and stories of Russia. "Just the Job", a dabbler in some mysterious work in copper, was another friend to whom he would escape for a while from the harshness of the household.

Ann Brown.

### BEGGAR MAN, THIEF...

**The Roots of Evil**, by Christopher Hibbert. Price 9s. 6d. *Pelican*.

Criminology is a fascinating subject and Christopher Hibbert's social history of crime and punishment provides an exceedingly readable lexicon of its evolution.

The opening chapters concern the growth of punishment between the sixth and eighteenth centuries; the rack, the pillory, branding and mutilation are considered. The rationale of torture, and some methods of its infliction, are mentioned, as are the means of execution and the ultimate fate of the corpse. The effects of such punitive measures are also discussed, for in Romilly's words "... cruel punishments have as an inevitable effect a tendency to produce cruelty in the people".

The second part of the book deals with criminological reform as it affected the Law, the Police, Prison and Penal Colonies during the last three hundred years. A short section is included on current techniques of execution, stressing that they are not always as quick, clean and painless as one likes to suppose. Three or four attempts may be required to destroy a man in the Electric Chair; men may remain conscious a while after the hangman's trap is sprung, and death doesn't always come at once when a body is riddled with bullets.

The criminals and their psychology are considered next in a comprehensive study text illustrated by famous cases as those of Haigh, Heath, Giffard and Hanratty. The environment as a culture medium for criminality is subsequently debated and possible remedies analysed. Crime Cults and their social significance are then discussed: the Private Eye, Sherlock Holmes, The Saint, and the incomparable James Bond.

Part Five concerns itself with the advances made in crime detection and woven into this theme are some of the fascinating crimes which required the complexities of Forensic Medicine for their discovery. Prohibition, the mobsters and bootleggers are dealt with next. The Mafia, and "Murder Incorporated" Al Capone, Dutch Schultz, "Legs" Diamond, "Bugs" Moran, "Mad Dog" Coll, "Abe Kid Twist" Reles and other such colourful names in American criminology are considered here, together with the development of the "G-men" and the "Cops", and the fight against crime by men like Dewey and Hoover.

The closing section ponders our present problems concerning capital and corporal punishment, prison, the sexual offender and the juvenile delinquent.

Christopher Hibbert's book is to be highly recommended as a lucid, absorbing and extremely humane thesis on the genesis of crime and punishment.

Jeffrey Gawler.

### THE IMMORTAL BAWD

**A Singular Man**, by J. P. Donleavy. Price 4s. 6d. *Novel*.

This is the sad yet delightfully funny tale of what happens to a singular man like George Smith when he falls in love.

George's singularities are many. Among them, his grandiose preoccupation with things morbid, illustrated by his practice of going to parties in a chauffeur-driven hearse, or his commissioning of a mausoleum to house his remains. The delicate respect which he holds for his body is possibly motivated by the excessive length of a certain part of his sexual equipment. His school friends were intrigued by it, and those females of his present intimate acquaintance are delighted by it. Finally he conducts a business correspondence of such obscurity and hilarity that he wins our affection. To list George's singularities does him and Mr. Donleavy no justice. This masterpiece must be read.

The book is drenched in humour, much of it bawdy, but none pornographic. Donleavy takes up where Lady Chatterley left off. Where Lawrence was educating us, telling us what

we could do if we tried, Donleavy accepts the fact that we've now learnt and presents us with the funny side of things.

Quite one of the best books I have read for a long time; it is immensely readable, and it is to be recommended for use when rain stops play.

Anthony du Vivier.

### IN THE HOME

**The Family and Marriage in Britain** by Ronald Fletcher. Price 5s. *Pelican Original*.

The aim of this book is to show that, contrary to much present-day opinion, the family as a unit is more stable and secure today than ever before in our history. It is primarily a detailed sociological study of various aspects of the family in Britain.

The author begins by discussing the nature and functions of the family. It is, he feels, a natural grouping, established for the sake of security and well-being of the offspring, rather than a sacred institution in itself as some religious groups would claim. The functions of the family are considered under various headings: government, economics, education, health, religion and recreation. The role of the family as a primary social group in preparing its members for a wider pattern of social groups is also discussed.

The second chapter is a brief historical survey of family life in Britain in the last two centuries. The author quotes from many sources to show that the family was not such a stable and close-knit unit as might be imagined, owing to severe economic and social pressures. He shows very convincingly that there was little time for mutual activity and enjoyment when everyone in the family over the age of three was working for up to eighteen hours a day on different shifts, when a family of eleven lived in one room, when the wife was a physical wreck from heavy work in the mines.

With his account of the present position, he gives results of many statistical surveys: the marriage and birth-rates, the age group in which divorce most commonly occurs, the average number of children per family, and many others.

From the evidence which he has gathered in the early part of the book, the author concluded that there has certainly been no decline in family life in recent years but rather, with improved economic and social conditions, the family is becoming more stable

and is providing much more for its individual members than ever before.

Anyone interested in the social implications of the family unit will find this a worthwhile book.

Ann Brown.

## MEDICAL BOOKS

### Anaesthetics

**Anaesthetics for Medical Students**, by Gordon Ostlere and Roger Bryce-Smith. 6th Edition. Published by J. and A. Churchill. Price 14s.

The sixth edition of this popular small book has been revised and brought up to date, although its size is essentially the same. There are new sections, on tracheostomy, cerebral oedema, transfusion reactions, neonatal resuscitation and post-operative pain. That on neonatal resuscitation is particularly clear and concise. The importance of the treatment of post-operative pain is stressed, and the use of small repeated doses of drugs in order to gain adequate pain relief yet avoid overdose is emphasised. This is sound advice but it should be remembered that, with the modern tendency to light general anaesthesia, patients often require more post-operative sedation and analgesia than they might have done previously.

The use of vasopressors is a controversial subject but an intra-venous dose of 15 mg. Methylamphetamine ("Methedrine") might well produce a greater effect than is desired. In passing, the dose of curare is presumably meant to be 15-30 mg., not 15-18 mg.

The treatment of cardiac arrest as a medical emergency is considered in insufficient detail, brief mention only being made of external cardiac massage and artificial ventilation, and none of internal massage, correction of acidosis or of drugs used. The description of external cardiac massage is not very clear and there is no mention of the methods used to assess the efficiency of the procedure, such as the maintenance of a good colour and signs of an effective circulation.

This book however remains a classic and one has no hesitation in recommending it.

J. Missen

### Biography

**The Life of William Harvey**, by Geoffrey Keynes. Kt. Oxford, Clarendon Press, 1966. Price 90s.

It is fitting that most of the outstanding work on William Harvey has been done by Bart's men and women. Sir James Paget, Sir D'Arcy Power, Sir Wilmot Herringham, Dr. Gweneth Whitteridge, Dr. K. D. Keele and Prof. K. J. Franklin have

provided biographical studies and translations of Harvey's writings, while Sir Geoffrey Keynes has compiled a bibliography, and also contributed several studies on Harvey. Sir Geoffrey has now produced this definitive biography, taking full advantage of the contributions of previous writers on the subject, re-evaluating their findings, discovering new material, and digesting the resultant facts in a handsome volume published at the Clarendon Press, Oxford.

This book reproduces all that is known about Harvey, and the skeleton (for we know little of his domestic life) is clothed with information regarding his relatives, colleagues, friends and patients, his association with the College of Physicians and with this Hospital, and his service with two monarchs. Harvey is presented in the setting of his period, and the episodes of his life are fully documented. Letters, prescriptions and the Wills of Thomas, John and William Harvey are printed in full; there are thirty-three illustrations.

Sir Geoffrey corrects several errors, including the generally accepted fact that Harvey was incorporated M.D. at Cambridge (p. 35) and gently, but rightly, refutes the suggestion that the manuscript letter preserved at Milan from Harvey to Hofmann is in Harvey's handwriting (p. 257, note 1). He makes no mention of the translation of *Prelaciones* published in 1961. Perhaps in view of Dr. Gweneth Whitteridge's scholarly work issued in 1964, the former is best forgotten.

The more important an individual the greater the significance of every detail respecting his life. Unfortunately, some of the greatest figures in the history of medicine have either been too modest to bequeath biographical material to posterity, or this information has largely disappeared. In recent years in particular, every conceivable source of information regarding William Harvey has been tapped. Most of his works have been translated, the sources of his information have been investigated, and the effect of his writings upon later authors have been studied. Contemporary authors have been scoured for every reference to Harvey, and conjectures have occasionally been employed to fill the gaps. Sir Geoffrey has sifted the wheat from the chaff, and in presenting all admirers of Harvey with a monumental study, has produced a useful source of material for the historians of medicine, politics and sociology. Only

one thing can cause the displacement of this biography as the definite study of Harvey and his period; the discovery of significant new Harveiana. Sir Geoffrey will then have an excuse for producing a second edition of a book published almost forty years after his Nonesuch edition of *De motu cordis* and of the first edition of his *Bibliography of the writings of William Harvey*.

J. L. Thornton

### Dermatology

**Dermatology. A Functional Introduction**, by Jarrett, Spearman and Riley. Published by English Universities Press. Price 20s. paperback, 30s. Library edition.

This book is described by the authors as an attempt to present dermatology as a rational subject based on scientific principles. In it, skin diseases are arranged in histological subdivisions and accounts of their physiology and pathology accompany the clinical descriptions. There are a number of stimulating ideas about dermatology in it and it makes refreshing reading after some of the standard textbooks. However, for the student who is learning something of dermatology as part of his general medical education there are several weaknesses in the descriptions of common diseases, notably the accounts of the endogenous varieties of eczema and chronic paronychia, while few dermatologists would agree with the use of a dilute aqueous solution of penicillin for impetigo.

There are no clinical illustrations.

This is more a book for those wishing to specialise in skin diseases and, as the authors state, it is not a book for students to cram a little knowledge of dermatology for finals, or for the practitioner who wants to label a rash.

D. A. Birkett

### Pharmacology

**Lecture Notes in Pharmacology**, by J. H. Burn, M.D., F.R.S. 8th Edition. Published by Blackwell Scientific Publications. Price 12s. 6d.

Textbooks, no less than others, vary with the viewpoint of the author. According to the preface, this book was originally prepared for Oxford students and was intended to replace or supplement the notes taken by the student. The author suggests it will be of value in helping 'to raise the general level of the students' knowledge of pharmacology provided that they consult fuller accounts in addition'. The author has adhered to this view through seven editions and it follows that the book will be of value only to those who have already followed a course in pharmacology.

As would be expected, the author takes a wide view of pharmacology and includes chapters on subjects from sulphonamides to compounds used in the treatment of worm infestations as well as those subjects which form the major part of the 2nd M.B. syllabus elsewhere. All this is covered in a book of only 140 small pages. The treatment and perspective

are characteristic of the author, but some sections are severely foreshortened so that the result is but an outline.

In order to keep the book short, the author has compressed his already economical style so that each sentence and word convey reminders of relevant facts. It follows that it is easy to pass over important points if it is read in the manner of an ordinary book. However, we must be grateful for this effort to reduce the bulk of at least one textbook and we must not cavil at some of the results.

A. F. J. Mason

### Scoliosis

**Proceedings of a Symposium on Scoliosis**, edited by P. A. Zorab. Published by National Fund for Research into Poliomyelitis and other Crippling Diseases. Price £2 2s. 0d.

With greater specialisation in all branches of medicine the horizons of the expert become narrow and progress is often obstructed. This is particularly so in orthopaedics which touches on the fringes of many disciplines. This Symposium illustrates the value of discussion by experts who view a common problem from different aspects. Scoliosis is seen in all dimensions and the publication of the proceedings makes it possible for anyone to review the result at leisure. It is a report which is instructive reading to all, even those with no special interest in scoliosis.

The orthopaedic surgeon is largely concerned with the cosmetic problem of scoliosis and during recent years systematic studies of this with special regard to prognosis have been made. These findings although largely empirical have helped to rationalise orthopaedic management. They are well summarised at the beginning of the symposium.

The second section deals with the genetic and biochemical studies on the aetiology of scoliosis and although the findings are largely negative they illustrate the methods of future study. The population survey in Edinburgh which shows a definite genetic factor in idiopathic scoliosis is an excellent example of this type of investigation. It is therefore unfortunate that Miss Ruth Wynne-Davies' paper does not include the details of her methods and findings.

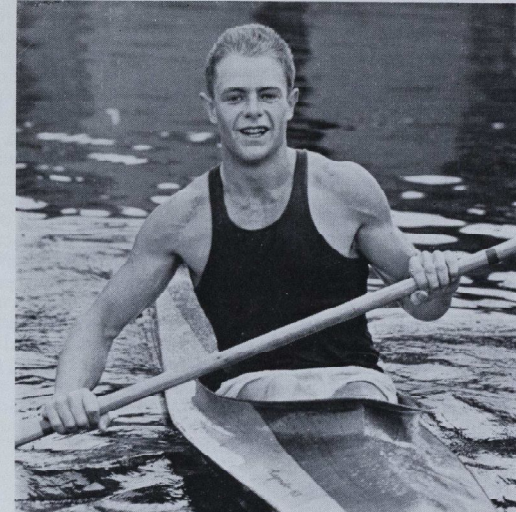
The most interesting contributions are those concerned with cardio-respiratory complications of scoliosis which make considerable progress towards their understanding. Dr. Fishman of New York gives a lucid description of how alveolar hypoventilation leads by way of hypoxia and pulmonary hypertension to right ventricular failure. From the data presented it appears that cardiorespiratory failure only follows severe deformity which would already require surgical correction for cosmetic reasons. Screening tests of cardio-respiratory function to detect early failure may therefore be unnecessary but this will only be established by the careful prospective study of patients, and important guidance is given on how this should be done. This is probably the richest fruit of the symposium as it points the way ahead.

The book is well presented but some papers that refer to slides are difficult to follow because these are not reproduced.

P. J. Stiles

# SPORTS NEWS

## CANOE CLUB



### Sella River Race

This is the most famous long distance river race for canoes in the world; there is still no official World Championship, but this race is accepted among paddlers as being the unofficial Championship Race.

This year teams from twenty countries competed, among them a British team of two singles and three doubles (K1s and K2s), which had been selected on the results of the season's racing at home.

The race by tradition takes place on the first Saturday of August each year, and this year's race was the thirtieth. Most crews arrive several days before the race, have one or two runs down the course and try to size up the opposition. There is a fiesta of sorts, a bull-fight, or a drinking session every evening, but the favourites are never much in evidence at these diversions.

On the day of the race Asturias goes mad. Arriondas, where the race starts, is so full of people that no traffic can enter the town. The sun shines, the streets are full of dancing girls and everyone, except the paddlers themselves, is happy. Before the Race there is a Parade through the town, countries being allocated

their positions by their performances of the previous year. Thus Denmark, winners of the doubles in 1965, headed the procession, with G.B., in the person of Charles Evans of Bart's the holder of the singles title, in second place. While this pantomime is going on, the experienced paddlers try to relax by the river, for the opposition always appears twice as strong and fast as oneself. Some talk too much, others remain silent and pensive, the Spanish team sits huddled around a priest, everyone is nervous.

Starting positions are decided by a draw, for the boats are lined up along each bank of the river. This year there were nearly two hundred entries and somehow previous winners are relegated to the back of the field, which makes life very difficult, particularly on a narrow, shallow river where there is not always room to pass. The National Anthems are played, "Asturias" is sung by the 250,000 or so spectators and then at last the race is under way. Excessive enthusiasm at this point usually brings a few minor collisions, but the experienced old hands can pick their way through the confusion.

The course is typical of a mountain river, with rapids, shallows and rocks with deep sections where the fast paddlers can use their speed. In places there is room but for one boat, whereas the lower part of the river is tidal and somewhat wider. The race finishes after 13½ miles under the bridge at Ribadesells, where the river widens into an estuary.

After five miles Evans and Roderger of Austria (the second man home in the race of 1965, losing to Evans by less than one second) were fighting for the lead in the singles class some way ahead of the body of the paddlers. The race depends on the portage three miles from the finish and whoever could pull away and have the lead at that point would win, barring accidents. The technique is to play cat and mouse with the opponent, wait until they make a small mistake and then strike. It is essential to break clear at this point, otherwise the opponent may just sit on one's wash, and thus get towed along. About a mile and a half from the weir Roderger took the wrong line at some rapids. Evans seizing his chance shot into the lead and at the weir was 250 yards ahead. By the finish this was increased to a lead, on time, of 2 minutes. As the tide was low, Evans record time of the previous year; 1hr. 29mins. 3 sec. was not beaten.

Great Britain, having the three highest placed boats in the overall classification; (11th Kirby and Boshier, 18th Evans and 25th Oliver and Parker) also won the team prize.

After the Sella Race the team competed in the other races of the International week. In the **Ascenso del Nalon**, about 100 miles east of La Coruna, Evans won the senior K1 class; in a team relay race Great Britain surprised every-

### ATHLETICS CLUB

#### College matches.

In a triangular match against Guy's and St. Mary's we were third, Coltart winning both the 440 yards and the 880 yards. Likewise we were third against Lloyd's Bank and the Metropolitan Police.

In a meeting against Pearl Assurance, Whitgift School, Linford A.C. and Guardian A.C. we were second; Coltart winning the 440 and 880 yards races again and Rawlinson winning the high jump and javelin events.

In the Inter-Hospitals Relay Meeting we finished fourth overall but did not win any event.

one by defeating the fancied Danish and Swedish teams; and in a 3,500 metre race Evans won a box of sherry. The next day's racing was at **Laredo** 200 miles to the east and here Evans again won the senior K1 class, while the 3rd and 4th places in the senior K2 also went to members of the team. In the **Ason** race, a rough water race which is very hard on the boats, Britain was placed first in the K2 class, while Evans led all the way in the K1 class only to be placed second on time and handicap.

The last race of the week was on the **River Orbigo** some 200 miles away from the Ason over the mountains. Unfortunately on the way one of the cars proved temperamental and when the team lined up at the start of the race all were suffering from acute lack of sleep. Evans, a stranger to the course foolishly took an early lead, and then managed to go the wrong way which necessitated an unexpected portage through a wood. His emergence from the wood beside a small rapid caused much amusement to the local populace, but not to Evans who found that the Spanish Champion was now in the lead, and in spite of a tremendous effort to catch him up, Evans trailed by 100 metres at the finish.

S.J.P.

#### Race Details:

**SELLA**, 13½ miles. Arriodas to Ribadesella, a small port on the North Coast of Spain.

**NALON**, 10 miles. Soto del Barco, a small port, to Pravia, a small industrial town.

**LIMPIAS**, (Laredo) 8 miles. A French holiday centre with the race following a loop course around the harbour.

**ARON**, 13 miles. Ramiles to Ampuero.

**ORBIGO**, 13 miles. Carrilo to Orbigo.



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The most successful match was against the University of East Anglia and Queen Mary College which we easily won; Coltart and Rawlinson repeating their double victories and Jolly winning the shot.

**In Retrospect**

The death of Edward Graham was a great loss to many including the athletics club, for he was a miler of great promise. We have had a poor season, not fulfilling the promise of last season's successes and our victory in the Winter League. There have however been several individual achievements.

Coltart (Secretary of the U.H.A.C.) was selected to captain his county (Dorset) in the south-western championships. Scott (Secretary of the U.L.A.C. and Vice-Captain of the U.H.A.C.) won the University 440 yards hurdles and 220 yards hurdles titles, was placed fifth in the British Universities 440 yards hurdles and competed in the AAA Championships at the White City. Both these athletes were regular choices for the U.H.A.C.

Thanks are due to John Coltart for his energetic captaincy of the club during the year. It was very unfortunate that his planned tour to North Wales had to be cancelled at the last moment.

**Prospects for next season**

The main complaint of the past season was lack of support, especially in the field events. Athletics at a college level is essentially a team sport and we continually lose matches through not having a full team. Let us hope that the new intake will produce some new faces for the Club and that the imminence of examinations will not figure so prominently as an excuse for not competing. One cannot complain about lack of opportunity for training or competition at Bart's and in the University. Every facility is laid on for our benefit; the University organises training at the U.L.U. Gym every Monday evening during the winter and also there is a training camp at Motts Park during Easter where International athletes coach under the supervision of the Chief National Coach John Le Masurier.

During the coming winter Bart's will participate in the University Winter League (which we won last year). These contests are held on Saturday mornings and cater for all events except the races over more than 880 yards. In the summer season there are opportunities to run for U.L.A.C., U.H.A.C. and Bart's.

1967 is the centenary year of the U.H.A.C., and it is to be hoped that their championships will be better supported.

In the following table the best performances this season are given in italics below the record for each event.

100 yds.—Record 10.2 secs. (A. A. Abrahams 1908, T. R. Griffiths 1926, J. G. Nel 1935, J. R. Mill 1929, 1931; E. M. Rosser 1947, B. D. Lascelles 1950, L. Pringle 1950, C. Richards 1961, M. Freeth 1961, C. Bridger 1961). <i>10.6 secs.</i> A. Breeson	220 yds.—Record 22.5 secs. (C. P. Reilly 1934, J. G. Nel 1945). <i>23.8 secs.</i> A. Breeson	440 yds.—Record 47.7 secs. (A. S. Wint 1951). <i>52.0 secs.</i> D. J. Coltart	880 yds.—Record 1 min 55.6 secs. (D. J. Coltart 1965). <i>1 min. 58.7 secs.</i> D. J. Coltart	1 mile—Record 4 mins. 21 secs. (D. Tunstall Pedoe 1964). <i>4 mins. 26 secs.</i> E. Graham.	3 miles—Record 15 mins. 10.2 secs. (P. Littlewood). <i>16 mins. 1 sec.</i> R. Thompson	120 yds. hurdles—Record 15.6 secs. (D. O'Sullivan 1956). <i>16.6 secs.</i> B. Scott	220 yds. hurdles—Record 25.6 secs. (B. B. Scott 1964). <i>25.9 secs.</i> B. B. Scott	440 yds. hurdles—Record 55.5 secs. (B. B. Scott 1965). <i>55.6 secs.</i> B. B. Scott	High Jump—Record 5 ft. 10 ins. (C. P. Roberts 1958). 5ft 6½ ins. K. Rawlinson	Long Jump—Record 23 ft. 2½ ins. (M. Dowling 1939). <i>19 ft. 11 ins.</i> D. Jefferson	Javelin—Record 184 ft. 11 ins. (P. Drinkwater 1958). <i>158 ft.</i> K. Rawlinson	Discus—Record 116 ft. 4 ins. (T. Keri-Nagle 1959). <i>104 ft.</i> R. Jolly	Shot—Record 39 ft. 4½ ins. (J. E. Stevens 1957). <i>34 ft. 6 ins.</i> R. Jolly
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Bart's records can only be broken on Sports Day and at United Hospital and University of London championships. Consequently the times of Arthur Wint winning a gold and silver medal in the 1948 Olympic Games are not included.

B. B. Scott

## CRICKET CLUB

**SUSSEX TOUR 31st July, v. Ferring. Won by 82 runs.**

The tour began in pleasant surroundings and excellent weather at Ferring, situated right on the coast west of Brighton, Bart's batted first and started well, Furness and Griffiths playing the bowling easily. At 45 Griffiths was caught and the new batsman Wood proceeded to play in a true cavalier style hitting four fours in a rapidly accumulated 20. But after this the rest of the batting was ineffectual and Bart's were all out for 108.

The Ferring innings lasted little more than an hour as Vartan (7 overs, 6 maidens, 5 wickets for 2 runs) and Husband destroyed them for 26 runs.

This early victory left little more time for ale than one normally anticipates and this set the tour off to a good start.

**1st August, v. Burgess Hill. Match abandoned.**

For the third year in succession this match was rained off. A start was made however, Griffiths and Furness hitting 20 and 35 respectively but the rest of the Bart's innings was spent combating both drizzle and accurate bowling, eventually the former drove the players to the pavilion.

**2nd August v. Rottingdean. Match abandoned.**

The morning was sunny and time was divided between golf and touch rugby, Lunch was taken in the Plough, whose salads are recommended but no sooner had the players taken the field than drizzle started which soon turned to a downpour. Thus once more the weather intervened with its customary perversity.

**4th August v. Barcombe. Won by 61 runs.**

Bart's; 134 for 5 dec. (M. Britton 35, N. Griffiths 27) Barcombe; 63: (Britton 3 for 32, J. Harrison, 6 for 22).

**5th August, v. Seaford Seagulls, Match drawn.**

Bart's batted first and were soon struggling with Griffiths, Britton and Vartan being dismissed in rapid succession. Hopkins, however, dug in and partnered first by Furness (18) and then by Harrison (23) pushed the score up to 128 for 7 at which point Griffiths declared, leaving Hopkins undefeated for 35.

The bowling of Vartan and Harrison removed the first eight Seaford wickets for 28 runs, but just as victory seemed in sight, rain interrupted play for three-quarters of an hour and when play was eventually restarted the home team hung on for a draw.

**ESSEX TOUR 11th August, v. Clavering. Won by 17 runs.**

Bart's; 122 for 6 dec. (N. Griffiths 50, C. Vartan 25 n.o.) Clavering; 105 (Griffiths 5 for 42, Vartan 3 for 14).

**12th August, v. Arkesden. Lost by 3 wickets.**

Bart's; 103 (P. Furness 46). Arkesden 104 for 7 (N. Griffiths 3 for 28).

**21st August, v. Hill End Hospital, Rain stopped play**

A scratch team with only one recognised bowler put up a good fight against the Hospital, P. Furness had a fine game and showed that as well as being an excellent batsman he is a capable slow bowler.

Hill End Hospital; 157 for 6 dec. (S. Baumber 4 for 31). Bart's; 69 for 5 (P. Furness 46 n.o.).

G. O. Hopkins.

## GOLF CLUB

**July 13th, v. Charing Cross Hospital, at Roehampton. Won 3-0.**

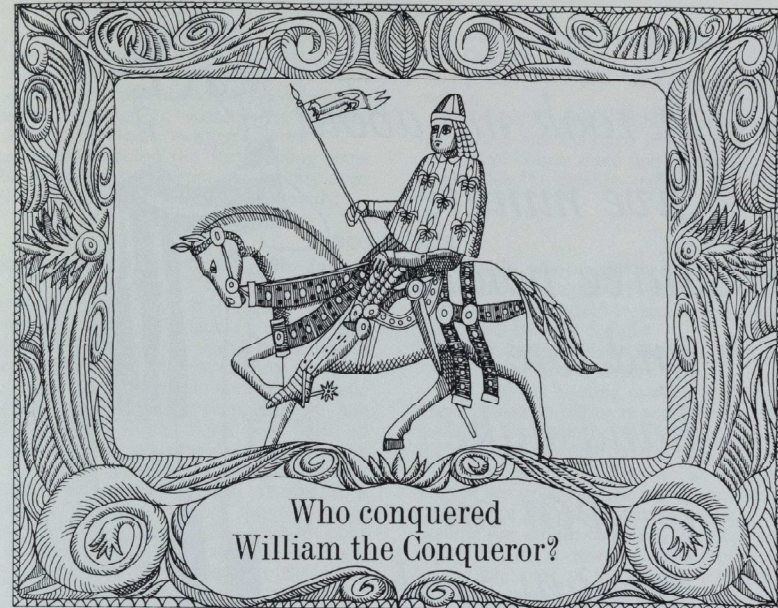
As most their players were on holiday the Cross could only field a team of three. Mike Bowen reached the peak of his form and both he and Alan Hamilton won easily. John Sadler provided more excitement by triumphing with his last putt.

**August 10th, v. Guy's Hospital at Chislehurst. Lost 2-3**

This was a close game with Guy's, and Nick Griffiths was the hero of the day. He played two Guy's men since they had unexpectedly arrived with an extra player and beat them both. Carol Cupitt fought well before succumbing 2 and 1 while Dick Atkinson took his opponent to the last green before going down by the same score.

Team; R. E. Atkinson, R. Begent, Carol Cupitt and N. Griffiths.

R. Begent



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**WRESTLING**

Such was the success of the April Wrestling tournament in College Hall Gymnasium that the Wine Committee (Promotions Division) have decided (in response to an overwhelming number of requests) to sponsor yet another, even more magnificent, evening's sport.

The programme for the forthcoming show will be published on posters—to be displayed on all College and Hospital notice boards.

**BOAT CLUB**

**Molesey Amateur Regatta, July 16th. Junior-Senior IV's.**

The Club entered for this regatta a light four which in spite of a lack of outings had managed to row over the course twice before the actual event, and this experience, the crew thinks, was a crucial factor in the club's success.

The first race almost never started, for just before the start a sturdy motor boat failed to avoid the four and ran over the bows. It took some minutes to separate the boats but luckily the Bart's boat was undamaged except for a lost bobble. In the first heat the crew beat Reading R.C. by three lengths. Half an hour later Herford R.C. were beaten by a length in the fastest time of the day. In the semi-final, Burway (the winners of the Junior-Senior eights at Kingston the previous week) gave the crew a hard race but the Bart's crew held on to come home winners by a canvas. The crew

**SAILING CLUB**

The months of July and August have been quiet ones for the club; only one race was entered, and that by accident. On August Bank Holiday Monday four Bart's members were rigging their boat when someone mentioned that the Annual Inter-Club Whaler Trophy Race was about to be sailed. We immediately entered and found that a crew of five was necessary. An old enemy from U.C.H. was soon mercilessly press-ganged and the fun began.

The boats were ASC's; a peculiar brand of Gaff-rigged dinghy, and in the first heat we were up against the United States Navy and Wembley S.C. Bart's were off to their traditional bad start and had to follow the Navy. On the beat, positions ahead of us changed around pretty frequently but we could not relinquish last place. On the next beat, however, we managed to get past the Navy, and in a tense situation just avoided disqualification as we squeezed under the bows of a starboard bound Wembley

The date for you to remember is Saturday 15th October, 1966.

The time 8.00 p.m. at College Hall Gymnasium.

Tickets at 5/- each will be on sale from Wine Committee members and leading bars.

AND of course there will be the usual Wine Committee hospitality—namely a ration of FR-- B--R

was greatly encouraged by this semi-final win, and in the final against Poplar, Blackwall and District in a smooth relaxed row they were victorious by two lengths.

**Barnes and Mortlake Regatta, 19th July. Junior-Senior IV's.**

This was an evening meeting held over our home course in rather miserable weather. The first heat was won by two lengths from Colet B.C. In the second round against Thames Tradesmen there was a restart as the crew was warned for pushing their opponents out of the stream, but since darkness at this stage of the evening was all but complete, there can be some excuse. In the re-row the opposition was held in the first part of the race but at the finish the crew was unable to reproduce its usual finishing spurt and was beaten by half a length.

Crew; P. C. Cobb (Bow and steer), J. K. Anderson, B. D. Cutler, J. D. Martin (Stroke)

boat. During this the Navy had slipped past into the lead, we were thus round the last mark in second place, but sailing close-hauled to the finishing line, we passed the Navy to windward to receive the gun.

In the final against Smiths S.C. and the R.A.F. we were once more last off the start to the first mark, but this we rounded within Smith's course and thus overtook them. We next overtook the R.A.F. to windward on a reach, surviving a strenuous luff in the process. We had then quite a substantial lead, which we managed to lose on the next beat, and from there the race rested between ourselves and the R.A.F., at no time was there more than 20 yards separating us.

In the final broad reach to the line we led all the way to become holders of a fine Trophy.

Crew: Miss P. Woods, Miss G. Petty, M. O. Freeth, N. Freeth and I. Richards (U.C.H.).

M. O. Freeth.



**HOCKEY CLUB****Early Season's Preview**

The new season gets under way on Wednesday, 5th October with a Practice and Trials Preview match at Chislehurst, to which all are welcome. Freshers are especially welcome to this game. Our first fixture proper is against Beckenham on 8th October—this club always gives both our teams hard and exciting opposition.

Wednesday 12th October, is our first full trial—by this stage we hope to have contacted all intending hockey players. Everyone will have an opportunity to play in his chosen position at this trial. We follow the game with a social evening—suitably lubricated of course!

The following Saturday both teams meet St. Mary's—old rivals on and off the field. Thus we will have had a good introduction to the season when we embark on the Cambridge tour—an event never surpassed in enjoyment. The tour starts on Wednesday 19th October,

and ends on Saturday 22nd October. Into this period we combine so much hockey, curry, good honest English Ale, with so little sleep, that we shall be lucky to recuperate sufficiently to match Kingston Grammar School's clever play on Wednesday 26th October. The last match of the month versus Oxted, should again ensure some lively play.

With all this activity in one month after the lazy, hazy days of summer, it seems appropriate to mention a word about training. The essence of all training and the only way to real fitness is, as we all know, regular and progressive exercise. The gymnasium will be allotted to the club for at least one session a week. If we make use of this facility it is going to make all the difference to our match record and also greatly increase our chances of winning the Inter-Hospitals Hockey Cup.

P. R. Jordan

**SWIMMING CLUB**

The Swimming Club has a large floating membership as many of its members find themselves committed to work or other sports, and thus are unable to turn up to all the matches. This means new members can find themselves a place in a team without much difficulty. Training is not compulsory, but enjoyable! It takes place every Wednesday afternoon in Gloucester House pool at 2.30 p.m.

This year, the annual Tour has been saved until the second weekend of the Autumn Term specifically to attract new members from the Freshers, and it should prove an excellent way to meet everyone. Since many of the best "clinical" swimmers have now qualified there is a need for new members. The Tour will start from Charterhouse Square at 10.30 a.m. on Friday 14th so that we will be away for a long weekend, and arrive back at Bart's on

Monday evening. The Tour will include Swimming and Water-Polo matches with Clubs and Colleges in the "West of England." Anyone who would like to come on the tour should, (1) Contact their Heads of Side for permission. (2) Contact Martin Knight (Secretary), or Peter Quinn (Captain) over in the Hospital. (3) Find Pocket Money and help out with Transport if possible.

The most active time for the Club is in Winter when we play Polo in both the U.L.U. and U.H. Leagues. This means at least a game a week for most keen members. There are also Friendly Matches and Galas going on from time to time. The Summer term is less active with more Friendly Matches and the U.L.U. and U.H. Championships.

P. M. Quinn

**SOCCER CLUB**

In anticipation of the start of the Soccer Season, we should like to remind players that the fixture list begins on the 1st October and that training sessions will be held throughout the season on Monday and Thursday evenings. We hope that those players who participated

in last season's matches will attend these sessions regularly.

With the majority of last season's players still available for the coming season we hope for greater success this year in both our University and Hospital League programmes.

S. Dorrett

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**THE JOURNAL STAFF**

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Miss P. M. Kilshaw

## THOUGHTS ON ABORTION

Adjustment of the law on abortion is, to most medical minds, a desirable step. To the extent that any reasonable person will be prepared strictly to separate law and morality, so will there remain complex ethical problems for the doctor, under a more liberal, and, if you like, permissive law. A conference was held by the Family Planning Association in April, on Abortion in Britain, and its proceedings have recently been published in book form\*. As ignorance is the greatest source of prejudice, this is clearly an important publication for any one interested in this subject.

However, one of the most striking features of the book is the confused picture which emerges. A gathering of experts produced a flurry of figures and also, less satisfactorily, mixed impressions. The number of questions that remain open, either because no satisfactory investigations have been performed, or because frankly contradictory findings are quoted, is significant and disturbing. Unhappily, aspersions may be cast on the validity of some, which only too clearly reflect their authors' biases rather than objective findings. One of the most respected of the "progressives", Sir Dugald Baird, stated that, "to say that termination of pregnancy is permissible for medical but not for social reasons seems to me quite unjustifiable." Sir Dugald finds the risks of illegal abortion in terms of mortality and morbidity low, substantiating all his statements with ample statistical evidence. In claiming that the psychiatric after-effects are similarly slight, he is at variance with Professor Rhodes, who quotes a Swedish survey, in which 34 out of 100 women felt severe guilt after they had abortions performed. Views expressed at the conference on the nature of lay-abortionists (nearly always women), ranged from their being motivated by compassion and feminine solidarity, to first and foremost financial considerations. Similar divergent opinions are expressed on whether this is principally a problem of the young unmarried girl or the older, married, multiparous woman.

The fact that this problem almost invariably involves overlapping social, ethical, and moral features makes it one of extreme difficulty to the medical conscience. To what extent should one stick rigidly by one's own code of personal morality when approached by someone who is desperate, but perhaps has different standards? Of course, one can disapprove in general, but find individual circumstances justify the exception, with complete satisfaction of conscience. Again, in practical terms, how far should a gynaecologist allow his natural distaste for what Professor Morris termed "a haemorrhagic exercise in destruction", and that which "conflicts with our basic training and philosophy", to influence him?

Reformers claim that liberalisation will help reduce the tragedy of the unwanted child, that is—dramatically speaking—the proto-psychopath. They differentiate between the respect demanded by the born human and that due to the foetus. Should the latter be permitted to fragment and destroy the family, to harm society, only itself to be severely handicapped? Is not this humanistic attitude more and not less sympathetic to the individual?

Without presuming to judge, I would mention the converse view, that abortion is a form of murder: that conception has significance in that it settles genetic constitution, the only permanent part of the individual—for the environmental factors influencing psychological and physical development are, theoretically at least, in constant flux. Furthermore, might not acceptance of abortion be the thin end of the wedge leading to infanticide and eventual devaluation of any human life that is weak or "substandard"?

These prickly questions must presumably be settled by medical and human experience dictating the utmost discretion, understanding and genuine concern for health in the most positive and widest sense.

\*Abortion in Britain; price 12s. 6d.; published by Pitman Medical Publishing Co. Ltd.

## LETTERS TO THE EDITOR

### EARLY COLLECTION OF SPECIMENS

Sir,—May I congratulate you on the interesting articles on Aspects of Medical Education? One of the aspects in which "abroad" appears to have the advantage is in the access of students to patients: for example, in Canada the students are in the wards doing venepunctures at 7.45 to 8.15 a.m., thus getting this chore over early in the day, and presumably the specimens to the laboratory in good time. While not advocating such an early start for British students, I should like to see them get into the wards at 8.45 to 9.15 a.m., to collect blood; it would give more time for their clinical work, and the laboratory would benefit by receiving specimens earlier.

Modern medicine is so dependent on laboratory investigations that medical and nursing education could do with more emphasis on the importance of the proper collection of specimens in the wards. Many of our patients are admitted "for investigation", which often implies little other nursing than the careful collection of specimens and/or the preparation of patients for X-ray examination, etc.

Yours faithfully,  
A. B. ANDERSON,  
Department of Chemical Pathology,  
St. Bartholomew's Hospital,  
16th Sept. London, F.C.1

### Engagement

TUDOR-WOODWARD.—The engagement is announced between Dr. John C. Tudor and Miss Rosalind M. Woodward.

### Marriage

THEW-WARNER.—On October 1st, Mr. Ronald James Thew, to Miss Ivy May Warner.

### Births

CHRISTIAN.—On July 27, to Margaret (née Dawes) and Dr. Brian Christian, a daughter (Jacqueline Ann).

IND.—On September 24, to Dorothy (née Bishop) and Dr. John Ind, a son (Thomas Edward).

PRICE.—On September 2, to Glenys (née Johns) and Dr. Richard Price, a son (Michael Richard), brother for Christopher.

SAVEGE.—On September 9, to Julia (née Fawcett) and Dr. Peter Savege, a daughter (Rachel Frances).

WYATT.—On September 3, to Anne (née Lawson) and Dr. Nicholas Wyatt, a daughter (Jemima Jane).

### Deaths

EVANS.—On September 12, Dr. Daniel Davies Evans, M.C., M.D. Qualified 1916.

SLADDEN.—On July 28, Dr. A. F. S. Sladden, M.D., M.A., aged 82. Qualified 1910.

WARE.—On September 3, Charles Edward Markham Ware, M.B., B.S., F.C.Path, aged 56. Qualified 1933.

### Change of Address

J. R. E. Davies to 2 Hadley Court, Hadley Road, New Barnet, Herts.

Dr. C. S. Goodwin to 28 Park Lane, Fareham, Hants.

Dr. and Mrs. G. G. Holmes to Barrans, Port Navas, Nr. Falmouth, Cornwall.

## RETIREMENT

## Miss George-Davies

The large and friendly gathering in the Great Hall on 6th July was in itself an eloquent testimony to the affectionate regard in which Miss George-Davies has been held, by high and low, in the Hospital hierarchy, throughout her long tenure of office as Sister Lawrence. It was entirely appropriate that she should be thus honoured on her retirement, for to many of us, the Hospital will never be quite the same without her.

Wherein lay her extraordinary influence? Of course she was a first-rate Nurse and Ward-Sister, she knew her work and lived up to the noblest traditions of her profession, but the real secret lay in her lovable personality, and her understanding of the needs and cares of all her neighbours. Furthermore, understanding always led to deeds of kindness as well as words of love, for she was quite tireless in her devotion to her patients, as to all her other friends.

Such is her buoyant enthusiasm and energy

that it seemed pure nonsense that she should be approaching retiring age. She has always been a woman for all ages, equally at ease coaxing old people into convalescence, or taking children to the circus—though it would be idle to pretend that she found both of these equally exciting! She was at her best on the great occasions like View Day and Christmas, for thus she preserved her youthful zest for the best things in life. Her merry heart did good like medicine, and even in the most grisly days of the war, when George was about, either in the ward or better still, out on her bicycle, we knew we could take it.

She has the heartfelt good wishes of her many friends in her retirement. It is said that she is off to convert the Australians, some of whom have already fallen under her spell; and when she has subdued that continent, we want her back.

J.P.R.

## ABERNETHIAN SOCIETY

Thursday, 17th November — 5.45 p.m.  
Physiology Theatre.

**Dr. R. R. A. Coombs, F.R.S.**

*The Allergic Reactions and Medicine.*

Thursday, 24th November — 5.45 p.m.  
Physiology Theatre.

**Dr. Richard Hunter, M.D., M.R.C.P.**

*The Insanity of King George III*

Thursday, 1st December — 5.45 p.m.  
Physiology Theatre.

**Professor F. E. Camps, M.D.**

*Jack the Ripper.*

## NOVEMBER DUTY CALENDAR

Sat. & Sun., 5th & 6th	Mr. Hunt Sir Ronald Bodley Scott Mr. Aston Dr. Gillett Mr. McNab Jones
Sat. & Sun., 12th & 13th	Sir Clifford Naunton Morgan Dr. Black Mr. Manning Dr. Bowen Mr. Dowie
Sat. & Sun., 19th & 20th	Mr. Badenoch Dr. Hayward Mr. Manning Mr. Ellis Mr. Fuller
Sat. & Sun., 26th & 27th	Mr. Tuckwell Dr. Oswald Mr. Aston Dr. Ballantine Mr. Cope
Physician Accoucheur for November is Mr. G. Bourne.	

# Recent Trends in Bilharzia Research

by P. JORDAN

It has been estimated that nearly 200 million people are infected with bilharziasis, considered by some to be second only to malaria as a cause of suffering and economic loss. But whereas control measures in many parts of the world have removed the risk of malaria from 1,000 million people, (70% of the population living under malarial risk), there are few if any countries which can claim that bilharzia control has made any significant impact on the prevalence of the infection. The increased use of irrigation and other water conservation methods—so necessary in the developing countries—may lead to a concentration of man and intermediate snail hosts favourable for increased transmission. But, while the dangers of bilharzia in irrigation schemes have probably been the stimulus to much research, it should not be forgotten that the disease is as old as history and the majority of people probably still acquire their infection from an infected domestic water supply rather than from a newly developed irrigation system. The provision of safe water with elimination of infected foci should follow naturally the growth of towns, but for generations to come, the rural peasant and his family will depend on streams, rivers and water holes for their water supply, and attention must be paid to the control of transmission in these waters.

Mathematical models have been devised to explain the epidemiology of bilharzial infection, and these emphasise the data required for a full understanding of the dynamics of transmission. Such data have been, and are being acquired by field studies in different endemic areas. Biologists are studying quantitative

aspects of transmission in search of weak links in the bilharzial chain, and epidemiological studies relating to the human host are now being put onto a quantitative basis. Such observations are essential before scientifically planned, executed and assessed control schemes can be considered.

Control of transmission through molluscicides is becoming more realistic with increasing knowledge of the dynamics of transmission. Effective molluscicides, non-toxic to man and his domestic animals and active in very low concentrations have been developed and some of these are now available commercially.

Treatment of the infection is still unsatisfactory, but the clinician has more drugs at his disposal now than in previous years. Sodium antimony dimercaptosuccinate is used extensively with probably fewer side effects than with the time honoured sodium antimony tartrate but it is only now that the comparative effectiveness of a number of antimonials in *Schistosoma haematobium* infections is being investigated in carefully controlled trials. All antimonial preparations are, however, potential poisons—a fact which is perhaps not sufficiently recognized and stressed in endemic areas. Non-antimonial drugs such as lucanthone hydrochloride, tris (p-aminophenyl) — carbonium pamoate, dipterex, dehydroemetine, and the nitrothiazole derivative Ambilhar, have been introduced in recent years, and while at the present time few have been fully evaluated, some may have a place in the treatment of bilharziasis. One of the unsolved problems in the treatment of *S. haematobium* is the fate of adult

worms during therapy—adult *Schistosoma mansoni* worms probably move to the liver, (as they do in experimental animals) but do the *S. haematobium* adults inhabiting the veins of the vesical plexus, negotiate the anastomoses between the pelvic systemic veins and the portal blood system and also end up in the liver, or are they swept to the lungs in the systemic venous system?

The concept of suppressive therapy to relieve symptoms and reduce morbidity, and its possible use in control, has introduced a new and interesting field for the clinician, and antimonials and thioxanthenes have been used in this manner.

With new drugs have come new methods of assessing their effectiveness. The oogram technique developed in Brazil has been shown to be effective in *S. mansoni* infections and the quantitative aspects of egg excretion before and after treatment in those cases not cured is now receiving attention.

Treatment invariably reduces egg output even in the absence of cure, and since the late complications of bilharziasis (particularly in *S. haematobium*) are due to eggs trapped in the tissues, there is reason to hope that even treatment that fails to produce a parasitological cure, may reduce morbidity.

It has recently been shown in East Africa that a high incidence of urinary tract pathology related to egg output, occurs in Primary School children—8% of children in one school were found to have hydronephrosis. This degree of urinary tract disease has been found also in West Africa, and reports from Rhodesia and Egypt suggest the picture is the same elsewhere.

The natural history of bilharzial hydronephrosis in Africans is not known, but it seems unlikely that it will be significantly different from that of hydronephrosis occurring in the more developed countries. Our present knowledge leads us to expect a high morbidity in such cases—probably at the peak of active life—and any bilharzia policy must be geared to stop this. Although certain aspects of the pathology of *S. haematobium* have become clearer, the relationship between bilharzia and bladder cancer is still not clear.

The prevalence of severe pipe stem fibrosis of the liver appears to vary in different geographical areas where *S. mansoni* is endemic, and perhaps all factors involved in its development have not yet been determined, but there is little doubt that in Brazil and Egypt severe liver lesions due to *S. mansoni* are common. Lesions of the urinary tract, intestine and liver

are widely known to be caused by bilharziasis, but the clinician in non-tropical countries would do well to remember other tissues of the body may become involved, such as the central nervous system, and, in obscure clinical conditions in patients from endemic areas, bilharziasis should be considered as a differential diagnosis.

While parasitological cure would seem the ideal to be aimed at, what is the ultimate effect of curing a patient who will be exposed to re-infection? Numerous antibodies have been demonstrated in patients with bilharziasis, but, although none has been shown to be immunising, it is likely that some degree of immunity develops. Does curative treatment destroy immunity? Our knowledge of this important subject is limited, but it might eventually be shown that in endemic areas treatment to reduce the load of infection may be more advantageous than parasitological cure.

Complex epidemiological and clinical patterns, and problems relating to therapy and control can only be investigated in the endemic areas of the tropics, but answers to other problems can, and are being sought for, in laboratories in Europe and America. In these countries important fundamental work is being done in an endeavour to clarify the problem of intermediate hosts—particularly those of *S. haematobium*. Recent work has done much to clarify the position of intermediate hosts generally, but electrophoretic studies of snail proteins and chromosome patterns of snails are now being studied in efforts to unravel further the complex problems of identification.

Fundamental investigations relating to the parasite are also being made from the endemic zones. *Schistosomulae* have been maintained *in vitro* for many weeks. They have grown to adult size and mated, but egg production has not yet been noted. Results of investigations into the food requirements of adult worms and their metabolism may enable new drugs to be developed—and although antimonials have been the cornerstone of treatment for many years, it is only recently that its mode of action—the inhibitions of the phosphofructokinase enzyme system of the adult worm—has been demonstrated and many of its pharmacological actions investigated fully.

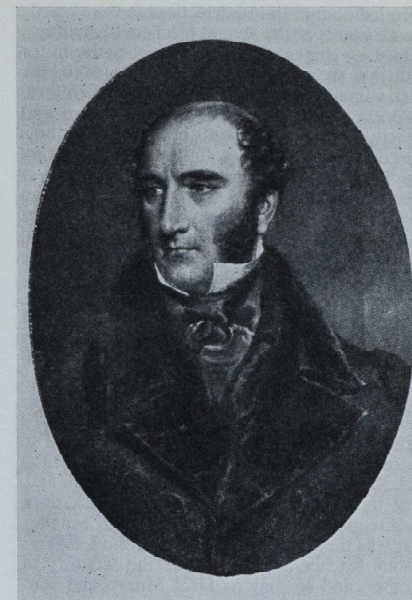
Increasing amounts of money are being spent on bilharzia research in the field and in the laboratory and our knowledge in all disciplines involved in the problem is increasing. Is it too much to hope that in the next decade control of bilharzia will have caught up with that of malaria?

## Life and Works of ROBERT LISTON 1794-1847

### PART 1 The Foundation of the Career

by D. J. Coltart

*This is a condensation of the Essay  
awarded the Wix Prize 1966*



ROBERT LISTON  
From a mezzotint by J. C. Bromley.

Liston's claim to remembrance is based upon the marvellous dexterity with which he used the surgeon's knife, and upon the profound knowledge of anatomy which enabled him to operate successfully in cases from which other surgeons shrank. Living at a time immediately antecedent to the introduction of anaesthetics, he appears to have attained a dexterity in the use of cutting instruments which had probably never been equalled, and which is unlikely to be surpassed. When anaesthetics were unknown it was of the utmost importance that surgical operations should be performed as rapidly as possible. Of Liston it is told that when he amputated, the gleam of his knife was followed so instantaneously by the sound of sawing as to make the two actions appear almost simultaneous, and yet he perfected the method of amputating by flaps. At the same time his physical strength was so great that he could amputate through a thigh with only a single assistant, who held the limb. Liston, so it was said, was not a scientific surgeon, neither was he a good speaker, nor was he very specific as a writer; it was that bold determination with which he embarked upon the seemingly impossible, and thus showed the way for others to follow, that captured the admiration of his contemporaries and has earned for him a place in the annals

of medical history, if only for the influence he exerted on others who followed him, and whose names will forever be remembered.

In 1818 Robert Liston became a member of the Royal College of Surgeons both in London and Edinburgh and in this year he began to demonstrate anatomy at John Barclay's School. After a short while he disagreed with Barclay and began to teach anatomy on his own account, with James Syme, his cousin, as his demonstrator. The class opened in the winter session 1818-19 with 60 students.

Practical dissection by the students was not at this time compulsory, and, on account of the expense and other difficulties, was not general. Subjects were obtained in the neighbourhood, but as the medical schools increased in numbers and the supply became deficient, bodies were obtained from London at greater expense. They also came from Ireland in considerable numbers, by way of Liverpool. The process of resurrecting, that is, of robbing churchyards for supplying dissecting rooms, was carried on with great vigour in the early part of the 19th century.

In Edinburgh the resurrectionists were chiefly the assistants of the several teachers of anatomy, helped by students who were enthusiastic in the study of the subject. The time chosen in the dark winter nights was from six to eight o'clock, before a watch was set in the churchyard and the city police commenced their rounds. A hole was dug down to the coffin at the upper end, the loose earth being received on a canvas sheet to prevent any of it from being scattered on the grass. The digging was done with short flat dagger-shaped implements of wood to avoid the noise of iron striking stones, and the whole process could be completed in an hour.

When the head of the coffin was reached, two broad hooks under the lid broke off sufficient from the head-end to allow the body to be extracted. The grave clothes were stripped off and scrupulously buried, as it was supposed that taking them away would render the predators liable to indictment for theft. The surface of the ground was carefully restored to its original condition, the body secured in a sack, transferred over the churchyard wall, and, once in the street the carrier of the sack drew no attention at the early hour of the evening.

It was the understood thing that the followers of one teacher did not invade the territory of another, and so long as Dr. Munro and Barclay were the only teachers of anatomy, resurrecting went on smoothly. But when Liston also became an anatomy teacher, he paid no heed to these prudent arrangements, so that competition and fights arose between rival parties of resurrectionists.

As the public became better informed regarding these practices, more effective measures were taken to prevent graves from being disturbed, such as burial in a heavy mortsafe until sufficient time had elapsed to make the body useless to anatomists, securing the coffin by iron bars rivetted across it or on the surface of the ground etc. There gradually arose in consequence a professional corps, called body-snatchers, consisting usually of the greatest scoundrels in the community, and thus originated the crimes of Burke and Hare in Edinburgh, and of Williams in London.

The reputation that Liston had made as a teacher of surgery at Surgeons Square followed him to the hospital. From the first he manifested that boldness of initiative and dexterity in execution for which he later became famous. His ability as an operator was quickly recognised, and in the absence of serious opposition from the senior members of the staff he soon acquired a very considerable practice as an

operating surgeon. His success in cases in which others had failed to give relief, or had even refused to make the attempt, spread his reputation throughout the district, and his services were eagerly sought by the most seriously afflicted of the sick poor. As he had no official connection with the Infirmary, he had to operate in the homes of the patients or in lodgings which he provided for them, and to rely upon the friends of the patients for such nursing as they were capable of. Under these unfavourable conditions, with the assistance of Syme, Liston performed many operations that have since become legend, and that laid the foundation of advances in operative surgery of far-reaching import.

Liston's seniors could not but view with some misgivings the rise of such a serious rival, and in some at least his growing reputation aroused a feeling which can with justice be called by no other word than jealousy. Sinister rumours began to circulate that Liston was abusing his privileges as he "walked the hospital", and that the patients who formed his clientele were induced to forsake the Infirmary by undue influence. He was accused also, and not without reason, of openly criticising the surgical practice of the hospital in such a way as to diminish its reputation in the eyes of the public. He did complain of the tedious and often injurious delay which took place before patients were operated upon, and the unsatisfactory result of many of the operations; while he himself had undoubtedly cured many discharged as incurable, or imperfectly relieved.

The dispute culminated in the managers of the Infirmary passing the following resolution:—

Edinburgh,  
14th March, 1822.

"The managers had made such enquiries as satisfy them, that Mr. Liston has frequently been guilty of interfering improperly in the surgical department of the House, and with the patients. They therefore consider it to be their bounden duty to take such measures as may prevent Mr. Liston, and deter others, from pursuing similar conduct in future; and therefore resolve, that Mr. Liston be prohibited and discharged from entering the wards or operation-room of the Royal Infirmary, at any time, and on any pretence whatever; and he is hereby prohibited and discharged accordingly. And they direct their clerk forthwith to transmit a copy of this resolution to Mr. Liston and the Treasurer to notify the substances of it to Physicians, Surgeons, Apothecary, Matron,

Clerks and Porter."

This drastic step was taken without any formal charge being made against Mr. Liston, and without his being given any opportunity of meeting the innuendo contained in the resolution. The action of the managers was confirmed by the Court of Contributors under the influence of a powerful indictment made against Liston by the then Lord President of the Court of Session and the leading advocate of the day, Francis Jeffrey.

Liston appealed to the College of Surgeons for support on the ground that the action of the managers in excluding from the Infirmary one of their members without their concurrence was an infringement of one of the ancient rights of the College. His petition, however, met with a cold reception, the President (one of the surgeons to the Infirmary) curtly replying that "under all the circumstances of the case the Royal College of Surgeons do not consider it expedient or necessary to take any steps in consequence of the communication from the managers of the Royal Infirmary."

This episode was doubly unfortunate: it checked the surgical career of Liston for a period of five years, and during that time deprived the Infirmary of the services of one of the most brilliant surgeons of the day. It was not until 1827, aged 33, "his impudence and presumption forgotten", that Liston was appointed one of the Surgeons of the Infirmary. These anxious and weary years of waiting were not spent in idleness. With grim determination he overcame the handicap of being without a hospital appointment, and circumvented the open antagonism of his surgical contemporaries. The trend of his mind was towards the practical rather than the scientific side of surgery, and he made the most of his opportunities of acquiring clinical and operative experience. Many of his most famous operations belong to the period when he was waiting for a hospital surgeoncy. In the medical press he found the publicity otherwise denied him, and the short pithy papers he published during these years spread his fame far beyond the bounds of his own school. It is hardly necessary to read between the lines of these contributions to detect the adroit thrusts he makes at the opinions and practices of his surgical opponents.

In addition to his *Surgery* Liston published numerous valuable papers on amputation, difficult cases of aneurysm, tracheotomy, lithotomy, and lithotripsy. He left his impress on a very large number of operations, either devising new

methods of meeting old difficulties, or improving the accepted modes of dealing with them. He invented an improved shoe for the treatment of club-foot, and was adept at reducing dislocations.

One of Liston's striking exhibitions of decision and invention occurred during an amputation of the thigh by Andrew Russell, then Professor of Clinical Surgery at Edinburgh. An artery in the cut bone bled profusely, and in consequence of its bony surroundings could not be tied in the ordinary way. Liston with the amputation knife at once cut off a chip of wood from the operating table, formed it into a cone, and drove it into the bleeding orifice, and in this way immediately arrested the bleeding.

Liston's general principles of treatment are also worthy of note, as he exercised by their means a considerable influence on the profession. He early became alive to the error of over-treatment, and tended more and more to trust to natural recuperative powers. He was thus enabled to dispense with the multitudinous paraphernalia which surrounded the operating surgeon, the repeated poulticing, strapping, bandaging, anointing, which often rendered a stay in a surgical ward almost intolerable.

On the death of Sir Antony Carlisle in 1840, Liston was elected to the Council of the Royal College of Surgeons, but did not become one of the Examiners until March 1846. There is little doubt that he would before long have attained the Presidency of the College, had not his career been cut short.

In 1818 when Liston was made a Fellow of the Edinburgh College of Surgeons he was one of the earliest members of the profession in Scotland to achieve this honour, and the first of that small band to be a member both of the College of Surgeons in London and of the College of Edinburgh.

His admission to the College of Edinburgh followed his presentation of the treatise "Structures 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.

One of his earliest contributions to surgery was his "Dissertation" read before the Royal Medical Society in 1820, when he was 26 years of age, on *Fracture of the Neck of the Femur*. The same year he published a remarkable series of cases of aneurysm, five in number, which

had occurred in his practice "within the last five or six weeks".

In 1823 Liston performed an operation which caused a great sensation at the time. It was for the removal of an enormous tumour of the scrotum—of the nature of elephantiasis—measuring forty-two inches in circumference and extending below the patient's knees. The account says that "the flow of blood was likened unto the discharge of water from a shower bath," and before half the vessels could be tied, the patient sank off the table, without pulse, and with relaxed muscles, voluntary and involuntary. A cordial—good strong whisky—was poured into his stomach, and before much sign of recovery could be observed he had taken a pint of it. After removal the tumour was said to have weighed forty-four and a half pounds. In three weeks the patient was able to walk out. Liston records "In this operation I had the valuable assistance of my friend, Mr. Syme, without which the result might have been less favourable."

His *Observations on Amputation* reflected the importance attached in those days to rapidity of operating as well as the haunting fear of pyaemia, and, incidentally, the reliance he placed in his own muscular strength and his pride in it. "As to the tourniquet", he said, "it is in my opinion of no use, and in many cases worse than useless". "I have," he goes on, "repeatedly compressed both the femoral and the humeral arteries with the fingers of one hand, whilst with the other I removed the limb, and with the loss of much less blood than if I had followed the ordinary mode."

Towards the close of the pre-Listerian era, the Surgical School of Edinburgh reached the zenith of its fame. In a band of able and accomplished surgeons two figures stood out pre-eminent: Robert Liston, the great operator, and James Syme, the surgeon par excellence. In their earlier years Liston and Syme had been as David and Jonathan. They were fourth cousins, a mysterious Scots relationship difficult to trace; it was through the influence and advice of Liston that Syme took to medicine as a profession; they worked together as demonstrators in Barclay's dissecting-rooms; and together they passed to conduct an independent class of anatomy and surgery.

Until the year 1823 their friendship was unabated and their loyal co-operation was mutually stimulating and helpful. It was perhaps inevitable, however, that the constant association of two such brilliant exponents of a devel-

oping art should lead to emulation and that the relationship of allies should pass into that of rivals.

All was passive jealousy between them till this unfortunate case occurred, when the excitement of Mr. Liston ran a course which was much to be deplored.

It happened much about the time when the book of annual subscriptions to the Surgical Hospital at Minto House was being handed round amongst the inhabitants of Edinburgh, that Liston, getting hold of it, wrote in it, instead of a name and subscription, "Don't support quackery and humbug." Mr. Syme was not a man to endure this, not only for his own reputation, but for that of his Surgical Hospital. He immediately raised an action of damages against Liston, which, after some correspondence between the agents of both parties, resulted as follows:

"Edinburgh, October 4th, 1830.

"Sir—In reference to an entry in the subscription book of the 'Edinburgh Surgical Hospital' made by me in the terms 'Don't support quackery and humbug', I regret having made this entry, which I admit was perfectly unjustifiable, and without the slightest foundation. I agree to pay the expenses you have incurred in adopting legal measure with the view of a prosecution against me on this subject.—I am, Sir, your most obedient servant, Robt. Liston."

"James Syme, Esq., Surgeon."

The culmination of their quarrel occurred in 1833 when Syme defeated Liston after a bitter contest for the Chair of Clinical Surgery in the University, on the retirement of Russell. Russell suffered from many of the frailties which accompany such advanced years, including doubtless, the old man's sense of being indispensable. He made it a condition of his resigning that his successor should pay him the sum of £300 a year for the period of his lifetime. James Syme was elected his successor, subject to this condition. Syme's strongest opponent for the Chair was Robert Liston, who "positively, and in rather coarse terms" refused to pay the retiring allowance.

It is to be noted that he eventually became reconciled to Syme after their serious divergence of views. He took the initiative finally in 1839, and a genial correspondence took place between them. They met once more in the autumn of 1847, when Liston visited Edinburgh, and were often together. Liston dined with Syme at Millbank the day after his arrival in Edinburgh and again before he left for London.

## ASPECTS :

### Witchcraft as a Chorea

Upto the nineteenth century Mental Disease was regarded by all, except the most enlightened, with fear and superstition, as a manifestation of the occult evils of witchcraft. During this era it is probable that all forms of definitive mental disorders were, at one time or another, incriminated as demonstrating the processes of witchcraft. Epilepsy springs to mind as a likely example, but there is another well-documented condition that may be correlated, in retrospect, with contemporary descriptions of witches.

Huntington's Chorea, a degenerative disease of the Basal Ganglia and Cerebral Cortex is named after George Huntington, a Long Island physician, who in 1872 first defined the four main features; persistent, progressive chorea and dementia, appearing in adult life, with a marked familial incidence. This last feature had in fact been pointed out some nine years earlier by Lyon, but, by tacit medical agreement, Huntington's name was affixed to the condition. Huntington had been familiar with the condition since his early boyhood, when his father, a physician, had pointed out the writhing movements, that his own father (Huntington's grandfather) had first noticed in 1797. The definition of this choreic syndrome was thus quite a family affair, which incidentally could provide an opportunity for the intense pedant to argue a case for shifting the apostrophe from "s" to "g".

Apart from this locus on Long Island, the condition had been reported all over the world by the turn of the last century, although there was an increased incidence in the New England area of the USA. One of these New England families was studied by Vessie, who managed to trace the family back through twelve generations to their arrival in Massachusetts in 1630.

In that year as members of a Pilgrims' expedition led by John Winthrop, three men and their wives came to Massachusetts. All hailed from the village of Bures in Suffolk, where there had been, as was common at that time, a series of witch-hunts, as well as the usual religious intolerance.

The structure and inter-relations of the families prove an interesting study; two of the

men were brothers; the younger, named pseudonymously "Wilkie" by Vessie, married twice. A son by the first wife married a woman who in later life was accused of being a witch, but there is only a vague reference to a confession to substantiate this. The daughter of this marriage i.e. Wilkie's grand-daughter became a celebrated witch in the Groton area, and is described as having convulsive movements. The descendants of Wilkie's second marriage, also to a Bures' woman, are believed to be the Huntingtons' Long Island Group. "Nicholls" the elder brother had three children by his only marriage, one of his grand-daughters was a substantiated witch and in later years his wife herself was accused of witchcraft. The third man "Jeffers" had married a Bures' girl too and they had four children; the younger of the two boys married Nicholls' eldest daughter and this union produced the line that Vessie studied. Only in the fifth generation of this family is Chorea definitively described and thus any occurrence before this must rest upon circumstantial evidence. Three of the womenfolk were thus authenticated witches.

The basic beliefs of the time were such that anyone who showed gross alterations or eccentricities of conduct and manner, was likely to be accused of being possessed; often confessions were extracted by torture. A contemporary New England observer Cotton Mather reports the writhings and twitchings of the New England "hell-hags" and it is also reported that among the Dutch of this area there were well known "magrums" families, in which the members were afflicted by staggers, fidgets and winding movements. The popular explanation of the time was that the movements represented the sufferings of the Crucifixion and were the result of a curse put on the individual for talking derisively or disrespectfully about the Crucifixion. Unfortunately there are no descriptions of the behaviour of witches around Bures during that period.

Thus, if these descriptive reports of typical New England witches and the reports that there were three proven witches in the first three generations of the Bures Group, are correlated

with the evidence that these witches are direct ancestors of a line of Choreics, the conclusion that these three witches were in fact adult cases of Huntington's Chorea may be drawn.

If this is accepted then the wives of Nicholls and Wilkie are incriminated as being one of the means of transmission of the disease to the New World. The men-folk, however, cannot be exonerated from having an effect upon the dissemination of the condition. It is now believed that the condition is inherited as an autosomal dominant, which is complicated in that the phenotypic effects are not apparent until adult life. There is thus time for a Huntingtonian to beget a sizeable family before symptoms present; indeed Nicholl's wife had three children before she was accused of witchcraft. The early changes are mainly in personality, and anxiety and irritability are common.

The three men, Wilkie, Nicholls and Jeffers were by reputation hardly typical pilgrims, and accounts show that they were anti-social, with criminal tendencies. This behaviour of the menfolk is repeated in their sons and grandsons, and coupled with the reputation of the families to produce witches, succeeded in isolating the families from society in general. This led in turn to a marked degree of inter-marriage

within the families which could have been instrumental in propagating the condition, especially if there were any offspring produced with a double-dominant genotype for Huntington's Chorea.

This early insularity can explain in part the propagation of the genetic material, but the reason for its survival, apparently in contradiction to the theories of Darwin, lies in the latent period before appearance of symptoms. Thus the only means of eradication short of the sterilization of all descendants of Huntingtonians (wherein some fifty per cent, those without the gene, would be denied the right and/or privilege to have a normal family), is the counselling of this group of people, with an explanation of the risks to any child born of the union.

Some day, however, medical science may be able to modify the basic genetic material, and then the worries of descendants of Huntingtonians, and of many other groups will be eased.  
J.A.S.

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## A Working Visit to the United States and Canada

by Miss C. M. Walker

Just over six hours flying time, a smooth flight in a B.O.A.C. VC10 and already New York and my travels of the last ten months seemed far away, in what seemed, with the fond eye of absence, to be a rather crowded, rather dirty, but very welcoming London. Since leaving Bart's and Southampton on October 23rd,

last year, my travels had taken me from New York, north along the eastern seaboard to Boston, south to Washington D.C., on to Lexington, Kentucky; Kansas City then to Denver, staying there for six months, followed by visiting more hospitals whilst travelling to the west coast as far north as Vancouver; inland to

Edmonton, then back through parts of Canada and the States to New York again.

My most lasting impression of this wonderful opportunity to see so much of the American continent, and to learn something of the nursing there, is the great welcome all visitors receive, not only in their hospitals, but also in their homes and churches, and of their unflinching kindness to their guests. The hospital visits I made during the first six weeks were somewhat bewildering—trying to absorb the very great differences in the structure of the Nursing team, of the many and varied assistants to the actual Nursing staff, and the many different training programmes for the Student Nurses. This was made much clearer to me and my understanding of the system so much more, when I had received the benefit of working and getting to know something of the "Why" of American Nursing, in the Intensive Care Unit of St. Joseph's Hospital in Denver, Colorado.

This is a six hundred bed hospital run by enthusiastic and energetic Catholic Sisters, situated in a modern building, constructed in the form of two towers. The patient's rooms radiate round the circle of the towers, surrounding the centrally situated Nurses station—the sluices, utility rooms etc. being contained in the portion of the building connecting the towers. The physical set-up is excellent, the Unit takes all seriously ill patients including medical, surgical and gynaecological problems and has a special room for those having had open heart surgery. It was with great apprehension that I arrived on my first morning (clad very strangely in white dress, shoes and stockings!) and observed the many pieces of machinery and equipment surrounding the patient's beds. Prior to this, I had been given, in common with all new employees to the hospital, a two week orientation period; during this time one is welcomed by the Director of the Hospital and makes visits to every department, which I think most people found genuinely helpful.

Kind as all the personnel were on the Unit, I did find it very difficult to adapt myself to the different ways. Once I had learnt to accept that it would be different, and that the system worked very well in America, I found that I was less critical of it, and anxious to learn more of the many good things this Unit had to offer. The American Nurses' Training, of necessity produces a nurse whose academic qualifications

are excellent and whose care of a patient in the acute stage of an illness, (remembering this often involves the use and understanding of complicated machinery), is often very good. They are extremely keen to learn and are energetic in their search for more knowledge. Team Nursing is used, whereby one is responsible for the total care of the patients committed to one's charge, and one in turn is responsible to the Team Leader. Since I was fortunate enough to work in an Intensive Care Unit, I was able to continue with the bedside nursing—on the main floors this is done by the Nursing Aides and Licensed Practical Nurses; the Registered Nurse being responsible for the administration and paper work (of which, despite almost round-the-clock use of Ward Clerks, there is a vast amount) and the giving of medications.

On speaking to the nurses and getting to know them, one learnt how much they would have preferred to have spent more time on the wards during their training and how unsure and worried they felt (a feeling we all know well, but I think their's was doubly so), on emerging at the end of a five year degree programme, into positions of responsibility, with minimum experience of patient and staff contact. I admired tremendously their enthusiasm and opportunities, and their practical approach to priorities. Perhaps the things I missed most were the relationship between the patient and the nurse, the opportunity to use one's own discretion and judgement, and also the unity of the team one finds in the Firm system, such as we have at Bart's.

That I was lucky enough to spend six of my ten months in Denver, truly the gateway to the Colorado Rocky mountains and within easy reach of the wide open spaces of Wyoming (real cowboy country) was of course a great attraction. Happy as I am to be back at Bart's, I realise how much I have been helped by this opportunity to work in another country. The benefit lies, not only in a greater understanding of that country's way of life, and its nursing problems, but seeing one's own in a different light, and appreciating the good and bad points of both. In conclusion I would like to thank Matron and the Hospital Committee for all their help also Sir Clifford Naunton Morgan and Mr. D. F. Ellison Nash for their introductions and advice in so many ways. I hope many people will have a similar opportunity.

# opening of the new college hall bar



THE NEW College Hall bar was officially opened on Tuesday, 20th September. Before the "general public" were admitted to enjoy the new amenities, the Wine Committee treated themselves and their guests to a well-deserved party. With matchless daring and brazen impudence, your reporter and photographer insinuated their presence into the general conviviality, but were sorely disappointed at the lack of newsworthy gossip; if scarcely staid, the gathering bordered on the respectable. This seems to deny the advantages generally assumed by an all-male enclave, for such the Wine Committee was, is, and, one hears, ever shall be. Perhaps the presence of a number of consultants was inhibiting, or rather civilizing. In fact it was not this, nor yet the threat of photographic evidence, but simply that it was a very enjoyable gathering where conversation flourished. The official opening by George Ellis, President of the Wine Committee, took place in a twinkling in the midst of the proceedings, with characteristic lack of fuss, and with thoughtfully minimal interruption. "Gentlemen, the bar is open," and the party continued with gathered momentum. Three of the Wine Committee's Vice-Presidents: Dr. Wykeham Balme, Mr. Fuller and Mr. Rothwell-Jackson were present, as also were Mr. Cope, Dr. Bowen, President of the Students' Union, Mr. Birnstingl and his successor as Warden of College Hall, Mr. David Williams.

From about 8.30 the bar was opened to "all regular users" of the bar. It then proved that, despite all the controversy which preceded its use, there was ample space, magnificent access to the double-sided bar and yet a refreshing absence of the bleakness that characterises so many modern pubs. In short the atmosphere was right. The magnificent McElwain was prompted to perform his world-beating feat at drinking a yard of ale not once but TWICE during the course of the evening. Sceptics might doubt that it was done in less than ten seconds, but our intention of getting a photograph during the first and last pints of the yard was foiled because the speedy electronic flash-gun took ten seconds to recharge after use, by which time not a drop was left! Attendance grew, consumption rose, and by 9.30 the sixty gallons of free beer, supplied the Wine Committee, had run dry. That was very far from being the end of proceedings and drinking and the odd vocal performance carried on far into the night.





# The New Extension to College Hall

## 1. Initial Impressions

(A Prospective View written before Occupation or use)

The new extension opens this month: it is quite a remarkable building, both for its achievements and deficiencies in architecture and fittings.

We started our tour of the newly completed, but still empty building by squeezing through the narrow entrance from the foyer. Our efforts were rewarded by the sight of a magnificent new bar which is double-sided and gives us three times as much space as the old bar. The surrounds are also generous, with ample room around the bar itself. A low-level patio at the side of the bar leads to the new common room, with picture windows looking out onto the tennis courts. Our joy was completed by finding adequate cloakroom facilities also on the ground floor, within easy reach of the bar.

The initial good impression is unfortunately spoilt on closer scrutiny. If you are over 6 feet 2 inches, and of ample girth, not only will you crack your head on the lintel of the entrance door from the foyer, but you will certainly find it impossible to pass anyone coming down the narrow stairs from the bar. Having bought your pint, you may lean against one of the pillars, only to find your suit covered with a film of white dust. Staggering back in disgust, you are liable to fall four feet to where you started from, at the foot of the stairs. Squeezing up the stairs again, you make your way to the quiet of the patio — negotiating another narrow flight of

stairs, with only plate glass separating you from a twelve foot fall to the concrete below, and a certain visit to Casualty.

The cyanosis exhibited by you and your friends is due to the blue glass windows, whilst orange lampshades give a more pleasing, warmer light at night.

Passing on from the patio to the Common Room, you will (if you are wise) lower your head, as the lintel on this entrance is even lower than the door from the foyer.

Leaving the ground floor, the back staircase leads to the bed-sitting rooms on the floors above. The corridors are narrow and poorly lit (perhaps to conceal the naked brickwork). The bed-sitting rooms are small and compact, each having a washbasin and built-in cupboards. There is a phone at the end of the corridor and residents can be contacted by means of a buzzer outside each bedroom. One can envisage the chaos at 9.0 a.m. as X residents clamour for the use of the one bath, one lavatory and one shower on each floor.

The extension has an extra (7th) floor, comprising of a vast penthouse sitting room, the entrance to which is also reached by the same narrow, steep staircase characteristic of this new extension.

Perhaps initial impressions will be more favourable when the new extension is furnished.

## 2. The Official Opening

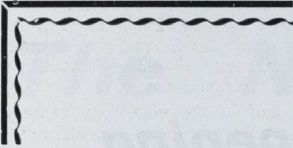
On Tuesday, 4th October, the new extension to College Hall was officially opened. This rather quieter occasion than the earlier opening of the new bar, was attended by members of the University Grants Commission and the architects of the new block, as well as members of the past and present staff of the hospital. Proceedings opened in the penthouse seventh floor residents' lounge, which allowed people to meet and mix, and was then followed by an informal inspection of the rest of the new facilities, providing adequate opportunity for exchange of views and opinions. During the buffet supper that followed, a most charming ceremony was enacted, in which Sir James Paterson Ross was publicly presented with the portrait that was commissioned on his retirement from Bart's. Many will already have seen the painting, which was on display in the summer exhibition of the Royal Academy. To those who had not previously met Sir James, the qualities which led to the fund for the portrait being soon overscribed, and also in informal conversation to such spontaneous comments as, "In all the time I knew him, I never knew him say an unkind word," and "He was quite the best teacher I ever knew," became as obvious during the course of his modest speech, as if one had had the privilege of long prior acquaintance.

This important occasion for College Hall gave the opportunity for clearing up certain questions which have been on the minds of the residents. For example, why are the new rooms so much smaller than those in the original building? Firstly one was told that the apparent floor area, because of the extent of the built-in features, such as the wardrobe and especially the wash-basin unit, was much less than the total area of each room. Thus the total floor area of the new rooms is 110 square feet as opposed to 140 square feet in the old rooms. When the first stage of College Hall was built in 1948, it was one of the first of its kind and necessarily experimental; at this


time the restrictions on price and space were far less stringently specified. Any criticisms that one might be tempted to make of the architecture of the new building should be made with the more recent legislative limitations imposed by the U.G.C. in mind, which in turn are limited by Governmental policy and the economic position of the country. Contrary to what an inhabitant of a new room may feel, the new rooms are indeed larger than the minimum size stipulated by the U.G.C. Opinions must not be swayed by comparison with what was possible in the balmy days of the late forties, when despite economic hardship, the considerably lighter load of University building permitted more spacious accommodation.

Nevertheless, certain important questions remain open. Why is it that the boarding fee in College Hall is so much more than in other medical schools' halls of residence? One can accept that in ordinary University hostels a considerable income may be made by their astute use for conferences during the vacation periods. However, all medical halls are alike in having this source of revenue denied to them. The restriction on building was money; space, in terms of the number and size of rooms, was secondary to this. If two rooms per floor were dispensed with, this would have led to somewhat larger rooms but wasted approximately 12 x £1,000 = £12,000. This is one way of looking at it, but one hears of somewhat desperate measures being considered in order that all the new rooms be filled, and which having been done led to at least a temporary overburdening of the kitchen and dining facilities.

If a personal opinion can be expressed, let it be this: it is inevitable that many dissatisfactions, both justified and otherwise, will be expressed about College Hall. But it should not be forgotten that the amenities we enjoy at Bart's are hard to rival in any similar institution in the country.



## THEATRE SUPPLEMENT




### A Short History of the Theatre

by DAVID BAUGH

The origins of the theatre are naturally obscure, but from time immemorial, people have fulfilled the wish of their fanciful instincts. During the Middle Ages, there still survived in England many ceremonies and games that had pagan origins. The present-day Maypole Dances stem from Mediaeval rituals that acted out an imitation of the birth, life, death, re-birth cycle. Christianity robbed these devices of their original meaning transforming them to its own ends: Twelfth Night is a survival of Roman Saturnalia.

The Booth Stage and Pageant (a four-wheeled cart) were the usual vehicles of presentation in the Middle Ages; roaming troubadours and minstrels of great versatility, the players. 1576 saw the building of James Burbages' "Theatre" in Shoreditch and the establishment of settled places of professional acting. Previously, inns and country mansions had provided a semi-permanent basis to acting. Travelling

actors, having no legal standing, were regarded as a dubious and dangerous element; there were moreover puritanical objections to plays. This state of affairs necessitated the patronage, however nominal, of some aristocratic or high official. Thus all Elizabethan companies were someone's "Servants", a tradition that is still retained today at Drury Lane, where the current actors are regarded as the servants of the reigning monarch.

Although Shakespeare's achievement has lasted for centuries it must be remembered that a great array of talent contributed to the Elizabethan Stage. The work of dramatists of such standing as Middleton, Jonson, Kyd, Marlowe, flourished because it was sought after by an eager public. This galaxy of writers belonged to a period when Britain was forging for herself a political identity, yet beneath this growing national pride, the Puritans were conducting a subtle attack against drama. This

attack increased under the Stuarts, not without reason, since drama was becoming frivolous and morbid. On September 2nd, 1642, when the Great Rebellion was only a few days old, the *First Ordinance Against Stage Plays and Interludes* enacted that "... public stage-plays shall cease and be foreborne." This act was not as tyrannical as it appears, it merely accelerated the deterioration of standards of drama. Actors went "underground" and had to perform surreptitiously since it was also decreed that "... Players shall be taken as Rogues".

The majority of actors of that time were Royalists and the Restoration of the monarchy saw a return of the "legal" status of acting. Charles II, shrewdly recognising the influence of the stage, determined to maintain control of this medium. He granted two patents in 1662 for the formation of theatrical companies. These went to Thomas Killigrew whose Company, "The King's Servants", established itself at the Theatre Royal, Drury Lane, and to Sir William D'Avenant, who had succeeded Ben Jonson as masque-writer to the Court, and who had been active in theatrical organisation during the Commonwealth. His Company, "The Duke of York's Servants" established itself at the Duke's Theatre, Lincoln's Inn. This patent eventually passed to the Covent Garden Opera House in 1732. These two patents maintained a monopoly of all legitimate drama in London until 1843.

Plays during this time were often tailored to fit the design of the theatre and some of Shakespeare's greatest works were reduced effectively to pantomimes. The characters of Restoration Comedy were witty, wicked creatures without morals or scruples; a reflection perhaps on the high-born, educated, ill-mannered libertines who paid to see them. In 1698, a Reverend Jeremy Collier published *A Short View of the Immorality and Profaneness of the English Stage*: public opinion was outraged by a corrupt theatre.

The eighteenth century was a period of economic security and saw the rise of the middle classes. This nouveau-riche was enticed to the theatre by that peculiarly English compromise, the Pantomime. Sentimentality and the art of shedding a gentle tear replaced the vicious vigour and brittle laughter of earlier times. Sheridan, Hannah Crowley and Colman were the outstanding playwrights of the era, but it was David Garrick who was the greatest influence of the eighteenth century, both as an actor and manager. He strived for greater

realism, with more emphasis on scenery, music, sound-effects and lighting. Plays came to be written for the scenic effects, and the influence of the individual actor dwindled: music replaced emotion; frenzied event, plot.

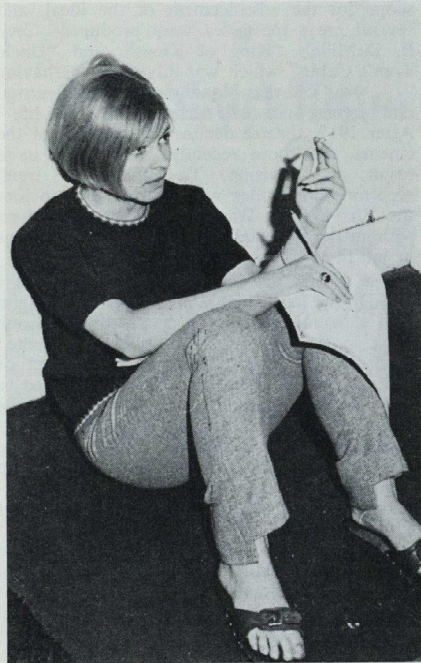
In the first half of the nineteenth century, these pieces became known as "melodrama", a now despised form of theatre. Equestrian spectacle, Harlequinade, Extravaganza, Horror Plays, Pantomimes: in these the nineteenth century theatre possessed as wide and varied a repertoire as the traditional Eastern, however skin-deep the plot and emotional content might be.

From the 1850's onwards a new era of Naturalism pervaded the theatre, especially in Europe. Ibsen, Zola, Chekhov, explored this new vision of truth. The idea initially failed in England where the public was still enjoying spectacular melodrama. George Bernard Shaw was successful, however, since he combined naturalism with laughter—a redeemable feature in the eyes of the English.

The advent of the cinema provided indefinite scope for the advancement of the ideal, and several great spectacles were produced—Cecil B. DeMille's "King of Kings", and "Uncle Tom's Cabin" which was advertised as having "... real ice, real bloodhounds, real Negroes, real actors and real scenes from real life". After 1918, theatre declined as a result of the cinema and more recently, the cinema as a result of television. To offset this trend repertory companies were started even before the First World War, but few have survived without the financial help of local organisations or industry.

The theatre has fought back in recent years through the individual talents of the playwright. This new movement was heralded by "Look Back in Anger" by John Osborne presented at the Royal Court Theatre. The impact of Ionesco, Brecht, Wesker, Compton, has led to a wholesale re-thinking of the why and the wherefore of the modern stage: this must necessitate experimentation with adaptable staging, properties and above all actors. The means are definitely there, but the end is obscure. The Mermaid, The Festival Theatre at Chichester, the various Folk Theatres and Experimental groups, the New Nottingham Playhouse, IAMD (London Academy of Music and Dramatic Art), all represent this search for harmony with other forms of visual art. It remains for responsible theatrical groups to find an identity for the theatre of the future.

## to try . . . . . . or not to try ?



There are virtually no legal, academic or social restrictions to entry to the theatrical profession. Apart from some recent stipulations laid down by Equity, the Actors' Union, demanding that West End managements and film companies cast only from union members, an actor's life is open to all who are content to tread the boards, hide themselves behind a mask of make-up, and speak someone else's lines till death, or unbearable unemployment, do them part.

However, taking into consideration the growing pool of out of work actors, discriminating producers, and public freedom of choice, it is wiser to have some sort of training before attempting to earn a living as an actor. There are several ways of going about this, the most obvious being to apply to one of the many drama colleges throughout the country. Here one learns the rudiments of the craft—to speak and to move. In addition one becomes accomplished in the arts of singing, dancing, fencing, using a microphone, and all manner of other useful and necessary practicalities. Alongside these are included academic studies of the theatre and literature in general.

Drama college is one way, another—less common, but rapidly gaining in popularity—is to enter the theatre via university. It is wise to supplement a degree, or a two or three year stay at a degree-giving establishment, with some training in voice and movement, unless God has been particularly kind, and blessed one with a well modulated voice, perfect breath control, and a body that moves effortlessly and beautifully where, when and how one wants it to. I have not found God over-liberal when it comes to granting gifts such as these, and that is why I recommend training in the 'basic two', i.e.

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### A Survey of the Means and Motives for becoming an Actor

by  
MORAG HOOD

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speech and movement, before offering one's services to an art in which acquired technique is as important as natural talent. One must possess the two in equal degree, as surplus of one does not make up for a deficit in the other.

If neither of these methods of entry appeals, the budding actor can get there by iron determination alone: writing to theatres all over the country, demanding or imploring work as he sees fit. Or one could be discovered in a café by a passing producer who cannot, nay will not, make his film without you. Or one could be 'found' at Butlin's. Or one could be an intellectual model . . . or . . . as I said, there are no restrictions to this profession. It is all-embracing.

I have been deliberately flippant on 'how to be an actor'. At this level, in my opinion, training is a matter of choice. I chose the second channel, i.e. via university, and although one could weigh the pros and cons of this method till the proverbial cows come home, I shall not attempt to, since I consider an actor's training to be a life-sentence which starts seriously when he gets his first job in the theatre.

For the majority, this is in a smallish repertory company and it is here that 'the work' begins. Slowly and painfully, after indulging in all manner of menial tasks, one finally earns the right to call oneself an actor. It is not necessary to know how to put up a flat, how to make burnt sugar look like whisky, or how to work a tape recorder, but it does help. Working in a rep. is, in a sense, staking one's claim in the theatre, buying one's union card. The work is hard, the conditions are not always conducive to inspiration, and needless to say, it is rarely financially rewarding. But it is a personal discovery ground for one's own thoughts, techniques and talents. This is stage



one in a programme of working at oneself which will never end, no matter what course the actor's career takes.

However, the average actor armed with two years experience of repertory up and down the country, does not necessarily march merrily forward to the next logical period in his career. Instead, he reaches a point where he needs a considerable amount of "staying-power", my personal euphemism for unemployment. His career is not entirely in his own hands, but rests largely with his agent, the theatre management, the current whims and, of course, luck. All he can do is to resist offers which may be from a short-term point of view practical, but which afford little aesthetic, and in the long run, no practical gain. To be acting is no longer enough. One must be seen by the right people, at the right time, in the right place. Most actors realise this, but it becomes more difficult to

accept after the second or third month of unemployment. Even this "waiting" can be put to use by the well-organised actor, who is for the purpose of this section, ideal rather than average. He must never stop working. Working is not confined to the execution of a performance; I mentioned above, that in the early stages of training it is advantageous for an actor to be able to dance, sing, fence etc., but he should continue to acquire new skills throughout his working life. He must never cease to be involved in life with regard to people and events outside his own profession, because ideally an actor at his prime, should be "all-understanding" and "all-competent". Few are, but then in a generation there are few really great actors. In a way the wait is never over. One waits to work with one's most admired actor or director; to play one's favourite rôle; to feel truly satisfied with one's performance—of course one rarely, if ever, achieves.

It is not all one long, arduous struggle. An actor is what is known as "happy in his work", because no one could possibly allow himself to be forced into the theatre. He chooses it, and should he perchance dwell on the sadder elements from time to time, it is simply a reaction to the myth that his is a life of glamour and financial reward, out of proportion to the effort expended. Even non-puritans offer this

## A Guide to Buying Theatre Tickets

by JOHN SILLS

London must surely have the greatest quantity of theatre in the world, and when one considers the quality of the productions one can see, it must rank as the quality capital too. While one is in the metropolis as a student, there is thus a great opportunity to see a wide range of productions. The prices of seats are to say the least reasonable (one can see a *National Theatre* production for 3s. or 2s. if one stands!), but one has the feeling that many people miss their opportunity, either through ignorance of the protocol for advance booking, or through some inherent abhorrence

criticism on occasion.

But why does he choose it? Why does he refuse society's tantalising offers of super-annuation schemes, and substitute instead an existence which promises little practical or mental security; which means perpetual self-questioning, denies a normal social and family life, and forbids him to take life easy, physically and mentally, but rather taxes him the more? There is a very basic reason which applies to most actors and enables them to suffer such drawbacks quite cheerfully. They are almost to a man, egotistical to a greater or lesser degree. To be looked at, listened to and applauded at the end of it all, makes life as a performer highly attractive. But to be paid for doing so makes it virtually impossible to resist.

Nevertheless there is another reason in my opinion—bear in mind that this is perhaps only my opinion, and that the next actor you meet may refute my arguments. However, Stanislavski said that "In other arts the audience sees the result of the creative process. In the theatre the audience is present during that process." It is the sheer joy in participating in this, the satisfaction to be gained when a work has been performed well, that attracts a person to master the means of expression within his power, and having done so, to employ them in the capacity of an actor.

of committing themselves to one particular date weeks ahead.

This guide attempts to spotlight for those who are prepared to commit themselves, the ways and means of procuring tickets for *Covent Garden*, *The National Theatre* and *The Royal Shakespeare Company*, etc. For the occasions when spontaneity is the dominant feature, there is a section indicating those theatres where one can reasonably expect to get seats or standing positions on the day of the performance.

The first section gives those theatres where all seats may be booked in advance and where there is no priority booking at all. This should not be interpreted to mean that there are never seats available on the day of performance, but rather that it is quite likely that all seats in the less expensive parts of the theatre may be sold out months in advance. Theatres in the second group may well have spare tickets even though the bookable seats may be sold out.

Theatres where all the seats may be booked in advance:—

**Adelphi**, Strand, W.C.2, TEM 7611.

**Ambassadors**, Cambridge Circus, W.C.2, TEM 1171.

**Apollo**, Shaftesbury Avenue, W.1, GER 2663.

**Cambridge**, Cambridge Circus, W.1, TEM 6056.

**Comedy**, Panton St., S.W.1, WHI 2578-79.

**Theatre Royal**, Drury Lane, W.C.2, TEM 8108.

**Duchess**, Aldwych, W.C.2, TEM 8243 44.

**Fortune**, Russell St., W.C.2, TEM 2238.

**Globe**, Shaftesbury Avenue, W.1.

GER 1592-93.

**Golders Green Hippodrome**, Golders Green, N.W.11, SPE 0022.

**Haymarket**, Haymarket, W.1, WHI 6606.

**Lyric**, Shaftesbury Avenue, GER 3686-87.

**Mayfair**, Stratton St., W.1., MAY 3036.

**Piccadilly**, Denman St., W.1, GER 4506.

**Prince of Wales**, Coventry St., W.1, WHI 8681-82.

**St. Martin's**, Cambridge Circus, W.C.2, TEM 1443.

**Savoy**, Strand, W.C.2, TEM 8888.

**Vaudeville**, Strand, W.C.2, TEM 4871.

The following theatres are likely to have spare tickets on the day of the performance: the *Royal Opera House*, Covent Garden; *The National Theatre*; and the *Royal Court*, details of which will be covered in the next section, and:—

**Criterion**, Piccadilly Circus, W.1, WHI 3216, has standing tickets available if all seats are sold.

**Duke of York's**, St. Martin's Lane, W.C.2, TEM 5122, has 3s. gallery seats on sale half an hour before curtain-up.

**Garrick**, Charing Cross Road, W.C.2, TEM 4601, has 3s. 6d. gallery seats on sale half an hour before curtain-up.

**New Theatre**, St. Martin's Lane, W.C.2, TEM 3878, standing tickets available when seats sold; stalls and upper circle, 6s. gallery 4s.

**Palladium**, nr. Oxford Circus, GER 7373,

standing tickets available when seats sold; stalls and upper circle 6s. 6d., gallery 4s.

**Victoria Palace**, Victoria St., S.W.1, VIC 1317, standing tickets; 4s. and 2s. 6d., on sale half an hour before curtain-up.

**Whitehall Theatre**, Trafalgar Square, S.W.1, WHI 6692, standing tickets, 6s., on sale when all seats sold.

**Wyndham's**, Charing Cross Road, W.C.2, TEM 3028-29, standing tickets on sale when all seats sold; stalls and upper circle 6s., balcony 5s.

Needless to say, it may well not be necessary to have to have recourse to any of these tickets. On the other hand, for a particularly popular show, one may have to queue for an hour or so, or visit the box office early on in the day.

In theatres where the demand for seats far exceeds the supply, there is often a mailing list scheme, either free or for a small annual sum. Most of the theatres in this group have an associated supporting society, membership of which provides opportunities for other booking concessions, as well as the usual admittance to Sunday evening talks, and previews of new productions.

The **Royal Shakespeare Company** (Aldwych Theatre, Aldwych W.C.2, TEM 7611), offers advance booking facilities through special forms available at the Box Office. Booking is for periods of eight weeks; telephone, personal booking and booking by letter, start about two weeks before, but using the special booking forms, one can book one week earlier still.

The *Royal Shakespeare Theatre Club* offers individual membership at 12s. 6d. p.a., previews, priority bookings, Club discussions and extra-mural activities.

The **National Theatre**, has seasons at the **Old Vic** (Waterloo Road, S.E.1, WAT 7616) and at **Queen's Theatre** (Shaftesbury Avenue, REG 1166-67). Booking for both follows the pattern of the *Royal Shakespeare Company*; the booking periods are for two months and special booking forms, from the theatres or by mailing list, give one week's advantage over other methods. Seats and standing places are available from 10 a.m. on the day of each performance to personal applicants only. (Seats 15s., 12s. 6d. and 10s., and standing 3s. 6d. in the stalls and dress circle; seats 3s. standing 2s. in the gallery.)

The **Royal Opera House**, Covent Garden, W.C.2, COV 1066. The system here varies with the season, but there is a subscription scheme that gives two weeks priority; this involves buying five or ten seat vouchers, filling

in the performances wanted and returning the vouchers to the Box Office. General booking for the season is through the Box Office, and advance details may be obtained through a mailing list for 5s. a year. Bookings starts about three months before the start of the season, and on the day when booking is generally open there is usually a great queue. To ease congestion "queue tickets" are issued which specify a time to return to the Box Office to buy tickets in a more leisurely manner. On the days of performances, provided that all seats have been sold, standing tickets are on sale, from 12 noon for matinees and from 4 p.m. for evening performances. There is a maximum of 43 tickets and they are on sale to personal applicants only.

The *Friends of Covent Garden* offer the usual activities, including advance booking facilities, Student membership is £1 10s. p.a. (Full 5 guineas, Associate 3 guineas).

Sadler's Wells (Rosebery Avenue, E.C.1, TER 1672) has three month booking periods. General booking starts one month beforehand, but mailing list subscribers; 5s. p.a. can book one week earlier still.

The *Royal Court Theatre* (Sloane Square, S.W.1, SLO 1745) is the home of the *English Stage Company*. All seats are bookable in advance, but N.U.S. members may buy any seat unsold 5 minutes before curtain-up for 5s.

The associated *English Stage Society* offers student membership for 5s. (full membership 1 guinea p.a.) and among the privileges of members is seven days priority booking.

The *Mermaid Theatre*, the *Tower Theatre* and the *Jeannetta Cochrane Theatre* are all worth special mention, for although they have associated clubs, most of their activities and performances are public.

The *Mermaid Theatre* (Puddle Dock, Upper Thames St., E.C.4, CIT 7656) managed by the irrepressible Bernard Miles, besides having a main production each week-day evening, augments its programme by Sunday talks and concerts, and by lunchtime film shows on Thursday and Friday. All seats may be booked, but the *Mermaid Association* entitles one to special previews, lectures, exhibitions and advance information about future events. Membership 10s. p.a.

The *Jeannetta Cochrane Theatre* (Southampton Row, W.C.1, CHA 7040) is the home of the *Traverse Company*; all seats for the main production are bookable in advance. There are also lunchtime attractions: jazz

concerts, talks, reviews and one act plays; seats are bought at the door. On Friday and Saturday nights, after the main production, there are often concerts of jazz and folk music. Seats for these may be booked in advance.

There is an associated group, the *London Traverse Society* (membership £1, students 10s. p.a.) which includes mailing list and booking facilities and late night film shows among the attractions.

Up in Canonbury Place, N.1, is the historic sixteenth century *Tower Theatre*, the home of the *Tavistock Repertory Company*. This is an entirely self-supporting non-professional company which presents fourteen productions each year (Membership of the Company is by audition).

Seats for all productions are bookable in advance. The *Tower Theatre Club* (Membership 21s. p.a.) has booking facilities, and the *Tower Theatre Film Society* runs three seasons of classic films each year. Box Office; CAN 3475 (9 a.m.-6 p.m.); CAN 5111 (6.30 p.m.-9 p.m.).

The final group in this study of theatre comprises the Theatre Clubs, the main raison d'être of which is to allow members to buy tickets. The most famous are the *New Arts*, the *Hampstead* and the *Players Theatre Club*; the club status unfortunately restricts the purchase of alcoholic beverages to members.

*New Arts*, Great Newport St., W.C.2, TEM 3334. Full membership is £3 3s., Associate; 10s. p.a. There is a main production each evening and throughout the year there are lectures and art exhibitions.

The sum of one shilling gains entry to the *Quipu Lunchtime Theatre Club* which performs at 12.15 and 1.15 p.m. each week-day. Seats for both clubs are bookable in advance.

*Hampstead Theatre Club*, Avenue Road, N.W.3, PRI 9301. Full membership is one guinea, student membership 7s. 6d. p.a. There is also an Honorary Membership available to holders of any Camden Public Library Ticket. The student and honorary memberships offer booking facilities for the main production only, full membership is necessary to buy tickets for other presentations.

*Players' Theatre Club*, Villiers St., Strand, W.C.2, TRA 1134. Here underneath Charing Cross Station one can recapture the glories of Victorian Music Hall. For a membership of 4 guineas p.a. one has free admittance to any performance and access to the dining and drinking services.

## Theatre Designs

by LIZ FERREIRA



Design by ALIX STONE for Ingrid Bergman in "A month in the country".

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A new gallery devoted to the theatre arts has just opened in Halkin Arcade, Motcomb St., S.W.1. The gallery exhibits work done by theatre designers for stage productions; this hitherto untapped source of original works has proved very successful. Because of the renaissance of the English Theatre during the last ten years, many leading painters are working on theatre productions.

Until recently, theatre designers were not a great financial success; they received a fee, perhaps two hundred to three hundred pounds for a series of designs for any one production, the work took months to prepare, and although the play might have been a roaring success, the designer would not have benefit from it financially. His method of finding work is haphazard in this country, there being no established ladder of success, as in New York, where designers have to qualify with a city examination before they are allowed to enter the very



Design by KENNETH ROWELL for Paul Rogers as Petruchio in "The Taming of the Shrew".

strict union, a compulsory condition of employment. Because more and more painters are producing work for the theatre, the designs for costumes and set-pieces are often works of art, the materials used for the pictures are varied, paints, chalks, and often incorporating cloth into the design.

This gallery, although selling a great deal of work for designers, provides a hunting ground for producers and directors to find new talent.

People buy their designs for reasons as varied as the styles they find. An abstract back-cloth of the Royal Ballet's "Symphony" by Yolande Sonnabend is a non-figurative painting that suits a modern décor, and of course fans of Margot Fonteyn or Richard Burton will go to considerable pains—and price—to possess one of the designs for their rôles. The designs for the Incas in "The Royal Hunt of the Sun" were beautiful: they now decorate the walls of a Knightsbridge pent-house, and the serious collector will go to any lengths to own something



Design by **TERENCE EMERY** for "The Rose and the Ring".



Design by **JOHN TRUSCOTT** for "Swan Lake" for the Festival Ballet.

as important as one of John Piper's extremely beautiful water-colours for Olivier's production of "Oedipus."

The gallery opened with a retrospective exhibition of theatre designs by Kenneth Rowell—it included his work for the production of Hamlet with Richard Burton, and Macbeth with Ralph Richardson. It also had designs for "Bluebeard" at Sadler's Wells, and there were some witty drawings for the Festival Ballet's production of Alice in Wonderland.

Prices are still reasonable—one can buy an unframed design for five pounds, but prices climb to around the one hundred pound mark. The next exhibition will be of theatre designs by Oliver Messel from October 26th to November 12th. The gallery is also showing exhibitions

from abroad; they have a large permanent exhibition of work done by well-known designers, and hope to show examples of work for films and television productions. During the coming year, they will show work by Peter Rice, whose designs for "The Thieving Magpie" led him to be hailed as the best theatre designer in London. Apart from this, they will present once a year, special exhibitions of designs by students of the various art schools, to show outstanding new talent to directors and choreographers.

## Why Cruelty? The Aims of the Theatre of Cruelty and the Ideas of Antonin Artaud

by **PAUL SWAIN**

Labels can become terrible traps. Modern Drama certainly has suffered from a surfeit of labels, most of them devaluing and degrading the original productions to which they are applied. The monotonous emptiness of the "Kitchen Sink" label is evident enough, (I don't ever remember seeing a functional kitchen sink in any production and it would be technically difficult to achieve, since very few theatres have tapped water onto the stage). Total Theatre and The Theatre of the Absurd are simply not very meaningful adages. Why should the Theatre of Cruelty be any better as a label?

The phrase has the initial advantage of puzzlement. Theatre and Cruelty would not seem to have much to do with each other. Also is not cruelty nasty—not the sort of thing we ought to be having on our stages? The first instinctual reaction to cruelty is repulsion, cruelty offends against our ideas of humanitarianism and our enthusiasms for the R.S.P.C.A. and the like. Yet the phrase was chosen, and with care, by Antonin Artaud, whose brilliant series of essays on the theme of a revolution in theatrical technique was the starting point for the modern school. The meaning of Cruelty here is well worth looking at.

Artaud emphasized that his Theatre would not systematically cultivate horror: that the

This is a new idea for art collectors of modest means, yet who aspire to own a work by an important contemporary artist. In the past, the field has largely been restricted to the graphic arts, for example lithographs or etchings. However, such forms do not satisfy the desire to own something truly original, even though a limited issue may be made. A further advantage of buying theatre designs is that they will almost inevitably be both beautiful and decorative.

word Cruelty was to be taken in a broad sense and not in any rapacious sense. In a magnificent poetic exciting sentence—(Artaud's writing is always tinted purple)—he sums up his conception of Cruelty. "There is in life's flame, life's appetite, life's irrational impulsion, a kind of initial perversity: the desire characteristic of Eros is cruelty since it feeds upon contingencies; death is cruelty, resurrection is cruelty, transfiguration is cruelty, since nowhere in a circular and closed world is there room for true death, since ascension is a rending, since closed space is fed with lives, and each stronger life tramples down the others, consuming them in a massacre which is a transfiguration and a bliss."

His conclusion and assertion is that this ought to be the stuff of the Theatre, that the real magic of which it is capable can only be regained by reference to these Cruelties which are the springs of action. As alternatives to the title the "Theatre of Cruelty" he offered the "Theatre of Life" or the "Theatre of Necessity," by this equation making synonymous Cruelty, Life and Necessity. His first achievement then is to produce a metaphysic for the Theatre and we are not to be afraid of that word.

Although he is trying to restore a meta-physical profundity to the Theatre, at the same time he is trying to escape from any intellectualism. He hates the wordy, too clever, psychological drama which is driving the public to watch inferior entertainments. Although he saw in the Marx Brothers' films the kind of action he wanted in his Theatre of Cruelty he classed the film and the music hall as inferior to the Theatre. Today the long runs of inferior entertainments shows that the Theatre is still sick—the invariable presence of the "Mouse-trap" and the "Sound of Music" in the amusement guide of the *Evening Standard* is a constant sore to the eye. Artaud's words are very sensible here. "It is not a matter of boring the public to death with transcendent cosmic pre-occupations. That there may be profound keys to thought and action with which to interpret the whole spectacle, does not in general concern the spectator, who is simply not interested. But still they must be there and that concerns us."

There is an infectiousness about Artaud's writings, an exhilaration, a superb communication of the excitement and the intellectual ferment of a revolution which is taking place. He opens his first Manifesto on the Theatre of Cruelty with a cry to battle. "We cannot go on prostituting the idea of the theatre whose only value is in its excruciating, magical relation to reality and danger. He is calling for a theatre in which theatricality is not a dirty word. The first of his aims is an escape from the domination of the Theatre by the playwright. He asserts that instead of continuing to rely upon texts considered definitive and sacred, it is essential to put an end to the subjugation of the Theatre by the text. "No More Masterpieces" is the witty title to one of his essays. He writes with an impassioned brilliance towards a new language of theatrical expression, and he defines it in terms "of its possibilities for dynamic expression in space as opposed to the expressive possibilities of spoken dialogue."

This language is of course the language of Spectacle; but Artaud's conception of spectacle

is new—new in its concentration, and new in its extremity. Here is his definition of spectacle which is delicately reminiscent of the Surrealism with which he was connected in his early days, yet it has a new certainty, a masculine power. "Cries, groans, apparitions, surprises, theatricalities of all kinds, magic beauty of costumes taken from certain ritual models; resplendent lighting, incantational beauty of voices, the charms of harmony, rare notes of music, colours of objects, physical rhythm of movements whose crescendo and decrescendo will accord exactly with the pulsation of movements familiar to everyone, concrete appearances of new and surprising objects, masks, effigies yards high, sudden changes of light, the physical action of light which arouses sensations of heat and cold."

Is the Theatre of Cruelty to be the theatre of the future? Artaud after all, died years ago (1948) but he had asked this question himself. "And the question we must ask is whether in this slippery world which is committing suicide without noticing it, there can be found a nucleus of men capable of imposing this superior notion of the theatre, men who will restore to all of us the natural and magic equivalent of the dogmas in which we no longer believe." There are encouraging signs. Peter Brooke and Charles Marowitz are two important producers who have espoused the cause of the Theatre of Cruelty, and the Marat/Sade production of the Royal Shakespeare Company which is one of the finest in recent years was much influenced by Artaud's ideas.

Artaud's writings can be bought in a paperback entitled the "Theatre and its Double" and is well worth reading, very exciting and marvellous stylistically (occasionally gushing). I'd also like to plug an Englishman, Edward Gordon Craig whose revolutionary ideas on stage presentation run parallel in many ways to those of Artaud. He died this year and was, incidentally, the finest English designer of scenes and costumes and an important Wood Engraver. His designs for the Theatre are available in a Penguin and are worth the money.

## Pubs Associated with the Theatre

### The Victoria Tavern, Strathearn Place, W.2.

The theatrical connections of this pub are not immediately obvious, it is far from theatre-land and as one enters nothing particularly strikes one as relevant to the stage. On ascending to the upstairs bar, however, all is clear, for this is furnished with plush Victorian theatre seats, has a false gallery on which sit top hats and over which are draped long gloves. The walls are decorated with playbills from the heyday of the old Gaiety Theatre, and the bar itself is modelled into the semblance of a proscenium arch.

In the corners, backed by mirrors, are groups of chairs behind a low wall, forming convincing imitations of theatre boxes. The intimacy of these and the discreet lighting make this a good pub to take a girl to, yet has enough life to make it likely that one will bump into old friends not seen in years. Atmosphere and ingenious decor commend this pub.

### The Salisbury, St. Martin's Lane, W.C.2.

This pub is madly gay—take this how you wish—for this is the actors' pub. Though this may seem a recommendation, it is not really the place to take a girl, particularly one in the least bit fashion-conscious, for here the men steal the thunder—acid yellow shirts seem to be all the rage. Architecturally it is fit surroundings for such peacocks and indeed is worth visiting for this alone. The windows are etched into designs that would be the envy of Jack Frost. Mirrors proliferate, many receiving the same treatment but sufficient is left clear to



The Victoria Tavern

give the long bar infinite depth. Lights sparkle, many held by brass, nude Art Nouveau ladies, and one can be sure that there will be never a dull moment and be grateful perhaps that there is no opportunity for intimacy here.

**The Gilbert and Sullivan**, John Adam Street

This pub, a focus for Savoyards, lies just below Charing Cross in the Adelphi, within easy reach of the Festival Hall, across Hungerford Bridge. Recently redecorated, the walls are covered with gilt-framed pictures of the two heroes of operetta and their innumerable productions.

Above the modern bar stretch stately dioramas which illustrate the operas in chronological order. They reminded some of the history of costume as depicted in a second-class museum, others the penny tableaux on the pier.

Pooh Bah's costume dignifies one corner, his fan inscribed by the present members of the D'Oyly Carte Company. In the opposite diagonal the chef is to be found; his beef sandwiches are the best thing about the place.

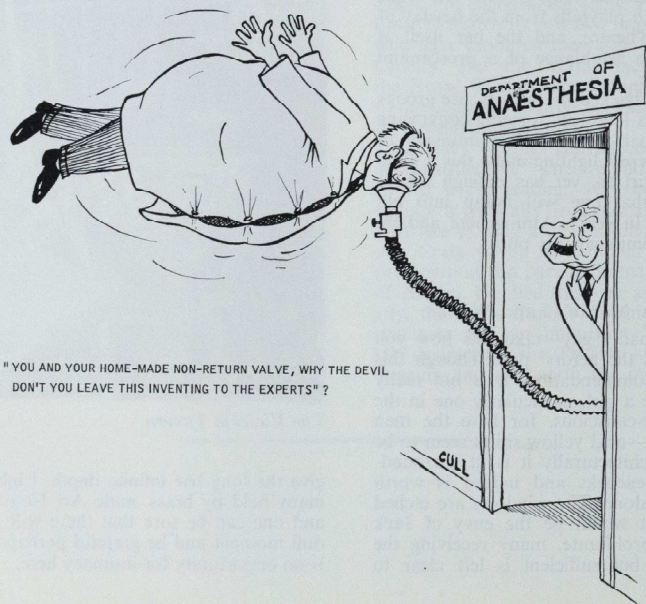
**The Nag's Head**, James Street, W.C.2.

This is the Covent Garden pub, in the fullest sense, as it is both the elegant haunt of the opera and balletomanes, yet is open at 5 a.m. to cater for thirsty workers in the market. Often at this early hour it is not the sole

prerogative of the latter, for one of the most characteristic sights is the group of inveterate and incurable opera-goers, who will always be seen in the early hours of mornings that booking opens.

The pub is old and was rebuilt by the second Samuel Whitbread. The beer is as good as its distinguished pedigree, if rather expensive (though a newly bought pint, knocked over with one cavalier gesture, was replaced without a word, and scarce a frown). It is pleasant to visit on a quiet night and peruse the snatches from the past, preserved in the form of the framed portraits, cartoons and playbills, which deck the walls. Associated with the pub were such giants of the stage as David Garrick and Henry Irving, and the immortal Edmund Keen is well represented in caricatures and also playbills. The note appended to one advertising his performance of Hamlet in 1814, tells that he was at this time the object of such a cult, that 166,742 people paid to see him in 68 performances.

The good beer, varied company and walls hung with attractive and interesting items, make this a pub worth repeated visits.



"YOU AND YOUR HOME-MADE NON-RETURN VALVE, WHY THE DEVIL DON'T YOU LEAVE THIS INVENTING TO THE EXPERTS" ?

**Penguin Book Review****EASY COME, EASY GO**

**Something for Nothing**, by Jack Trevor Story.  
Price 4s. 6d. *Novel*.

The book follows the fortunes of Albert Argyle—the character first encountered in "Live Now—Pay Later".

The nonchalant style rapidly sketches Albert as an easy going, but totally amoral opportunist, who skilfully works his way into a get-rich-quick trading stamp organisation, and makes his own profit.

In this process he brings about the suspension of a local schoolmaster, and the financial ruin of a greengrocer. We also discover that he has been responsible for half a dozen illegitimate babies, and many times that number of bounced cheques. However he becomes involved with a girl whose trust and innocence make him feel guilty about the deceptions that he has led her into; and reluctantly, more for peace of mind than anything else, he asks her to marry him.

The moral "You can't get something for nothing" appears, nevertheless largely lost on Albert, whose basic attitudes are not changed. Thus, in the last chapter, we find Albert confiding his position with his former girl friend—now married—who appears to be the only person with whom he shares any empathy.

Though the style is attractive, the book fails to stand up to close criticism. I could not take seriously the created image of a lovable colourful figure, whose handling of people and events for his own immediate ends is little short of psychopathic. Thus the rare, and tentative, attempts to portray any genuine feeling and sensitivity, stand out incongruously and awkwardly from the general style. Albert Argyle must therefore remain a superficial character—an everyday James Bond trapped in the environment of a boringly prosaic provincial town.

A. J. Barrett.

**MEDICAL BOOKS****MEDICINE**

**Handbook of Medical Treatment**, by Chatton, Morgan and Brainerd. 10th Edition. Published by Lange, California; Blackwell, Oxford. Price 42s.

This is the 10th edition of what, in America, has become an extremely popular and widely used handbook of medical treatment. Measuring 7" x 4" x 1½" it can genuinely be regarded as a pocket reference. Despite its size, the volume runs to over 700 pages. The type is small and close-set but is remarkably clear and easily read.

Written for the American internist engaged both in office and hospital practice, the book provides a wide coverage of most aspects of medical therapy. The style is essentially synoptic but, nevertheless, quite agreeably readable. The information is clearly presented, critically accurate and up to date.

While primarily dealing with medical treatment, the authors continually emphasise the need for accuracy in diagnosis and complete clinical assessment beginning each section with a brief review of the

salient diagnostic features and the therapeutic problem.

An unusual and pleasing aspect of the book is that it not only deals comprehensively with the medical treatment of diseases of the major systems and the indications for surgery, but also includes details of pre- and post-operative management.

The striking feature of this book, however, is its essential practicality. It is primarily a working doctor's handbook providing in a convenient size a ready source of reference, be this to diet schedules, antibiotics, the treatment of poisoning or frostbite.

Of some inconvenience to British readers is the general use of American official and trade names for drugs and medicinal preparations.

No book of this type could or should replace standard reference texts on pharmacology or therapeutics. However, as a pocket reference this somewhat expensive book fulfils a useful function and as such can be highly recommended.

W. R. Cattell.



## Nursing

**Medicine for Nurses**, by W. Gordon Sears, 10th Edition. Published by Edward Arnold. Price Board 30s., paper 18s.

This is the tenth edition of a book that has been reprinted and re-edited regularly over the past twenty years, indicating that it has a position in the education of nurses today.

This edition has been brought up to date with the inclusion of many new methods of treatment, whilst retaining some older and well-tried methods. Some of the latter I have not seen in general use during the last few years—particularly part of the section on peptic ulceration.

There are a few good diagrams but I feel that it could be greatly improved by more well-labelled and realistic ones. The photograph of waves of gastric peristalsis is far from convincing to me.

For the nurse who finds it offers sufficient information for her needs, it is reasonably priced and well printed. Each section is clearly defined and set out under extremely good headings and should be of assistance for revision purposes. It would be difficult to recommend this book if it was to be the only textbook on medicine to be purchased by the nurse.

P. Ford.

## Orthopaedics

**Outline of Fractures**, by J. Crawford Adams, M.D., F.R.C.S. 4th Edition. Published by E. & S. Livingstone. Price 30s.

The fact that there have been four editions of this book between the years 1957 and 1964 is, in itself, evidence of its excellence and popularity.

The text is admirably set out and clearly written so that it is not only easily understood and remembered by students preparing for examinations, but it also provides a convenient and concise book of reference for the qualified doctor.

The summaries of treatment at the end of the sections dealing with the upper and lower extremities must be most helpful for those doing final revision. Similarly, the carefully selected list of references contained at the end of the book should be of great value to those working for higher surgical qualifications.

The illustrations, whether line drawings, reproductions of x-rays, or clinical photographs are, without exception clear and well produced.

Only one very minor criticism could be found. That is on page 42, it is perhaps a little misleading to suggest that a cortical bone graft is a standard method of providing internal fixation for a fracture, whereas, while this is one of its advantages, bone grafts are normally primarily concerned with assisting union.

Apart from this small point, this work is excellent in every way, and cannot be too strongly recommended.

J. N. Aston

**Outline of Orthopaedics**, by J. Crawford Adams, 5th Edition. Published by E. and S. Livingstone. Price 37s. 6d.

The 1966 reprint of the fifth edition makes seven printings of this textbook in ten years: this gives a true appreciation of its value as a textbook suitable for final examination and well worthwhile keeping for reference by those directly concerned with orthopaedic surgery.

The examination, diagnosis and treatment is very well presented first in general, and later by regions, and the methods described are logical, straightforward, and orthodox, and therefore easier to remember. Likewise, the approach, necessarily a personal and dogmatic one in a short book covering a wide field, is orthodox and uncontroversial. If the advice given was followed precisely, no patient should fail to benefit, nor should any candidate fail to satisfy his examiners! The bibliography—a new feature in the fifth edition has a personal slant, but, all the writings are sound, and most are universally accepted.

Some of the best features are first-class presentation on good paper, which allows excellent reproduction of photographs and radiographs, and the crystal-clear diagrams, which are easy to memorise. I think this is the best textbook of Orthopaedics for the medical student.

C. W. S. F. Manning.

## Pathology

**Colour Atlas of Histopathology**, by R. C. Curran, 1st Edition. Published by Baillière, Tindall and Cassell. Price 75s.

"Histology is the keystone of pathology. . . . There is no corner of medical science into which it does not penetrate." So writes Sir Roy Cameron in his preface to this outstanding atlas, which is designed to cover the needs of the undergraduate student and to complement textbooks of pathology. At the same time, as Professor Curran states in his introduction, it is hoped that the atlas will prove of interest and value to postgraduate students training in the various branches of medicine and particularly in pathology.

There are 765 colour reproductions of photomicrographs, the actual reproduction being of high quality in most instances, this being an important feature for any colour atlas. The illustrations are from the author's personal collection, which is in current use for undergraduate instruction. Most common and fairly common conditions are illustrated, as well as a number of comparative rarities, but the book does not pretend to cover the whole realm of special pathology. There are useful explanatory captions to the illustrations, and the book is divided by headings into systems or organs, apart from an initial section on inflammation and repair. While the text has been kept fairly short, the index is comprehensive.

A few minor defects are apparent. The book measures 12½ x 11½ inches, an awkward shape for the shelf or bench and difficult to carry. The text is in rather small print, with the lines 10 inches long, and reading would have been much easier if two columns had been used for each page. As regards the actual subject matter, the relative emphasis which should be given to different pathological

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conditions may be a matter of opinion and choice, but while six illustrations have been given to primary thyrotoxicosis, six to regional enteritis, six to extra-hepatic cholestasis and four to alveolar carcinoma of the leading authorities on the subject. Inclusion (a difficult and important subject for students) has been covered rather thinly with only 10 illustrations.

There is no doubt at all that this is an excellent atlas, and the price is not excessive for the quality of the work. It should prove helpful to many students, even though the emphasis on histopathology in the curriculum may not be as great as it used to be.

Professor Curran's hope that the atlas will also prove of interest and value to postgraduate students should certainly be fulfilled.

W. J. Hanbury.

## Spina Bifida

**Proceedings of a Symposium on Spina Bifida**. Published under auspices of National Fund for Research into Polymyelitis and Other Crippling Diseases. Price £2 2s. 0d.

This soft-covered monograph gives a first class and full account of the pathology, treatment and management of babies with spina bifida and meningocele. It includes papers presented by many of the leading authorities on the subject. Inclusion of the discussions which followed the presentation of the papers adds to its value.

Publishing in monograph form the proceedings of a symposium is an excellent method of making available the most up-to-date treatment and management of a specific condition.

An excellent overall account of the condition is given, the first sections dealing with Physiology, Neuropathology, Epidemiology and Genetics. The incidence of 2-3 per thousand live births is startling and only just being realised. This means that approximately 2,500 of these babies are born every year in the United Kingdom. Ethical problems which arise in dealing with these children are discussed openly and freely. This aspect of a disease often tends to be overlooked. I feel the aim of the majority treating these babies is to refuse morbidity and not overall mortality. Suggested fields for research are mentioned, giving some idea of the wide range open to anyone interested.

The sections on Early Closure of the Back, Treatment of Hydrocephalus, Urinary Complications and Orthopaedic Procedures bring out all the complex problems which arise in these children and provide good accounts of the methods of dealing with them.

The final sections cover the important emotional and social aspects, again drawing attention to the size of the problem, especially when these children come of school age. Parent education and the need for special centres to educate these children is emphasised.

I strongly recommend this monograph to all involved in the treatment of these children and also any body wishing for an introduction to the subject.

J. F. Carter

# SPORTS NEWS

## SPORTS EDITORIAL

The winter sports programmes are now well under way and the Rugby Club, celebrating its Centenary Year, is looking forward to a good season. The Cornish Tour this month should provide some enjoyment and there is also a home match against the Greyhounds on Wednesday, November 23rd, when we hope they will be well supported.

It is important to realise that all the clubs thrive not only on the efforts of their active members but also through loyal support, par-

ticularly at important fixtures.

In the past, support generally has been somewhat disappointing (except at Inter-Hospitals Rugby Cup matches) and we appeal to all those who are not involved in playing games to make an effort to come and support the various clubs.

It is in this way that greater team spirit is generated and perhaps we might win some more Inter-Hospitals trophies this year.

## RUGBY CLUB

### Centenary Season, 1966-1967.

The Centenary season started with a full programme of 7's and 15-a-sides. The early games were disappointing, but the two 7-a-side tournaments gave us good defensive experience. We intend to concentrate more on 7's in the future as they are very enjoyable to watch and to play.

#### Cheltenham Sevens. Sunday, September 18th.

After an easy passage through the 1st round we had formidable opposition in Wasps with four internationals. Bart's started well, Rosser was caught on his twenty-five, the ball was carried forward and Jackson picked it up to score half way out. The score remained at 3-0 until just before half time when Wasps equalised. In the second half Bart's were reduced to six men and a cripple and Wasps added eleven more points. Final score 14-3. A good result and one in which everyone played well.

#### Bart's v. Beckenham. Wednesday, 21st September. Lost 16-5.

This was an open game, characterised by many Bart's handling mistakes and very few mistakes by Beckenham. Smart scored chasing a well placed kick by Buckley.

#### Bart's v. Trojans. Saturday, 24th September. Lost 21-6.

A sad day, lack of elementary defensive technique and no fire. Trojans played well with good line-out work and loose play. The bright spots were our front row with Fairclough in his new position at prop, and the occasional break by the threequarters. Savage scored a nice try from a loose heel, and Bell scored after a long throw by Britton.

#### Streatham Sevens. Sunday, 25th September.

We drew Old Whitgiftians in the first round. There was nobody to match the speed of the Whitgiftian outsiders and consequently they ran around us. Britton scored near the posts and Grafton converted. Result—Lost 21-5.

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## FIXTURES IN NOVEMBER

Nov. 5th	Penzance, Away.	} Cornish Tour	12th	Old Haberdashers, Home.
7th	Falmouth, Away.		19th	Old Alleynians, Away.
9th	Newton-Abbott, Away.		23rd	Oxford Greyhounds, Home.
			26th	K.C.S. O.B.s, Away.
				D. B. Jackson

## RIFLE CLUB

## Staff v. Students match.

A variety of persons was assembled at Bisley on Sunday, 18th September, for the first match of this kind since 1961. Before lunching at the North London Rifle Club, shots were fired at 200 yards, resulting in a slight lead for the Staff. After suitable refreshments however the Staff, girding up their loins under the fine example of their Captain Mr. Gordon Bourne, and wielding Mr. Jackson Burrows' rifle, swept into an eleven point victory at 500 yards.

Thereafter camp followers and competitors all repaired to the North London Rifle Club for tea and so to home. A most enjoyable day under ideal shooting conditions.

	200 yds. (35 shots)	500 yds. (50 shots)	Totals
<i>Staff:</i>			
Mr. Gordon Bourne	32	49	81
Mr. Paul Ellis	33	47	80
Mr. Michael Barton	32	44	76
Dr. Kenneth Wise	32	47	79
Dr. Richard Hamshere	27	41	68
		Total	384
<i>Students:</i>			
J. M. M. Turner	33	47	80
S. G. Crocker	34	47	81
A. K. Bacon	28	42	70
I. McLellan	29	42	71
C. J. Sedergreen	29	42	71
		Total	373

## GOLF CLUB

**Bart's v. Guy's.** September 14th at Sundridge Park. **Drawn 1-1.**

This match was played at Sundridge Park where the day before a tractor had disappeared down a bomb crater, which meant the course was reduced to 16 holes. We played 4-ball matches, following the idea introduced at Hadley Wood. Richard Begent and John Sadler as the first pair lost 2 and 1 to a Guy's pair who only dropped 1 shot. The match was squared by the 2nd pair (Angus Hoppe and Mark Hares), who won 4 and 3 with some steady team golf.

**Team:** Richard Begent, John Sadler, Angus

Hoppe and Mark Hares.

**Barts v. Middlesex.** September 28th at Chislehurst. **Won 3-1.**

Angus Hoppe, recently awarded his colours, celebrated with an excellent win of 6 and 5. John Sadler started with an eagle 3 at the 1st but lost for the second time to the same Middlesex opponent by 3 and 2. Carol Cupitt played her usual immaculate game winning 2 up, and Bill Graham clinched victory at the 17th by nearly holing in one.

**Team:** Angus Hoppe, John Sadler, Carol Cupitt and Bill Graham.



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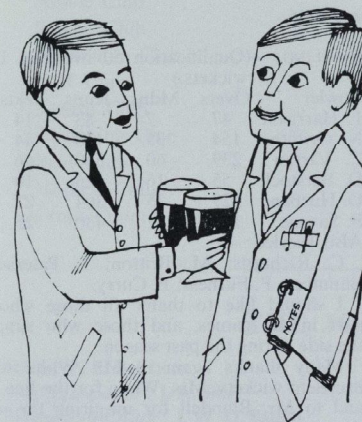
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Each pre-clinical  
Soundest drink to  
Set on pinnacle!

## CANOE CLUB

1966 has been a most remarkably successful year for the Canoe Club. Our racing prospects did not look too bright in February, when Charles Evans was in bed with Glandular Fever, making sorrowful noises about the end of his racing career. As usual he was wrong, and during June and July won six long-distance races convincingly, and collected an impressive array of cups at Sprint Regattas. In August he ensured that the Union Jack would fly for another year on the bridge at Ribadesella by winning the Sella river race, and returned from Spain to win the British National Long Distance Championships. This race, over 13 miles on the Conway in N. Wales, was very close and exciting to watch. All 130 boats started together, and there were some interesting moments on the half dozen rapids in the first mile.

After two miles, Charles Evans was racing neck and neck with Alastair Wilson, a great rival from the Kyle Canoe Club, and one K.2 (with Tony Kirk and Martin Boshier, Royal Canoe Club) and the rest of the field were half a minute behind. A mile from the end the leading group was unchanged, but 500 metres

from the finish, they hit a patch of rough water and Alastair had the misfortune to capsize. Charles Evans carried on to win in the K.1 class and to take second place overall. The Royal Canoe Club from which St. B.H.C.C. operates, won the team prize with an impressive 1st, 2nd, 3rd and 4th overall placings.

Charles W. Evans has now retired again, and hopes to do a little medicine over the next few months.

Mark Castleden has had a good half-season after his conversion from Rowing. He won his class in the Orwell race in June, but his best effort was in the Royal Canoe Club Centenary Race (Marlow—Teddington) on September 17th, paddling with Duncan Bell. Thirty Seven miles is a very long way, even sitting down, and they did extremely well, overtaking the opposition in the last mile to win the Touring Doubles by 10 seconds; (Time: 5 hrs. 10 mins.). Adrienne Huskisson also paddled nobly in this race, pushing along a partner much heavier than herself, to win the mixed doubles by 1½ hours, despite a lengthy halt at Staines for food.

## CRICKET CLUB

## Averages, Season 1966.

BATTING:—(Qualification 10 completed innings.)

Batsman	Innings	Times		Runs	Av.
		Highest Score	Not Out		
J. Gately	10	70 n.o.	1	244	27.0
D. Husband	16	50 n.o.	3	292	22.7
P. Furness	16	46 n.o.	1	322	21.5
N. Griffiths	24	64	2	455	20.8
P. Savage	16	36	5	176	16.0
C. Vartan	22	40 n.o.	2	284	14.3
G. Hopkins	18	35 n.o.	4	196	14.0
M. Britton	12	35	1	70	6.4

Also Batted:—

G. Major, W. Ali, R. Wood, D. Berstock, S. Thomas, K. McKintyre, S. Baumber, P. Curry, C. Grafton, D. Pope, D. Delaney, T. Bucknall, J. Harrison, P. Clarke, P. Bradley-Watson, D. Jefferson, T. Letchworth, C. Richards, I. Paterson, J. Clarke, G. Davies, W. Graham, S. Johnson, J. Redden, N. Offen.

BOWLING:—(Qualification 50 overs or 10 wickets.)

Bowler	Overs	Mdns	Runs	Wkts	Av.
J. Harrison	47	7	83	14	6.0
N. Griffiths	154	33	430	44	9.8
C. Vartan	239	60	560	46	12.2
D. Berstock	55	16	126	10	12.6
D. Husband	127	35	304	21	14.0
P. Savage	169	41	430	25	17.2

Also bowled:—

C. Richards; M. Britton; J. Paterson; S. Baumber; P. Furness; P. Curry.

I should like to thank all those who took part in the games, and those who supported the side during the past season.

Many thanks again to Mr. White for the excellent wickets, Mrs. White for the fine meals and to Mr. Blundell for umpiring throughout the season.

G. O. Hopkins.

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## THE DESIRABLE DOCTOR

The election of a medical student as "Miss World" adds a pulchritudinous dimension to the medical scene. Of the many reactions she will doubtless provoke, one of the least likely is a further consideration of the desirable qualities to be found in a doctor. Perhaps it would be wiser to remember that she is still only a student, however, as her medical future is uncertain, her looks, alas, impermanent, and there remains the gulf that lies between the qualified and the unqualified. This is represented in the cosy myth that what a student does is unimportant, so long as the magical metamorphosis can be wrought, by which the nasty student is transformed into the nice doctor. The implication would seem to be that the work which matters in determining real medical competence only begins on qualifying. Few could agree that this is a balanced attitude, but insofar as it recognises any point in student life, it does indicate the importance of non-academic and non-clinical factors.

The Teaching Hospital thus provides more than the requirements of the curriculum—about which there is argument enough (as witnessed by the results of the survey conducted by Dr Cantrell, published in this month's *Journal*). It is clearly a most important and powerful organ for the formulation of professional attitudes, and the corps d'esprit that it breeds has both good and bad effects. As things stand today, there is no danger of too little loyalty but much too great a likelihood of providing a swamping and suffocating environment. For this reason there is much to be said against encouraging a belief in the be-all and end-allness of one's Alma Mater. The greatest defence against unquestioning and passive absorption of all that is flung in one's direction is the liveliness of mind that is afforded by a broadly based general education.

Dr. Kenneth Keele in a recent article in the *B.M.J.* on the uses of medical history, produced some interesting ideas. The perspective afforded by an awakened historical sense, guards against the dangers of intellectual arrogance. The lessons of the past can add to the equipment provided by a fully assimilated scientific education in feeding the critical faculty and producing a proper scepticism. There is nothing to be gained by hiding difficulties in the hope that a watered-down and simplified version will be more easily remembered. Interest is the key to learning and intellectual challenge can only act as a stimulus—yet the criticism comes from both inside and outside the profession that medical education seems designed to favour the sponge and defeat the ambitions of the more active. The hospital gates are both physically and metaphorically closed to all but a few, yet it would seem a sick society that shuts its eyes to all but the sick—even a society whose function it is to heal the sick! It is important to know about the life the patient has come from and can return to: neglect of the full past history of a patient can lead to a totally inadequate concept of health. Even the General Practitioner, whose position in the community leads to fuller appreciation of the social situation, can still survive with a singularly negative view of health. It is thus incumbent upon the doctor to acquaint himself with the full life of the society with which he deals, irrespective of his speciality.

### ERRATUM

It is regretted that the figure that accompanied the article in the October *Journal* "The Suggested Aetiology of Cot Death—A Type of Sudden Unexpected Death in Infancy" by P. B. Wood was printed upside down. The printers have accepted complete responsibility for this error which occurred after the page proofs had been returned correct. There is therefore inserted in this *Journal* a reproduction of the figure printed on gummed paper, which may be stuck over the original figure in order that the legend can be referred to on reading the graph.

## LETTERS TO THE EDITOR

### MEMORIAL TO MISS WAY

Sir,—At a recent meeting, the Parochial Church Council of St. Bartholomew-the-Less resolved to commission a memorial to the late Miss F. M. Way, who died on March 16th, 1965. Many will remember her as Sister Colston, where her kindness and humour won her the devotion of all her patients. Much of her free time was spent in caring for our church, where she was Sister Sacristan for some years and Churchwarden from 1955-1963. As Miss Way loved colour in the Church, it has been decided that the memorial should take the form of a set of pulpit falls. A patient, who is skilled in ecclesiastical embroidery, has made a set of falls, and these are now in use.

The Council feels that other friends of Miss Way may like to be associated with this simple memorial, and donations may be sent to:—

Miss M. M. E. Calcutt,  
Hon. Treasurer,  
St. Bartholomew-the-Less P.C.C.,  
The Nurses' Home,  
St. Bartholomew's Hospital, E.C.1.  
R. H. Arnold, *Vicar*  
M. A. Shorthouse,  
H. E. Gribble, *Churchwardens*  
St. Bartholomew's-the-Less,  
St. Bartholomew's Hospital,  
London, E.C.1.

21st October.

### Births

CARRINGTON—On August 23, to Dr. Elizabeth (née Ware) and David Carrington, a son (Richard William James), a brother for Sally.

### Deaths

NEWTON DUNN—On October 14, Dr. Thomas William Newton Dunn, M.B., B.Chir. (Cantab.) aged 86. Qualified 1905.

### Change of Address

Dr. and Mrs. L. H. Blakelock to 82, Burton Road, Lincoln. Tel. 24293.

Dr. Le Brasseur's professional address to 65, The Drive, Hove, 3. Tel. 32328.

### Orthopaedic Exhibition

A demonstration of orthopaedic interest is to be on permanent show in the clinical lecture theatre. The first of these is entitled "Osteosarcoma", and the second "Exostoses". It is hoped that these will ultimately be changed at monthly intervals although this will not be immediately possible.

### Announcement

The Department of Psychological Medicine is now holding regular monthly meetings at which a topic of psychiatric research is discussed. For the next few months we plan to have speakers, largely from within the department, telling us about their work.

In the first one, Dr. Jean Harrison, who is particularly interested in the reaction of the autonomic nervous system to psychological stimuli, discussed her work in connection with the palmar sweat glands. The activation of these glands by any significant psychic or sensory stimulus underlies what is commonly called the palmar galvanic response. Dr. Harrison found that when severe psychological stress was present, as in the case of patients about to have operations, the activity of the sweat glands stopped altogether. This response was subsequently found to be associated with increase in circulating adrenaline. Dr. Harrison is planning to continue her investigations on both normal subjects and on patients attending the Department of Psychological Medicine.

## Abernethian Society

Thursday, October 20th:  
Inaugural Meeting in the Great Hall.

**Dr. Martin Ware, M.R.C.P.**  
"The role of Medical Journals in Clinical Medicine".

The magnificence of the Great Hall provided a splendid setting for the Inaugural Meeting of the Society for the new year. After the President had welcomed the guests and new members, he introduced the speaker, Dr. Martin Ware, Editor of the British Medical Journal and an old Bart's man. Dr. Ware began with some delightful stories about his ancestor, James Ware, a contemporary of John Abernethy and like him a Fellow of the Royal Society.

Using the *B.M.J.* as a model, Dr. Ware gave an account of the functions of a general medical journal, namely to publish medical news, including in this, publication of original work and research, to educate, and to provide a forum for free and informed discussion. The leaders, one of the most important sections of the Journal, critically discussed advances in technique and knowledge. Limitations of space decreed that only a small minority of the original papers submitted to the Journal could be accepted for publication; the delicate task of selection was greatly assisted by reference to expert referees. The correspondence columns of the *B.M.J.* and *Lancet* were the envy of North American journals, and provided a critical evaluation of the original matter. Articles on medical history and ethics, current practice and politics, and clinico-pathological conferences were among the other educational services provided by a good medical journal. For these reasons, Dr. Ware concluded that such journals would always play an essential role in the development of clinical medicine.

Dr. Wykeham Balme, in his witty and gracious vote of thanks to the Speaker admitted that the *B.M.J.* was one of the few magazines he found worth keeping up, despite its expense.

An election was held to fill the remaining vacancy on the Committee. By a curious twist of fate the two candidates, Mr. Peter Quinn and Mr. Christopher Watkins drew an equal number of votes. The President, not visibly dismayed, proposed a cunning amendment to the constitution to allow the election of both candidates, thus avoiding any further democratic embarrassment. After some dispute this proposition was carried *nem. con.* and the atmosphere of the Society restored to its accustomed tranquillity.

Thursday, 27th October:

**Mr. Bernard Miles, C.B.E.**  
"A Non-Address"

The President introduced the speaker as the first theatrical personality to visit the Society since Bernard Shaw in 1924. How appropriate it was, he added, that 42 years later it was the Director of the City's only theatre who had come to address the oldest society in the City's only hospital. It may well have been 42 years since any of the Society's meetings have been so well attended—there were nearly 200 people present.

Bernard Miles, replying modestly to the Presidential eulogy, pretended that he had been awarded his C.B.E. in error; the citation had read "for services to the circus" and been meant for Bertram Mills. Like Edmund Kean, he had gone into the Theatre because it was the only profession which allowed one to stay in bed until noon every day. Unwilling to give a formal address, the speaker called upon the members to dictate the course of the meeting by asking questions of their own interest. There followed an hour of spontaneity and wit in which Mr. Miles delighted us with his grasp of, and dedicated interest in the live theatre. The Society can seldom have enjoyed such a brilliant feat of extempore speaking; it will long be remembered.

Marcus Setchell.

### December Duty Calendar

Sat. & Sun., 10th & 11th

Mr. Hunt.  
Sir Ronald Bodley Scott.  
Mr. Aston.  
Dr. Boulton.  
Mr. Dowie.

Sat. & Sun., 17th & 18th

Sir Clifford Naunton  
Morgan.  
Dr. Black.  
Mr. Manning.  
Dr. Cole.  
Mr. Fuller.

Sat. & Sun., 24th & 25th

Mr. Badenoch.  
Dr. Hayward.  
Mr. Manning.  
Dr. Gillett.  
Mr. Cope.

Sat. & Sun., 31st & 1st January

Mr. Tuckwell.  
Dr. Oswald.  
Mr. Aston.  
Dr. Bowen.  
Mr. McNab Jones.

Physician Accoucheur for December is Mr. J. Howkins.

## RUSSIA 1966

by I. P. Todd

In May of this year, I had the good fortune to go with thirty general surgeons and their wives (The Surgical Sixty Club) on a private visit to the Soviet Union. The object of the visit was to see first-hand something of Soviet medicine. At the same time we took the opportunity of seeing as much of the cities, the country and the culture as was possible. Having read something about each of these aspects beforehand, I think it is right to emphasise that what was true yesterday is not to-day, and what is to-day will not be tomorrow, for the face of Russia is fast changing.

The training of medical students in the Soviet Union would appear to be surprisingly similar to the training at Bart's. It is however difficult to be sure of detail and I have called upon the notes made by two of my colleagues in an attempt to verify some of my impressions but even then, they may be wrong. Students enter a training school at the age of seventeen to eighteen years, embarking upon a course of six years; the first three are in basic sciences but introductory courses in pathology and surgery are included in the third year. Entry to a medical school appears to be competitive. There are eighty such schools in the U.S.S.R., the majority belong to the Health Ministry and are known as "Institutes" (together with a lot of other training establishments). Only three or four are under the auspices of the Ministry of Education and connected with a University. Strangely these are traditional connections and include Tartu and Vladivostok. There would appear to be no shortage of doctors; in Georgia the ratio being 3.4 per thousand of population. In the same autonomous republic the medical institute of Tbilisi, the capital, graduates about three hundred and fifty doctors a year. About twenty per cent of students fail to complete the course; most fall out in the early preclinical years for reasons similar to those in this country. Qualification is by means of a short examination which was said to be the same throughout the whole of the U.S.S.R.

On qualification a doctor is assigned to work

in various areas or hospitals for three years. The first year appeared to be mainly concerned with treatment of internal diseases usually at a polyclinic. A polyclinic is essentially a health centre staffed by non-hospital doctors and junior hospital doctors (about Registrar grade). Simple diagnostic aids are available and cases are referred from there to a hospital. There is no general practitioner service in Russia and if a home visit is necessary, a doctor will be sent by the appropriate area polyclinic. The clinics originally were to deal with a factory and its community, the workers and their families living and shopping in the immediate neighbourhood of their employment. This concept however was admitted to have broken down over the housing shortage and need for some workers to travel long distances. Now polyclinics whether connected with a factory or hospital or not, act as district health centres. There is rotation of the staff between the polyclinic and hospital and there is said to be a specialist available to each department of the polyclinic.

On completion of the assigned three years the young doctor may become a hospital doctor or if he qualified with a good standard may at once proceed to a postgraduate course. These courses last three years at the end of which there is an examination which gives him the title of "Candidate" or "Aspirant" and the status of a junior specialist. Later the candidate may write a thesis, which if satisfactorily defended, brings him a State Diploma and the chance to become the head of a department in a district clinic. District hospitals seem to have five hundred to a thousand beds and may refer patients to specialised hospitals or institutes.

It was difficult to understand the administrative set-up for postgraduate studies but each of the fifteen autonomous republics (Leningrad for European Russia and Moscow for Asiatic Russia) appeared to have Medical Institutes, headed by a Rector. Five faculties were represented (1) Hygiene and Sanitation, (2) Stomatology (Dentistry), (3) Pharmacy and Therapy, (4) Medicine and Paediatrics, (5)

Surgery. Various institutes were responsible for refresher courses, postgraduate training and research in many fields.

In spite of an apparent abundance of doctors and other medical personnel, there is still a lower grade part-trained "doctor" or "felcher", who works in the country or perhaps where no doctor is available. The training is four years, or less if the person were initially trained as a nurse. The latter has a three-year training, though it seems doubtful whether this is controlled and the early training seems to be fused considerably with that of the medical student.

Apparently no doctor or nurse is normally resident. Both work a shift system of six hours a day and seldom have more than three nights on duty in a month. If on a night shift, no day duty is done the next day. Flats are provided by the city soviet (council) as with every other occupation in Russia: they can however be bought and personally owned and bequeathed without death duties. Junior medical staff have one month's holiday a year and senior staff two. Study leave may be granted with pay and expenses—at the moment this is seldom outside the U.S.S.R. though the Professor of Surgery at Tbilisi had spent four months at Hammersmith Hospital.

The staffing of a unit of one hundred and ten beds, which seems a common size, consists of one professor, two assistant professors, two divisional or research assistants and thirty junior staff. At some of the special oncological research units there were almost as many doctors as patients.

The question of remuneration was discussed freely, but I suspect that the prohibitive rate of exchange of 2.8 roubles to the £1 fixed by the Russian government makes nonsense of some of the figures. However it must always be remembered that there are almost no expenses or taxes. Total taxation—income, rent and rates—never exceeds 13% of the salary. Few professors own cars but they have use of a car provided by the state. However in Georgia many more people appeared to own their cars. A professor appears to have a salary equal to that of an ordinary engineer or school teacher. An experienced nurse or doctor on qualification appears to earn about half the salary of a bus driver or factory worker. However, the figures we were given varied considerably; nevertheless all agreed that the cosmonauts, ballerinas and pure scientists were paid the most—if not too much!

From the medical standpoint one was impressed and disappointed. The hospitals were

for the most part old, poorly maintained and ill designed. We still have something to be thankful for here! Mostly the wards were of about four to six beds, though some were smaller, some larger. All had narrow beds crowded along the walls. Locker space was poor and perhaps the most pathetic sight was the vase with the single dying flower. The Russian seems to be fond of flowers but they are really very expensive. The accident hospital in Moscow, the Sklivokovsky, was built as an old peoples' home and upgraded by Napoleon to be his Officers' hospital. Nevertheless it was here that Yudin worked and first used cadaveric blood transfusions in 1930. 85% of blood used in this hospital is obtained from cadavers, up to four litres being obtained from one body.

The blood is not citrated but a small quantity of sucrose and antibiotic is added. Routine blood tests are carried out on the blood and blood from people dying from malignant or infectious diseases is not used. It is normally taken within four to six hours after death, but may be taken up to sixteen hours. It is kept up to four weeks at 5-6°C. It seemed apparent, however, that fluid balance and transfusion as known in this country was as yet not practised in any of the institutions visited. Quarter litre bottles of blood were poured through gauze into open glass containers and infused through red rubber tubing. In the operating theatres and wards there was a very low standard of sterility and antisepsis. We saw an operation which was said to be a thyroidectomy televised in colour to medical students, though I could recognise nothing in the neck itself or on the screen. But we saw the Health Minister, Professor Petrovsky, carrying out an operation for aneurysm of the heart with cardio-pulmonary by-pass superbly. His mortality rate for this operation is 17% in well over one hundred cases. We saw Professor Boris Petrov, Yudin's successor, carry out a colonic replacement for stricture of the oesophagus, a first class operation and we saw Professor Chachava carry out a similar operation using the small intestine.

Suicide seems common in Russia and caustic soda a common agent. In the only intensive care unit we saw, there were four cases, three of them suicides. Mr. Alan Hunt would have been interested to see Professor Vinogradov at the 64th City Hospital, Moscow. It was quite apparent that laparotomy should be carried out soon after percutaneous transhepatic cholangiography. He would also have been knowledgeably critical of the work of Professor Napalkov at the Metchnikov Hospital in Leningrad, where

right hepatectomy and Mallet-Guy's operation of hepatic artery denervation were practised for portal hypertension and cirrhosis.

We saw many stapling machines used for intestinal anastomosis from oesophagus to rectum, for vessels, for closure of the bronchus and so on, but the general standard of instruments was poor and disposable scalpel blades are not yet generally available.

We visited the proctologic institute which is in the 67th Hospital in Moscow. This was a better building than most and less crowded. Here we saw ulcerative colitis being treated with *E. coli* M.17 by mouth and a dried albumin anti-viral serum, insufflated into the rectum. We were told 67% improved. They did not approve of steroids for ulcerative colitis and did not recognise Crohn's disease of the large intestine.

Anaesthesia seemed in its infancy and an interest in this subject had only been stimulated by Mackintosh's visit about five years ago. We saw many patients operated upon under local but they seemed to be in great pain.

One's over-all impression was that hospital medicine was of low priority in Russia. Preventive medicine and cancer research seemed good. The standard in big cities varied from very good to poor but one only visited the big cities. The approach to surgery is purely scientific and little attention appears to be given to the patients' mental or physical feelings.

A few random isolated facts—

75% of doctors are women  
75% of surgeons are women  
but in Georgia only 40% of doctors are women.

Georgia is a happy country well known for its hospitality—we met this both in the air and on the ground, in the city and in the countryside.

Doctors are allowed private consultative practice but treatment is given only in hospitals. However we were told that a number of doctors carried on private practice as a "hobby" and medicines could be purchased cheaply in shops.

Many people now own country cottages or "datchas".

Banks enable people to invest their money at 2-2½% interest.

Larger hospitals have their own interpreters because of the many languages spoken in the Soviet Union and to translate current medical literature.

Abortion is free and legal for any woman at her request up to three months.

It is said there are no waiting lists for admission to Soviet hospitals.

All children have an eight-year education but most now have ten. There seems to be an adequate number of teachers. All schooling is free as is a University education.

The baths have plugs but the wash-hand basins do not. Perhaps this is hygienic?

## Unusual Aspects of Myeloma

by B. D. Hore

The purpose of this present paper is to emphasise the less common manifestations of myeloma and to illustrate the widespread clinical spectrum it can produce.

Myeloma is perhaps best considered as a neoplastic condition affecting plasma cells. The tumour of plasma cells may present as a solitary tumour of bone (with swelling often painless and occasionally a pathological fracture) or multiple tumour of bones (classical form of the disease), or as a diffuse infiltration of the

bone marrow (classical features often being a progressive anaemia with a high ESR), or more rarely as soft tissue tumours (extramedullary myeloma). In Innes and Newall's series only six out of one hundred and eighty eight cases of myeloma were of this latter type. The usual sites of these tumours are the mucous membranes of the upper air passages, but other sites, including skeletal muscle, breasts and gastrointestinal tract, have been described.

These four types of myeloma are best con-

sidered variants of the same disease, for solitary myeloma, diffuse infiltration of the marrow with myeloma cells and extramedullary myeloma will frequently, if followed for long enough, terminate in the classical form of the disease.

Whilst extramedullary myeloma can go on to involve the skeleton, visceral involvement by myelomatous tissue is not uncommon in the classical form of the disease. There may thus be clinical hepatomegaly and splenomegaly, both these features usually being overshadowed by the well known features of the disease. Autopsies of myeloma patients often show histological infiltration of the liver even if it is not palpable in life. Davis *et al.* at the Royal Free have described a case of myeloma in which the presenting feature was obstructive jaundice due to liver infiltration. Myeloma may involve the liver and spleen in another way; that is by the deposition of amyloid.

Although respiratory infections are very common in myeloma due to the low level of normal globulin, infiltration of the pleura and lungs by myeloma tissue would seem to be very rare. Renal damage rivals respiratory infections as a major cause of death in myeloma. The presence of Bence Jones proteinuria has long been used as a diagnostic test for the disease. The commonest pathological lesion would seem to be that of cast formation in the tubules with a foreign body giant cell reaction around the tubules. The casts are said to consist of Bence Jones protein; and tubular degeneration usually follows. The kidneys may be damaged in other ways by infection, by nephrocalcinosis (associated with the hypercalcaemia sometimes seen), by amyloid deposits, by uric acid deposits (secondary gout is a rare, but well recognised complication) and very rarely by infiltration of the kidney by myeloma cells. The usual clinical features of renal involvement are those of chronic renal failure which may terminate in acute oliguric renal failure (this usually is attributed to massive cast formation). Tubular syndromes resembling nephrogenic diabetes insipidus, renal tubular acidosis and de Toni-Fanconi syndrome (with amino aciduria, glycosuria and phosphaturia) have been described. Occasionally acute renal failure has been the presenting feature of myeloma.

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The mechanical concept of casts blocking the tubules, and thus leading to renal failure, has, in recent years, been criticised, especially as autopsies of patients dying from acute renal failure fail to show casts in the tubules. In these cases, at least, glomerular damage may be the cause.

Bayrd and Bennet in their series give a figure of 15% of their cases being complicated by amyloidosis. The amyloid deposition corresponds with that of primary amyloid, e.g. myocardium, gastro-intestinal tract (including the tongue), skeletal muscle, skin, larynx, peripheral nerves and joint capsules. Less commonly are liver, spleen, lymph nodes and kidney involved. The amyloid material does not stain well with metachromatic stains, nor is there reliable affinity for Congo Red, making this test of little value in detecting the amyloidosis of myeloma. As stated above, amyloid deposition in joint capsules occurs in myeloma and may produce swelling, pain and limitation of function. The small joints of the hand particularly may be involved, producing a superficial resemblance to rheumatoid arthritis (Bywaters and Hamilton). Pain from myeloma deposits in underlying bone e.g. hip, may simulate arthralgia and secondary gout may occur.

Neurological manifestations have been well recorded by Silverstein *et al.*, in a series of two hundred and twenty seven cases. The commonest neurological manifestation is compression of the spinal cord or cauda equina usually due to extradural deposits. In most series about ten per cent of patients have this complication. The second commonest neurological feature is a radiculitis i.e. compression of spinal roots with subjective and often objective evidence of root involvement. Rarely myeloma deposits at the base of the brain may cause cranial nerve palsies.

Peripheral neuropathy, usually symmetrical and involving all four limbs, is a well recognised complication although of course uncommon. In some cases it would seem to be due to a direct involvement by myelomatous tissue, in others the result of amyloid infiltration and in others a "toxic" effect analogous to that seen in the neuropathies of carcinoma. Carpal tunnel syndrome due to amyloid compression of the median nerve has also frequently been described.

## A QUESTIONNAIRE ON THE CURRICULUM

by E. G. Cantrell  
and E. A. G. Cantrell

To some people studying medicine, a problem that arises during the time of the training is, "What are the priorities that must be learnt out of all the mass of information which is apparently part of the knowledge of medicine?" This may present as a feeling of uncertainty when confronted with a vast amount of knowledge, which somehow must be stored by the time Finals are approached. To some, it is a problem which occurs as a chronic irritation throughout the course of their training, while to others it reaches them only in the last few weeks before Finals, during the time when they really do some work! Basically, the problem is that there seems to be a great deal to learn in the practice of medicine, covering a wide variety of subjects. Out of all this, what is Essential Knowledge for the day when the newly-fledged doctor arrives at the hospital at which he is to work?

During two years, whilst working at St. Bartholomew's Hospital, informal tutorials were held for final-year students approaching their exams, with the purpose of trying to cover any subjects in medicine which they felt they did not fully understand, and a fairly free choice was given to the students as to which subjects were discussed. Almost always the question of treatment and management was requested as a subject for discussion. During most of the tutorials, we did in fact cover many of the emergency treatments that are likely to be required while working as a house physician. Most of these were the type of condition in which action may be required rather rapidly, and there is not a great deal of time in which, either to go and look up the subject, or to find someone else to ask about the exact approach to treatment.

A very strong impression was created during this time that many people do not really understand the essentials of treatment, particularly

of common emergencies, and that there existed a group of people, many of whom had a chance of passing their exams, and who would be thrown into the situation of being housemen, dealing with medical emergencies, but with a very uncertain knowledge of exactly how to manage such emergencies.

A further impression was that these common emergencies were not learnt because nobody had stressed their importance, in relation to all the other subjects to be studied. It was just as easy for a final-year student to know some obscure eponymous syndrome as it was for him to know how to treat an overdose of barbiturates. Sometimes "one-upmanship" glorified the former and resulted in complete ignorance of the latter—rather unfortunate when many hospitals will admit at least one overdose weekly, and some admit many more!

Impressions, however, do not make a very good source of evidence in a subject such as the medical curriculum, and would be wide open to criticism. It was therefore felt that an attempt should be made to obtain the opinions of those who had been through the course, and were doing their house jobs, to see if this agreed with my own impressions. For this reason a questionnaire was sent to all the members of a year's intake who had started work as housemen in various hospitals. The details of the questionnaire were as follows:—

#### AIMS:

- (1) To ask specific questions about various subjects, to enquire:
  - if the doctor felt he or she was adequately prepared for the subjects.
  - if not, whether he or she knew where the defect lay, whether in his own work, in instruction, or in practical experience.



SPECIFIC SUBJECTS	PREPARATION ADEQUATE		NO PRACTICAL EXPERIENCE	INSUFFICIENT OWN WORK TEACHING	
	YES	NO			
Emergencies in:					
PSYCHIATRY				++	+++
PEDIATRICS				++	+++
E.N.T.				++	+++
POISONINGS				++	++
EXANTHEMS				++	++
TUBERCULOSIS				+	++
SKIN DISEASES				++	++
MEDICAL EMERGENCIES				+	+
HAND SEPSIS				++	++
DRUG PRESCRIPTION				+	++
FRACTURES				++	++
COMA				+	++
RESPIRATORY FAILURE				+	+
MENINGITIS				+	+
SURGICAL EMERGENCIES				+	+
CARDIAC ARREST				+	+
SHOCK				+	++
ROAD ACCIDENTS				+	++
INTRAVENOUS THERAPY				+	+
BURNS				+	+
HEART FAILURE				+	+
ARTHRITIS				+	+
PNEUMONIA				+	+
HEAD INJURY				+	+
ASTHMA				+	+

+ = 0-5 VOTES    ++ = 5-10 VOTES    +++ = 10-15 VOTES

- (2) To enquire if any other specific problems had been encountered as housemen, not met with in the period of training.
- (3) To enquire about views on methods of medical teaching.
- (4) To leave room for further comments.

#### RESULTS :

Totals : Number sent 86; Number returned 23 : (21%).

It was disappointing to have less than a quarter returned, but it is appreciated that new housemen are already flooded by a repetitive bombardment of advertisements, and also have little time to spare. It is hoped that these reasons, rather than a lack of interest in the subject form the main reason for the absentees.

#### Student locums done by 8.

G.P. experience Yes—7 Some—2 No—14.

This would indicate that the policy of the curriculum was to present only hospital medicine, with no definite chance to learn about the life of the family doctor. I would challenge this emphatically, since surely all students should know the problems of the G.P. and even those intent on hospital medicine should know what it is like for the doctor having first contact with the patient.

**Specific subjects.** The results of this are shown in the accompanying figure, and clearly indicate a marked lack of confidence in knowledge by people who had already passed finals, and were licensed to practise as housemen! The figures do not all add to the same totals because some answers left blanks and did not give definite answers. There are enough, however, to give general trends, and although the numbers are not great, I feel that the results do show definite evidence of a lack of preparedness in several important subjects, for example, the treatment of poisonings.

The results have been put in three groups, those with the majority unprepared, those in whom half were unprepared, and those where the majority considered their training adequate. To my mind, the middle group as well as the first group show a disturbing number of subjects. The problem of practical drug prescription was one topic mentioned specifically by several doctors. That hand-sepsis, fractures, coma, respiratory failure and meningitis should be in a 50% confidence classification is also rather unsatisfactory, since apart from the last, they are all fairly common problems.

**Other subjects** listed as being encountered with no experience as a student may be listed as follows:—

Suicide (x4)	Tracheostomy	Minor medical procedures (eg. pleural tap)
Casualties with fractures (x2)	Subarachnoid haemorrhage	Pancreatitis
Volvulus (x2)	Encephalitis	Acute ulcer
Serum hepatitis (x2)	Subacute bacterial endocarditis	Status asthmaticus
Diabetic coma (x2)	Status asthmaticus	Anaphylactic shock
Common childrens' complaints	Rheumatic fever	Acute neurological conditions
Pulmonary embolism	Polyneuritis	Terminal care (eg. intracranial tumour)
Geriatrics	Abdominal emergencies/peritonitis (x2)	Parasitic infections
Chest injury	and finally, "legion"!	

**Practical experience** was by far the most common reason given for inadequate training, and it is clear that many of the subjects quoted are conditions that less commonly reach London Teaching Hospitals. Surely it could be answered by having definite periods as a student in peripheral hospitals, on call, where a month of seeing all emergencies would provide ample opportunity for gaining wider experience.

Insufficient—own work, 100 Totals teaching, 132

The diagram does show how these total figures were spread out among the various subjects, but although it is plain that people were honest enough to admit their own lack of work, it is clear that teaching was felt not to be as good as it should be, and also that these two factors do not rank as high as the lack of practical experience (quoted 247 times).

**Teaching methods :** (1) **Tutorials more often**  
Yes—21  
No—2

There is no doubt from these figures that most students would favour more chance to work out subjects in a group with a teacher, with a chance to ask questions and have some dialogue. One suggestion was that students should be made to do preparation for such sessions (although experience suggests that a time limit is also essential).

(2) **Resident periods at peripheral hospitals?**

More—21  
No—2

Again this has taken up quite a lot of comment, apart from figures shown here. Several people stressed this in particular as being of great value. Comments such as these were expressed:—

—theory at the teaching hospitals and practice at the peripheral hospitals.

—the value of first-hand experience, responsibility, student locums, and a warning system that could contact resident students when an important condition is being treated (eg. cardiac arrest).

(3) **More ward rounds? Yes : 2, No : 4, I.S.Q. : 14.**

(4) **More films/slides? Yes 9, No/ISQ : 9.**

These figures do not have absolute significance being rather small numbers, few people commented on these answers, except that some stressed that *good* teaching by competent teachers was essential.

(5) **More clinical demonstrations? Yes : 14, No : 2, I.S.Q. : 8.**

Comments on these were few, but they do seem to be appreciated and are certainly a convenient way of demonstrating important conditions with the vital addition necessary to learning, namely, a live patient to remember.

(6) **Teaching machines? Yes : 2, No : 19, 12.**

This was perhaps unfair, as probably several did not have any idea what such machines would be like to learn from. There was, however, quite a definite reaction against the suggestion, violently emphasized by some. One person suggested that a machine programmed to teach E.C.G.'s might be helpful.

(7) **Test or exam? Yes : 16, No : 7.**

It was asked whether some form of test at the end of each section of the course would help, and quite a few people expressed assent, perhaps multiple choice. It was doubted whether this would provoke more than twelve hours intensive work before the exam (one answer), or whether firms gave experience of sufficiently similar conditions (in medicine). My reason for this question was that any stimulus to work in the time of a specific appointment is better than none, and the tests might produce more stimulus still, if they counted in some small way toward the final assessment for graduation.

**Other suggestions :** These are quite difficult to condense, and cover a fairly wide range of topics. The most common subject, namely, the chance to do some practical responsible work, has been discussed already. In general it was felt that work as student locums, or as some sort of assistant in a peripheral hospital would

give excellent opportunities to learn from practical experience, and that some responsibility did give the greatest stimulus to learn. This of course has been the case for every one of us; we learn a great deal when we have qualified and do house jobs. The challenge is therefore to find ways of introducing graded responsibility to the student, so that he may be better equipped when he qualifies.

The second main topic is that many people feel that a smaller group discussion with a tutor or supervisor, either direct or after prepared topics by the students, would be of great value.

A third suggestion was for a "consolidation course", mid-way through the course, similar to the introductory course, but in more detail, to draw together systematically what had been learnt at random. The revision course was praised by several. This could be the function of an intensive integrated course in the middle of the clinical training period.

Other comments were as follows:—

—"*There is no-one that one can turn to for advice and help (both in the clinical course and in looking for jobs).*"

—"*Clinical teachers trained specifically to teach . . . .*"

—"*Elective period would be a good idea.*"

—"*Registrars teaching for exam. practice tend to be ridiculously high-powered . . .*"

—"*Working with a competent houseman I learnt far more practical material . . .*"

—"*Fear of the Ward Sister kept me off the wards more than anything else.*"

—"*The quality of the teaching was the single most important thing . . . .*"

Dr. Cantrell asked me for comments on his article as he had discussed the investigation with me in the planning stage.

I agree broadly with his conclusions and criticisms.

Firstly I share his disappointment at the small proportion of returned questionnaires; but having had previous experience of such surveys, both within the College and in professional organisations, I am not surprised, nor am I so charitable in attributing the cause. Lethargy is the most important factor.

We should all like to see more group teaching and every effort is being made in the College to this end: but if patients are also to be treated, both clinical and teaching staff will need increased sessions, and at present there are just not the finances for this either at College, University or N.H.S. levels.

## CONCLUSIONS :

This questionnaire was sent out in 1965, and the figures from the returns were small, so no great significance can be claimed from the statistics. It may also be that these comments refer to a curriculum of history, if many changes have already been made. For this period questioned, however, there is no doubt, from the trend of answers and comments, that several deficiencies were shown in the course. Firstly, it was possible for people to qualify without having been instructed in, or having had experience of, several important common emergencies and their treatments. Secondly, there existed a need for more chance to discuss diseases and treatment with experienced teachers in smaller groups, in preference to standard lectures and ward rounds. Thirdly, that work in the teaching Hospital alone was considered to be of less value than the same combined with periods at busy peripheral hospitals, perhaps with opportunities to do practical work under supervision.

No course can be perfect, and nothing can really take the place of determination in the student to learn, but these answers have provided some interesting suggestions. They do question whether learning in a haphazard way should not be supplemented by some teaching in priorities.

I would like to thank all those who gave their time to write their opinions on their training, and to Mr. I. M. Hill, for his help in preparing this paper.

Teaching machines can help in this respect and enable the student to learn at his own rate, and check his understanding of the subject. Most of the criticism was ill-informed; but the programming is initially a very heavy undertaking for staff.

Lack of practical experience for the clinical student is due both to the specialised nature of the patients seen at St. Bartholomew's, and the fact that the number of beds available on the island site is only about two thirds of the number required by a clinical school of this size. As it seems unlikely that we shall see an adequate increase in beds here, negotiations are afoot to obtain access to such teaching material in the region, the hospital accepting full responsibilities, so that all facets of hospital experience, and the relationship with general practice, would be avail-

able for teaching.

However, criticisms of lack of teaching and clinical material lose some of their edge to one who has to check student attendances at clinics. Excuses for non-attendance are far less original and more monotonous than the worst of teaching to which they are exposed.

Examinations within the clinical course are being planned and will be a stimulus to some and an indication to many how successful they are in their learning; students should realise, however, that they are already marked for all clinical appointments and these marks are sometimes taken into account at their final examinations, both University and Conjoint Board, and are always considered when house posts are allocated.

It is true that most students lack practical experience, especially in handling emergencies, when they qualify; but the pre-registration house appointment is designed to correct this defect.

There is much valid criticism by the University that in the clinical course students spend far too much time acquiring a mass of knowledge, and are woefully ignorant of how to learn, and how best to continue their education after qualifying. When the Royal Commission reports we may well see a reduction in the undergraduate clinical course, and an increase in the pre-registration period. All the Health Service has to do then is to find senior staff with sufficient ability, and sufficient time, to teach this doubled number of pre-registration housemen. Quite apart from the question of supply, there is the matter of finance, and few of the public realise that this country already has a health service which its economy cannot afford. To promise more without making the necessary funds available for treatment, teaching, and research and progress is fundamentally dishonest.

I. M. Hill.

## \* Kabarole Hospital \*

Kabarole is a small town in the South Western province of Uganda. It is not far from the Ruanda border, while below it on the plains, lies the famous Queen Elizabeth Game Park. In Kabarole is a small forty-bed general and maternity hospital, which is run by Dr. Robin Church and his wife Joan, who both trained at Bart's. The hospital was officially opened by Princess Margaret in March 1965, when it was the scene of great celebrations. After being present at the Consecrational service, Princess Margaret was shown all over the hospital.

The hospital, although modern by African standards, lacks much of the equipment we would consider essential, and there are always staffing and financial problems to contend with. They have recently been joined by a much needed new sister, who went out under the auspices of V.S.O. The extensive out-patient work includes a Child Health Clinic, Pre- and Post-natal Clinics and General Clinics. Beds are in great demand for patients with all kinds of diseases. A small amount of surgical work is being done, but as yet the theatre is not fully equipped.

In April this year, a severe earthquake caused great distress in the Fort Portal area. Robin and Joan's recently redecorated house was made uninhabitable, and the Nurses' home was also badly damaged. Robin and Joan were on holiday at the time, but the locum doctor's son had a narrow escape: providentially he had fallen asleep at the foot of his bed, for three square feet of plaster fell onto his pillow. The plans have just been passed for the house to be rebuilt to Robin's design.

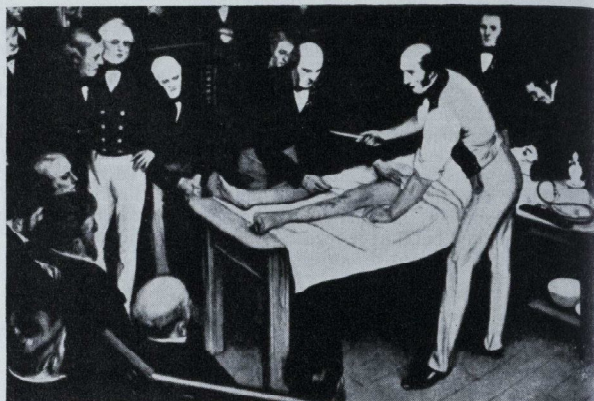
The Christian Union at Bart's has always taken a great interest in Kabarole and has tried to support them by gifts, making clothes for the children and knitting blankets for the beds—the nights can be quite cold, especially in the rainy season. As Christmas is coming, we are again hoping to send a present out to the hospital. Last year we sent sterilizers for the theatre, another time an anaesthetic machine. They badly need an incubator, and we are hoping to make this our Christmas gift this year. It would be from all at Bart's who wish to share in the work of healing at Kabarole.

## Life and Works of ROBERT LISTON 1794-1847

### Part 2

### His Work in London

by D. J. Coltart



*The first Operation under Anaesthesia in Europe*

In 1834 Liston decided to accept the offer made to him to become surgeon to the newly founded hospital—University College Hospital. The salary was small, the hospital was limited, the students few, but it was London and the possibilities were vast. Liston came south.

He wrote to his father in 1834: "My temper has improved amazingly since I got away from the wretched and malignant ninnies, Syme and Turner, and their hangers-on at the Edinburgh Hospital." The next year he was writing (16th June, 1835): "I had the other day a capital private case of deficient nose and repaired it to the satisfaction of the people, very rich and influential. It will do me good, I think. I may nearly pay my expense this first year, and that is saying a great deal—we shall see." He need have had no fear, he soon became popular and prosperous, and he feuded less in London than he had done in Scotland.

One of Liston's great contributions to practical surgery was the introduction of simple water dressing for wounds. Poultices, ointments, plasters were the usual forms of dressing, and it must be remembered that it was the rule for wounds to suppurate. Liston never tired of

describing such dressings as filthy and abominable, and an outrage on nature and common sense. He used plain lint dipped in cold water and frequently changed. If heat was to be applied he advised what is now called a fomentation, but which was then an obvious novelty. In a lecture delivered in 1846 he triumphantly says that the nurses at U.C.H. had almost forgotten how to make a poultice! For his generation he was a clean surgeon. He emphasized the need for careful cleansing of the sponges used in operation, and ordered the limb to be shaved preparatory to amputation.

In one of his lectures he refers to the danger of over-operating; many cases of joint disease, he says, will get well with rest and constitutional treatment, and need not be treated by amputation or excision. Today Liston's plan is generally followed.

Bearing in mind that Liston was easily the finest operator of his day, that he knew it, and that he liked applause, he would begin an operation by exclaiming, "Time me, gentlemen, time me!" It shows his breadth of view that he knew when not to operate. All surgeons at times make mistakes, and Liston's eagerness to operate once got the better of his judgement.

He was one day going round the ward with his house surgeon, Mr. Bucknill, a name commemorated in the Bucknill Scholarship at U.C.H., and was shown a case of a boy with a swelling in the neck over the carotid. The house surgeon said: "The tumour pulsates and I can detect a bruit in it." "Pooh," said Liston, "Who ever heard of an aneurysm in a boy so young?" and putting his hand into his right waistcoat pocket he took out a knife and made a deep incision into the tumour. "Out leaped the arterial blood, the boy fell." The artery was tied but the boy died. The post-mortem showed an abscess which had ulcerated into the carotid. Liston subsequently published the case but did not admit that it was an error.

Liston was not one of those elect few who have the gift to appreciate the significance of exceptional results. To most of us the exception to the rule is a misfit and a nuisance, something to be put aside. He relates a case of amputation of the thigh, and cannot find words strong enough to express his admiration for the patient's courage and fortitude. When on the morning following the operation Liston proceeded to remove the stitches, it will be remembered that this was the usual routine, the patient would not let Liston get near him. And this continued day after day. At the end of ten days the patient removed the stitches himself. Liston notes that they had not caused any inconvenience, and were more difficult to remove than usual as there was no suppuration. Healing had taken place by first intention, and he did not appreciate it. Again, he mentions, but only to condemn, the suggestion to use absorbable ligature made of tendon catgut or fish skin. He does not seem ever to have used them, but inquires how can one be sure that they will not absorb too soon.

The year 1846 was perhaps one of the most memorable in the annals of medical history in this country; up to then anaesthesia was unknown and the only drug in common use was alcoholic spirits, which was used by some as an antiseptic as well as a sedative. 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; 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 lose 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. William Squire and told him of the great news from America which Dr. Boott had received from Dr. Bigelow 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 anaesthetic 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 was 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 Liston. The volunteer for this experiment was Shell-drake, the theatre porter, who was a large, burly and plethoric man, which choice was, perhaps, unfortunate for Squire, since in his first public demonstration he failed to get the subject lower than the second stage of anaesthesia, i.e. that of excitement, and Shell-drake 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 Sheldrake. 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. Doctor F. William Cock's description of the scene may be quoted: "The well of the theatre is now almost full; it is 2.15 p.m. A firm step is heard, and Robert Liston enters, that magnificent figure of a man, six feet two inches in height, with a most commanding expression of countenance. He nods quietly to Squire, and, turning round to the packed crowd of onlookers, students, colleagues, old students, and many of the neighbouring practitioners, says dryly: "We are going to try a Yankee dodge today, gentlemen, for making men insensible."

"He then takes from a long, narrow case one of the straight amputating knives of his own invention. It is evidently a favourite instrument, for on the handle are little notches showing the number of times he had used it before. His house-surgeon, Ransome, puts the saw, two or three tenacula, and the artery forceps, named after the operator, on to the chair close by, and covers them with a towel, then threads a wisp of well waxed hemp ligatures, through his own button-hole. "Ready, Mr. Ransome?". "Yes, sir". "Then have him brought in."

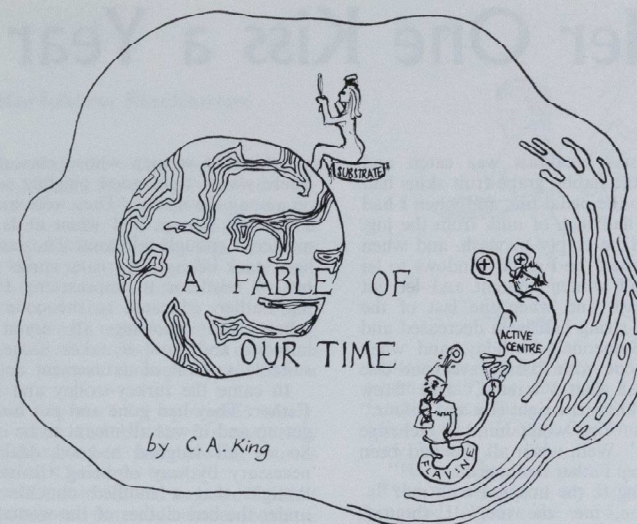
"The patient is carried in on the stretcher and laid on the table. The tube is put into his mouth, William Squire holds it and the patient's nostrils. A couple of dressers stand by to hold the patient if necessary, but he never moves, and blows and gurgles away quite quietly. Liston stands by, trying the edge of his knife against his thumb nail, and the tension increases; the patient's breathing gets deeper, more ether is dropped on the sponge. William Squire looks at Liston and says "I think he'll do, sir". The tube is removed and a handkerchief laid over the patient's face. "Take the artery, Mr. Cadge", cries Liston. Ransome, the house surgeon, holds the limb. "Now, gentlemen, time me." says Liston to the students. A score of watches are pulled out in reply. The huge left hand grasps the thigh, a thrust of the long, straight knife, two or three rapid sawing movements, and the upper flap is made: under 20 his fingers and the flap is held back: another thrust, and the knife comes out in the angle of the upper flap: two or three more lightning like movements, and the lower flap is cut: under goes the thumb and holds it back also: a touch or two of the point, and the dresser, holding

the saw by its end, yields it to the surgeon and takes the knife in return; half a dozen strokes, and Ransome places the limb in the sawdust. "Twenty-eight seconds" says William Squire. "Twenty-seven" says Bukell, a student, "Twenty-six" echoes yellow-haired Russell Reynolds. "Twenty-five seconds, sir" says proud Edward Palmer, the dresser, to his surgeon, who smiles in reply. The femoral artery is taken upon a tenaculum and tied with two stout ligatures, and five or six more vessels with the bow forceps and single thread, a strip of wet lint put between the flaps, and the stump raised. Then the handkerchief is removed from the patient's face, and, trying to raise himself, he says: "When are you going to begin? Take me back: I can't have it done!" He is shown the elevated stump, drops back, and weeps a little; then the porters come in, and he is taken back to bed. Five minutes have elapsed since he left it. As he goes out Liston turns again to his audience, so excited that he almost stammers, and hesitates and exclaims: "This Yankee dodge, gentlemen, beats mesmerism hollow."

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 died on December 7th, 1847, 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. Liston's death was lamented by all his professional colleagues and gave rise to many acrimonious disagreements between the physician who attended him in his last illness, and those who had treated him earlier. As was the custom in those days the dispute was aired in public through the columns of the *Lancet* in which, so it seems, all involved endeavoured to prove their diagnosis had been correct. It shows the concern felt of this untimely end, by all close to him, that they sought to prove that medical skill had not deserted the one who had given so much to the profession.



Once upon a time there lived an enzyme who was always sad because substrates never visited him on the undulating folds of the endoplasmic reticulum. Large molecules, small molecules, would pass without a word. Only one offered him comfort, his faithful co-enzyme Flavine. Frequently he would hover on the surface forming loose bonds with the enzyme and then make off.

"Would a substrate ever come?" thought the twin histidines on the active site. At this the distant proline residue yawned for it felt so far from the active site that it could raise no enthusiasm whatever for the presence or absence of substrate.

Suddenly the environment changed, a beautiful molecule appeared (molecular dimensions 36A x 24A x 36A), the enzyme felt his peptide bonds quake as a transient bond was formed only to be broken by the sudden twist of the substrate who glided off into cytoplasmic oblivion.

An hour later she appeared again, but this time she came closer. He held her by his two positive charges. His protein structure moved to engulf his substrate. This was surely bliss—but alas, his substrate was slipping from his grip. Soon she was only held by his ionized carboxyl group and then she was gone. Oh, what grief he experienced—what had gone wrong? He would ask messenger RNA (bristling

with information) about his unfortunate situation. RNA explained that the enzyme was not fit to hold his substrate, how could he expect her to link up with him when he was not able to accept her hydrogen atoms in the way she was accustomed. What a fool the enzyme had been to think his fine protein form would be enough. He fixed Flavine to his side to accept the hydrogens and the active site was now set. But wait, better place a Molybdenum ion by Flavine (according to Casano V.A. Guide Book for Frustrated Flavoenzymes pg. 9011, the  $Mo^{++}$  ion may produce the desired environment between Flavine, Enzyme and Substrate and the addition may remove any incompatibility sometimes experienced in these more complex systems).

The stage was now set and lo, the heroine appears. Positive met with negative—substrate and enzyme were united. More linkages formed and the enzyme enfolded her with his polypeptide chains. The nitrogens on Flavine prepared to accept the hydrogens. The moment the hydrogens were transferred, the whole environment changed. The double bond produced, wrenched the heroine from her many attachments and she disappeared into a ribosomal ravine.

Oh! that Biochemical love should produce such grief.

# Her One Kiss a Year

When Christmas breakfast was eaten and done with, and the flabby grape-fruit skins had been thrown into the pedal bin, and when I had drained the last half inch of milk from the jug, so that it should be empty to wash, and when Stephen had opened the French windows to let in a cold rush of winter sunlight and let out the smell of toast, and when the last of the paper and silver string had been decreased and folded up for Someone's birthday, and when everyone had done with kissing everyone else and saying, "Just what I wanted," and "How clever of you to know the right size and colour," and I had said, "You won't mind if I change mine will you?" Well, when all this had been said and done my Father announced.

"Who's coming to the hospital with me?"

"Me, me, me, me, me, me," I shouted, thumping the table with the flat of my hand. I was quick to volunteer because the alternative to hospital was church, and if the choice lay between depressing psalm singing and a glass of squash and salted peanuts, I knew the buttered side of my bread.

So here in the women's ward, they too knew about its being Christmas day and, after all, it was not just exclusively I who was having it. It seemed to have been made for all and not just me. They'd stood a centre table and made a splash of it with crêpe paper angels and half-eaten down candles standing in empty bottles. And King of the Castle was a little silver tree that stood on a fat book that was pretending not to be a book by hiding under a serviette. It was not a real tree but I forgave it that because it was silver and because every-time someone came through the swing doors, into the ward, it let in a draught which set the little silver tree shivering with excitement, and all its shimmering balls turned delicate green and acidic pink. Even those hideous basin type ceiling lights had been told it was Christmas because they had given themselves crêpe bows and sausage-shaped balloons that drifted in that very same breeze that tinkled the coloured balls on my little fir tree. But the hideous basin lights remained their ugly selves despite their itchy-bitsy make-up because they'd been too hot for the balloons and had made them shrivel and the paper bows fade and they made

me think of women whose mascara had run. There was a right good giggling session going on among the nurses. They were hidden behind some bed screens and when at last they had mustered enough self-control to come out they had, stuck behind their ears, sprigs of holly and bits of mistletoe to impress my Father. And my Father, educated to the code of pleasing others and knowing all about Christmas humour and how it takes some, showed a suitable amount of amusement and good will.

In came the turkey-trolley and in came my Father. They had gone and put him in a chef's get up and it was all meant to be one big joke. So we all laughed a good deal more than necessary by way of being Christmasy and I thought that a muffled chuckle came from under the bed clothes of the woman in number four, but I couldn't be sure. The sister thought to ask me my name, as she opened the lid of the sprout tank, in the 'keep hot' trolley. And then when I'd told her she asked me to spell it, and then when I'd done that she said, "How unusual, where did you get it from?" as if I had gone to some big London store and ordered it specially. And while my Father poured over the gravy he asked how Mrs. Bell's urine was today and I didn't think that nice talk for Christmas dinner, especially when you're doing the gravy. And then some other doctor came in and asked me if the blue tights I had on were from Father Christmas, and I had to say that they weren't but that they were from my Aunt Norah; and then quite suddenly I was completely forgotten, everyone was busy rushing around with plates of this-and-that; I was merely a bit of Christmas decoration in blue stretch tights and I felt in the way.

I was just on the verge of contemplating turning myself into a spider and hiding away under the 'keep warm' trolley when a deliciously chocolate coloured nurse beamed at me and said, "Would you like to take Miss Porter in bed fourteen her Christmas pudding?"

Now there is something mildly unnerving about walking the length of a highly polished linoleum-covered floor to the far bed, in a camel coloured duffle coat, to deliver a lump of black plum-pud that lies in the centre of a flat plate. I thought that this is what the Queen

by Kari-Anna Blackburne



must feel like when she walks the length of the red carpet and knows that all eyes are following her and when she suddenly becomes aware of the hem of her coat feeling unbearably long as it keeps hitting the backs of her legs. My feet grew very big and unmanageable and they tripped me and made me knock into the end of bed nine and that set one old woman a-coughing. And with number nine still choking away, and myself all covered with hot confusion another voice pierced through to me for a bed pan.

"I'm afraid you can't," I apologized nicely. "I'm not a nurse and besides it's not really very nice to have a bed pan between courses especially during Christmas lunch."

"I'll not wait," said the old hag and I didn't wait either but moved onto my number fourteen. I found her head somewhere down by her knees and so told it that I had got it some Christmas pudding. After all, it *wasn't* her head that I was speaking to but some other unaccountable part of her anatomy. She lay in a hump and heaved very slightly. She was asleep so I left her her pud along side her cold untouched sprouts.

I passed by a woman in a pink cable-knitted bed jacket and she said,

"Hallo dearie, who are you?"

"That's my Father," I said by way of an answer and jerked a look down to the turkey-trolley.

"Oooh," she said, shuffling up her bed to get a better look at me "And did you get those blue stockings from your Daddy then?"

"No," I said. "I got a pogo-stick for jumping to places on."

"Oooh," she said, sliding down a bit. "Now, isn't that useful. I expect your Daddy spoils you doesn't he?"

"No," I said blankly, staring at the cable knit.

"And what did Father Christmas bring you then?" she persisted.

"Nothing because we've got central heating and the fire place was blocked up last year so my Father gives me more instead."

"Really?" she said. "Well do you think you could take back my pudding and ask for one without custard."

"It's not custard," I corrected her. "It's

white sauce but I'll swop it for Miss Porter's because her's is dry and I don't think she fancies any. There, no don't thank me, thank Miss Porter. Happy Christmas and a happy New Year."

"Happy Christmas and a happy New Year," all the nurses said to my Father and me as we prepared to leave the ward. The white sauce ladle was licked clean and stood in the gravy jug and my Father picked up a forgotten chipolata and popped it into my mouth. We pushed through the heavy swing doors and out into the corridor. Sister Doret walked us as far as the lift shaft. She spoke of the decorations being the best ever this year and of how the nurses had worked so hard. And my Father became drearily medical again and spoke of that woman in bed four and her urine. I wished he wouldn't because he was putting me off the big lunch that waited for me at home. When we reached the lift shaft we discovered a limp bit of mistletoe hanging over the sluice door so my Father did his Christmas duty and gave spotty Doret her kiss of the year. My Father pulled open the iron gates to the lift and left her tittering on the other side.

"Do you think my pogo-stick will jump on gravel?"

"No," he said as we travelled down.

"I'm hungry aren't you?" as we passed a floor through the little porthole window.

"Quite," he said.

"I don't like that bit when the lift goes umph at the bottom, do you?"

"No," he said when we had reached the umph.

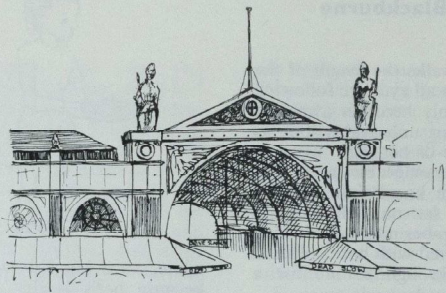
"Do you suppose she enjoyed that kiss?"

"Yes," he said, pulling open the lift doors.

"Did you?"

"No!"

# LONDON MARKETS



## 1. Smithfield Market

by John Sills

There can be no one, who while a student has no contact with the London Central Market, even if this amounts to one 'stitch-up' on an injured Market employee. The present main building strikes one as a fine example of Victoriana but the history of the Market does not stem from this period. In fact the Market dates back almost to the time of Rahere.

The first mention of Smithfield as a Market dates from the writings of Thomas à Becket's clerk FitzStephen, when in 1174 he wrote of the site as "a smooth field where every Friday there is a celebrated rendezvous of fine horses to be sold, and in another quarter are placed vendibles of the peasant, swine with their deep flanks, cows and oxen of immense bulk". In the following centuries this site of "Smoothfield", a plain grassy space, became the play centre of the citizens of London, and tournaments and archery competitions were held there. It was also the well recognised centre for Public Executions, one is reminded of this when walking towards Charterhouse from the main gate, for there are two commemorative plaques on the wall of the Hospital. In the reign of Queen Mary I many Protestant Martyrs were burned: 200 between 1554-58!

In 1400 the Customs (tolls) at the Market were confirmed to the City by a Charter and in 1638 the Land itself was granted when by a Royal Charter the Corporation of London established a cattle market on the site. For some two centuries the Cattle market and the

associated meat shops survived, but for many years they were a great nuisance to the public and frequent petitions to Parliament to remove the market were made. At last in 1855 Parliament did intervene and the Cattle Market was removed to a new site up in Islington. This Metropolitan Cattle Market incorporating abattoirs was also owned and administered by the Corporation of London; it survived up to two years ago but now the site is scheduled for redevelopment. The tower is still a well known landmark around Caledonian Road and York Way.

In December 1868 the first two sections of the main building were opened and the business of the Newgate Street Meat Shops was transferred to the new buildings. Additional sections were added in 1875, 1889, 1898 and 1899.

The London Central Markets, for that is the official title of Smithfield, are owned and controlled by the Corporation of the City of London, and managed by a committee of Members of the Court of Common Council, while the trade which rents the Market shops and Cold Storage facilities from the Corporation is represented by the Smithfield Market Tenants' Association.

The Committee has the task of enforcing order, maintaining, powering, and cleaning the Market. There is a separate list of bye-laws, which govern such things as the hours of opening, the size of barrows and loads and the prohibition of vagrancy and obscene language!

The present phase in the Market's History dates from the end of meat rationing in 1954. During the war the distribution was decentralised and from 1946 Smithfield, although back in use, was merely the major national distribution centre until 1954. Most of the war damage repair was completed when in 1958 there was another setback; fire destroyed the Poultry Market. However, a temporary Market was set up on the site of a nearby car-park, and in 1963 a new £1.8m. Poultry Market was opened; this is the building to the west of the two main halls opposite the Hospital.

Today the annual turnover of goods is in the region of £100m. per year, this represents the handling of some 400,000 tons of meat and poultry.

Who does the handling of the goods? The meat arrives either by rail or by road, there is unloading room for 400 3-ton lorries around the Market. When a load arrives the meat is first handled by the "pullers-out", who move the meat to the tailboard, where the "pitchers" take the meat to the market stalls. Both the "pullers out" and the "pitchers" are casual

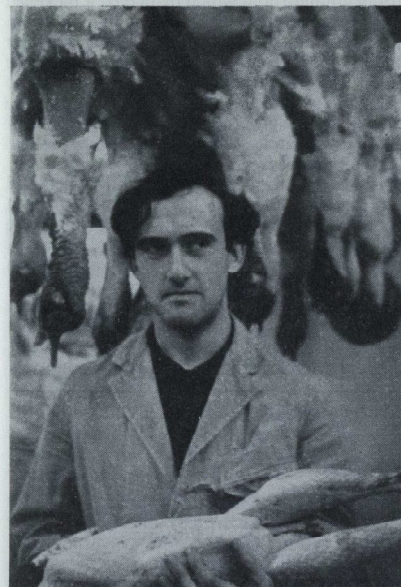
labourers and are not required to be licensed.

Once the meat is in the stalls it is handled by employees of the tenants; the shopmen. They are categorised into nightmen, who unload from the pitchers, humpers who move the meat about the stall, cutters, scalesmen, deliverymen and the young offal boys. In spite of the apparent demarcation there is free interchange of duties as circumstance demands. After sale the meat is removed to outgoing transport, and in this process it is handled by one of the classes of "Licensed Porter". The porters are licensed by the Corporation and those carrying on the left arm a badge with their number in black on a yellow background are employed on a permanent basis by one of the firms of carriers. They number 400. The porters who sport red numbers on a white background are the "Bummarees". They are casual and freelance porters who are hired by carriers not having retained porters—they are paid cash for each piece of meat handled (there is no differential for distance) e.g. hindquarters; 1s. 5d. rump and loin; 9d., pigs up to 80lb.; 9d. 80-120 lb. 1s. 0d.

The bummarees are the elite of the market, they are body of some 200 and entry is extremely difficult. Vacancies only arise on death or retirement and these may be filled from the same family, though strictly there is a rotation, a cutter, a shopman and a porter being selected in turn. Since they are free-lance working on a cash basis their earnings are much higher than other porters.

There are also many clerks employed in the Market behind the scenes for there is considerable pressure in accounting for the daily supplies and ensuring that the account sales and cheques are in the post on the day of receipt. Probably the most responsible job in the market itself is that of the salesmen, for it is they who decide the selling prices and in this sort of trade where the profit is made on turnover rather than on a large profit margin they must be alive to anticipate the trends of supply and demand, and adjust the prices accordingly.

In an objective assessment of the working of the market many would conclude that it was inefficient and out of date and that its continued survival was a mystery, but such is the way the whole of the meat marketing system has evolved around the focus of this market, that rather like the institution of Parliament, it can be appreciated that perhaps no logical organisation would in fact work so well, as this typical British evolution.



*Festive Season in the Poultry Market*

## Medicine in literature

An Extract from  
**ARROWSMITH**

By Sinclair Lewis

When he had practised medicine in Wheat-sylvania for one year, Martin was an inconspicuous but not discouraged country doctor. In summer Leora and he drove to the Pony River for picnic suppers and a swim, very noisy, splashing, and immodest; through autumn he went duck hunting with Bert Tozer, who became nearly tolerable when he stood at sunset on a pass between two slews; and with winter isolating the village in a sun-blank desert of snow, they had sleigh-rides, card-parties, "sociables" at the churches.

When Martin's flock turned to him for help, their need and their patient obedience made them beautiful. Once or twice he lost his temper with jovial villagers who bountifully explained to him that he was less aged than he might have been; once or twice he drank too much whisky at poker parties in the back-room of the Co-operative Store; but he was known as reliable, skilful and honest—and on the whole he was rather less distinguished than Alec Ingleblad the barber, less prosperous than Nils Krag the carpenter, and less interesting to his neighbours than the Finnish garageman.

Then one accident and one mistake made him famous for full twelve miles about.

He had gone fishing, in the spring. As he passed a farmhouse a woman ran out shrieking that her baby had swallowed a thimble and was choking to death. Martin had for surgical kit a large jack-knife. He sharpened it on the farmer's oilstone, sterilized it in the tea-kettle, operated on the baby's throat and saved its life.

Every newspaper in the Pony River Valley had a paragraph, and before this sensation was

over he cured Miss Agnes Ingleblad of her desire to be cured.

She had achieved cold hands and a slow circulation, and he was called at midnight. He was soggily sleepy, after two country drives on muddy roads, and in his torpor he gave her an overdose of strychnine, which so shocked and stimulated her that she decided to be well. It was so violent a change that it made her more interesting than being an invalid—people had of late taken remarkably small pleasure in her symptoms. She went about praising Martin, and all the world said, "I hear that Doc. Arrowsmith is the only fellow Agnes ever doctored with that's done her a mite of good."

He gathered a practice, small, sound, and in no way remarkable. Leora and he moved from the Tozers' to a cottage of their own, with a parlour-dining-room which displayed a nickelled stove on bright, new, pleasant smelling linoleum, and a golden-oak sideboard with a souvenir match-holder from Lake Minnetonka. He bought a small Roentgen ray outfit; and he was made a director of the Tozer Bank. He became too busy to long for his days of scientific research, which had never existed, and Leora sighed.

"It's fierce being married. I did expect I'd have to follow you out on the road and be a hobo, but I never expected to be a pillar of the Community. Well I'm too lazy to look up a new husband. Only I warn you; when you become the Sunday School Superintendent, you needn't expect me to play the organ and smile at the cute jokes you make about Willy's not learning his Golden Text."

So did Martin stumble into respectability.

## Medicine and Music

by Patricia Owen

midst.

The Music Society was formed early this year under the Chairmanship of Mr. Peter Dixon, Assistant Clerk to the Governors and has gathered all the music under its wing, with a grant of £100 from the Governors to provide a few additional feathers, to continue the metaphor.

This is not going to be a scientific, learned article about the concurrence of these two phenomena, full of examples of musical medics from the past—that research you can easily do for yourselves. No; the purpose of this essay is to bring to the notice of a largely apathetic community, that somehow manages to live its life in a tight, unseeing mental cocoon, exactly how much music is actually happening in its

### The Choir

Because it is the largest and probably the most representative musical activity, the Choir comes first. Under the conductorship of Robert Anderson it has already performed "Trial by Jury", Handel's "Messiah", Mozart's "Requiem" and is now rehearsing Purcell's "Dido and Aeneas" for performance on December 7 at the City Temple Hall in Holborn. Rehearsals are in Gloucester Hall every Monday at 8.30 p.m.

### Madrigals

For those who like to sing unaccompanied and can read music tolerably well there will always be a welcome at 5.30 p.m. on Tuesdays in Gloucester Hall. The Madrigal Society has performed in concerts with the Orchestra and was responsible last year for the music in the Service of Nine Lessons and Carols at Christmas.

### Orchestras

The Bart's Orchestra is responsible for three concerts or so every year and is delighted to have so many new instrumentalists amongst the

freshmen this year. With such a shifting student population it is essential to have a continual supply of new talent.

Springing from the Orchestra are several chamber groups, easily distinguishable by the discerning: they are frequently to be found clutching instruments, stands and music, feverishly looking for somewhere to practise.

Last season saw the birth of the Rahere Ensemble—David Baker, flute; William Goss, 'cello; Michael Spira, violin and Alan Gray, virginals. They have given two concerts as well as providing music for the Students' Drama production of "Twelfth Night" earlier in the year.

Lastly, and probably most exciting of all, we have a Senior Orchestra, again under Robert Anderson, which meets every Thursday at 7.15 p.m. in Gloucester Hall to play with various soloists—often with the marvellous and magical Jacqueline du Pré: here is music few people are privileged enough to experience—on your very doorstep—all you have to do is to come and listen.

So there you are. At least, if you have read this you will know what is going on.

### THE RAHERE ENSEMBLE

Violin: Michael Spira  
Cello: William Goss  
Flute: David Baker

Virginals continuo: Alan Gray  
Piano: Elizabeth-Ann Smith

If you happen to know the member of a chamber group, listening to them in concert will always give keener pleasure than if they are just names to you. It was thus with pride and delight that we heard the Rahere ensemble in "an evening of chamber music" on the evening of October 28th. And forgetting that the members were all friends of ours, we were given playing which did full justice to some fine music ranging in style from early Baroque to contemporary.

The recreation room at College Hall, which usually resounds to the musical ordure of the contemporary dance style lends itself very readily to an enterprise of this sort. The acoustics are good, and in size and atmosphere there was just the right combination of intimacy and occasion to complement the music. We heard pieces by Handel, Haydn, Mozart, Purcell, Mendelssohn and somebody called J. J. Quantz (1697-1773) whose Triosonata in A minor fell pleasantly upon the ear, as well as works

by Poulenc and a composition of almost inexpressible tedium by Leonard Berkeley, whose irritating and precious dissonances contrasted ill with the rest of the programme.

To single out individuals from this delightful occasion is invidious, but David Baker's superbly assured playing in Poulenc's Flute Sonata must be mentioned. However, it was not usually the expertise of this or that individual that we noticed, but the unity and musicianship of the group. Examples of real subtlety and inspiration abounded in their phrasing, never one player attempting vainly to outshine the rest.

In all, this was one of the most pleasant and civilized evenings that the college has witnessed, and one for which we owe the Rahere Ensemble much gratitude. It is essential that they give another concert soon.

A point of interest is that Alan Gray made his own instrument.

R.S.T.

# Listening to New Music

by Adrian Jack

"Perhaps all unity in art, at its inception, is half-natural and half-artificial but time insists, or at least makes us, or inclines us to feel that it is all natural. It is easy for us to accept it as such. The 'unity of dress' for a man at a ball requires a collar, yet he could dance better without it. Coherence, to a certain extent, must bear some relation to the listener's subconscious perspective. For example, a critic has to listen to a thousand concerts a year, in which there is much repetition, not only of the same pieces, but the same formal relations of tones, cadences, progressions etc. There is present a certain routine series of image-necessity-stimulants, which he doesn't seem to need until they disappear. Instead of listening to music, he listens around it. And from this subconscious viewpoint, he inclines more to the thinking about than the thinking in music. If he could go into some other line of business for a year or so perhaps his perspective would be more naturally normal."

Charles Ives goes on to say how a sonata is expected to follow a certain form and how this form is associated with unity, whereas the acceptable (to the critic, that is) form may rather deform the musical content. Today, nearly fifty years after the publication of Ives's article (*Essays before a Sonata*), everyone would agree very quickly, not wishing to waste much breath on so generally agreed a truism. Furthermore, we are very fond of criticising, in a knowing and superior way, composers whom we suspect of attempting to fill out pre-conceived forms (the famous padding and the seams which show in the music of a tailor with a bad reputation like Brahms, for instance) although it is, unfortunately, left to those who do not like the sound of more advanced music anyway,

to upbraid some of the more modern composers for talking at disproportionate length about, and thus giving the impression of attaching inordinate importance to the form of their music, as if it were the last word in factory design.

Back to Ives again (begin to yawn, but then he did get there before me, so it is only fair. . .): "In such an abstruse art as music it is easy for one to point to this as substance and to that as manner. Some will hold and it is undeniable—in fact quite obvious—that manner has a great deal to do with the beauty of substance, and that to make a too arbitrary division, or distinction between them, is to interfere, to some extent, with an art's beauty and unity." The more experienced listener to all that is new in music and the listener who wants to be sophisticated will usually prepare himself to grasp two things when listening to a new piece: what sort of impression the material makes on him and what happens to this material in the course of the piece. Since there is the cautionary tale of how Beethoven fed the five thousand (in the first movement of the fifth symphony, for instance), the second consideration is sometimes paramount in his mind. This is what he has been brought up to, for a respectable musical education, including analysis of the classics, teaches him that composers have 'ideas' and proceed to develop them. Enlightened modern education in these matters, of course, teaches him that the composer develops his ideas according to his own light and not according to any rules. But this education usually hasn't the temerity to attempt to explain why as opposed to how any form evolves. Indeed, there must be many people who, reading musical analyses, secretly gasp at the patience or the magic with which the composer has filled out

the crossword puzzle he has set himself, little realising that the plot which can indeed be diagrammatically represented by a crossword puzzle, is no more than the result of the most interesting, dramatic, moving or whatever-may-please-him situations that he can invent. Furthermore, as commentators are always talking about form and architecture in music, one receives the impression (as Ravel complained) that if the composer has done or failed to do that, if the proportions and the balance of his piece are not right, the edifice in sound will topple to the ground. We mistrust the intangibility of what is heard and therefore inevitably slightly distort it by interpreting it in visual terms. The composer, it is assumed, owes it to his inspiration (any objections?) or invention (though the now fashionable concept is of selection, so you may substitute that word for the foregoing and it will serve the sense of the sentence all the better) to ensure that it is heard to the best advantage, that is to say, in the simplest terms, in the most effective contexts. Sometimes a composer, if he is in an ironical or protesting frame of mind, may deliberately refuse to do this, confounding the critics—at least those of his own day—as in the case of Satie. On the other hand, it rarely occurs to the wiseacres, who only know historical facts (in this case, of the different versions he made of his symphonies) and who think that Bruckner was incompetent, that his music is all the more effective when it abruptly changes from one section to another, when he seems to say, "That's enough of that for the moment, now on to the next." Indeed, it is surprising that he has not been hailed as a daring innovator in his dispensing with bridge passages; but then bridge passages are a proof of craftsmanship whereas abrupt juxtapositions depend on imagination and it is always easier to assess craftsmanship. This is not to suggest that a high level of imagination is not brought to bear upon the construction of bridge passages although I must confess that when I hear the transition from the second to the third movement of the 'Emperor' piano concerto, I think, "Why, while he's being so clever himself, does he have to take us all for fools?" Perhaps this is hindsight—but after all, this sort of music is not written for just one hearing.

The experienced and sophisticated of those who frequent concerts of new music, in which many of the pieces will not be heard by them again, are well aware that the music is not written for just one hearing and accordingly try to cultivate the ability to detect what is

enduring, what will withstand repeated use and what will not. Not surprisingly, craftsmanship is at a premium. A craftsman, the experienced and sophisticated tell themselves, will not do certain things, because these things weaken the structure of his cabinet work. The actual music is heard as it were through the ears of good taste, good form and nice balance, ears which belong to no one. This is what Ives called listening around music. To the modern-minded musical sophisticate, certain things just are not done, be the texture of the music ever so pointillistic, the piano ever so prepared or the other instruments ever so abused.

For example, if the composer, having accustomed his audience to acceptable seconds, tritones, sevenths, ninths and so forth, is immodest enough to include a phrase which suggests cadential harmony, the radical-minded students will snigger while the more sober and hardened critics will sniff and roll their eyes as Stanford no doubt did when some barbarian assailed his ears with a battery of consecutive fifths. If the composer breaks the rules of variety, forgetting what is the spice of life, by sustaining one texture for the greater part of a movement or even a whole work, he will be considered either a bore or naive. However, he may console himself with the thought that, unless he really is a bore or just plain lazy and even if he is naive, provided that his naivety is inspired, he will, like Bruckner and Satie, eventually be embraced by a great part of the musical élite (but still not by those sternly practical people who are dull enough to keep their feet on the ground) and be called 'courageous'. In rather special cases he may be embarrassed by scoring a popular hit, as the composer of 'Bolero'. To be able to fasten on such breaches of etiquette strengthens the confidence of the talent spotter, making him feel wise and on intimate terms with the most modern idioms; having detected such irregularities, he does not feel too obliged to consider anything else.

Thus the journalist who remarked of one of the Xenakis pieces performed at this year's Oxford Bach Festival, that the rapidly repeated notes on wind instruments were banal, completely missed the point, while another journalist was unusually clear-headed and honest in saying that for most of Xenakis's works, to talk in terms of aural blandishments was beside the point, and added that the critic is usually forced to do just that when faced with advanced, new-sounding music. One frequently



reads of a work by Boulez, the slightly guilty words: "as sheer sound it is fascinating," which makes one wonder what is to be despised about sheer sound. The first journalist's folly, however, was in his passing judgement on a particular sound before (it was all too obvious) he had a chance to come to know its relationships to its context. There is a very straightforward motive for bass chorus at the end of Varèse's 'Intégrales' which, out of context, seems bare and rather banal and yet which, after one has heard the work several times, takes on an unfathomable significance, so that it keeps recurring in one's head, like some object, insignificant or mundane in itself, which always slips in to form part of our way of visualising things merely because it was a witness at some important event in our lives, so that the ass's head may become the object of our interest, admiration or love, not for its own sake but on account of the conditions which have led to or surrounded its appearance.

Commentators (not to let them off lightly) are also in the habit of discussing the relationships between sounds as if sounds were words, words as used in everyday speech as opposed to poetry, no doubt a hangover from the days of the rule of cadential harmony in which each note and chord had a generally recognised place in the hierarchy of relationships to a centre of gravity. No doubt Stravinsky's famous dictum about music being unable to express anything and only eloquent of itself, was provoked by this impression given and by the absurd affectation of talking about what a composer 'says' in this or that work (usually with reference to some Eastman-colored symphony by Shostakovich). However, now that we have broken into musical space and the same law of gravity no longer concerns us, we may sometimes be applying the wrong criterion when we listen to music two-dimensionally, when we listen for lines and their development, instead of immersing ourselves in sound and its dimensions (not just the fascinating sonorities people speak of in Boulez).

Although we may feel we are aiming high when, all closed-eyed and wide-eared, we prepare to follow a dialectic in a new piece, we may not be always right to do so. The critic who is rash enough to write about a work after one hearing may be baffled and secretly embarrassed when he has to report upon a composition in which the composer has not obligingly provided a dialectic to be followed. This is what the more musically sophisticated have become conditioned to, so that, very often,

one feels when talking to them, that they have lost the ability to relish or be excited by the language itself. When Mozart, the hero of the sophisticates and (to use a phrase not my own) a great architect of musical structures himself, criticised Clementi's sonatas, he did not mention their form but complained that there were no striking passages and spoke in this way about his own music. This was also the practice of his contemporaries and of distinguished writers on the subject like Roger North and Doctor Burney. No one would assume that either Mozart, North or Burney were unaware of the significance of the parts with regard to the whole and they did on occasion, talk about the effect made by the succession of different parts of the music, yet they placed the emphasis on the expressive impact and not on form as such.

Furthermore, although we may feel we are only being human in responding emotionally to expressive impacts, we may not be always right to do so, for, quite apart from the fact that our associations may be completely at odds with those the composer had in mind, emotional expression may be irrelevant to the music.

Just as many think that the music of the sixteenth century and before, meanders in a no-man's land and fails to end properly because they are expecting the tensions that exist only in eighteenth and nineteenth century music, just as many think for the same reasons, that modern music is nothing but wrong notes so may we still be applying the wrong criteria to new music even if, superficially, we think ourselves familiar with its idiom.

It is time to quote from John Cage's words, which always make one feel as no doubt the Pharisees felt when they tried to argue with Jesus Christ. I do not identify myself completely with Cage's view of music but I deliberately quote his words out of context since I regard them as salutary in themselves. Cage has said that his purpose in composing is to eliminate purpose and, on the other hand, that it is to make audiences listen and feel that they are doing something. In "Music for Piano" and subsequent pieces, he has eliminated structure (which he defines as the division of the whole into parts); he has said with regard to this, that the mind, though stripped of its right to control, is still present and when "ears are in connection with a mind that has nothing to do, that mind is free to enter into the act of listening, hearing each sound just as it is, and not as a phenomenon more or less approximating a preconception."

## record review

Christmas being upon us very shortly most of the records reviewed this month are eminently suitable choices if not for yourself then at least as presents for others. To begin with, Supraphon have just released a new record entitled simply, *Enrico Caruso* (SUA 10731). There are now well over a dozen long-playing transfers of the famous recordings of this greatest of all Italian tenors; but, with one exception, none is as cheap as this one. This is a decided must for all Caruso addicts, a recommended disc for anyone at all interested in opera, but of course an item to be avoided by all hi-fi enthusiasts (unless they are willing to accept that some of the best performances ever recorded were originally intended for use on wind-up machines). This record recalls memories of a style of singing that was murdered long ago by that merciless dictator, Fashion. There are fourteen arias and songs, including *Vesti la giubba*, *Recordita armonia*, *La donna è mobile*, and such popular ballads as *O Sole Mio* (recently crucified in a Hollywoodised version by one Mr. Presley). Unfortunately, beyond giving the titles and origins of the arias, the record sleeve discloses no information whatsoever: a great pity since most people, I feel sure, will want to know something about the original recordings. I shall try to fill in some of the details from what I personally know, but I cannot vouchsafe the absolute accuracy of my information. Most of the recordings were originally made around about 1911 (some ten years before Caruso's death) by the 'acoustic' recording process that resulted in a very "boxed-in" sound. Twenty years or so later these very recordings were 're-recorded'—a new accompaniment was dubbed on to them in such a way that the old one was rendered barely audible. This process, performed on the then new 'electrical' recording apparatus, resulted in a

fuller sound, although Caruso's voice, recorded years before, naturally still sounded the same. This explains the curious discrepancy between the poor quality reproduction of his voice and what is, by comparison, the almost hi-fi sound of, for example, the big brass fanfares in the aria, *Celeste Aida*. It is these 're-creations' that are used on the present record. On the whole the new orchestral accompaniments are thoroughly worthwhile, but I cannot understand how an organ was allowed to creep into *Ombra mai fu*, serving only to contribute to the popular misconception that the melody (otherwise known as Handel's *Largo*) was intended for religious use. Nevertheless, this record stands as a magnificent testimony to the fine art of one of the greatest singers the world has ever known.

Anyone unfamiliar with the music of Chopin would be ill-advised to start with his piano concerti; these are tedious, often boring, compositions which give a lie to the natural genius of this great composer whose *métier* was undoubtedly the short piece—the *prelude*, the *mazurka*, the *polonaise*, and so forth. The only redeeming features of the concerti are the very beautiful slow movements that are virtually *nocturnes* for piano and orchestra. **Frantisek Rauch** gives a poetic performance of **CHOPIN's Piano Concerto No. 2 in F major** (SUA 10603). He does, however, take too many liberties with the *tempo*—though that is very much a matter of individual taste—and the conductor, **Vaclav Smetacek**, draws a somewhat insensitive performance from the **Prague Symphony Orchestra**. The whole situation might have been improved a little by the judicious use of cuts in the outlying movements. The accompanying performance of **LISZT's Piano Concerto No. 2 in A major** is also unexciting.

In the midst of gloom and despair there is to be found, occasionally, joy. Such was certainly the case with **SCHUBERT**, for it was in the middle of his most melancholic period, when he was writing *Die Winterreise*, that there blossomed forth his sunniest and most endearing composition, the *Trio in B flat major for violin, cello and piano, Op. 99* (SUA 10624). The **Suk Trio** give a warm, fresh performance that is quite delightful. A little roughness of tone here and there by the otherwise admirable cellist is of small consequence, and the leader—that superb violinist, Josef Suk—has a sweetness of tone that recalls a style of fiddle-playing that died with Kreisler. The fill-up on this disc is the pedestrian *Nocturne (Adagio)* whose lyricism is nevertheless very pleasant.

If ever a man poured his innermost feelings into his work then such a man was Bela Bartok. His six string quartets form a sort of musical panorama of his life, reflecting every stage of his development like so many milestones. They illustrate all aspects of his highly characteristic style with one exception: in contrast to the rest of his music, the native "folk" element is subordinated to a purely secondary role. They span nearly three decades of the composer's life, from the age of twenty-seven to six years before his death in 1945, at the age of sixty-four. Inevitably their extreme intensity and lucidity combined with sheer economy (the Third Quartet lasts a mere 17 minutes) make them remind one of the late Beethoven quartets. Briefly tracing Bartok's stylistic development—a basic understanding of which is essential if one is to appreciate the quartets, his greatest masterpieces—the following course is described: starting under the influence of the late German romantics (First Quartet), becoming more individualistic and combining elements of Magyar folk music (Second Quartet), he progresses to the peak of his experimentation and compression with a sort of clinical abstraction (Third Quartet); having reached this intense pitch, he returns by a more lyrical path (Fourth Quartet) which he follows for some time (Fifth Quartet), finally reaching the phase of absolute classical simplicity (Sixth Quartet).

It is probably clear from this description that these works really form a cycle, a fact of which most string quartets ensembles and recording companies are aware. I say *most* for, curiously, Supraphon have broken the tradition of recording the six quartets consecutively (occupying

three long-playing records) by engaging the **Prague City String Quartet** to record **BAR-TOK's String Quartets Nos. 3 and 5** only (SUA 10645). I know of no explanation for this and I regret I do not know if further "instalments" are scheduled. This is the first time I have heard this particular group of musicians which professes a speciality for playing modern and contemporary compositions. The fact that this is no idle boast is amply borne out by this new record, for there is the usual high standard of music-making that one has come to expect of their compatriots (which is why Supraphon records are generally such a superb buy). Having said that, I am bound to say that these are not the performances I would choose from all others. The playing is persuasive and the technique is accomplished, not to say brilliant (these quartets are incredibly difficult to play), but compared to the matured performances of, say, the Juilliard Quartet, they sound a little flat. The rhythms are not so taut, the tone not as flexible, the dynamic contrasts not so pronounced, and the unanimity of design and execution not so clearly defined. Added to this, the recording does not allow sufficient clarity of the individual parts. The playing, on the other hand, is warm—so characteristic of Czech musicianship—and not as clinical as some other performances, which may or may not be an advantage.

The ultimate choice of whether or not to buy this record depends upon a variety of considerations. The price is a bargain: *complete* sets run to about £5 12s. 6d.—that is, three discs at 37s. 6d. each (although the Fine Arts Quartet have recorded the entire set at the astonishing price of only 10s. a record). However, if you decide that frankly 17s. 6d. is the most you would rate Bartok (for the present, at any rate), then the present record (the only one, incidentally, that offers you this particular coupling) is a sound investment since it offers you the two quartets that are perhaps the most representative examples of the furthest extremes of their composer's style. I trust that I may be excused for ending on a somewhat cerebral note so shortly before the approaching festive season.

Michael Spira.

Supraphon records most of which are available in mono or stereo, are priced 17s. 6d. each.

## The Christmas Card 1966

The Christmas Card this year shows the fracas that occurred in the snowstorms of December, 1875 between the Police and the students of St. Bartholomew's Hospital.

The design is that used for the frontispiece of the January edition of the Journal this year—a special block has been made for use on the cards and hence cannot be used again in the Journal to reproduce the picture.

Cards are now ready and may be obtained by filling in the order form below.

Christmas Card Order Form (BLOCK CAPITALS please)

Name: .....	No. of cards required.....
Address: .....	Cost .....
.....	£ s. d.
.....	Cards at 5s. per doz. ....
.....	Postage, 1st doz. 10d. ....
.....	each additional doz. 8d.
.....	(Orders over 5 doz. post free)
.....	TOTAL .....

Please enclose remittance with order, addressed to The Manager, The Journal, St. Bartholomew's Hospital, London, E.C.1. Cheques and P.O.'s should be made payable to St. Bartholomew's Hospital Journal.

Signed .....

# SPORTS NEWS

## SPORTS EDITORIAL

An encouraging number of freshmen have offered their services to the Sports Clubs this year and it seems that all the Clubs are benefiting from this. The Soccer and Swimming Clubs have already scored some notable successes, the Squash and Cross-country Clubs have claimed new promise and the Rugby Club is now putting out seven sides every Saturday. At

Charterhouse on Mondays and Thursdays, unprecedented numbers of rugby and soccer players are seen obstructing the drives, and several aspiring canoeists (no doubt inspired by Charles Evans' recent successes) have been observed perspiring in the gym.

Such enthusiasm surely cannot fail to meet with success on and off the field.

## RUGBY CLUB



### Centenary Match

This Centenary Match attracted a mixed bunch of spectators, and was the occasion for many reunions, both during the match and in the bar afterwards. Support from the student body itself was rather disappointing; only one of the four coaches ordered was filled. However, with the influx of Old Bart's men there

was still a large crowd to line the touchline. The United Hospitals' team provided formidable opposition but the atmosphere was relaxed, there was none of the tension associated with Hospitals' Cup games, and although there was the natural support for the underdogs the spectators hoped to see a game worthy of the

occasion, and would have been content to see an exciting open game of rugby, without a popular victory.

Conditions were ideal, the ground was firm, there was but a slight northerly wind, and the rain which threatened from the overcast sky limited its appearance to a brief spell in the first half. Bart's won the toss and elected to play with the wind; a fine kick by the Bart's President Mr. J. W. Cope started the play. Bart's were soon on the attack and went close to scoring; Savage made a break in the centre but his pass to Jefferson was dropped. After five minutes Bart's were awarded a penalty in front of the U.H. posts, the expectant silence collapsed in murmurs of disappointment when Pope sent the ball wide of the left-hand post. There was some scrappy play in midfield but the Bart's forwards appeared to be getting the better heel from the loose. After fifteen minutes Grafton found a long touch almost on the U.H. goal line. There was some indecision among the U.H. forwards at the lineout and Mason was able to crash over in the corner to put Bart's into the lead. The kick at goal failed. Shortly after this, the U.H. hooker arrived and the U.H. team enlivened by this new arrival began to get more of the ball but good covering by the Bart's back row stifled any attacks.

Another fine kick from Grafton took play down into the U.H. "25". From the line out, there followed a set scrum, U.H. gained possession and Fletcher was sent away on the blind side. McIntyre however was covering and took Fletcher with a devastating tackle, the Bart's forwards were up very quickly and the ball shot out of the maul. Bradley-Watson seemed so surprised to get the ball in such a good situation that his pass to Grafton was too high, Grafton somehow got his hands to the ball and knocked it down to his feet, some people thought this was a knock-on, but sensibly playing to the whistle Grafton gathered the ball and spotting a gap in the U.H. centre made the half break before giving a good pass to Jefferson who scythed through to score under the posts; Griffiths was given the goal kick and made no mistake.

The Bart's pressure continued and was so sustained that two lady spectators, one with an infant in a push chair, felt able to walk across the field along the Bart's "25", accompanied by ribald cheers from the touchline. Pope was getting plenty of "good ball" from the Bart's pack which at this stage of the game was a much more cohesive unit than the U.H. pack, and his

good use of the touchline took play once more in to the U.H. "25". From a scrum about ten yards from touch and ten yards from the U.H. line. Pope broke flat on the open side and Grafton took a reverse pass to split the U.H. defence; a classic scissors. The U.H. backrow stopped Grafton in full flight but from the loose McIntyre got possession and twisted over to send the spectators into ecstasies. Griffiths converted with a fine kick and thus Bart's were incredibly into a good lead; 13-0, after 35 minutes play. There was no more scoring before half time but it was apparent that the U.H. pack were becoming a force to reckon with and in this period they began to pour through on some untidy tapping back to harass Pope into making some hasty kicks to touch. Half time saw the usual drift towards the Pavilion for refilling of pots, but inside the population was more that of a nursery clinic and it would be interesting to find out if this occasion saw the greatest ever number of Bart's babies in the Pavilion!

No doubt the U.H. Captain had said some sharp words to his team for they came much more into the game from the kick-off, and one dangerous attack was only foiled by a fine kick to touch under pressure from Johnson. The U.H. half-backs were having considerable trouble from the Bart's back row but on several occasions the ball reached the outside centre Skirving who put in some very awkward kicks, which Griffiths did well to clear safely. Bart's too attacked and Pope varied his tactics from the base of the scrum, once Jefferson was nearly over after a jinking run inside the U.H. "25".

The U.H. backs became more confident and were finding more room to move, a scissors between Norcott and Fletcher almost led to a score but Griffiths found a good relieving touch. Soon after this, Skirving was put away by Fletcher on the ten yard line and ran through





the Bart's centres and the back row to score an exciting try half way out on the left. Pymont converted with a huge kick.

More U.H. attacks followed and Fletcher showed his class with yet another fine break, but good covering by the back-row prevented any score. Pope kicked Bart's back into the U.H. "25", from a scrum Skirving again broke clear in the centre but a poor pass to the wing enabled Bart's to scramble the ball clear. This uncertainty in handling seemed to dog the U.H. centres at this time, but this was only transient for first Evans broke and then Fletcher set Skirving free in the Bart's "25" with an overlap, but fortunately for Bart's the pass was forward. Soon after the same player ran through three tackles before being brought down.

Grafton then relieved the position with a good touch. Now it was Bart's on the attack and some good work by McIntyre nearly brought a score. With seven minutes of the game left Bart's were awarded a penalty half way out on the left on the U.H. "25"; Griffiths with another fine kick made the score 16-5.

From the restart U.H. swept into the attack and from some loose play on the left their forwards won the ball, Pymont came into the line to make the extra man and Wilson was able to run round the cover to dive spectacularly over by the right hand corner flag: 16-8.

Bart's in turn moved into attack from the kick-off and good work by the back row harassed the U.H. fly half into a wild pass to Fletcher, Jackson following up swooped on the ball and slipped it to Savage, who broke to within five yards of the U.H. line, he was tackled, the ball ran loose, but was picked up by Skirving who ran around outside the Bart's cover near the touchline and looked as if he might make a run up the wing; McIntyre, how-

ever, steaming across took the ball from Skirving's hands and slipped down the touchline to score an incredibly audacious try half way out. Griffiths' kick was just wide and thus the final score was 19-8. A well-deserved, somewhat unexpected victory, but totally appropriate for the occasion.

It was, as a game of Rugby most entertaining and both sides must be congratulated for the spirit which allowed such fast, open, and exciting play. The foundation of Bart's victory lay in the pack; as a unit it was magnificent and their fire from the kick-off generated by Gilmore's leadership enabled Bart's to take advantage of the early unfamiliarity among the U.H. team. The lineout work and loose play was good, the binding, blocking and looking for the ball give much hope for the rest of the season; the backrow hunted and defended as a fearsome trio and the blend of Smart's generalship, Bradley-Watson's determination and McIntyre's flair and devastating tackling was most effective. Pope dictated the game cannily, his kicking was excellent, but Grafton seemed to run out of time on occasions, so that he was forced into hurried kicks, or jinks back inside and into trouble. The centres when they did get "good ball" ran intelligently but without the power or the penetration of their opposite numbers, Fletcher and Skirving, whose running, was one of the features of the afternoon.

Thus, while this was without doubt a fine and heartening win, the Hospitals' Cup is not yet won. But, with this pack and this back row there is a good basis for building a strong Cup side, for success is built upon the pack. Success in the Centenary Year would indeed be appropriate, it is, after all, long overdue.

Teams: St. Bartholomew's Hospital; N. J. Griffiths, D. B. Jackson, P. E. Savage, D. Jefferson, S. M. Johnston, C. A. Grafton (Capt.), D. C. Pope, O. J. A. Gilmore, D. A. O'Kane, P. Furness, M. G. Britton, A. M. Mason, P. J. Bradley-Watson, C. J. Smart, K. R. McIntyre (Touch-Judge); P. D. Fairclough).

United Hospitals' Centenary XV, F. Pymont (The London), R. Evans (St. Mary's), T. Fletcher (St. Mary's), A. Skirving (Westminster), P. Wilson (Middlesex); H. Norcott (Charing Cross), J. Frazer (King's); P. Kelly (The London), J. Graham (King's), H. Steer (St. Thomas's; Capt.), J. Michael (St. Thomas's), A. Kingdon (Guy's), J. Stamatakis (King's), A. Boyle (St. Thomas's), P. Williams (Guy's). (Touch-Judge J. Ormsby-Gore). Referee: Dr. R. D. Winch.

J. A. Sills



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### CENTENARY DINNER

The Centenary Dinner of the St. Bartholomew's Hospital Rugby Club was held at the Grosvenor House, Park Lane, on Saturday 29th October.

Several distinguished guests were present including Mr. J. T. W. Berry, Vice-President of the R.F.U., Mr. R. E. Prescott, Secretary of the R.F.U., Sir Douglas Logan, President of the U.L.R.U.F.C., the Secretary of the Referees Association and several Hospital Clubs' Pre-

sidents and players.

Mr. J.W. Cope proposed the toast to the R.F.U., Mr. J. T. W. Berry replied and toasted the Club and Mr. F. C. W. Capps replied for the Club.

Appetites were stimulated by the fine game in the afternoon and after an excellent Dinner, all returned to College Hall for liquid refreshment.

### ALPINE CLUB

The Alpine Club has been particularly active in the past year and hopes to continue in the same vein this winter. We have had two or three expeditions per term, mainly in Wales, but also in the Lake District, Derbyshire and Cornwall.

Several meets, held in Derbyshire on outcrops of gritstone, have been fairly successful climbing wise and very pleasant socially. It is an ideal place to introduce newcomers to rock-climbing in tolerable weather; conditions were superb for snow climbing in the gullies, which gave us an opportunity to use crampons and ice-axes. In summer, Wales can be very sunny, when we walk or climb, or very wet, when we retire to the nearest pub for a few pleasant hours.

Whitsun was, as usual, spent in Cornwall with

sunbathing, looking at rocks and some very energetic climbing. Here we used our talents in a mass-rescue operation to relieve sunbathers trapped on an island by the tide. Ropes were rigged up, relays fixed and people brought across. Dramatically, as the last body was saved, the tide turned!

As it is only six hours away by motorway, the Lake District is ideal for a weekend meet, and in July a large camping party enjoyed some superb weather there. Once more our talents came to the fore as one of the party performed an expert stitch-up on my head.

Over the past year the standard of climbing, which was at a fairly low ebb due to many competent people qualifying and leaving, has been

steadily improving. Climbs of a very difficult standard are now being attempted and many beginners are progressing well and showing great promise.

The Alpine Club is open to anyone who is

#### SOCCER CLUB

We started the season with a University League match against Trinity College of Music. The opposition was very weak, but the team's 7-0 victory was still an encouraging performance. Goal scorers were: Farrow (3); Tommey (3); Dorrett (1).

However our limitations were to be exposed in the next two games against the G.P.O. and Clare College, which we lost 1-4 and 2-5 respectively. Both these teams had more individual skills than the Bart's side, but more application and method on our part could have overcome this. (It should perhaps be mentioned that the side that played Clare College was unfortunately weakened by injuries).

After these two friendly matches we returned to league football, playing Charing Cross at Chislehurst. The defence had a very shaky first

#### THE BADMINTON CLUB

This season got off to an inauspicious start. Exams taking their toll of our best players, we were unable to muster a complete men's team to play Queen Mary's III, and we lost 9-0. However, the next match, mixed doubles against King's College, showed much more promise, and perhaps a different choice of pairing would have given us victory. As it was we lost very narrowly 4-5. Our third match continued the trend. We beat a men's team from the Northern

#### GOLF CLUB

September 29th v. **Bart's Golfing Society**, at Chislehurst. **Lost** 4½-3½.

This match between Bart's men and students fulfilled its promise as a most enjoyable sporting and social event. Mr. J. O. Robinson headed the Bart's Society team and after a very close game lost 2 and 1 to C. P. Vartan on the 17th. This was one of many exciting matches, four of which went to the last green. Notable amongst other results was the victory of Dr. Anderson over A. Hoppe in a struggle of top quality golf. Results:—

Dr. Anderson won 2 and 1 v. A. D. L. Hoppe.  
Mr. G. T. Hankey lost 1 down v. J. C. Sadler.  
Dr. J. A. Sadler won 1 up v. R. H. J. Begent.  
Dr. C. P. B. Pare won 3 and 1 v. R. E. A. Atkinson.  
Mr. J. O. Robinson lost 2 and 1 v. C. P. Vartan.  
Mr. H. P. Ross lost 3 and 2 v. N. Packer.  
Dr. Hurst halved with M. M. Hares.  
Dr. J. E. Sales won 1 up v. N. J. Griffiths.

interested in walking or climbing and especially welcome are those with some climbing experience. Anyone interested should contact Mary Hughes.

half in which two goals were conceded, but the second half started in brighter fashion with Weir scoring off a good through ball. However the fire faded and Charing Cross held on for a 2-1 win.

We gave a far better display in beating R.D.H. 6-1. Playing more spirited football, Bart's were soon on top. Several chances were missed before Davis opened the scoring with a lobbed shot from the edge of the penalty area and Leech made it two just before half time. Shortly after the restart a goal-keeping error presented R.D.H. with a goal, but Bart's speedily re-established their ascendancy and further goals were added by Leech, Raine (2), and Bowen-Roberts.

C. M. Sutton.

Polytechnic 5-4, although one of our number arrived late, replete from a Guinness luncheon and some time elapsed before the effects had worn off.

At the beginning of this season, quite a few people enquired about playing badminton. Most of the ladies have appeared on club nights but the men have shown a surprising lack of willingness to turn up and play for us.

C. H. Bowker.

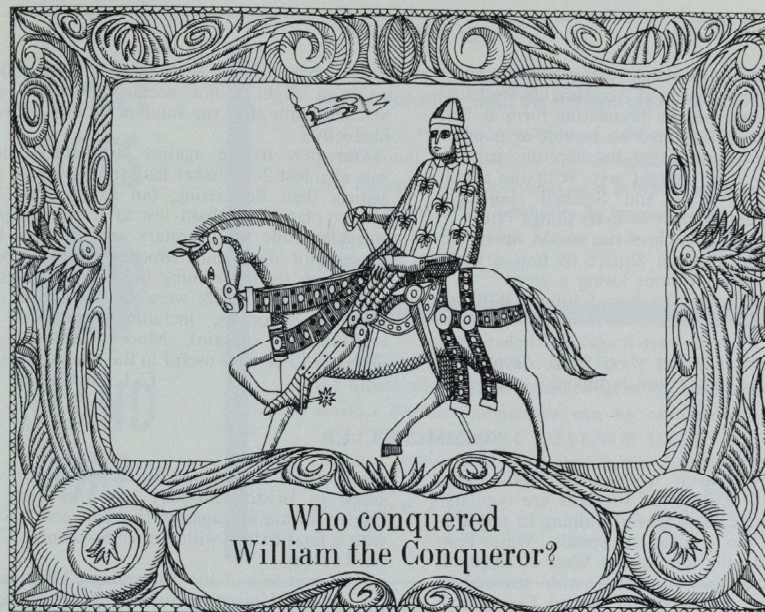
October 12th v. **College of Estate Management**, at Chislehurst. **Won** 4-2.

This year Stuart Davison has moved from C.E.M. to Bart's and so one of our most skilled opponents has become one of our best players. He proved this by beating one of his ex-comrades 5 and 3, setting the pace for a resounding victory for the whole Bart's team. Also notable was M. Hares' win by 8 and 7.  
Team: M. Bowen, C. Booth, S. Davison, D. Grieve, M. Hares.  
October 26th. v. **College of Estate Management**, at New Malden. **Lost** 3-4.

On their home course, C.E.M. gave us a tougher fight. S. Davison and D. Grieve won handsomely, R. Begent scrambled home, but the other games were lost.

Team:— J. Sadler, S. Davison, D. Grieve, R. Begent, N. Packer, C. Booth, M. Hares.

R. H. J. Begent.



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### SQUASH CLUB

The Club started the season with a home win versus the Chartered Accountants Students' Union. Ussher was in devastating form at first string, and Edelsten had no trouble at number two. Williamson engaged his opposing captain and also won in straight sets. With the match already won, Goss and Setchell sportingly sacrificed their games to even things out.

In the second match of the season we visited the courts at Dolphin Square to beat a weak Gallaher's team without losing a game.

*Team:* Mitchell, Ussher, Latham, Williamson, Setchell.

We lost the away match against Roehampton 2-3. Ussher, in usual good form, despatched his opponent without much difficulty and Edels-

ten just beat an opponent who had been shaken up in a slight motor accident. Latham and Setchell, unfit after the summer months, proved ineffective.

Our new fixture against Birkbeck College was also lost 2-3. Ussher had an uneventful win against their first string, (an ex-London University player). Latham lost after an energetic struggle, while the Secretary and Graham lost to superior opponents. Moore proved to be a useful 5th string, winning in straight games.

The Squash Trials were well attended and several newcomers, including Shepherd (an ex-Blundell's captain), Moore, Purcell, and Dobe, will be very useful in the coming season.

C. L. McCaldin.

### SWIMMING CLUB

The new season has started well. Large numbers of enthusiastic Freshers are regularly coming to the early season training in preparation for the United Hospitals Water-Polo League, and the tour to the West of England.

The polo season started with resounding success, both the First and Second Teams have won their first matches.

First Team vs. Thomas': 4:1 (Weller 3, Jolly 1).

Second Team vs. Guy's: 7:1 (Weir 3, Durey 3, Fairhurst 1).

At the time of writing, organisation of the tour is complete. The first match is against Swindon Dolphins on Friday 28th. October. This is followed on Saturday by a three sided

contest with Bristol and Southampton Universities, in Bristol. Monday sees the Team in Exeter swimming against the University Side, with a final fixture with Yeovil Swimming Club on Tuesday.

Five members of the Swimming Club entered the London University Swimming Trials, many more than in previous years. The results were also better than in the past. D. Sheira, in an M.Sc. course in Physics, was just second in the 100m. Butterfly, P. Weir, 2nd M.B. Fresher was second in the 100m. Backstroke, and P. Quinn, was second in the individual medley. R. Jolly and P. Weir also entered the Polo Trials, R. Jolly being asked to play for the Second Team.

P. M. Quinn.

### BOAT CLUB

#### Review of the 1965-66 season.

The success of the 1st VII during the season was, for the most part, due to the policy adopted right from the start. Our aim was to get together an eight as soon as possible and keep it unchanged throughout the regatta season. This is the only way in which an eight can hope to meet with any success in the summer regattas. At Bart's this is difficult to achieve, as one has to leave out anyone who is only available to row for part of the year.

The U.H. regatta comes early in the rowing year and we used this to discover our best oarsmen. We won the Senior IV's, Junior VIII's and Senior sculls, which showed that we were once again at the head of Hospitals' rowing.

Early in January the 1st and 2nd VIII's were settled and trained hard both on and off the water. This resulted in our best achievement ever in the Tideway Head of the River race—48th. We also won the Junior Pennant. In the University Head we came up from 21st to 3rd.

After two weeks off for Easter, we started with an intensive week of two outings a day and then settled to once a day for the next two months. In the U.H. bumps in May we came Head for the first time since they were started in 1955 and so won the Hospitals' Cup. Our second boat won the Second VIII's Pennant.

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 M.D.S., F.D.S.

The Allom Cup regatta was disappointing for although we reached four finals we didn't win any of them.

Reading regatta provided us with the club's first win in a major regatta for many years, and in all the other regattas we reached at least the semi-finals. At Henley even the National Press considered us unfairly treated.

The season was rounded off by winning the Junior-Senior fours at Molesey regatta.

With a good standard in the first VIII, the second and novice VIII's must now be improved.

At the A.G.M. in July, Mr. Tubbs was elected President for the coming year and J.D.C. Martin was elected Captain.

J. K. Anderson.

The new season began with the annual swimming race for Tideway clubs. We came within a (body's) length of winning this and I feel that, had the team done any training at all, the De Mancha shield would now be in the trophy cupboard.

*Team:* W. P. Garson, J. K. Anderson, D. Bell, J. D. C. Martin.

**Head of the River Fours.** Saturday, 22nd October, 1966. *Chiswick Steps to Putney Pier*—3 miles.

Four of the previous year's eight had been going out four times a week, making use of the last few summer evenings. We had the good fortune to be coached by Peter Brass and John Gordon.

The race began at 11.30 a.m. in perfect conditions and with a strong ebb. We went up quickly on Southampton University, but our main tactics were to keep our distance from the University of London First crew. As far as Hammersmith Bridge their steering was not as true as ours, and they gained very little. After the bridge, however, in the reach from Harrods to the Crab Tree, we found ourselves some twenty yards nearer the Middlesex shore than the rest of the fleet, who seemed to be in a faster lane together. We should have got out of this slack water earlier, but in the final reach we held our position and in the last minute, increased our distance from the University crew. Result—finished 37th.

*Crew:* B. G. M. Lamberty (Bow, steers), P. A. B. Cheetham, B. D. Cutler, J. D. C. Martin (Stroke).

The Boat Club Ball: this will take place in February, 1967.

J. D. C. Martin.

## HOCKEY CLUB

**Bart's 1st XI 0—Beckenam 4.** 8th Oct. 1966

This first fixture of the season resulted in what might be described as "an encouraging defeat" for the Club; in the past Beckenham have tended to swamp us, but their four goals this season were hard won. The October intake provided vital new talent for the Hospital side and in this game they showed great promise in the face of skilful and experienced opposition. Judging the game purely on merit the contest was much more even than the score implies.

15th October, 1966

**Bart's I 2—St. Mary's H. I 2**

**Bart's II 5—St. Mary's H. II 0**

A day of glory for our 2nd XI and disappointment for the 1st XI. Our old rivals Mary's always field two strong teams and this year was no exception. Our 1st XI lacked shooting power in front of goal, the defence's weaknesses were exploited. Very little can be

## CROSS COUNTRY CLUB

Although we had contemplated a poor season this year, it appears that after the results of three races our standard will be higher than in 1965-66. We have already established a numerical superiority over the other hospitals, and with consistent training by our slower members, we should win the U.H. Championship for the seventh year in succession.

We are fortunate to have secured the services of John Brooks, a very promising freshman, and of Will Field and Richard Davies, two established students who have turned towards the Club. Our prospects will be brighter if we can persuade Roger Down to run for us. We would like to thank Steve Williams and Graham Messelden of R.D.H. for their loyalty; they form the backbone of our team although they cannot run in the Hospitals Championship.

**U.H. v. Barnet v. Others** at Barnet. 8th. October.

This match showed the Bart's potential, with Brooks and Messelden the first U.H. men home and three other Bart's runners in the scoring six.

**U.C. Relay** 6 x 1.8 miles, at Hampstead. 15th October.

We put out two teams for this race with Brooks and the Secretary running twice and made a very good showing against the Provincial University teams present.

said but congratulations to the 2nd XI on a fine win.

26th October, 1966

**Kingston G.S. I 2—Bart's I 2**

**Kingston G.S. II 1—Bart's II 2**

The 1st XI, despite the loss of the Capt. A. Barclay and his brother R. Barclay, who were representing the United Hospitals XI, played a very enjoyable match and did well to draw against the polished, young Kingston side.

Again the 2nd must be congratulated on a fine win—judging by their performances so far this season, they should do very well in the Junior Cup Competition.

(Report of the Cambridge tour in the next edition).

Records to date this season:—

	P	W	D	I	GF	GA
Bart's I	7	3	2	2	9	12
Bart's II	3	2	0	1	7	6

P. R. Jordan.

## 1st Team, 23rd.

Brooks (8 min. 29 sec.); Thompson (8 min. 52 sec.); Tunstall-Pedoe (9 min. 28 sec.); Williams (9 min. 06 sec.); Sanders (Unrepeatable); Messelden (8 min. 45 sec.).

## 2nd Team, 39th.

Field (9 min. 47 sec.); Collart (10 min. 1 sec.); Markham (10 min. 27 sec.); Thompson (9 min. 32 sec.); Kitchener (10 min. 37 sec.); Brooks (9 min. 21 sec.).

45 teams finished, the winners were Nottingham University and the fastest lap was 7 min. 40 sec. Of the hospitals, only Guy's beat our second team.

**University Trial and League** at Hampstead. 22nd. October.

Your correspondent wishes to remember as little as possible of this wretched race but knows that 191 runners started, that the winning time was 30 min. 18 sec. and that of the University, Brooks and Messelden finished 14th and 16th respectively. Bart's placings were:—30th Brooks (33 min. 43 sec.); 32nd Messelden (33 min. 49 sec.); 63rd Thompson (35 min. 36 sec.); 90th Williams (36 min. 58 sec.); 126th Sanders (39 min. 01 sec.); 137th Wood (40 min. 01 sec.); 139th Markham (40 min. 18 sec.); 148th Davies (41 min. 09 sec.)

R. J. Thompson.

## ST. BARTHOLOMEW'S HOSPITAL JOURNAL

CLINICAL AND  
RESEARCH SUPPLEMENT

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Supplement No. 13

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RESUSCITATION OF THE NEWBORN  
INFANT

by G. B. Gillett

Department of Anaesthetics

"Laryngoscopy and intubation, the pivot upon which turns the movement to prevent asphyxial death"—Paluel J. Flagg.

Intra-gastric oxygen has likewise become a thing of the past—having been shown to be completely ineffective'. Nowadays the accent of resuscitation in the apnoeic asphyxiated baby is on the use of controlled respiration.

The purpose of this article is to consider the practical aspect of the establishment of respiration in the newborn infant.

In recent years considerable progress has been made in the treatment of neonatal asphyxia. The days are gone when the severely asphyxiated baby was the helpless recipient of a variety of manual, physical and chemical stimulations in the vague hope that any one of these might reflexly initiate respiration.

## Administration

In order that resuscitation may be carried out effectively a definite person must be made responsible for the task. This can be an obstetrician, an anaesthetist or a paediatrician. Ideally it should be an anaesthetist. The arrangements that have been made at St. Bartholomew's Hospital are that the Resuscitation Registrar is called to look after the

SIGN	0	1	2
HEART RATE	Absent	Slow (Below 100)	Over 100
RESPIRATORY EFFORT	Absent	Weak Cry Hypoventilation	Good Strong Cry
MUSCLE TONE	Limp	Some Flexion of Extremities	Active Motion Extremities Well Flexed
REFLEX IRRITABILITY	No Response	Grimace	Cry
COLOUR	Blue, Pale	Body Pink, Extremities Blue	Completely Pink

TABLE  
*Apgar Scoring Method*

baby for all deliveries involving a general anaesthetic and to any other delivery where it is thought that the baby may require resuscitation. In the remaining deliveries the baby is cared for by the obstetrician. If a baby presents continuing respiratory problems—as in the case of hyaline membrane disease—then its further care is performed by both paediatrician and anaesthetist.

Any clinician who is responsible for the resuscitation of the newborn must be (a) aware of the problems they are likely to encounter and (b) capable of passing an endotracheal tube and performing intermittent positive pressure respiration. Those unfamiliar with the art of neonatal intubation should first practice on a stillborn baby under the guidance of someone experienced in the art.

#### Assessment of the Newborn Infant

Before deciding what resuscitation is required a rapid assessment of the condition of the baby must be made. Here a consideration of the Apgar Scoring Method<sup>2</sup> will be of great help.

Sixty seconds after the complete birth of the infant the five objective signs are evaluated and each given a score of 0, 1 or 2. A score of 7-10 indicates an infant in good condition. A score of 3-6 indicates a moderately depressed infant and a score of 0-2 indicates a severely depressed infant. Personally I do not actually make a "score"—but I do assess the signs listed—of which heart rate, respiratory effort and muscle tone are the most important.

As the heart rate is the most important sign it is useful to get an observer to listen to the heart with a stethoscope and by synchronous motion with the forefinger indicate the rate to the resuscitator. Colour is the least important sign—only about 15 per cent of infants being born completely pink.

#### Delivery

The actual delivery of the baby is the responsibility of the obstetrician. It is very important that the pharynx should be aspirated—through the mouth—as soon as the head is born. This procedure helps to prevent the baby

aspirating liquor or mucus into the bronchial tree when it takes its first breath. If one waits until the entire baby is born it may well take its first breath before the pharynx can be sucked clear.

The question of the timing of the clamping of the cord is important. If practicable, the cord should not be clamped until the baby has taken its first breath. If the cord is still unclamped when the baby takes its first breath, the amount of blood flowing through the expanding lungs is greatly increased. There is then an increased flow of blood into the baby from the placenta. This may amount to as much as 80 ml<sup>3</sup>. However, the problem of resuscitating a baby who is apnoeic and still attached to its mother via the umbilical cord is considerable. Thus if the baby does not show signs of taking a breath within a short time of delivery the cord should be clamped and divided and the baby made accessible for resuscitation.

#### Resuscitation

Accessibility is of great importance in resuscitation. All newborn infants should be placed on a firm, flat, warm surface with a slight head-down tilt. If the baby cries immediately after birth, has good tone and a satisfactory heart rate, the only resuscitation required will be further suction to the pharynx and perhaps the administration of some oxygen via a rubber funnel. If the baby is moderately depressed, more careful assessment is required. The pharynx should be sucked clear with the aid of a laryngoscope—on occasions a plug of mucus being found lying in the glottis. It is useful at this time to pass a catheter into the stomach and aspirate any fluid that may be there (this applies especially to babies born by Caesarean section). A suction catheter should also be passed into the nostrils—a procedure which may, in itself, initiate respiration, or at least enable one to assess reflex irritability. Oxygen should now be administered to the baby via a funnel, and the heart rate counted. Muscle tone is also assessed. When administering oxygen via a funnel or a face mask, no attempt should be made to actively inflate the baby's lungs. This applies especially when the lungs are unexpanded as the pressure required to expand the lungs is in the region of 35 cm. water—which exceeds that required to open the oesophageal cardia. Thus inflation of the stomach may readily occur. This is very undesirable as a distended stomach will tend

to split the diaphragm and further impede respiration.

A minute will now have elapsed since the birth of the baby and a decision must be made as to what further resuscitation is required. In the presence of a satisfactory heart rate and reasonable muscle tone the onset of regular respiration can be anticipated—and in fact encouraged—by gentle stimulation, i.e. feet tapping, blowing on the abdomen, and suction to the nostrils. Chemical stimulants are of little use and may even be harmful. If they do not initiate respiration they may deepen the depression by increasing the oxygen requirements of the brain cells. Undoubtedly the finest stimulant for an asphyxiated baby is oxygen. Nalorphine 0.25 mg given into an umbilical vein is indicated on occasions when morphine analogues have been administered to the mother and could reasonably be expected to be playing a part in the respiratory depression of the baby. In these circumstances it may, in fact, be better to give the nalorphine to the mother before the baby is born.

Sometimes failure to establish regular respiration is due to the presence of excess fluid in the trachea. On aspiration of this fluid the baby immediately "picks up".

If there is any deterioration in the condition of the infant intubation should be performed without delay. Once intubated, controlled respiration with oxygen can be instituted and suction applied to the trachea.

If the baby is severely depressed—as shown by slow heart rate, absent respiration and no muscle tone—he should be intubated immediately and his respiration controlled with a high oxygen atmosphere. As already stated a pressure of about 35 cm. water is required to expand the unexpanded lung. Even if the lungs are not expanded by controlled respiration the fact that the lungs are being ventilated with oxygen via an endotracheal tube enables some oxygen to be absorbed via the respiratory bronchioles. This will lead to an improvement of the condition of the baby and often initiate the first breath and expansion of the lungs.

If there has been a prolonged period of asphyxia, a metabolic acidosis will have resulted from anaerobic metabolism. Carbohydrate reserves will also have been depleted. When adequate oxygenation has been restored after severe asphyxia the metabolic debt has still to be repaid. It will therefore often be necessary to administer sodium bicarbonate and a slow i.v. drip of 10% dextrose after resuscitating the baby.



## Equipment

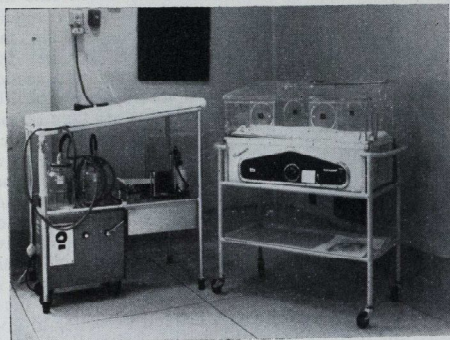


Fig. 1.

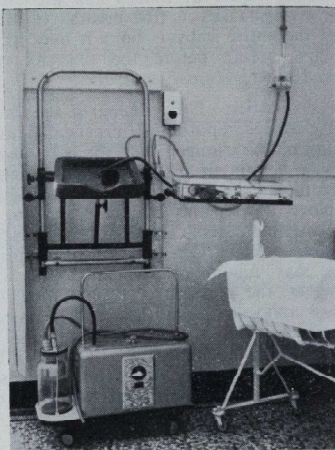


Fig. 2.

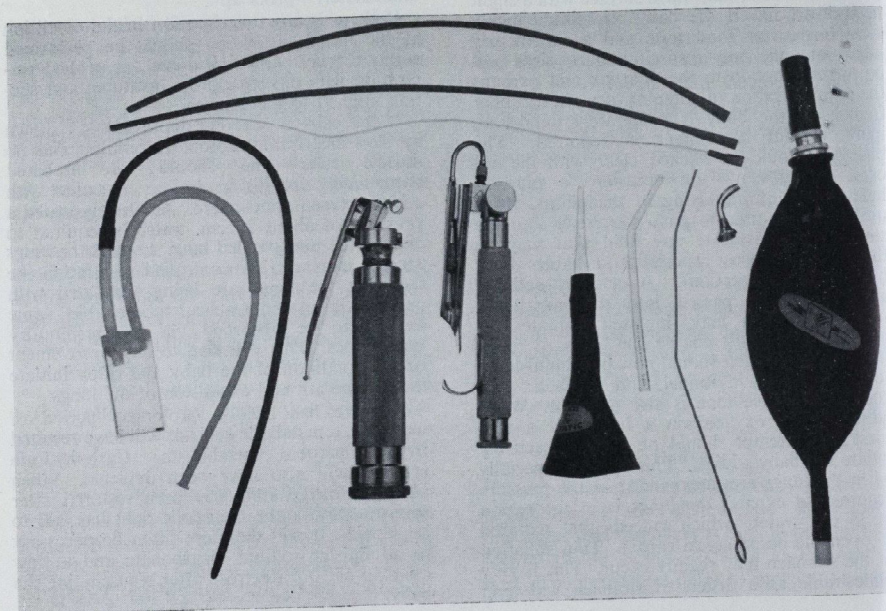


Fig. 3.

## Equipment

In order to perform satisfactory resuscitation of the newborn equipment must be at hand in both the labour ward and the gynaecological theatre.

FIG. 1.—Gynaecological Theatre

Fig. 1 shows the arrangement in the gynaecological theatre for Caesarean section. On the table with a slight head down tilt, there is an electric blanket to prevent the temperature falling during resuscitation. Attached to the table is a pair of scissors—an essential piece of equipment. Piped oxygen is available—as is a mechanical sucker. After resuscitation the baby is placed in the incubator and taken back to the ward.

FIG. 2.—Labour Ward

In the labour ward, where space is more precious, a small adjustable table is attached to the wall (Fig. 2). This lets down into the slight head down position. There is piped oxygen and mechanical suction. After resuscitation the baby is placed in a warm cot. The whole resuscitation area is screened from the mother, to hide the procedure of resuscitation from her.

FIG. 3.—Equipment

The equipment necessary for resuscitation is shown in Fig. 3, the items being:—

- (a) Rectal suction catheters (size 6 English gauge)—for pharyngeal suction.
  - (b) Portsmouth pattern suction tube size 2—for endotracheal suction.
  - (c) Laryngoscopes—Seward blade and Magill blade.
  - (d) Warne's neonatal tube (Riplex)—size 12 F.G.
  - (e) Stilllette.
  - (f) Magill connection (size 0 oral) with a hole drilled in the convexity of the curve.
  - (g) Catheter mount.
  - (h) 500 ml double ended reservoir bag.
  - (i) Improved Macrac mucus extractor—for use if no other means of suction are available.
- Items (f), (g), and (h) constitute the circuit described by Hargrove and Deacock for neonatal resuscitation<sup>4</sup>.

When resuscitating babies born by Caesarean section it will probably be necessary to aspirate the pharynx under direct vision with the aid of a laryngoscope in about 50 per cent of babies and to intubate about 20 per cent.

## Discussion

Arguments which have been raised against this type of resuscitative regime include the possibility of shock, infection, laryngeal trauma, emphysema and pneumothorax. These dangers are grossly over emphasised, as is shown by a consecutive series at Portsmouth of 342 babies who, following operative delivery, were intubated at birth for the purpose of endotracheal aspiration or oxygenation. Not one of these 342 intubated babies had any complications due to endotracheal intubation and the use of controlled respiration.

## Summary

The essential procedure and equipment for the resuscitation of the newborn infant have been reviewed. It is important to emphasise that early intubation is far better than late intubation; and in fact—"Artful inactivity may well lead to an artless death."

## Acknowledgements

I would like to thank the Department of Medical Illustration for the photographs and Miss Joan Goodwin for secretarial assistance. Also Dr. T. B. Boulton for his help in the preparation of this article.

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## CURRENT CLINICAL RESEARCH

### THE MEDICAL PROFESSORIAL UNIT

1. The use of D-penicillamine in the treatment of cystinuria with particular reference to its mode of action and effect on the natural history of the disease.
2. Studies on the metabolic abnormalities in cystinuria, and on the genetics of this disease.
3. Studies on the metabolic lesion in primary hyperoxaluria.
4. In vitro and in vivo studies on oxalate formation in man with particular reference to its possible therapeutic regulation.
5. Therapeutic uses of allopurinol.
6. The factors predisposing to acute uric acid nephropathy arising as a complication of myeloproliferative disorders.

### RENAL RESEARCH LABORATORY

1. Physiological basis for excretion pyelography—studies of the factors determining the excretion of contrast media and the effect of these on the quality of pyelograms—in conjunction with the Department of Radiology.
2. Studies on the toxicity of hypaque.
3. Urinary infection—continuing studies on the dynamic aspects of bacterial growth in the urinary tract—in conjunction with the Department of Bacteriology.
4. Evaluation of the place of isotope techniques in studying the dynamics of urine flow in the upper and lower urinary tract—in conjunction with the Radio-Isotope Department.

### CLINICAL PHARMACOLOGY DEPARTMENT

General purpose: To investigate the action of drugs in man under different physiological and pathological conditions.

Specific Projects: (1) Centrally acting drugs.

- (a) Their influence on tests of central function, correlated with blood and urine levels.
- (b) Their interaction with other drugs as measured by such tests.
- (c) The influence of using pH on their degree and duration of action, and rate of excretion.

### (2) Adrenergic-blocking drugs:

- (a) As tools to investigate the risk of adrenergic activity in various conditions.
- (b) Their mode of action and value in the treatment of certain conditions.
- (3) The clinical assessment of new drugs.
- (4) A clinical study of drug toxicity, its incidence and significance.
- (5) A study of potassium loss associated with different diuretic combinations.

### SIR RONALD BODLEY SCOTT'S FIRM

1. The Department of Medicine in conjunction with the Department of Physics has been carrying out investigations on the anaemias of malignant disease with particular reference to haemolysis.
2. A long term study of serum protein changes in the reticuloses continues.
3. Participation in the Medical Research Council Trials of therapy of acute leukaemia, chronic myeloid leukaemia and multiple myeloma have been joined by two further trials of therapy in patients attending the Anaemia Clinic who have Hodgkin's disease and Chronic Lymphatic Leukaemia.
4. The first stages of the establishment of a biological assay for erythropoietin have been completed. Further work on the levels of erythropoietin seen in the anaemias of the reticuloses is now being started.
5. A study of circulatory ferritin in patients with liver disease; urinary or immunological method is at an early stage.

### DR. HAYWARD'S FIRM AND THE DEPARTMENT OF CARDIOLOGY

Disability and illness from heart disease often implies that the myocardium is no longer able to work efficiently as a pump. The effect of disease on myocardial function is therefore of great importance and this is being studied from several aspects:

1. Cardiac outputs, systemic blood pressure changes and stroke volumes are measured in

hypertensive and ischaemic patients at rest and during graded exertion.

2. The effects of drugs blocking the sympathetic drive of the heart are studied in a similar manner in patients with ischaemic heart disease.

3. Measurement of the fraction of left ventricular blood volume ejected at each beat.

(a) By means of a thermocouple located in the ascending aorta.

(b) Using volume measurements from simultaneous biplane angiocardiology (in co-operation with the Radiological Department).

In co-operation with the Electronics Department a new instrument has been developed for study of the movements of the apex beat. This instrument is applied to the chest wall and is giving valuable information in a wide range of heart disease, including ischaemic, rheumatic and congenital lesions.

A previous study carried out in conjunction with the Department of Anaesthesia showed that surgery under general anaesthesia in patients with ischaemic heart disease frequently caused electrocardiographic deterioration. Further studies with continuous electrocardiographic monitoring are now in progress to attempt to identify the factors responsible for the deterioration.

Amongst the many conditions undergoing joint investigation by the Thoracic Surgeons and the Cardiac Department are included:

The effects of replacement of the mitral valve by a prosthetic valve on the pulmonary vasculature and on left ventricular function.

The accurate diagnosis of pulmonary embolism prior to emergency embolectomy using cardio-pulmonary by-pass.

### DR. BLACK'S FIRM

1. A prospective study of the influence of diabetic control on the development of diabetic complications.
2. The effect of vitamin deficiency states on intermediary keto-acid metabolism.

### DR. OSWALD'S FIRM

1. Investigation into the immunological abnormalities of patients with malignant diseases (Dr. Fairley).
2. Assessment of chemotherapy in patients with malignant blood diseases (Dr. Fairley).

### SURGICAL PROFESSORIAL UNIT

1. Mr. B. N. Catchpole:  
Methysergide and Phenoxybenzamine in Raynaud's Phenomenon.

Study of Post-operative Intestinal Motility.

2. Mr. A. J. Edwards:  
The reticulo-endothelial system in experimental malignant disease.
3. Mr. C. R. Naylor:  
Platelet stickiness in arterial disease. Assessment of the Electro-magnetic Flow Meter and other methods of arterial flow estimation.
4. Mr. J. Neely:  
Experimental assessment of drugs in the control of gastro-intestinal motility.
5. Dr. G. Rowland:  
The influence of tumour growth on the biochemistry of the reticulo-endothelial cells.

### MR. NAUNTON MORGAN'S FIRM

Investigation of the Neurogenic Bladder (Mr. Ellison Nash).

### MR. HUNT'S FIRM

1. Copper metabolism in hepatic cirrhosis:  
Abnormal copper metabolism as a cause of hepatic cirrhosis has been recognised for many years in Kinnear-Wilson's disease, and more recently in primary biliary cirrhosis. However, in other forms of cirrhosis it seems that a greater amount of copper is present in the liver cells. Further studies are being carried out along these lines in association with the Royal Marsden Hospital in an attempt to discover the relationship between cirrhosis and carcinoma of the liver.

### 2. Plasma Ammonia in Hepatic Cirrhosis:

The relation of hepatic coma to plasma ammonia and other factors is being assessed. Pre- and post-operative ammonia tolerance tests (by both the oral and intravenous methods) are being assessed, and the dietetic aspects of treatment of hepatic coma are being studied in detail.

### 3. Extra-hepatic portal vein obstruction:

A clinical study of all cases of extra-hepatic portal vein obstruction (portal vein thrombosis) seen on this unit between 1949 and 1965 is being carried out. Those cases where a portal-systemic shunt has not been possible or has

failed have, in general, been treated by a proximal gastric resection, some in childhood. The overall prognosis as regards re-bleeding is being assessed, and the growth and development of those children who have undergone gastric resection is being studied, particularly in relation to hypocalcaemia.

#### MR. BADENOCH'S FIRM

1. A long term study on the prevention of urinary infection after prostatic surgery with special reference to late morbidity.
2. Regional renal hypothermia for the preservation of function in the ischaemic kidney both "in situ" and for free homotransplantation.
3. Studies on the fundamental aetiology of acute oliguric renal failure with special reference to the role of endogenous ammonia in the production of tubular necrosis.

#### DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

1. Mr. Fraser, Dr. Curling: Cytological changes in relation to the menopause.
2. Mr. Howkins, Mr. Williams, Mr. Hudson: Long term results of hysterocolpectomy and the effects on the urinary system.
3. Mr. Bourne, Dr. Ross: Toxoplasmosis. Relation to abnormal pregnancy.
4. Mr. Bourne: Prospective study of the intra-uterine contraceptive device.
5. Mr. Williams, Dr. Canti: Well Women's Clinic. Cervical cytology screening.
6. Mr. Williams, Dr. Kemp Harper: Well Women's Clinic. Mammography screening.
7. Mr. Williams, Mr. Hudson: A study of vault granulations after abdominal hysterectomy.
8. Mr. Williams: Clinical trial of local chemotherapy in vaginal moniliasis.
9. Mr. Hudson, Dr. Stansfield: An investigation into the effects of a progestogen on carcinoma of the endometrium.
10. Mr. Thomson: An investigation into the Stein-Leventhal Syndrome.

#### EXPERIMENTAL PATHOLOGY DEPARTMENT

1. Studies on the mechanism of delayed hypersensitivity:—
  - (a) Isolation of the lymph node permeability factor by chemical and immunoelectrophoretic methods.
  - (b) The role of the lymph node permeability factor in experimental arthritis.

(c) Studies on human lymph node permeability factor, its biological characterisation and its demonstration in arthritic disease in man.

(d) The demonstration of the lymph node factor in hypersensitivity reactions by immunofluorescent methods.

(e) The lymph node factor in homograft reactions.

2. Studies on cytokinetics:—

(a) The origin of the cellular components of chronic inflammation.

(b) The cellular changes in hypersensitivity reactions.

3. Investigations in acute inflammation:—

(a) Pharmacological mediators of vascular permeability.

(b) Biological studies on "cortisol released activating protease" (CRAP), its possible role in inflammation, healing and the shock syndrome.

4. Studies on cold agglutinins in cardiac surgery.

Staff involved in these investigations:— Professor W. G. Spector, Dr. D. A. Willoughby, Dr. R. Meacock, Dr. A. Lykke, Mrs. E. Coote, Dr. M. Cawley, Dr. W. Shand, Miss N. Heeson, with the technical assistance of Mr. R. Dunbar, Miss J. Weber and Miss J. Page.

#### BACTERIOLOGY DEPARTMENT

Hospital infection is the main research interest of this department. Investigations during the last ten years have explored the sources of sepsis in surgical patients, and have contributed to the understanding of the natural history of *Staphylococcus aureus*. When building operations are complete we hope to begin an epidemiological survey in Percival Pott, as an example of a fully ventilated ward, studying at the same time patients in Waring, partly as a control and partly so that we can compare the results we obtain there with the results of the work done in that ward some years ago. For the last six months we have been studying the epidemiology of *Pseudomonas aeruginosa* in Waring aided by typing facilities provided by the Central Public Health Laboratories at Colindale. So far we have found a higher faecal carriage rate than previously reported. The work has also provided opportunities for an examination of the possibility that this organism changes its type by induction or transfer.

We demonstrated recently that showering increases the output of skin bacteria to the air. In conjunction with Dr. Bernard, who has now returned to St. Louis, we are looking to see if

this output can be reduced by the use of germicidal soap.

The epidemiological side of our other main interest, urinary tract infection, has also made progress. The typing and characterisation of the *Escherichia* isolated during a long survey with Dr. Spencer of his patients has now been completed in Dr. Joan Taylor's laboratory at Colindale. Again some unexpected findings of possible changes in type have emerged. Progress has been made on the problem of deciding from clean specimens whether the infant urinary tract is infected. Using the methods developed, we are conducting with Mr. Nash a survey of the children with spina bifida he cares for at Coney Hill School. With Mr. Badenoch, Mr. Wickham and Dr. Cattell, we are about to conduct a further study of post-prostatectomy urinary infection. On the experimental side, several models simulating conditions in the urinary tract are under study. We have confirmed our theoretical reasoning about the changes in urinary concentration of organisms which result from the ingress of fresh urine when the bladder is empty. We are now trying to see whether these concentration changes significantly affect the response to antibacterial substances.

Animal work is presently restricted to two fields: the study with Dr. Barbara Smith of the myo-neurotoxic and anti-inflammatory effects of various substances, and the study with Dr. Stansfeld of the role of hyper-sensitivity in experimental candidiasis and the influence of immuno-suppressive agents. Both studies have produced interesting results, the first currently more coherent than the second. One interesting development is that these initially disparate investigations are beginning in some respects to move along similar paths.

#### DEPARTMENT OF HAEMATOLOGY

1. Dr. H. F. Brewer:
  - (a) The evaluation of a heat inactivated (virus free) plasma protein solution in transfusion.
  - (b) Leucocyte agglutinins as a cause of reaction in some otherwise compatible blood transfusions.
2. Dr. A. J. Salsbury:
  - (a) Differentiation of acute leukaemias by nucleolar stains.
  - (b) Investigation of the occurrence of malignant cells in circulating blood, particularly during operative and diagnostic procedures.

(c) Investigations into the sites of bloodborne metastases in rats, following the intravascular injection of malignant cells in various sites. (In conjunction with Mr. J. A. MacKinna).

3. Dr. G. L. Scott:
  - (a) Development of techniques for the estimation of serum folic acid.
  - (b) Investigation of serum and red blood cell Vitamin B12 levels by a radio-isotope method.
4. Dr. A. J. Salsbury and Dr. G. L. Scott:
  - (a) Determination of iron, cobalt, copper and zinc content of bone marrow by neutron activation.
  - (b) Development of immuno-fluorescent techniques for the detection of auto-immune disease.

#### VIROLOGY DEPARTMENT

1. Mechanisms of development of immunity to respiratory viruses with particular reference to the parainfluenza viruses.
2. Studies of the mechanisms of recovery from virus infection.

#### CYTOLOGY DEPARTMENT

Clinical Cytology in its present stage of development is continually subject to critical evaluation.

1. The value of cytology in certain skin lesions is being explored.
2. The accuracy of cytological investigation of serous fluids is under review—of particular interest at the present time is the problem of diagnosis of mesothelioma (all suspect fluids from any source are welcome).
3. Special interest is being directed towards the natural history of squamous cell carcinoma of the bronchus. Changes in the bronchial epithelial cells are often detectable many years before the development of invasive carcinoma. Follow-up of these cases with abnormal cells in the sputum is proving rewarding. The longest follow-up so far has yielded a clinically detectable carcinoma six years after malignant cells were first reported in the sputum.
4. The recording of cytological appearances of cerebral tumours continues; although over 400 tumours have been investigated, atypical histological types are still being encountered.

#### E.N.T. DEPARTMENT

1. Long-term follow-up of the effects of Otitis Media in children on their hearing (Mr. R. F. McNab Jones with Dr. J. Fry).
2. Study of non-malignant ulceration in the upper respiratory tract (Mr. A. P. Fuller).

3. Investigation of the results of treated Otitis Media in general practice (Mr. L. N. Dowie).
4. Post-operative study of pharyngo-laryngectomy with colon replacement (Mr. C. C. H. Dale).
5. The Reticuloses as seen in the E.N.T. Department (Mr. C. C. H. Dale).
6. Study of the epithelium of mastoid cavities (Mr. T. W. Hamilton *et al.*).  
(The list for this department is not complete).

#### DEPARTMENT OF ANAESTHESIA

1. Research on emergency anaesthetic apparatus. (T. B. Boulton).
2. A clinical trial of phenoperidine for general anaesthesia for haemorrhoidectomy. (I. B. Boulton and Janet Missen).
3. Abnormal haemoglobin dissociation curves in peripheral vascular disease. (P. V. Cole, in conjunction with Department of Surgery).
4. Methods of storing samples of gases and blood prior to investigation. (P. V. Cole).
5. The response of the adrenal cortex to surgical and anaesthetic stress. (P. V. Cole).
6. The post-perfusion lung syndrome following cardiac by-pass (P. V. Cole, J. Edmonds-Seal, R. D. Marshall).
7. The effects of operation and anaesthesia in patients with ischaemic E.C.G.s. (J. Edmonds-Seal, D. W. Bethune with D. A. Chamberlain).
8. The complications of arterial puncture. (P. V. Cole and Jean Lumley).
9. Growth of pseudomonas pyocyanea on vapour condenser humidifiers. (Jean Lumley, with F. E. W. O'Grady and J. Pennington).
10. The effects of anaesthesia and operation on respiratory function in chronic bronchitics. (D. W. Bethune, J. Edmonds-Seal and R. W. Gabriel).
11. A comparison of different methods of bronchodilator nebulisation. (D. W. Bethune, J. Edmonds-Seal and R. W. Gabriel).
12. Acid-base changes following cardiac arrest. (J. Edmonds-Seal and R. D. Marshall).

#### ORTHOPAEDIC DEPARTMENT

1. A clinical review of synovial osteochondromatosis by Mr. T. E. Jeffreys.
2. A follow-up of all patients with osteoarthritis of the hip treated by intertrochanteric osteotomy. This has been made to assess in detail the results of the operation and the causes of non union. Mr. D. Rosborough and Mr. P. J. Stiles read a paper on "The Causes of Non-Union" at the British Orthopaedic Association meeting in October.
3. The dissemination of tumour cells during the surgical manipulation of bone tumours is being started by Mr. Stiles with the help of Dr. Salsbury of the haematology department.
4. During the last two years all femoral neck fractures have been treated by early fixation with a low angle intramedullary nail. The results of this series will be reviewed during the next year.
5. A clinical review of sacro-coccygeal chordomas from Bart's and other London Hospitals has been started by Mr. Stiles to assess the results of treatment on the behaviour of this bone tumour.
6. Miss Wareham and Miss Fisher, of the Physiotherapy department, are collaborating with Mr. Stiles to evaluate the place of ultrasonic therapy in Dupuytren's Contracture.

#### DENTAL DEPARTMENT

- Mr. G. A. Cowan:  
Gingival Physiology.
- Mr. J. Cambrook:
- (1) Properties of newer Acrylic and Rubber Compounds used in the making of prostheses replacing bony defects of jaws and soft tissues.
  - (2) Improved vibrators for production of artificial speech in post-operative laryngectomy cases.
- Mr. F. Coffin:
- (1) Temporo-Mandibular Joint researches.
  - (2) Researches on soft tissue lesions of the mucosa.

## FITNESS, MUSCLE STRENGTH, AND GIRTH OF MEN DURING A CLIMBING EXPEDITION

by N. H. Pott

#### INTRODUCTION

In an age of increasing mechanisation many people earn their living without moving from the seats of their chairs. Motors instead of muscles provide the power which turns the wheels of industry and man himself is carried to work by road or rail. Only a small proportion of his time is spent standing up, which is not in itself an ambitious form of exercise<sup>(\*)</sup>. As a change from the desk or as a return to the nomadic life of their ancestors some people choose to spend their vacations in pursuits which call for unaccustomed muscular activity. There is evidence that exercise and subsequent improvement in physical condition offer some protection against degenerative cardio-vascular disease<sup>(\*)</sup>. It was therefore of interest to examine changes in levels of fitness in a group of subjects during a vacation when they took much more than their accustomed amount of exercise.

The physical fitness of 6 members of the Cambridge East Greenland Expedition, 1963<sup>(\*)</sup> was measured before and during their time away from civilisation and the results are described in this paper. The members of the expedition travelled to Iceland, then by air to the east coast of Greenland at a point 650 km. inside the Arctic Circle. Here the strenuous part of the journey began. They crossed the Staunings Alps on foot carrying loads weighing 35 kg. Soft snow covered most of the route and this was traversed on short skis. After 7 days, at the end of the 80 km. mountainous march-in, base camp was established. After 2 days rest the 28 day climbing phase began. The men carried loads of 30 kg. to the point where advancing camps were set up. Each subject then climbed approximately four peaks (1800 m.-2700 m.) carrying only personal equipment and spent 5 days sheltering from snow-storms while still consuming enough food to sustain a full day's climb.

#### METHOD

Cardiovascular fitness was measured by means of a modified Harvard Step Test<sup>(\*)</sup>. The test was demonstrated to the subjects prior to performance. The test was performed four times by each subject. The first test was conducted in England (Series 1), the second 3½ weeks later just before the flight to Greenland (Series 2). The results from these two tests (Series 1 and 2) were the base-line measurements. The third test (Series 3) was carried out on arrival at base camp just after the 7 day march-in and the last test (Series 4) just before starting for home, 28 days after Series 3.

Muscle strength and girth were measured at Series 1, 3 and 4.

#### Subjects

The subjects were 6 undergraduates aged 21-23 years. In the 3 months before leaving England their physical activity was curtailed by study for examinations. Prior to this they had all regularly played competitive sports. Unfortunately not all subjects were present on each occasion and only the results of those present at all tests are given.

#### Techniques

##### (i) Step Test

The Step Test was modified from the Harvard Step Test<sup>(\*)</sup> to provide an exercise intensity closer to the maximum of these fit subjects. As in the original test the subjects stepped for 5 mins. at a rate of 30 steps/min., but the stool height was raised from 51 cm. to 55 cm. and pulses were counted at 1, 2 and 3 minutes instead of 1, 2 and 4 minutes after stepping was completed. The score was calculated according to the original formula:—

$$\frac{\text{Number of seconds spent stepping}}{\text{Sum of pulse counts in beats/minute}} \times 100$$

(ii) Muscle Strength

A 90 kg. spring balance with a non-return needle was used to record isometric muscle strength. The movement of the points of attachment of the instrument was negligible. Each result represents the average of three consecutive readings. Motivation was provided by a competitive spirit, the results being announced at the end of each experiment. Subjects were not however told of their achievements during the experiment.

a) *Shoulder abductors.* Handles were fitted to the instrument and it was used in the style of a chest expander. The subject was allowed to adopt his own position.

b) *Elbow flexors.* The forearm of the seated subject was semi-pronated and the elbow was held at a right-angle by an adjustable wooden frame. The balance was attached to the ground and strapped to the wrist at the level of the radial tubercle.

c) *Knee Extensors.* The subject sat on a 55 cm. stool, knees at a right-angle. The balance was fixed to a point just above the malleoli.

(iii) Limb Girths

Limb girths were measured at fixed points over the bellies of biceps and gastrocnemius and at mid-thigh. The steel tape measure was held at constant tension by weights fixed to either end.

RESULTS

(i) Step Test

The subjects were all fairly fit at the start of the experiment (Table). Their mean score was as high as that of the fittest group in the original investigation<sup>(9)</sup>. Using Student's t test, there was no difference between the scores of the

Test	Number of subjects	Unilateral or bilateral	Base-line figures		After march-in Series 3	After climbing Series 4
			Series 2	Series 1		
Step Test scores	6	—	93.2	95.5	107.2	98.7
Elbow Flexor strength	5	U	32.0kg	—	31.8kg	34.2kg
Knee Extensor strength	4	B	44.0kg	—	50.3kg	52.5kg
Shoulder abductor strength	6	—	31.0kg	—	42.0kg	43.3kg
Upper arm girth	4	B	28.0cm	—	27.5cm	27.5cm
Calf girth	4	B	37.3cm	—	36.0cm	35.3cm
Mid-thigh girth	4	B	55.1cm	—	54.5cm	54.7cm

TABLE—Mean results of all subjects.

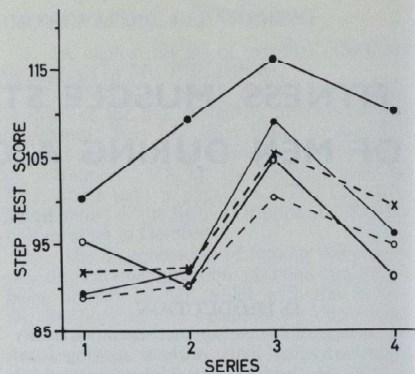


FIGURE 1.—Changes in the Harvard Step Test scores for individual subjects.

two base-line series. All subjects showed a rise in their score at the third test (Figure 1). The mean rise of 12.8 was significant ( $p < 0.01$ ). The scores of all subjects decreased in the final test, made after the climbing trip. This fall was also significant ( $p < 0.01$ ) but the final score was still higher than the base-line values ( $p < 0.01$ ).

(ii) Muscle Strength

The mean of the maximal isometric strengths of all subjects' shoulder abductors rose significantly ( $p < 0.01$ ) between Series 1 and 3. All subjects became stronger (Figure 2). During this time the subjects marched with heavy loads from the coast to base-camp. No further significant increase in strength occurred during the climbing phase.

The mean strength of the knee extensors showed a somewhat less clear picture (Figure 2). All subjects became stronger between Series 1 and 3 but the mean rise was not significant.

Only one subject failed to show a further rise in strength after the climbing phase (Series 4). The mean strength at Series 4 was significantly greater than it had been at Series 1 ( $p < 0.01$ ).

The strength of the elbow flexors showed no significant changes throughout the experiment.

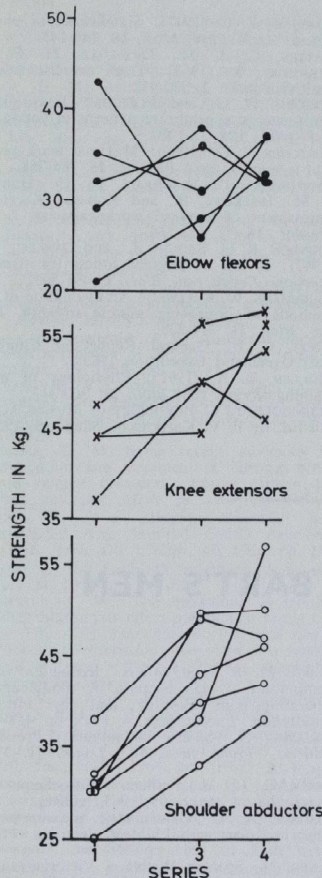


FIGURE 2.—Changes in the strength of the three muscle groups (elbow flexors, knee extensors and shoulder abductors) for individual subjects.

(iii) Muscle Girth

In spite of the significant gains in strength in the legs, the muscle girth showed no changes, nor were there any changes in the girth of the upper arms.

DISCUSSION

Fitness has been described as "the ability of the organism to maintain the various internal equilibria as closely as possible to the resting state during strenuous exercise and to restore promptly to the resting state any equilibria which have been disturbed"<sup>(1)</sup>. This definition applies to activities where the cardio-vascular system is the limiting factor and to estimate its capacity at a given time the Harvard Step Test is very effective<sup>(2)</sup>.

The subjects in the present experiment were fit at the start of the expedition. Until they gave up regular games playing to study for their examinations, they had presumably been in even better condition. Nevertheless their average base-line score of 94.4 was similar to that of the fittest group in the original Harvard Step Test series (94.0). The comparison is made although a higher stool was used and pulse counts were made at less favourable intervals after stepping.

Even a small decrease in the intensity of the exercise causes a rapid deterioration in cardio-vascular fitness, as shown by the fall in Step Test score during the climbing phase.

Most normal people taking a strenuous vacation would start less fit than these men. Their cardio-vascular fitness would be likely to improve, though rather less quickly<sup>(3)</sup>. The fitness they achieved may give worthwhile protection against degenerative heart disease, though the effect may not be very long lasting as a return to their sedentary lives would cause a rapid fall-off in fitness.

Muscle strengths were measured as maximal isometric contractions. Walking heavy-laden over rough ground provided isotonic training for the knee extensors while the shoulder abductors were under isometric strain from the weight of the pack frame.

The greatest increase in strength was seen in the hardest worked muscle groups at the time of maximal stress. This confirms the findings of Müller<sup>(4)</sup> that the increase in strength depends upon the size of the training stimulus and Josenhans<sup>(5)</sup> who showed that it is the number of isometric contractions which is the most important factor. The elbow flexors, which did no more work on the Expedition than previously, did not change in strength.

An increase in muscle strength is associated with an increase in its girth, due to hypertrophy of each muscle fibre<sup>(10)</sup>. That limb girths did not increase in this experiment may have been due to a simultaneous rise in muscle girth and fall in the quantity of subcutaneous fat. Unfortunately, the skinfold calipers which were included in the supplies dropped by air were destroyed when the parachute of their container failed to open.

Although the apparatus was simple, the results of the experiment are clear-cut. Step Test scores and strength of knee flexors and shoulder abductors increased during the march-in. The training stimulus was less severe during the climbing trip. The Step Test score fell and the strength of these muscle groups rose only a little. It would be of great interest to extend this fairly simple procedure to study the effect of less strenuous vacation pursuits on subjects representative of the average level of fitness of the population.

#### SUMMARY

On an Expedition to a remote region a group of fit subjects crossed difficult terrain carrying heavy packs. It was found that their muscle strengths and Step Test scores were further increased. It is suggested that average subjects embarking on a holiday of this kind would show a greater improvement in physical condition and this might offer protection against atheroma and related conditions.

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## ST. BARTHOLOMEW'S HOSPITAL JOURNAL

# CLINICAL AND RESEARCH SUPPLEMENT

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## THE RECOVERY WARD AND INTENSIVE THERAPY UNIT

by E. K. Gardner

Consultant Anaesthetist to the Barnet Group of Hospitals.

In recent years the increasing complexity and severity of surgical operations has led to the development of Recovery Wards in many hospitals, and these have formed the first stage of Progressive Patient Care.

Better nursing care can be given by concentrating similar types of case into special units for the purpose: e.g. "eyes", orthopaedics, thoracic and neurosurgery. By gathering the most seriously ill patients, medical and surgical, into one unit, where they are held during the most acute phase of their illness, results improve, and further, more economic use can be made of nursing staff; as there is a shortage of nurses in many hospitals this latter point becomes very important. While it may be true that 'a rose by any other name is as sweet', a misunderstanding of the name used can be very misleading. Such a place as this may be called

the 'Special Nursing Centre', the 'Special Care Unit', and so on.

In some hospitals the emphasis may be to give active treatment or special monitoring rather than just careful nursing of patients in such a unit. Perhaps 'Intensive Therapy Unit' is a better name; in a general hospital, respiratory failure in one form or another will loom large. Of course, very skilled nursing is essential, but many patients will be "apparatus-dependants". Patients with respiratory failure can be treated in the general wards of the hospital, but to have them congregated in a single unit with nurses specially trained and highly skilled in technique and the use of complex apparatus is to offer a much better service. Some of the apparatus is bulky and expensive and calls for good maintenance, which again is more easily carried out in a central unit.

### Siting

Our recovery ward was opened in 1960 as an extension to a twin theatre suite. It was built and furnished for less than £3,000, its design and equipment are simple.

The Intensive Therapy Unit was opened in January 1965, as a purpose-designed unit costing between £11,000 and £12,000. Figure One shows the general layout and emphasises the close association between the Unit, The Recovery Ward and the anaesthetic rooms. These three departments share a common nursing staff, separate from that of the operating theatre staff. We believe that this arrangement is good for at least two reasons: first, while assisting the anaesthetist, the nurses can be taught about mechanical ventilators, the management of patients on them, technique of tracheal aspiration, and the use of other equipment, much of which is common to all three areas of their activity; second, the work of the Intensive Therapy Unit may be very heavy, and when nurses begin to show fatigue, they can be transferred to the less exacting sphere of

Recovery Ward or Anaesthetic Room. The wise Sister is ever alert for "tiredness" in her nurses. Staffing arrangements will be considered later.

Many patients in the Intensive Therapy Unit require tracheostomy; to have the Unit near the theatre suite obviates the need for a small special theatre for this purpose.

### Design

The Recovery Ward is rectangular and has but one door for entry and exit of patients. To allow maximum wall space, the windows are placed high. Artificial lighting is supplied by six clusters each of four tungsten bulbs reflecting from the ceiling. There are three telescopic lights in addition for close work. The walls are tastefully shaded from blue grey below through pink to warm yellow above. We find the walls and lighting combine to give an excellent colour balance and shows up slight degrees of cyanosis clearly. The floor is of polyvinyl-pyrrolidone strips, green and yellow with a grey border. This is bonded and sealed with a polyurethane finish giving a high gloss,

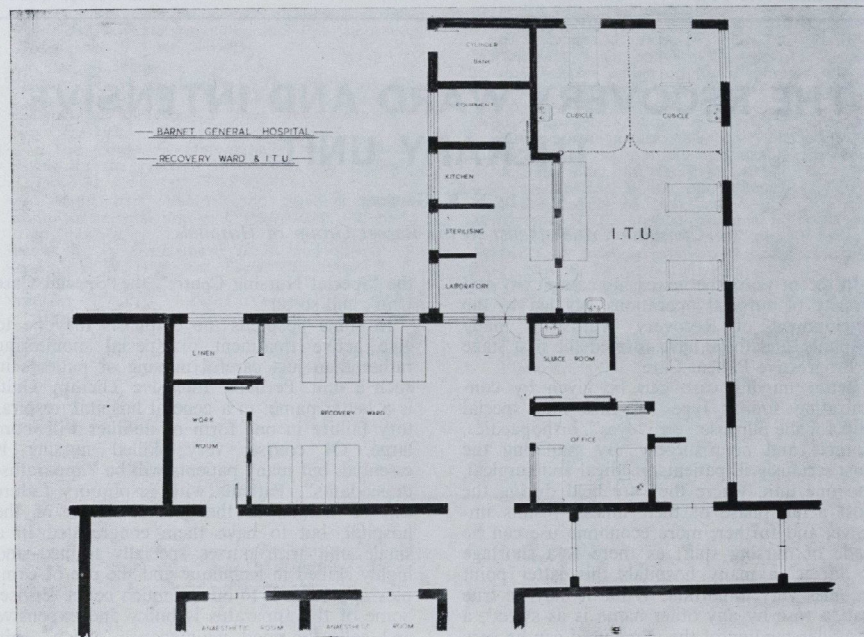


FIG. 1.

clean appearance, easy-work surface, quiet and non-slip.

Oxygen and suction delivery points are available at six sites in the ward, and along one wall a rail supports three small tables with swab and instrument trays. Every effort is made to keep the floor space clear for ease of movement. In this way up to twelve patients can be cared for at one time, though this is rarely necessary. Drawers and cupboards for apparatus, intravenous fluids and drugs occupy but a small space. Opening from the ward are a small linen room, the Sister's office, and the nursing station of the Intensive Therapy Unit.

The Intensive Therapy Unit is arranged to accommodate five patients, 1% of the hospital beds (or 1.5% if only the acute beds are considered, and this figure then agrees with the findings of general investigations into the desirable size).

Two cubicles, each of 100 sq. ft. floor space, were set apart for infectious patients, and are separated from each other and the remainder of the ward by double-glazed windows containing venetian blinds. The remaining three beds of the unit may be 'closed' by draw-round cotton curtains.

As in the Recovery Ward the windows (with one exception) are high, and artificial light is provided by ceiling-reflected tungsten lamps. The floor is of grey bonded and sealed Polyvinyl-pyrrolidone strip, which is quiet, comfortable for walking and easy to clean. Air-conditioning is provided by a Westinghouse wall unit combined with underfloor heating.

Near the head of each bed on one side are air, oxygen and suction terminals with the necessary fittings, and on the other a panel of six electric sockets with a calling switch for use by the patient or the nurse; an orange light comes on by the bed and a buzzer operates in the office. Under the head of each bed is a panel to aid inspection of drainage bottles and similar receptacles. There is one 30 amp. socket for X-ray apparatus in the unit.

On either side of the glass screen dividing the ward from the nursing station are work benches with cupboards and drawers below. This screen is provided for quietness in the ward, but it remains to be seen whether or not this is wise or even desirable.

The nurses' station has four areas opening from it: an apparatus store room, a small kitchen bay for occasional meals will have to be provided, a space for laying up trolleys and

provided with drawers and cupboards for holding pre-sterilised packs, and a small clinical laboratory where simple biochemical analyses may be performed by staff working in the department: the micro-Astrup gas analysis apparatus has proved invaluable.

A sluice room and departmental office complete the unit. Accommodation is available in the office for a doctor to stay there for the night if necessary.

### Use and Usefulness

All patients from the twin theatres are admitted to the Recovery Ward until the pharyngeal reflexes have returned and their general condition justifies transfer to the wards. The average time of stay is, of course, long for those who have had epidurals (or other hypotensive techniques) and hypothermia. Pulmonary and cardiac surgery is not normally performed at Barnet, but in the Group thoracic surgical unit at Clare Hall Hospital. Following extensive operations in the theatre devoted to orthopaedic surgery, patients are admitted for an hour or two.

A few patients are brought to the ward for pre-operative treatment, for it must be remembered that Barnet is a partially hatted hospital.

The Recovery Ward had not been open long before its value as a special unit was appreciated and respiratory failure patients were admitted. And so it was that this simple ward came to serve a dual purpose of post-operative Recovery Ward and Intensive Therapy Unit. Such an arrangement cannot be regarded as desirable for at least three reasons: it limits its use as the Recovery Ward; some means of screening I.T.U. patients is essential, and this interferes with the clear through-vision so desirable in both units; and from time to time infected cases are admitted for ventilator treatment, and occasionally this dictated the closing of the ward completely as far as Recovery cases were concerned.

While a detailed study of this series is out of place, a few observations may be made. The post-operative patients were all 'transferred' from the Recovery Ward because of a prolonged stay of over eight hours, an arbitrary but convenient time factor. In November 1964 a tetanus unit was established at Barnet.

The overall mortality is high, 27.1% (if coronary patients are excluded it drops to 14%), but considerably lower, we believe, had these patients not been treated in the I.T.U. This lessening of the death rate in these serious cases



	1960-64		1965	
			First 6 months	
Trauma	36	(11)	7	(1)
Poisoning	38	(0)	10	(0)
Laryngeal Obstructions	11	(2)	1	(0)
Neurological Cases	20	(11)	4	(1)
Tetanus	2	(1)	5	(1)
"Medical Chests"	38	(9)	8	(1)
Coronary Thrombosis	—	—	20	(7)
Post-Operative Cases	41	(15)	20	(2)
Miscellaneous Cases	6	(3)	13	(4)
Total	192	(52)	88	(17)

TABLE.—ADMISSIONS TO THE I.T.U.  
Numbers in brackets ( ) indicate deaths

is a reflection upon the skill and devotion of our nursing staff.

A changing pattern of cases is already emerging: post-operative intermittent epidural analgesia is being used more. Patients with myocardial infarction are being admitted for monitoring, assessment and correction of metabolic acidosis, and treatment. It is hoped in the near future to establish a separate coronary unit in a medical ward.

Most of the patients passing through the recovery ward stay on the tipping theatre trolleys: for the more seriously ill patients' beds are brought from the wards. Oxygen by Venturi-mask is given to most patients who have undergone abdominal and other major operations lasting more than an hour. No particular records are kept in the recovery ward other than blood pressure and pulse readings. Permission for a patient to leave the recovery room is given by the anaesthetist concerned, or rarely, by the Sister deputising for him.

A few comments on the management of the unit's cases may be of interest.

The first of a small series of patients with status asthmaticus who failed to respond to medical treatment pointed the way in which later cases would be treated. The patient, a young woman, was already unconscious when first seen by my colleague, Dr. James Rochford: an endotracheal tube was passed and intermittent positive pressure instituted using a long inspiratory time of three seconds and a high pressure of about fifty cms. of water. After about ten minutes both inspiratory time and pressure were gradually lowered for the tidal volume was increasing and the spasm of the bronchi becoming less severe. Some ninety minutes after the beginning of treatment the

patient regained consciousness, and the endotracheal tube was removed half an hour later. High pressure and prolonged inspiratory time for a short period seem to be the keynotes of success.

"Chesty patients" included the acute on chronic chest infections and cor. pulmonale: the treatment for such cases as well as the outcome are less dramatic than that of status asthmaticus or barbiturate poisoning. Most patients are 'wet' when first seen by the anaesthetist. The following outline of management was worked out during the first year or two. Transfer to the I.T.U. was arranged, oxygen being given if necessary. The pCO<sub>2</sub> was estimated by the modified Haldane technique; now, of course on the micro-Astrup along with pH and pO<sub>2</sub>. An endotracheal tube was passed under gas, oxygen, and halothane unless he was already unconscious from carbon dioxide narcosis. Secretions were aspirated via the endotracheal tube. Bronchoscopy was only performed when it was essential for diagnostic purposes, or for aspiration of secretions when there was to be no tracheostomy. These preparations and preliminary studies took anything from half to one and a half hours. Tracheostomy was then carried out, without undue rush under routine general anaesthesia. There is, in our opinion, no place for local anaesthesia and very rarely is there indication for dramatically urgent operation. The tidal volume and pCO<sub>2</sub> were closely watched during the ensuing hours, the former measurement being made every fifteen minutes. Often the removal of secretions and tracheostomy were sufficient to allow ade-

quate ventilation, but all was ready for giving intermittent positive pressure ventilation if necessary. Once started I.P.P.V. had to be continued for one to four days on an average. Closure of tracheostomy was permitted only after the infection had been overcome and the pulmonary function adequate.

We now prefer prolonged intubation for up to four days during which heavy antibiotic therapy is given, frequent physiotherapy and aspiration of secretions are carried out, and slight hyperventilation with oxygen enriched air is the rule. Sedation with increments of promethazine or Droperidol is ensured and an initial dose or two of pethidine or Phenoperidine to depress the respiratory centre. This preference for endotracheal intubation rather than tracheostomy also applies where possible to infants with tracheobronchitis.

The management of the severe "crushed chest" by Intermittent Positive Pressure Ventilation and tracheostomy has revolutionised the prognosis in these serious cases. Our experience has been considerably augmented by cases at Clare Hall Hospital and elsewhere. Surgeons and anaesthetists alike have been very impressed with the results attending this method of treatment, not only as to the patient's life but also to alignment of the fractured ribs. Intermittent Positive Pressure Ventilation has been continued in all cases for a minimum of five days and usually for seven to ten days, once for as long as twenty two days. This method is indicated in any patient with paradox and a rising pCO<sub>2</sub>, an evidence of a failing respiration. The tracheostomy allows for easy aspiration of secretions. It has been our practice to sedate the patients using a triggered ventilator, rather than curarise them; in this way stability of the chest wall can be assessed with ease. One of the most striking features of this method of treatment is the immediate and almost complete relief of pain. Skeletal traction has not been used on

any case in the Group for six years or more.

#### Staffing

In Barnet General Hospital the nursing staff of the I.T.U., the Recovery Ward and the anaesthetic rooms is under one sister, and is, as far as possible, staffed by trained volunteer nurses, for the work is often hard, at times frustrating and with many new techniques to be learnt. Part-time nurses, State Enrolled Nurses and nursing aides can take a full share of responsible work in such a department. Student nurses should have the opportunity to see the work of the department, but as observers rather than members of staff.

The total number of nurses required is very difficult to assess, and careful observations will have to be made. Our present staffing suggestions for the whole department are as follows: one sister in charge with two junior sisters; eight staff nurses and four post-

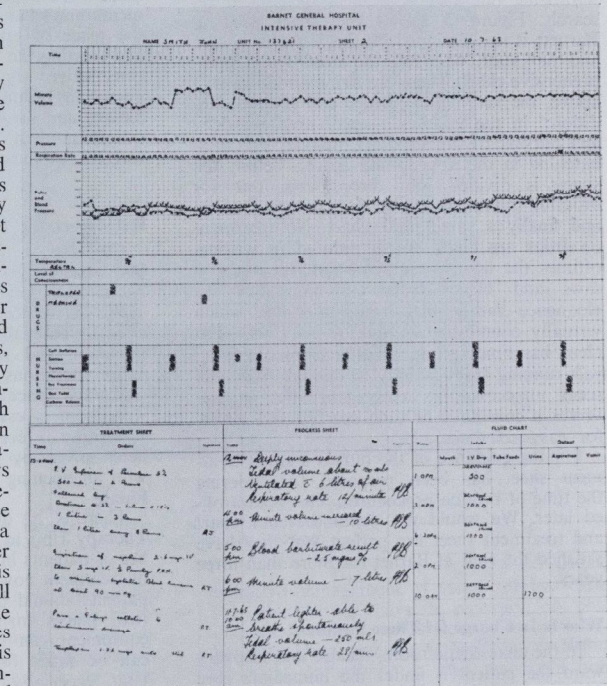


FIG. 2. The Barnet Chart.

graduate nurses for training for periods of six months, half that time being in the Anaesthetic Rooms, and the remainder in the I.T.U.; two State Enrolled Nurses, one nursing auxiliary and one technician.

While working under the same Sister it is desirable to have some distinguishing mark for those in the I.T.U., and save in dire emergency the nurses will keep to their allotted department.

The training of our nurses is partly by routine lectures by Sister and doctors; instruction in the management of patients on ventilators is given in theatre; each nurse is given a book of notes on her arrival in the anaesthetic department for her guidance during her stay.

### Records

Good records of the patient's condition and progress are important not only for the patient's well-being but also as a basis of clinical research. Figure 2 shows the chart used at Barnet; it was designed by the Sister in charge and her staff, who felt the need for a comprehensive chart. There are five main divisions: above, the ventilation picture and general condition; in the middle, a small area for drug and nursing treatment given, marked by cross-hatching in the appropriate space; below, the space is divided into three parts, one for ordering treatment, a place for 'progress' notes, and finally a small fluid chart. No treatment or drugs are given unless ordered in writing, of times the new house physician full of 'wise saws and clever instances' moderates his eloquence rather than sign an order which virtually countermands that of his chief! The chart has times printed in fifteen minute intervals running from midday to midday; this may seem unnecessarily extravagant, but it preserves a constancy of time spacing and makes for easy reference.

For the guidance of the nurses a small treatment sheet has been prepared for ordering the time of routine procedures. This is destroyed later. We would not claim that our chart and treatment sheet are perfect, but they have satisfied the staff at Barnet for more than three years.

### Who Is In Charge Of These Patients?

In the anaesthetic room, theatre and recovery ward the patient is under the immediate care of the anaesthetist, but in the I.T.U. there is often a dual and sometimes triple control.

Generally speaking the physician's or surgeon's name is "above the bed"; there is no problem here. Many patients are being treated by two or more doctors at the same time and possible difficulty here is largely prevented by clear understanding as to the part each is playing, e.g. the anaesthetist is usually held responsible for matters of ventilation, sedation, pain relief and physiotherapy. It must be made quite clear who is ultimately responsible for the patients. Continuity of care is essential.

The anaesthetists administer the I.T.U. with a small ad hoc committee of Chairman of the Medical Committee, surgeon, physician and anaesthetist.

### A Look Ahead

Variations in techniques of treatment and improvements of training methods occupy our minds. We hope to study biochemical and cell membrane changes resulting from injury, and the place of epidural analgesia in preventing and treating the ravages consequent upon vasoconstrictive shock. Methods of monitoring alterations of lung and thoracic cage compliance, airflow and airway obstruction are under consideration. Nurse-to-nurse and nurse-to-doctor call system must be improved.

### Retrospect

Cubicles or open wards? We are satisfied that two cubicles are sufficient, but they should be much bigger.

We have been extremely fortunate in the almost total absence of any hint of cross-infection, and would not wish to make any major alterations on this account.

Storage space should be much larger and a workroom is essential.

Visiting is ever a problem and might have been solved by having an "outside" corridor with an opening to each bed.

### Finale

There is, no doubt, a place for an Intensive Therapy Unit in each area hospital. The number of patients in need of the special techniques of treatment now available is increasing. These patients should be gathered into one (possibly two) places for specially trained nurses and equipment can thus be concentrated. A case can be made for an Intensive Nursing Care Unit, especially for patients with myocardial infarction, in addition to the Intensive Therapy Unit.

## THE ROLE OF THE RESUSCITATION REGISTRAR IN THE RECOVERY PERIOD

by R. D. MARSHALL

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FIG. 1.—Patient in the recovery ward of the Thoracic Surgery Unit following open heart surgery. Note: special nurse, Respirator, E.C.G. monitor and catheterisation for control of input and output.

One of the most significant trends of post-war medical practice has been the extension of the responsibilities of the anaesthetist outside the operating theatre. In particular, the anaesthetist often plays an important part in the post-

operative management of major surgical cases. The ideal is to have a recovery or post-anaesthetic room situated close to the operating theatre<sup>1</sup>. Unfortunately, a great many British Hospitals, including our own, have not been

\*At present at the North Middlesex Hospital.

built to any particular plan, but have gradually evolved over a number of years with the result that operating theatres are spread over a wide area and not concentrated in one corridor or suite. At St. Bartholomew's Hospital there are ten operating theatres for major surgery, two X-Ray theatres and four departments where anaesthetics for minor procedures are administered. Two operating theatres and the Department of Neuro-radiology are grouped together as a suite but the remaining theatres are isolated units. In such circumstances it is impossible to organise a single recovery unit for the whole hospital. Recovery rooms are therefore located on the neurosurgical, thoracic, E.N.T., and ophthalmic floors. These are, however, essentially part of the main wards and are not near the theatres. All other patients are returned to the general wards immediately after operation.

In 1963 members of the Department of Anaesthesia were increasingly called upon to assist with post-operative care, especially in the recovery room of the cardio-thoracic unit. These and other calls for assistance with resuscitation in the general wards and out-patients departments, which included cases of cardiac arrest, respiratory failure and major trauma<sup>2</sup>, often led to disruption of routine operating sessions or unavoidable delay in providing assistance. The Medical Council authorised the creation of the post of Resuscitation Registrar in order to free an anaesthetist for duties outside theatre. The registrar establishment of the Department of Anaesthesia was increased by one so that the appointment could be held in rotation, for one month at a time, by each registrar. During his tour of duty the Resuscitation Registrar does not administer anaesthesia but is available to deal with respiratory, cardiac and other emergencies outside the operating theatres. He is also responsible for the supervision and management of patients in the general wards, who in ideal circumstances would be treated in an intensive care unit.

TABLE I. Cases seen by Resuscitation Registrar May 1964 to July 1965.

TOTAL CASES ... ..	336
POST-OPERATIVE ... ..	144
OTHER CASES ... ..	192
Cardiac Arrest ... ..	70
Respiratory ... ..	49
Emergency Room ... ..	38
I.P.P.B. Nebulisation ... ..	25
Miscellaneous ... ..	10

The problems tackled by the Resuscitation Registrar during the period May 1964 to July 1965 inclusive are reviewed in Table I. No case appears in more than one category; for example a patient suffering a cardiac arrest within 48 hours of an operation would be classified as a post-operative problem and not as a case of cardiac arrest. The table does not include resuscitation of the newborn, supervision of the airway during stomach washouts or acid-base and blood gas estimations. Of the 336 cases seen in the first 15 months of the scheme, the largest single group (144 cases) were patients with post-operative problems.

TABLE II. Post-operative Problems.

THORACIC ... ..	70
Open-Heart ... ..	58
Others ... ..	12
GENERAL ... ..	48
NEUROSURGERY ... ..	12
VASCULAR ... ..	8
E.N.T. ... ..	6
<b>TOTAL</b> ... ..	<b>144</b>

A breakdown of the post-operative problems (Table II) shows that, as might be expected, the cardio-thoracic unit makes the greatest demand on the time of the Resuscitation Registrar (Fig. 1). Nearly 50 per cent of post-operative cases seen by the Resuscitation Registrar were in the recovery room of this unit and the majority of these had undergone cardiac surgery. In fact, all patients who have undergone open-heart surgery are automatically seen by the Resuscitation Registrar whereas other post-operative cases are only seen if trouble is anticipated or has actually occurred.

The Resuscitation Registrar has been able to play an important part in the post-operative treatment and respiratory care of patients who have undergone cardiac surgery. It is well known that these cases have peculiar pulmonary problems. In the first place temporary pulmonary oedema may occur due to alterations in haemodynamics following reconstructive operations and, in addition, these patients are subject to the post-perfusion lung syndrome<sup>3, 4</sup>.

This always results in a degree of desaturation due to ventilation-perfusion irregularities and true intra-pulmonary shunting. It is therefore necessary for all post-operative open-heart cases to have the inspired air enriched with oxygen either by means of a mask and tent if breathing

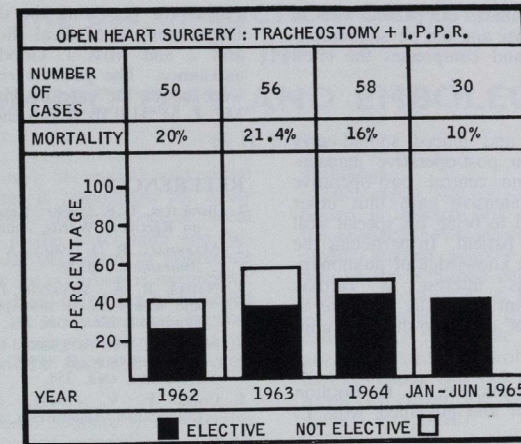


FIG. 2. See Text.

spontaneously, or via the ventilator if respiration is controlled. Therapy of this kind is required for at least four days. Post-operative analgesia has been provided on a number of occasions by intermittent injections of lignocaine through a thoracic epidural catheter<sup>5</sup>. This technique is particularly valuable when a bilateral transverse thoracotomy has been employed and respiration has not been controlled post-operatively. The analgesia provided is of particular value in covering physiotherapy and is used mainly for this purpose.

Considerable use has been made of automatic ventilation via a tracheostomy in the post-operative management of patients following cardiac surgery. We believe that this technique has done much to reduce mortality. We have passed through three phases in the use of tracheostomy and controlled respiration (Fig. 2). At first (1962 and 1963) we avoided tracheostomy and ventilation at the end of operation whenever possible, but frequently found ourselves compelled to carry out the procedure early in the post-operative period. In the second phase (1964) we were over-enthusiastic and possibly ventilated more cases than was strictly necessary. Later (1965) we became more selective; there were fewer tracheostomies and those that were done were elective procedures. We believe that tracheostomy without ventilation has no place in the treatment of these patients as it only leads to accumulation of

secretions and hypoxia. Ventilation via an endotracheal tube has rarely been used because, once controlled ventilation has been instituted, our practice is to continue for at least four days so covering the main period of post-perfusion lung syndrome. We have also found ventilation via an oral endotracheal tube more hazardous and distressing for the patient than ventilation through a tracheostomy.

Cardiac arrest is a not uncommon occurrence in the recovery room of a cardiac unit. Initial treatment is instituted by the medical and nursing staff present at the time and the Resuscitation Registrar is called immediately. We have found the chances of restarting the heart greatly increased if the patient is being ventilated and monitored at the time of the arrest. In the first year of the Resuscitation Registrar scheme five of twelve patients arresting in the cardiac recovery room survived to be discharged from hospital. All these survivors were monitored and on a ventilator at the time of their arrests.

The respiratory care of all patients on ventilators at St. Bartholomew's Hospital is the responsibility of the Resuscitation Registrar. His primary duty is to ensure satisfactory ventilation and oxygenation and he must be available to attend the machine or patient at any time. Regular visits to assist the physiotherapist have now become an established part of the routine management. The Resuscitation

Registrar manually inflates the patient with an AMBU resuscitator bag and the physiotherapist vigorously vibrates and compresses the chest during expiration.

#### Summary

Anaesthetists can and indeed should play an important part in post-operative management. If there is no central post-operative recovery ward or intensive care unit other means must be found to bring his special skill to the bedside of the patient. In particular the anaesthetist's working knowledge of pulmonary physiology and his interest in cardiac resuscitation make him especially valuable in the recovery room of a cardio-thoracic unit.

#### Acknowledgements

I would like to thank Dr. T. B. Boulton for his encouragement and guidance; Miss L.

Farrar for providing the data for Fig. 2; the Department of Medical Illustration for Figs. 1 and 2 and Miss J. Goodwin for secretarial assistance. The patients referred to in Fig. 2 were under the care of Mr. O. S. Tubbs and Mr. I. M. Hill to whom the author is grateful.

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## THE USE OF SUCTION CATHETERS IN THROMBECTOMY AND EMBOLECTOMY

by H. B. Ross

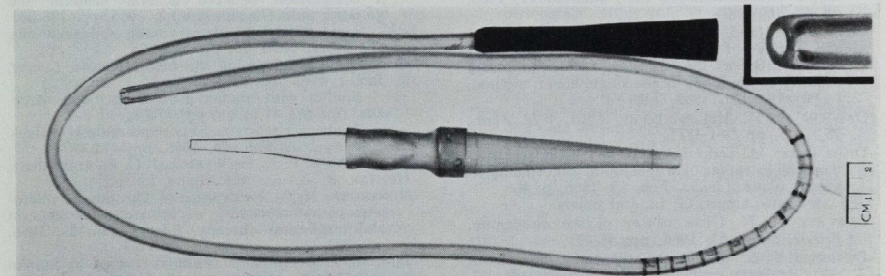
Incomplete removal of emboli and distal propagated thrombus is responsible for many disappointing results in the treatment of recent vascular occlusion in the lower limb and this is frequently because of failure to appreciate that the removal of the occlusion is incomplete. Thus, a fairly brisk back bleed can be achieved following removal of local thrombus because of the patency of nearby collaterals, and yet the main artery or vein may still be blocked.

Experience has been obtained in an effective technique for removing arterial and venous thrombus through the femoral vessels using a catheter originally designed for bronchoscopic suction\*. The catheters (see figure) are obtainable in sizes from 9-18FG. They are 65 cms. (26 ins.) in length and therefore can be passed from a femoral arteriotomy to a level below the popliteal fossa. The catheters are made of plastic which, although not rigid, is sufficiently firm to give some control over the tip while it is being passed down the vessel. They have been repeatedly sterilized by boiling or autoclaving without apparent alteration in texture, but it is important to store them straight in order to avoid the development of a curvature which might cause the tip to damage the vessel wall as it is being passed down the lumen. The catheters are transparent, with a red rubber shoulder at the proximal end; the nozzle is bevelled (inset), thus minimizing the possibility of damage to the intima.

#### Technique

The largest size of catheter which can be passed is selected first and this is joined to the standard theatre suction apparatus by means of the tapered adaptor shown in the figure. The sucker is turned on, but, to avoid suction during introduction of the catheter, a clamp is placed across the rubber shoulder of the catheter. (A side hole can be made in the adaptor in order to avoid build-up of pressure in the system, this hole being closed with the finger tip when the clamp is removed and suction is applied).

The catheter is introduced through the femoral arteriotomy and passed proximally to remove an iliac occlusion and distally into the limb vessel. When resistance is felt, this is due either to the tip of the catheter impinging on thrombus or to natural narrowing of the distal vessel. In either event suction is applied by releasing the clamp from the shoulder of the catheter and the nature of the aspirate is observed. If pure blood is seen the clamp is re-applied. Occasionally fragmented thrombus is sucked out, but more frequently there is no aspirate because thrombus is firmly impacted in the nozzle of the catheter. The catheter is therefore withdrawn, suction being maintained, and the thrombus will be attached to the end of the catheter. This process is repeated until no further thrombus is obtained and then in distal thrombosis smaller catheters are passed until all the thrombus within reach of the smallest catheter has been removed.



\*Rusch bronchoscopic suction catheter, available from the Genito-Urinary Manufacturing Company.

It is possible that the intima might become detached if strong suction were applied to an empty artery, but post-mortem studies with pressures approaching 30 ins. Hg. have not produced this effect. Suction by means of the theatre suction apparatus is therefore considered to be superior to suction with a syringe as advocated by Dale (1962). Some difficulty may be experienced with blood-loss due to back bleeding through the incision in the vessel while the catheters are being introduced. This is prevented by placing a bulldog clip obliquely across the vessel immediately proximal to the catheter, thus reducing the effective size of the arteriotomy.

The method described above has been found to be more effective than the Fogarty (1963) catheter when the thrombus has become adherent to the vessel wall. It is also of great value in recovering thrombus from arteriosclerotic vessels in which jagged intimal plaques tend to rupture the balloon of the Fogarty catheter during withdrawal.

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## RECENT PAPERS BY BART'S MEN

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 WIDDICOMBE, J. G., *see* Sleight, P., and —.  
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CLINICAL AND RESEARCH SUPPLEMENT

ORTHOPAEDIC PROBLEMS OF DIFFUSE MALIGNANT DISEASE

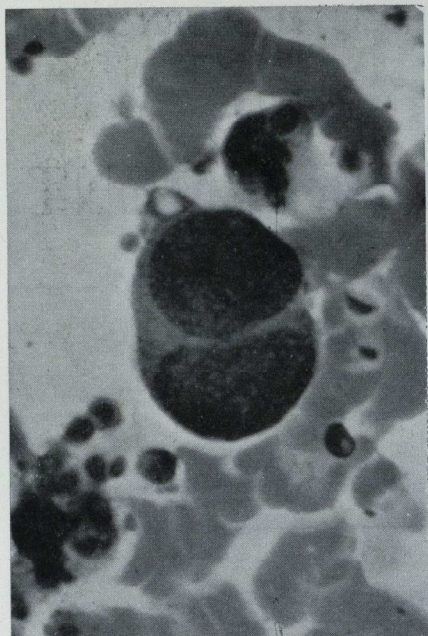


FIG. 1. A pair of circulating malignant cells collected during the insertion of the prosthesis in Fig. 3.

A theoretical objection to the surgical fixation of skeletal metastases is that operative manipulation will increase the dissemination of tumour cells. Work on this particular problem is at present in progress in the orthopaedic department at Bart's. The small number of cases so far studied show that tumour cells are disseminated during operation (Fig. 1) but in much smaller numbers than one would suspect. The movement that occurs at an inadequately fixed fracture may well produce dissemination of cells and thus outweigh this disadvantage of surgical fixation. This problem is in any case only of real importance in the apparently single metastasis where the tumour is not already widely disseminated. In carcinomatosis the improvement in the general well-being of the patient that follows internal fixation more than outweighs the risks of disseminating the tumour.

It is the metastases in the long bones that are particularly suitable for surgical fixation and these are most common in the femur and humerus.

### The femur

The femur may fracture at any level, the neck, the shaft or the supracondylar region. If the neck is fractured at the transcervical level (Fig. 2) prosthetic replacement of the femoral head is the correct treatment (Fig. 3). This provides the most certain guarantee of rapid recovery. Nail fixation of these fractures is difficult due to the bony destruction produced by the tumour. Fractures at the trochanteric level are fixed by a nail plate (Fig. 4) and this is the treatment of choice for high subtrochanteric fractures. Fractures of the shaft below this level are fixed with a Küntscher nail, except those in the supracondylar region where the medullary cavity is too wide to grip a Küntscher nail. These can sometimes be held with two Rush nails inserted through the condyles (Fig. 5).



FIG. 2. A pathological fracture of the femoral neck due to carcinoma of the breast.



FIG. 3. Austin Moore prosthesis inserted for the fracture shown in Fig. 2.



FIG. 4. A McLaughlin nail and plate for an intertrochanteric fracture from a metastasising carcinoma of the bladder.

LEFT

FIG. 5. A fracture of the lower femoral shaft in a patient with myelomatosis. This is fixed with two Rush nails and "Surgical Simplex" bone cement.



FIG. 6. A uniting fracture of the shaft of the humerus, through a thyroid carcinoma metastasis following fixation with a V nail.

#### The humerus

Pathological fractures of the shaft of the humerus are best fixed by an intramedullary nail (Fig. 6).

#### The spine

Metastases are very common in the spine alone or in association with secondary deposits in the long bones. The pain of these may be helped by a suitable surgical corset but surgery is almost never required. The metastases may fracture, an event that can be precipitated by the osteoporosis following therapy with corticosteroids, but as the posterior joints and ligaments are generally intact there is seldom any cord damage. An interesting exception was a patient with metastases from a thyroid carcinoma in the bodies of the sixth and seventh cervical vertebrae. She presented at Bart's with an almost complete paraplegia. This improved following a period on skull traction and the spine has been stabilised by a posterior fusion from the fourth cervical to the second thoracic vertebral, (Fig. 7.) This was combined with local radiotherapy and radioactive iodine. She is now walking unaided and pain free.

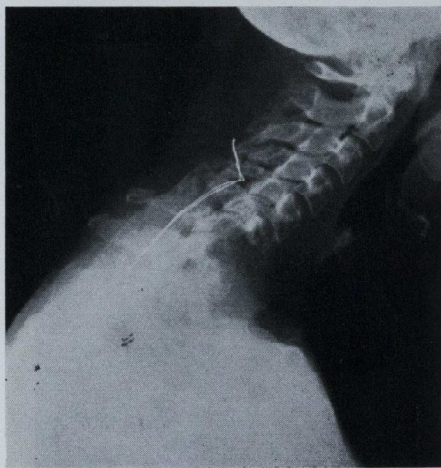


FIG. 7. Metastases from a carcinoma of the thyroid, destroying the bodies of the sixth and seventh cervical vertebrae. The posterior fusion is uniting.

#### Discussion

A pathological fracture is therefore a strong indication for internal fixation. Although the aim of operation should be firm fixation this is not always possible because of the extensive bone destruction at the fracture site. If this is so it may be necessary to supplement the internal fixation with splinting or traction until the fracture begins to become solid. A recent development in the management of this problem is to surround the fracture with plastic cement. This is marketed as "Surgical Simplex" a plastic powder which is mixed with a liquid to form a pliable paste. This can be packed around the fracture and will rapidly harden by polymerisation (Fig. 5). Although this inhibits biological union it combines with the metallic fixation to hold the fracture firmly for the limited duration of the patient's life. Alternatively the problem can be avoided by fixing the metastasis before fracture occurs. This is particularly suitable for metastases in the shafts of long bones as these can be reinforced by an intramedullary nail inserted blindly without exposure of the metastasis (Fig. 8).

It is thus seen that the orthopaedic surgeon has a valuable part to play in the management of these patients. He cannot prolong life but he can relieve pain and increase the mobility and well-being of the patient. He can also reduce the difficulties of nursing and facilitate radiotherapy.

I am grateful to the Department of Medical Illustration for providing the photographs which illustrate this paper.



FIG. 8. A Küntscher nail inserted through a metastasis from a carcinoma of the breast, before fracture has occurred.



## CARCINOMA OF THE STOMACH UNDER THE AGE OF THIRTY

by W. J. Hanbury

When specific tumours occur only rarely in certain age groups, reported instances are always of interest, and it may be hoped that the accumulation of recorded occurrences will gradually add a little to the total knowledge of neoplastic disease. Carcinoma of the stomach is rare under the age of thirty (Willis, 1960).

In the Museum of this hospital there are two specimens of gastric carcinoma (Nos. K 228 and K 207b. See Figs. 1 to 4) which came from patients aged 23 and 26, and their existence prompted a search of the hospital records for further cases under thirty. Only histologically proved instances were acceptable, and nine other cases (aged 18, 22, 29, 29, 24, 23, 29, 29 and 29) were found in addition to the two Museum ones, making a total of eleven. As the records are by no means complete, an accurate incidence cannot be given, but from the more recent post-war records cases under thirty constituted approximately 0.5% of all carcinomas of the stomach. This figure is lower than the range of 0.7% to 2.8% for several series quoted by Tamura and Curtiss (1960), the figure for their own series (less than 31 years of age) being even higher 3.2%; about two-thirds of their patients, however, were Japanese, and they stated that the high incidence of carcinoma of the stomach among Japanese was well known. The incidence of gastric cancer in those under 20 years of age is extremely low, a range of 0.06 to 0.1 per cent. of all gastric cancers (again among Japanese) having been quoted by Ogawa *et alia* (1961). These authors reported a case

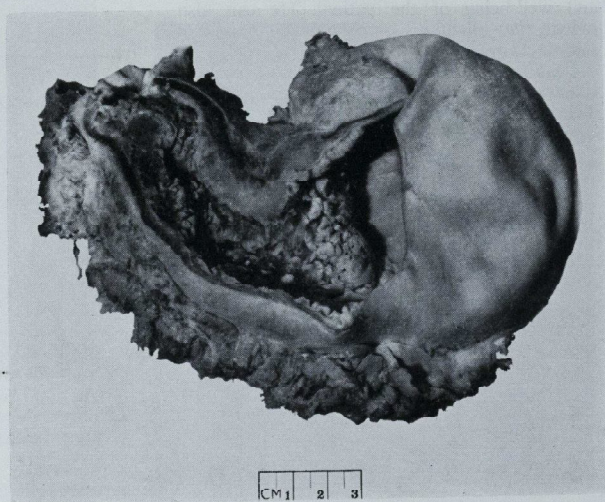


FIG. 1.—Museum specimen No. K 228 Mucoid carcinoma of pyloric region. From a man, aged 23.

of gastric carcinoma in a girl, aged 11. Other similar single case reports have appeared from time to time, such as the case of an 11½-year-old negro boy reported by Alaghemand (1962), but a complete review of these cannot be given here.

Some further references to the literature on gastric cancer in young persons can be found in the comparatively recent papers by Stewart and Holman (1959) and by Klein and Williams (1962). Osler and McCrae (1900) were amongst the earlier writers on the subject, and another important contribution was that of McNeer (1941), who studied 501 cases under 31 years of age from the world literature as well as presenting five further cases.

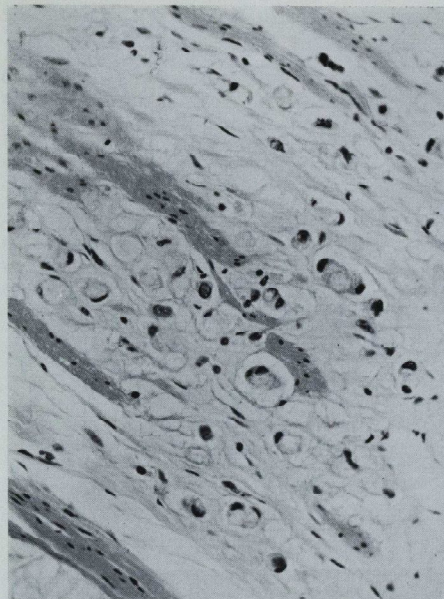


FIG. 2.—Mucus-secreting carcinoma cells infiltrating muscle of stomach wall. Same case as Fig. 1 H. & E. x 300.

### CLINICAL ASPECTS

#### Sex Incidence

In the present series there were nine males and two females, but the sex ratio has been variable in other series, references to which have been given by Tamura and Curtiss (1960).

#### Occupation, Residence, Past and Family Histories.

Nothing of significance was found under these headings, except that the father of one of the female cases died of a gastric carcinoma one year before his daughter's death. Also of interest, but of doubtful significance, was that the husband of the other female case was reported to have died from a sarcoma of the rectum at the age of 26 one year before his wife's death.

#### Habits

As regards cigarette smoking no information was available for three cases, two were non-smokers, four were light smokers (less than 10 per day), one was in the medium range

(10 to 20 per day), and there was one heavy smoker (more than 20 per day).

Alcohol consumption was not known in four cases, one patient was a total abstainer, and there were three light and three moderate consumers.

#### Symptoms

These differed in no way from the symptoms commonly associated with gastric cancer, and they were, in order of frequency, pain, vomiting and loss of weight, a feeling of distension or dyspepsia, loss of appetite and tiredness, haematemesis and melaena.

#### Investigations

There was a severe degree of anaemia in one case (haemoglobin level less than 40% (Haldane), a moderate degree in two cases (Hb. less than 70%), and a slight one in three cases (Hb. less than 80%). In two instances there was no anaemia, and in three cases no reports were found.

Testing for occult blood in the stools was carried out in four cases, and in these the tests were positive.

A fractional test meal was performed in one case, revealing a total absence of free hydrochloric acid.

Reports of barium meal X-ray examinations were found in eight cases. In two of these the appearances were suggestive of neoplastic ulcers, two showed prepyloric deformities, in one it was concluded that there was organic obstruction at the pylorus, in one it was thought that the stomach was distorted by pressure from without, another case was thought to show a benign ulcer, and a further one a recently healed ulcer. McNeer (1941) found the roentgenological diagnosis to be correct in 63.6 per cent. in his collected group of young cases, and he wrote that "nowhere in this study were the results of examination given less credence than in the roentgenographic reports. On many occasions the roentgen reports were to the effect that the defects resembled cancer, but the subject was deemed too young to have the disease."

#### Blood Groups

These were not known in three cases. Four patients belonged to Group A, three to Group O and one to Group AB. Four were known to be Rhesus positive and one Rhesus negative. These figures are too small to be of any significance in themselves, but previous studies have shown a significant increase of blood

Group A (and to a lesser extent Group O) in series of gastric cancer patients of all ages (Sommer, 1958).

#### Surgical Treatment

—In three patients no surgical treatment was carried out; laparotomies were performed in two cases, partial gastrectomies in four, a gastro-enterostomy in one and a gastrostomy in one.

#### Survival

Only one patient, the most recent case, is alive at the time of writing. In nine cases the average time of survival after the first symptoms or diagnosis was nine months, with a range of eleven weeks to two years. The survival time in one instance could not be estimated.

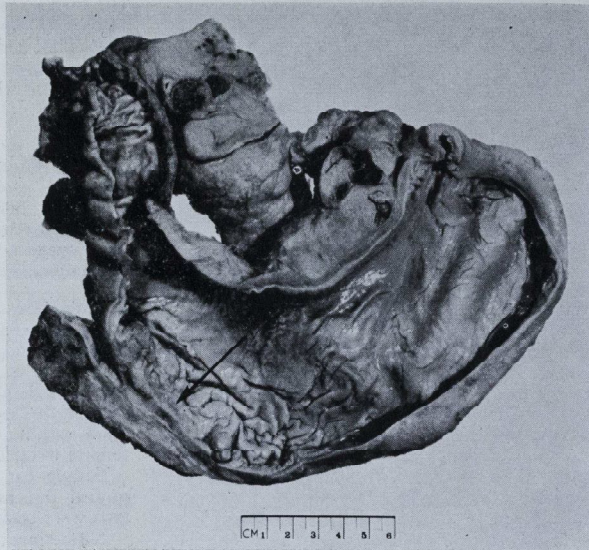


FIG. 3.—Museum specimen No. K 207b. Ulcerated carcinoma on greater curve (marked by arrow), with extensive spread to lymph nodes. From a man, aged 26.

#### PATHOLOGICAL FINDINGS

##### Site and Gross Type of Tumour

Five of the growths were situated in the pyloric region, three on the greater curve, two on the lesser curve and one at the cardia.

Five tumours could be classified as ulcerated and penetrating with elevated margins; three were ulcerated, penetrating and partly diffuse; two were diffusely infiltrating part of the stomach, and one was of the polypoid or fungoid type without marked ulceration. Only one case appeared to be a true "ulcer cancer", and one case was grossly mucoid.

##### Histology

There was one undifferentiated carcinoma. The rest were adenocarcinomas, six being poorly differentiated, two moderately differentiated, one well differentiated, and one prominently mucus-secreting.

##### Spread

The frequency of the different sites involved in either direct or metastatic spread is shown in the Table below, and it can be seen that the regional lymph nodes come highest on the list.

In the series reported by Tamura and Curtiss (1960) metastases were most frequent in the regional lymph nodes, ovaries, peritoneum and lungs.

Site	No. of cases
Regional lymph nodes	10
Through all layers of stomach wall	7
Liver	6
Omentum	5
Pancreas	4
Distant lymph nodes	4
Distant peritoneum	2
Spleen	2
Adrenals	2
Kidneys	2
Lungs	1
Bones	1

Table—Direct Spread or Metastases of Tumours

#### SUMMARY OF CASE HISTORY OF YOUNGEST PATIENT

E.C., a male clerk aged 18, was admitted to hospital with a history of loss of appetite, especially for meat, for 13 months, intermittent vomiting for 12 months, epigastric pain and a feeling of distension after meals for five months, and general malaise for two months. He had also lost one stone in weight over six months.

Nothing relevant was discovered in the past or family histories. (A recent attempt to trace the family history through Somerset House was unsuccessful.) The patient was a non-smoker, and a typical daily diet was given as:

Breakfast	— Cereal with milk; occasional bacon; tea.
Lunch	— Sandwiches, usually ham or salmon; coffee.
Tea	— Cup of tea with a biscuit and one piece of bread and butter.
Supper	— Fish or cheese (very occasional meat) with vegetables; tea.
Before bed	— Sometimes biscuits or bread and butter.

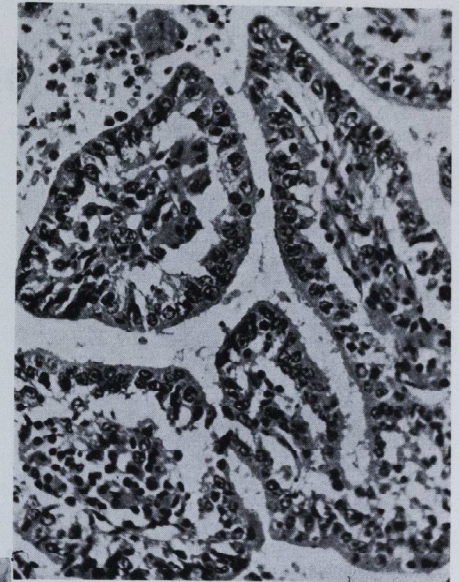


FIG. 5.—Clumps of carcinoma cells in the sinuses of a lymph node. From the youngest case, a male, aged 18. H. & E. x 300.

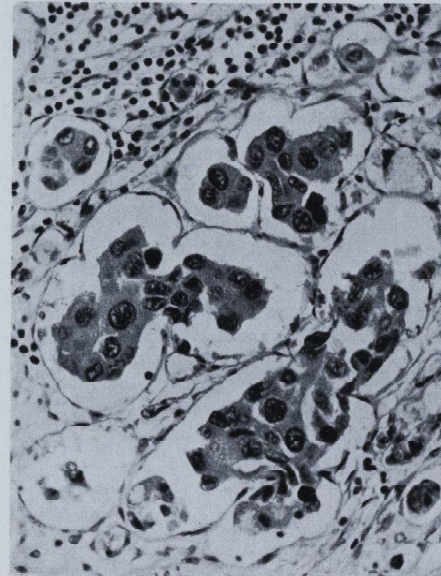


FIG. 4.—Papillary adenocarcinoma of stomach. Same case as Fig. 3. H. & E. x 300.

(It is of interest to note here that in a recent study of dietary factors in carcinoma of the stomach Acheson and Doll (1964) could find no convincing dietary differences of probable aetiological importance between 100 carcinoma cases and 200 controls).

The main positive findings on examination were a furred tongue, a dilated stomach with visible peristalsis, anaemia, occult blood in the stools, and X-ray evidence of organic obstruction at the pylorus.

At laparotomy a large inoperable pyloric carcinoma was found, and a posterior gastro-enterostomy was performed. Death occurred 10 days later after a haemorrhage from the growth.

Post-mortem examination revealed a large ragged ulcer crater at the pylorus, with neoplastic tissue extending through the stomach wall into the head of the pancreas and adjacent tissues. Metastases were present in the liver and abdominal lymph nodes.

Histologically the growth was a poorly differentiated adenocarcinoma, some of the cells being small and pale and of signet-ring type, others

pleomorphic. Extension of the tumour was seen in lymphatics, veins and lymph nodes (Fig. 5).

**SUMMARY AND CONCLUSION**

Two Museum specimens of carcinoma of the stomach from patients under the age of thirty, a rare occurrence, prompted a search of the hospital records from which nine other such cases were found. The clinical and pathological features of these cases have been presented collectively, and a summarized case history of the youngest patient has been given.

The present findings do not differ essentially from similar reports in the literature, references to which have been made. This study supports the previous conclusion expressed by *Bellegie and Dahlin* (1953) that "there is a marked similarity between gastric carcinoma in young adults and gastric carcinoma in older persons." Several authors (e.g. *McNeer*, 1941; *Bellegie and Dahlin*, 1953) have pointed out that the prognosis in the young adult is not necessarily any worse than in older patients, but there is a definite danger of the diagnosis of carcinoma being overlooked in the young (*Stock*, 1963), and a gastric lesion should not be considered benign solely because of the patient's age (*Tamura and Curtiss*, 1960).

**Acknowledgments**

I am indebted to Miss E. J. Armour for access to statistical files, to Mr. W. D. Tredin-

nick for the photographs, to Mr. P. R. Crocker for the photomicrographs, to Mr. J. W. Miller for histological sections, and to Miss C. E. Le Brand for secretarial assistance.

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**THIRTEEN YEARS OF  
CANCER REGISTRATION**

by R. M. Vick

In 1952, I was invited to become Director of the Cancer Records Bureau of the South Western Regional Hospital Board. There were then two Cancer Records Officers, one in Bristol and one in Plymouth. The two areas had been entirely separate and my first job was to combine their figures into one Report and correlate the work of the two officers. The next step was to visit as many Hospitals as possible and to get in touch with General Practitioners and Medical Officers of Health. It was found impossible to combine the two offices for geographical reasons and this meant that I had to work both in Bristol and in Plymouth. The area of the South Western

Regional Board covers the whole of Devon and Cornwall and part of Wiltshire.

Total population:—2,903,000. Males, 1,411,000; Females, 1,492,000.

The Total number of cases registered to the end of 1963 was 133,793, the new cases registered in 1963 were 10,686.

In 1955, the Registrar General initiated an arrangement under which each office received every week a list of all those patients in the South West Region, whose death certificates showed that they had died of Cancer. This was a very great help, as it enabled us to check on the Hospitals not registering their cases and,

**Malignant Disease of Thoracic Organs**

	TOTAL CASES			TREATMENT					
	Reg'd	Treated	Alive	ALL CASES			SURVIVORS		
				Surg.	Surg+	R/T	Surg.	Surg+	R/T
1951	485	230	9	39	9	182	6	1	2
1952	522	241	17	44	15	181	12	2	3
1953	567	282	17	56	15	211	12	—	4
1954	791	346	24	88	21	237	19	1	4
1955	789	337	32	115	15	207	27	2	2
1956	811	358	41	127	24	207	36	3	1
1957	892	453	45	155	30	265	43	—	2
1958	909	470*	50	164	20	275	46	—	4
Total	5766	2717	235	788	149	1765	201	9	22

\*11 treated by other methods (Chemotherapy)

**ANALYSIS: ALL TREATED CASES: 1958 ONLY**

Age — Youngest 32, female, doubtful biopsy, treated by radiotherapy only. Alive. Oldest 81, male, positive biopsy, treated by surgery only. Dead. *Biopsy* — Positive in 284 out of 470 cases. *Surgery* — Pneumonectomy 131 treated 30 survived. Lobectomy 45 treated 15 survived. Other procedures 8 treated 1 survived. Thoracotomy only performed on 62 patients.

Five year survival rate treated cases (1958) — 11%

Radical surgery — 24%

Overall five year survival rate treated cases (1951 — 1958) — 9%

Note:—3,049 patients out of 5,766 were beyond treatment.

ultimately, to obtain information from General Practitioners about such patients as had died of Cancer.

One of the main functions of the Bureau is to register all cases of Cancer with the Registrar at Somerset House. Thus we play our part in the National Scheme of Cancer Registration. The Bureau maintains a comprehensive Card Index system filed by sites in yearly series from 1945 together with case summaries, which are available for survey and research.

We are ready to supply information to research workers and have very often shared in investigations.

Our Reports are *confidential*—as is all the work of the Bureau—They have never been in general circulation but copies have been sent to every one concerned in the treatment of Cancer in the S.W. Region, to a large number of General Practitioners in the Region, to all Medical Schools and Colleges in Great Britain

and Eire, to the Royal Colleges of Physicians, Surgeons and Gynaecologists, the College of General Practitioners, to medical schools in the Dominions, and to many other medical and statistical organizations in the United Kingdom, the U.S.A. and the Scandinavian Countries.

I will end this brief history of the Bureau by explaining that in 1952, Cancer Registration, in this country was in its infancy. For instance, in 1953, although all Hospitals in the Region were now included the number of new cases registered was only 6,588. The figures rose rapidly, when death certificate registrations were included and by 1963 10,686 new cases were recorded in the one year.

Since 1953, Cancer Records Offices have been established in all Regions and the national figures have been very greatly increased.

I will now try by reference to our Annual Reports to show the value of the information which we have amassed.

**Malignant Disease of The Breast Stage I**

	TOTAL CASES			TREATMENT							
				ALL CASES				SURVIVORS			
	Reg'd	Treated	Alive	Surg.	Surg+	R/T	H	Surg.	Surg+	R/T	H
1951	330	326	237	96	218	10	2	74	160	3	—
1952	335	334	226	81	248	5	—	52	172	2	—
1953	355	348	212	80	258	8	2	53	156	3	—
1954	366	352	220	67	273	11	1	39	174	6	—
1955	427	422	265	93	315	10	4	62	198	5	—
1956	441	440	267	70	358	6	6	37	227	1	2
1957	464	462	285	97	347	16	2	44	239	2	—
1958	421	418	255	95	311	9	3	58	191	5	1
Total	3139	3102	1967	679	2328	75	20	419	1517	27	3

**ANALYSIS: ALL TREATED CASES: 1958 ONLY**

*Age* — Youngest 26, female, positive biopsy, treated by surgery only (Local), Duct carcinoma. Alive. Oldest 91, female, positive biopsy, treated by surgery only (Local). Dead.

*Sex* — Male 7. Female 411.

*Biopsy* — Positive in 403 out of 418 cases.

*Surgery* — Local mastectomy 194 with 108 survivors.

*Pathology* — Remainder radical mastectomy. Duct carcinoma 30. Paget's disease 22. Colloidal cell 3. Remainder spheroidal celled adenocarcinoma.

*Note* — Bilateral oophorectomy 8 with 4 survivors. Bilateral adrenalectomy and oophorectomy nil.

Five year survival rate: Treated Cases (1958)—61%.  
All Registered Cases—61%.

Overall five year survival rate: Treated Cases (1951-1958)—63%.

*This table shows the high survival rate in early cases.*

We use the International Statistical Classification of the W.H.O. of sites and altogether there are forty Tables in the Report.

In the case of the Breast we divide the cases up into Stages I to IV according to the Manchester Staging and the same is done with Cancer of the Cervix. In the case of the Body of the Uterus, we divide the stages into early and late.

Each Table shows the number of Cases registered each year (the years in the current Report are 1951 to 1958 inclusive).

The columns show the total cases registered, the number treated and the number alive five years after treatment.

In subsequent columns are shown the cases treated by Surgery only, Surgery and X-rays and by X-rays only. And, in the final columns, we show the results of treatment of each type.

The period of five years after treatment is accepted internationally as a fair indication of results.

We have, also, at intervals, shown the figures for ten years after treatment.

I am now taking two specimen sheets out of the Report to show exactly how they are set up.

**TABLE A** 1951 — 1958  
SUMMARY OF INCIDENCE RATE in order of highest rate. This table is designed to show at which sites cancer is recorded as having occurred during the years 1951 — 1958 IN ORDER OF FREQUENCY. It also shows the five year survival rate for all cases and for treated cases during the same years.

Priority	I.S.C. No.	SITE	Total cases	Alive	5 yr. Surv. rate in all cases	5 yr. Surv. rate treated cases
1	170	Breast	7285	3057	42%	43%
2	162-5	Thoracic organs	5766	235	4%	9%
3	151	Stomach	4394	174	4%	9%
4	153	Colon	3752	724	19%	29%
5	154	Rectum	3071	576	19%	27%
6	177	Prostate	2193	372	17%	19%
7	191	Skin (Ex. R.U.)	1806	1097	61%	62%
8	171	Cervix uteri	1761	649	37%	39%
9	181	Bladder	1664	489	29%	35%
10	172-4	Uterus	1595	893	56%	62%
11	175	Ovary	1537	271	18%	26%
12	157	Pancreas	1084	12	1%	3%
13	150	Oesophagus	1049	31	3%	5%
14	193	Brain and O.N.S.	955	123	13%	28%
15	204	Leukaemia	843	48	6%	9%
16	201-2	Lymphadenoma and Reticulosis	580	143	25%	30%
17	180	Kidney	580	106	18%	25%
18	140	Lip	511	317	62%	63%
19	200	Lymphosarcoma and Reticulosarcoma	501	96	19%	24%
20	161	Larynx	478	128	27%	30%
21	176	Female genital organs	454	140	31%	34%
22	141	Tongue	409	76	19%	20%
23	143-4	Mouth	403	84	21%	23%
24	190	Malignant melanoma	383	172	45%	49%
25	142	Salivary glands	328	230	70%	74%
26	194	Thyroid	286	102	36%	42%
27	147	Hypopharynx	250	20	8%	10%
28	145-6	Nasopharynx	248	35	14%	15%
29	178	Testis	223	117	52%	57%
30	160	Nose, ear & sinuses	204	44	22%	23%
31	179	Male genital organs	172	77	45%	48%
32	196	Bone	163	24	15%	19%
33	192	Eye	92	51	55%	63%

It is, of course, impossible to show more than two tables to illustrate the way the figures are set out.

But, if you picture 38 more Tables showing the figures for all the various sites in the body, with all the results of treatment laid out, it will give you a good idea of the amount of information amassed throughout the years.

Another Table shows the Cancer Incidence for 1962 giving the rate per 100,000 of population and the number of cases in each sex as well as the total. General Incidence 35,783 per 100,000 population.

One site may be chosen to indicate the method.

#### Colon

Males 350 cases that is 24.80 per 100,000  
Females 502 cases—33.65 per 100,000.

TABLE B

SUMMARY OF VIRULENCE RATE in order of mortality  
This table shows the chance of survival under each site for the years 1951 — 1958. It gives the Five Year Survival rate for all cases.

Priority	I.S.C. No.	SITE	5 yr. Surv. rate all cases	Cases Registered	Alive
1	157	Pancreas	1%	1084	12
2	150	Oesophagus	3%	1049	31
3	151	Stomach	4%	4394	174
4	162-5	Thoracic organs	4%	5766	235
5	204	Leukaemia	6%	843	48
6	147	Hypopharynx	8%	250	20
7	193	Brain and O.N.S.	13%	955	123
8	145-6	Nasopharynx	14%	248	35
9	196	Bone	15%	163	24
10	177	Prostate	17%	2193	372
11	175	Ovary	18%	1537	271
12	180	Kidney	18%	580	106
13	141	Tongue	19%	409	76
14	154	Rectum	19%	3071	576
15	200	Lymphosarcoma and Reticulosarcoma	19%	501	96
16	153	Colon	19%	3752	724
17	143-4	Mouth	21%	403	84
18	160	Nose, ear & sinuses	22%	204	44
19	201-2	Lymphadenoma and Reticulosis	25%	580	143
20	161	Larynx	27%	478	128
21	181	Bladder	29%	1664	489
22	176	Female genital organs	31%	454	140
23	194	Thyroid	36%	286	102
24	171	Cervix uteri	37%	1761	649
25	170	Breast	42%	7285	3057
26	179	Male genital organs	45%	172	77
27	190	Malignant melanoma	45%	383	172
28	178	Testis	52%	223	117
29	192	Eye	55%	92	51
30	172-4	Uterus	56%	1595	893
31	191	Skin (excluding R.U.)	61%	1806	1097
32	140	Lip	62%	511	317
33	142	Salivary glands	70%	328	230

Total 852, which makes a rate of 29.35 per 100,000.

This Table gives similar figures for all the sites in the body.

I will end this resumé by giving you two final Tables which speak for themselves. Tables A and B, which serve to show at which sites cancer is most common in the body, and in the Mortality Table the chances of survival. The figures are for the years 1951 to 1958.

#### Summary of the Result of Treatment

A careful survey of the results of treatment, under the various sites, does show an unmistakable improvement, but it can still be stated with truth that only **early diagnosis and treatment** can ensure a satisfactory result.

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ST. BARTHOLOMEW'S HOSPITAL JOURNAL

CLINICAL AND RESEARCH SUPPLEMENT

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THE MOTILITY OF THE COLON

by B. N. Catchpole

A great deal of work is currently being done on the motility problems of the alimentary tract. Many different methods of study are being employed and none of them is particularly satisfactory; furthermore the responses of the gut in different circumstances are quite variable which makes interpretation often difficult.

Methods of Study

The physiologist has used isolated strips of muscle in suitably oxygenated salt solutions to study its behaviour. The responses to various drugs have been investigated by adding them to the saline bath and these act by affecting the myenteric plexus of nerves and possibly the muscle fibres themselves. More recently, whole segments of gut excised at operation have been maintained in a viable state by perfusion of the arterial supply with oxygenated saline and the responses to drugs of the gut as a whole recorded.

In vivo, pressure changes at various sites in

the alimentary tract can be monitored using open ended tubes or balloons. Alternatively, the radio telemetering pill may be swallowed or inserted into various parts of the gut at operation. A suitable aerial placed on the abdominal wall picks up the transmission and bedside apparatus transcribes it into a pressure trace. Continuous recordings may be obtained for the life of the battery in the pill which is up to four days. The pill is eventually passed per anum. Transmission times of various markers introduced into the gut have been studied in man; progress of the marker through parts of the gut may be followed by radiography. Segmental behaviour of the gut can be studied more intensively by introducing a contrast agent into it and recording the activity seen with an image intensifier by cinematography or video-tape. All of these methods are used for research purposes in this Hospital and may be seen by any who are interested.

Although pressure recording devices may give accurate information about the local pressure changes occurring in a segment of gut, they do not tell us the type of activity, i.e. whether simple segmentation is occurring or whether actual peristalsis is present. Only visualisation of the movement of opaque material on X-ray can do this, but obviously such visualisation can only be carried out for relatively short periods. More can be done in the experimental animal, but it is man who is our primary interest.

#### The Control of Motility

Taken from its natural environment, strips of gut musculature will continue to contract for hours if they are kept in a suitable electrolyte solution. In vivo, however, contraction is influenced by many factors both nervous and hormonal. How important are these? We know that after vagotomy for duodenal ulcer, the stomach's power of emptying itself is greatly reduced so that an associated "drainage" operation, either pyloroplasty or gastroenterostomy, is required to allow food to escape from it more readily. The small intestine, however, is little affected by vagotomy and continues to contract even on the day of operation; it is thus possible to feed a patient from the moment of operation provided what is given is passed into the duodenum by nasal tube or gastronomy tube—this is inserted at the time of operation through the abdominal wall via the stomach and into the duodenum. Evidently, the vagal "drive" needed by the small intestine to function adequately is little. The colon's dependence on extrinsic parasympathetic "drive" is less certain. From work done in the Dunn Laboratories by J. A. C. Neely, the extrinsic parasympathetic influence on the colon does not seem to be more than minimal.

On the whole alimentary tract, the sympathetic nervous system has a general inhibitory action on motility. Both  $\alpha$  and  $\beta$  types of receptors in various proportions have been demonstrated in the gut. The "braking" effect of the sympathetic nervous system mediated via these receptors is of obvious importance in the overall control of motility, particularly immediately after operation, but what part of the system is involved in the various disturbances of post-operative alimentary tract motility is not yet clear. However, from our limited observations so far it seems that the  $\alpha$  and  $\beta$  receptor influence may be different in various post-operative situations. Thus, we have observed fluoroscopically in one patient who had had an exploratory laparotomy the previous

day, complete gastric inactivity. When, however, the  $\beta$  receptors were blocked by intravenous propranolol, waves of peristalsis swept the distal half of the stomach, but after vagotomy and pyloroplasty, propranolol intravenously does not restore gastric motility and neither does ganglionic blockade of the sympathetic nervous system by guanethidine which prevents nervous stimulation of both  $\alpha$  and  $\beta$  receptors. This may emphasise the need of the stomach for parasympathetic "drive", loss of which is not offset by associated sympathetic inactivation. The small intestine's sympathetic innervation is predominately of  $\alpha$  type, but although there is no doubt that sympathetic tone is applied to the colon by both  $\alpha$  and  $\beta$  receptors, their influence is as yet inadequately explored.

Apart from the intrinsic motility and the external nervous influence, several hormones are probably important in the normal function of the gut. 5-Hydroxytryptamine (serotonin) is known to be important in this respect. This substance is produced in the mucous membrane of the alimentary tract and its excretion product 5-hydroxyindole acetic acid (5-H.I.A.A.) can be measured in the urine. When gut activity is stimulated or if the gut is distended, the level of 5-H.I.A.A. rises in the urine. The amount of serotonin in the colon may be considerable in man; certainly in the rat, excision of the colon halves the excretion of 5-H.I.A.A. in the animal's urine. Although in man serotonin stimulates the small intestine, it appears to inhibit colonic contraction. Bulbring and Lin (1958) have shown that serotonin excites sensory pressure receptors in the gut and facilitates the peristaltic reflex, but the role of the drug in normal activity is not clear. Gastrin also has been shown to stimulate motility in both the small and large intestines apart from increasing gastric acid output. This effect on motility may well explain why patients with tumours producing a substance like gastrin—even if it is not gastrin (the Zollinger-Ellison syndrome)—often have severe diarrhoea. There is no evidence that oxytocin, which has a powerful stimulatory effect on the myometrium, has any effect on the smooth muscle of the gut despite its early use to treat "ileus".

To summarise then, it may be said that our concepts of how intestinal motility is controlled are still nebulous, but perhaps they are slowly becoming clearer.

#### Patterns of Colonic Activity

It has now been shown that the normal colon is continually undergoing contractions. In young constipated subjects, these contrac-

tions are more frequent than normal though in older chronically constipated subjects, the colon may be largely inactive. In patients with chronic non-specific diarrhoea often the colon is also virtually inactive. In severe ulcerative colitis the colon becomes an almost inactive tube, when recovery from the acute episode occurs, motility returns.

This behaviour at first sight appears to be quite paradoxical. Normally we may suppose that contractions slowly move gut contents to and fro while some onward progression is made. Dehydration of gut contents presumably occurs continuously. Also in some animals, it is possible to see small segments of muscle contracting which seem to have the effect of rubbing the gut wall over its contents. In patients who are chronically constipated, it might seem that the greater need for reduction in bulk of the gut contents parallels the increased activity. In the older chronically constipated patient, where no colonic activity can be recorded, the whole mechanism of colonic function appears to have broken down; without massive stimulation by drugs, no motility occurs. How dehydration of contents is achieved is not clear. One patient is described in the literature who only had a bowel-evacuation when she had taken  $\frac{1}{2}$  lb of senna.

In chronic non-specific diarrhoea, presumably the inactive colon makes dehydration of the gut contents difficult, but this condition may differ from the state of the chronically constipated subject in that the gut tone is high. Apparently, evacuating contractions sweep the gut which then relapses into inactivity. One might therefore be able to forecast that if a patient was having diarrhoea, an antispasmodic drug, which at first sight would seem a reasonable drug for reduction of the bowel frequency, might in fact make matters worse. This was shown by Connell and Kellock in 1959. They used the antispasmodic drug Tricyclamol to treat patients with non-specific diarrhoea and found that the number of stools passed tended to increase rather than decrease as a result of treatment. These remarks, however, are not necessarily applicable to the conditions found in gastroenteritis when there may be general hyperactivity of the whole alimentary tract and the alimentary transit time is reduced. It is important to recognise that mere infrequency of bowel habit is not necessarily abnormal, nor is above average frequency of defaecation. The frequency of a normal bowel habit in a large number of patients varies in a Gaussian type of distribution and only between one half

and three quarters of normal subjects have one bowel action per day. On the basis of frequency alone, it has been suggested (Connell et al. 1966) that constipation might be defined as a frequency of bowel habit of less than three motions per week and diarrhoea as occurring when more than three stools per day are passed.

#### Disorders of Motility

Several disorders of motility have been studied recently which may be due to disorders of autonomic balance. Some patients complain of abdominal pain with or without constipation or diarrhoea, or with alternations of constipation and diarrhoea. The condition has been referred to as "spastic colon". Other patients with "irritable colons" have painless diarrhoea. Before any such labels are appended to disorder, however, the presence of organic disease must be most carefully excluded.

Colonic diverticulosis is very probably a condition of disordered motility. Over a localised length of colon, the muscle wall is grossly hypertrophied and it seems very likely that the mucosal herniations through the musculature are the result of abnormally high intra-colonic pressures. However, one careful study (Painter and Truelove, 1964) failed to detect any major difference of intra-luminal pressures in diverticulosis and in health, but the response to the parasympathomimetic drug prostigmine is greater in diverticulosis. The curious feature of this disease is its localisation. The segments involved are often the pelvic and iliac parts of the colon and there is also often a fairly sharp cut-off between the diseased area and the normal colon. It is true that scattered diverticula may be observed involving the descending, transverse and in some patients even the ascending colon, but the condition predominantly involves the left side of the colon. There are several possible reasons for this in that the faeces are becoming firmer as dehydration along the colon occurs and in the pelvic region, may require in some patients greater propulsive efforts to move them. Furthermore, the harder masses may cause local irritation and muscular over-activity followed by hypertrophy. However, the possibility comes to mind that this disease may be the result of over-activity of the parasympathetic sacral nervous outflow. These motor nerves supply the left side of the colon which is involved by diverticulosis. The condition of vagal over-activity is well recognised in the genesis of duodenal ulcer where both over-production of gastric secretion and hypermotility of the stomach are found. It has already been mentioned that in general the

parasympathetic nervous system seems to have little influence on the normal colon, but patients with diverticulosis may be variants of this normal pattern, the effects of prostigmine perhaps pointing in this direction. Nevertheless, there is at the present time no evidence to incriminate this system in the pathology of diverticulosis.

Another disorder of bowel habit sometimes troubles patients who have had total vagotomy in the treatment of peptic ulcer. Approximately three quarters of the patients who have a total vagotomy develop an alteration in bowel habit. In the great majority of these patients there is a tendency to an increased frequency of defaecation, some of these again have episodic diarrhoea which begins with abrupt suddenness and may be associated with incontinence. Such episodic diarrhoea may occur as infrequently as once in three months or as often as weekly. The social disability which this causes is very great, but fortunately disabling diarrhoea after vagotomy occurs in less than 5% of patients. What is perhaps surprising is that a few patients develop constipation after the operation. Five such cases were found in a study of 100 post-vagotomy patients followed up by Cox and Bond (1964). Diarrhoea frequently occurs in patients who have had hemicolectomy and, in fact, any operation which removes the ileo-caecal valve. Diarrhoea, of course, also occurs in Crohn's disease which usually involves this valve, but in such patients the ulceration and other changes in the gut may be responsible. There is no doubt in man about the existence of a sphincter at the ileo-caecal junction and local disturbances of it may lead to urgent diarrhoea (Gazet and Jarret 1964, *Gazet* 1964).

There may be some similarity between the vagotomised patient and the one who has had his ileo-caecal valve excised. In the former patient the motor innervation of both the valve and the right half of the colon has been removed. In both, ileal contents may be passed without hindrance into the colon; is this of critical significance? If it is, what is the nature of the mechanism causing the episodes of urgent diarrhoea? Even though the vagus usually has little influence on the colon, those patients with severe diarrhoea after vagotomy may be just those with more than usual vagal colonic tone. We know that with diarrhoea, colonic motility is depressed. Is this then the mechanism of diarrhoea after vagotomy and should we treat it with parasympathomimetic drugs in an attempt to re-establish normal

colonic motility and ileo-caecal valve action? There are, of course, several other possible causes of post-vagotomy diarrhoea but the one discussed has not received much investigation as yet.

### Conclusion

In many operations that the surgeon has to perform, interference with normal functions cannot be avoided. Excision of the right side of the colon for carcinoma is such an operation. Vagotomy is performed simply to reduce gastric acid secretion. Coincidentally it interferes with gastric emptying which can be compensated for by a gastric "drainage" operation but unhappily it also removes the parasympathetic influence from upper abdominal viscera and the alimentary tract as far as the mid transverse colon. To reduce this unwanted denervation, attempts have been made by many surgeons to carry out "selective vagotomy" preserving the branches of the vagi which do not apparently innervate the stomach. These operations are not always successful, however, in preventing post-vagotomy diarrhoea.

Medicine and surgery seek to restore normal physiology to those in whom it has become disordered. To discover what the normal is, therefore, becomes mandatory to successful therapy. Many drugs are being developed with specific effects. These may not only help us to unravel obscure physiological processes, but also enable us to correct well defined abnormal processes. This is one of the exciting points on the advancing front of medicine.

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## THE HEIDELBERG CLASSIFICATION OF THE EPILEPSIES

Sylvia M. Watkins

"The processes of disease are so complex that it is excessively difficult to search out the laws which control them" (William Osler); and yet an understanding of these processes and laws is a basic prerequisite for the successful management of disease in practice. With this principle in mind, Janz and his colleagues in Heidelberg have studied the epilepsies, the characteristics of the attacks and their natural history, their relationship to one another and to other diseases, in an attempt to classify them

and thus to clarify them; and in the light of their findings to evaluate and develop the available methods of treatment.

Their studies have shown that the most useful way of classifying the minor epilepsies is according to the characteristics of the seizures; this method, however, proved impractical for the grand mal epilepsies, which they classify according to the relationship of the attacks to the sleeping-waking cycle.

### PART I

#### EPILEPSIES WITH GRAND MAL SEIZURES

The majority of epileptics (almost 80%) are affected at some time by grand mal seizures, about half of them in combination with some form of minor attacks. These patients may be classified into three main groups according to various criteria, including the time of occurrence of the seizures with respect to the sleeping-waking cycle, the intrinsic sleep rhythm of the patient, the bio-electrical characteristics, the rôle played by precipitating factors, the psychological characteristics, and the response to different groups of anticonvulsants.

#### Grand Mal and The Sleeping-Waking Cycle

It has long been known that epileptic fits tend to occur at specific times of day:

1. Shortly after falling asleep (or in the first half of the sleep period).
2. Shortly before awakening (or in the second half of the sleep period).
3. Within a few minutes of and up to 2 hours after awakening.
4. During the period of relaxation after work ("Feierabend").
5. Seizures irregularly dispersed over all times of day, mainly during the waking period.

("Sleep" in this context includes not only nocturnal sleep, but also the daytime sleep of night-workers, afternoon naps, etc.)

On this basis it is possible to classify the patients with grand mal epilepsy into three groups:

- A. "Sleep" grand mal, with fits occurring exclusively or mainly during sleep, about four-fifths shortly before awakening (group 2), and about one fifth shortly after falling asleep (group 1).
- B. "Awakening" grand mal with fits occurring mainly shortly after awakening (group 3), but occasionally also during the "Feierabend" (group 4).
- C. "Diffuse" grand mal, with fits occurring at any time of day, and varying from one attack to another (group 5).

#### Incidence

An analysis of 2110 patients followed up for a minimum of 2 years in the Heidelberg epilepsy clinic, showed an incidence of 34% "awakening" grand mal, 45% "sleep" grand mal, and 21% "diffuse" grand mal. Thus 79% fell clearly into one of the categories showing regular patterns (the figures included a number of patients who did not show an absolutely pure pattern, but in whom the timing of the attacks corresponded predominantly to the "sleep" or "awakening" types, in spite of occasional seizures at other times).



### Aetiology

The three groups of grand mal epilepsies classified in this way may be further subdivided according to the aetiology, i.e. cryptogenic or symptomatic. The latter refers to epilepsy in the presence of a demonstrable organic brain lesion: trauma, tumour, "residual" (i.e. following severe perinatal injury), and miscellaneous causes including congenital abnormalities, cerebro-vascular disease, encephalitis, etc. (Only those in whom no organic lesion could be demonstrated are classified as cryptogenic).

	Cryptogenic	Symptomatic	Total
Grand mal on awakening	649 (90%)	70 (10%)	719 (34%)
Sleep grand mal	727 (77%)	219 (23%)	946 (45%)
Diffuse grand mal	207 (47%)	238 (53%)	445 (21%)
Total	1583 (75%)	527 (25%)	2110 (100%)

Fig. 1. Aetiological classification of 2110 cases of grand mal epilepsies.

A glance at Figure 1 shows that over half of the cases with diffuse epilepsy are symptomatic, whereas most of the "awakening" epilepsies are cryptogenic (suggesting that "awakening" grand mal is the prototype of the endogenous epilepsies, and diffuse grand mal that of the exogenous epilepsies). This finding may be of diagnostic importance in individual cases.

### Heredity

As would be expected from the studies on the aetiology of the various types of grand mal epilepsies, a positive family history was found more frequently in cryptogenic than in symptomatic cases, and similarly, more frequently in grand mal on awakening than in the sleep or diffuse types. In 1583 cryptogenic cases, a positive family history was found in 13.9% of "awakening" types; in 9.3% of sleep types; and in 7.3% of diffuse types.

### Age of onset of Grand Mal and its Association with the Minor Epilepsies

"Awakening" grand mal begins most commonly in adolescence: 77% of the Heidelberg cases started between the ages of 10 and 25. Sleep and diffuse epilepsies, on the other hand, may begin at any age (although the diffuse group was found to have two peaks of age of onset: one in the first year of life, the other between the ages of 18 and 25, corresponding to the ages of peak incidence of residual and traumatic epilepsies respectively.)

Each type of grand mal corresponds with respect to both age of onset and aetiology, to

the form of minor epilepsy with which it is commonly associated. Thus in pyknolepsy and impulsive petit mal ("myoclonic" petit mal), if there is associated grand mal, it is in 95% of cases of the "awakening" type; correspondingly, pyknolepsy, impulsive petit mal and grand mal on awakening, whether occurring alone or in combination, all tend to start during adolescence, and are most commonly cryptogenic (82.5%, 100%, and 90% respectively). On the other hand, cortical seizures are most often associated with diffuse grand mal: both types are often symptomatic, and both may begin at any age.

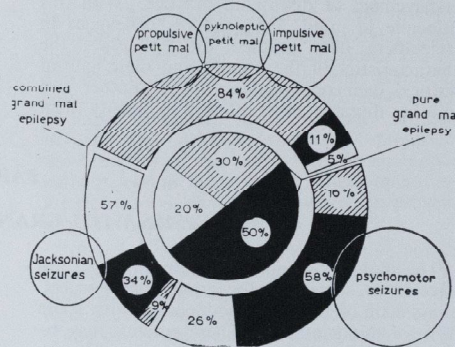


Fig. 2.

Distribution and relationship between the grand mal epilepsies and the most important types of minor seizures. Grand mal on awakening is represented by shaded areas, sleep grand mal by black, and diffuse grand mal by white. The distribution of the grand mal epilepsies unassociated with minor seizures, is shown in the inner circle. The "combined" epilepsies (i.e. associated major and minor seizures) are represented in the outer circle, where the figures refer to the percentage of the different types of grand mal associated with each type of minor epilepsy. (Reproduced from *Epilepsia*, 3 (1962), 69).

### Sleep Patterns

Not only the timing of the seizures in relation to the sleeping-waking cycle, but also the pattern of that cycle shows marked differences between the sleep and "awakening" epileptics. Thus, the sleep epileptics report that they sleep well: that is, they tend to go to bed early, fall immediately into a deep, dreamless sleep, awake feeling refreshed and able to face the day's work, and can concentrate best in the morning. The "awakening" epileptics, on the other hand, tend to go to bed late, have difficulty in getting to sleep, and then sleep restlessly with frequent dreams; they find it

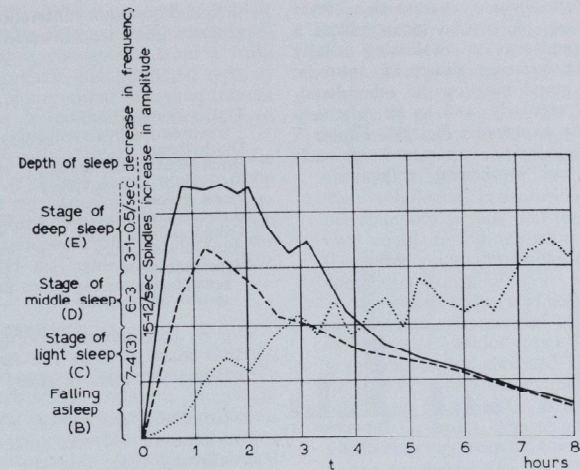


Fig. 3.

Depth of sleep graph of patients with epilepsy on awakening (dotted line) and sleep epilepsy (continuous line), compared with a normal subject (dashes). (Adapted from *Epilepsia*, 3 (1962), 69).

at a time when circumstances necessitate awakening). These patterns suggest that sleep epileptics sleep too deeply, and that "awakening" epileptics are in a state of chronic sleep deficit.

Objective studies of sleep patterns, judged by EEG recordings and response to test stimuli (Christian), show that sleep epileptics reach the deepest sleep levels (stage E) in one to two hours after falling asleep, gradually passing into lighter levels of sleep over the next six hours. The "awakening" epileptics, however, pass slowly and irregularly into sleep stages C-D, only two-thirds of them ever reaching stage E, and then only after 7-8 hours (i.e. usually

### Precipitating Factors

Grand mal on awakening may be precipitated by various factors, in spite of continued medication. The two most important factors are lack of sleep and alcohol, which in practice often occur together. Thus, going to bed too late, being awakened too early, or unaccustomed alcohol, even in comparatively small amounts, may often precipitate attacks. Less

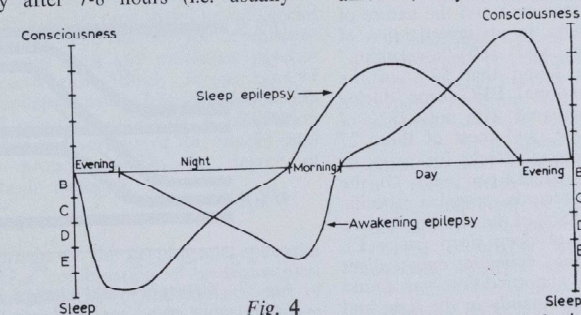


Fig. 4

The sleeping-waking profiles of patients with sleep epilepsy and epilepsy on awakening, portrayed diagrammatically. (Reproduced from *Epilepsia*, 3 (1962), 69).

important factors include overexertion, fever and menstruation. A careful history from a patient with grand mal on awakening usually reveals the precipitating cause of sporadic attacks. Sleep grand mal, on the other hand, tends to occur regularly, and to be relatively little affected by exogenous factors. Figure 5 shows the comparative importance of such factors in sleep and "awakening" epileptics.

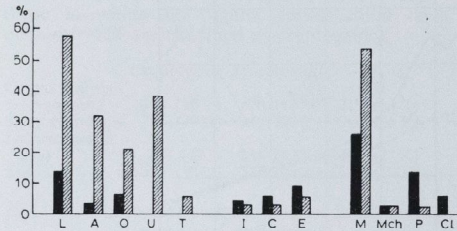


Fig. 5.

Type and significance of factors causing attacks in sleep epilepsies (black) and epilepsies on awakening (shaded). L: lack of sleep; A: alcohol; O: overexertion; U: untimely awakening; T: unusually high temperatures; I: infections; C: concussion; E: emotional shock; M: menses; Mch: menarche; P: pregnancy; Cl: climacteric. (Reproduced from *Epilepsia*, 3 (1962), 69).

The diffuse epileptics tend to be affected by different factors, including sudden exertion, bending, weight-lifting, excitement, defaecation, and hair-washing, all of which may precipitate an attack, probably exerting their effect through alterations produced in the cerebral circulation.

#### EEG Findings

The bio-electrical characteristics of the sleep and awakening types of epilepsy differ with respect to both the incidence and the nature of the abnormal findings. In an investigation of 150 sleep epileptics and 150 "awakening" epileptics, Christian found that 57% of the sleep type had a normal EEG even during hyperventilation, compared with only 18% of the "awakening" type (and most of these 27 patients had been free of attacks for years, or had only one or two attacks per year). On the other hand, sleep records revealed specific epileptic changes in 85% of the sleep epileptics, mostly in the stage of deep sleep (stage E), whereas in "awakening" epileptics only a slight increase of specific abnormalities was found during sleep, and then mainly in the light and medium sleep stages (C-D) and rarely in deep

sleep. The main differences in the types of abnormalities are shown in Figure 6.

	Sleep epilepsies		Awakening epilepsies	
	No.	%	No.	%
Totally normal EEG (even during hyperventilation)	86	57	28	18
Dysrhythmia	26	17	95	63
Paroxysmal dysrhythmia	16	10	72	48
Episodes of 3-4/sec. spikes and waves	5	3	62	41.3
Sharp isolated potentials	29	19	16	10
Temporal sharp waves	5	3	—	—
Focal abnormalities	19	12.6	3	2
Hyperventilation				
general abnormality	21	14	79	52.6
specific abnormality	—	—	19	12.6

Fig. 6. Distribution of normal and pathological EEG findings from 150 cases of sleep grand mal and 150 cases of grand mal on awakening.

Especially worthy of notice are the 41% incidence of 3-4/sec. spikes-and-waves in the awakening type; and the comparatively high incidence of focal abnormalities in the sleep epileptics. The incidence of EEG abnormalities was higher in both types of grand mal when they were combined with some form of minor epilepsy.

#### Course and Prognosis

Untreated cases of grand mal on awakening not infrequently run a benign course, with seizures occurring at irregular and often long-spaced intervals. Sleep and diffuse epilepsies, on the other hand, tend to worsen in the absence of treatment. Furthermore, with the passage of time, in some cases, the timing of the attacks with respect to the sleeping-waking cycle may change; thus, 6% of cryptogenic awakening epilepsies and 20% of sleep epilep-

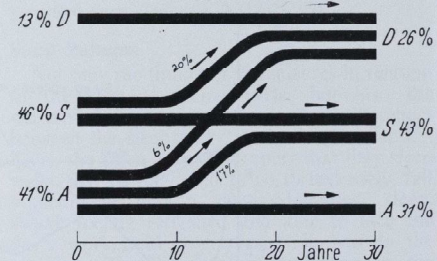


Fig. 7. Constancy and change in type of the cryptogenic grand mal epilepsies. (Reproduced from *Der Nervenarzt*, 34 (1963), 333).

sies changed to the diffuse type, and 17% of awakening epilepsies changed to the sleep type, possibly reflecting a changeover from a truly idiopathic to an organic (symptomatic) type, as a result of brain injury either following trauma sustained during a convulsion, or due to ietogenic brain damage.

Although both sleep and awakening epilepsies may change to a diffuse type, neither sleep nor diffuse types ever develop into an awakening type; this is further support for the notion that awakening epilepsy is the prototype of the endogenous grand mal epilepsies, and diffuse grand mal that of exogenous epilepsies.

#### Psychological Characteristics

The sleep epileptic is prone to develop the so-called "typical epileptic personality change": he is characteristically pedantic, dogmatic, obstinate, egocentric, headstrong, self-righteous, hard to instruct, but also difficult to lead astray; he is prone to introspection, hypochondria, and to long-lasting, deep-seated bad moods. On the surface such patients appear stable, and have a tendency to hypersociability and familiarity. They are on the whole comparatively easy to treat, in so far as they care about themselves and their illness, and generally follow the doctor's instructions in minutest detail. Awakening epileptics, on the other hand, are unstable, without ambition and without endurance, careless, thoughtless, jealous, lazy, easily lead astray, sometimes boastful and pretentious; they are prone to rapidly swinging mood changes and violent emotions. They care neither about themselves nor about their illness, are unreliable about taking their anti-convulsant drugs, and can rarely be persuaded to go to bed at a reasonable time (which is an essential part of their treatment). If the illness proceeds unchecked, they may become dissolute, antisocial or even criminal. The diffuse type of epilepsy is not associated with any particular psychological characteristics. Rarely, in any type of grand mal epilepsy, psychological degeneration to dementia may occur, usually in proportion to the number and severity of the attacks (and presumably proportional to the degree of secondary brain damage).

#### Treatment

The treatment of the cryptogenic epilepsies is based on a combination of anticonvulsant drugs and modification of the patient's way of life. The latter is comparatively unimportant in sleep epileptics, whose nature is often such

that they lead a regular life. In awakening epileptics, however, adequate sleep and abstinence from alcohol are so important that some cases of oligo-epilepsy of the awakening type may be successfully treated without drugs, simply by ensuring that the patient goes to bed reasonably early, has enough but not too much sleep (8-9 hours), and abstains completely from alcohol. Unfortunately, as mentioned above, the psychological constitution of many awakening epileptics is such that they are unwilling or even unable to follow such a régime. Similarly, they often prove unreliable in taking their anti-convulsant drugs.

An extensive drug trial covering 3,350 courses of treatment was carried out in Heidelberg in epileptics of various types. The patients with grand mal were assessed on phenobarbitone (0.3-0.4 G. daily), phenytoin (0.3-0.4 G. daily), mesontoin (0.4-0.6 G. daily), and primidone (1.0-1.5 G. daily). The results showed that the awakening type responds best to the barbiturate group (probably due, in part at least, to the regulating action of barbiturates in disturbed sleep patterns, thus abolishing the chronic sleep deficit). Sleep epileptics, on the other hand, respond well to hydantoinates, but are not infrequently made worse by phenobarbitone. Both types of drugs produced similar results in diffuse epileptics. The results with the various drugs are shown in Figure 8.

	Sleep	Awakening	Diffuse
Phenobarbitone	26%	58%	42%
Primidone	72%	65%	55%
Phenytoin	72%	36%	56%
Mesontoin	77%	51%	50%

Fig. 8 showing the percentage of patients with grand mal epilepsy who became free of attacks on various drugs (used singly).

If adequate doses are prescribed, most patients may be rendered free of attacks on one drug alone; in practice only a few cases fail to respond to drugs used singly, in which case combinations have to be used. For example, cases of sleep grand mal, resistant to both phenytoin and mesontoin alone, often respond to a combination of the two drugs.

The treatment of symptomatic grand mal depends to some extent on the nature and site of the underlying lesion; however, both in patients on whom surgery is possible, and in the inoperable cases, continuous drug therapy is equally important, and is based on the same principles as in the cryptogenic epilepsies.

## NEW SPECIMENS ADDED TO THE MUSEUM DURING THE YEAR 1965

Museum No.	Specimen	Clinician
A. 29	Jaundice of Bones	Dr. Cullinan
A.384	Hypertrophic Pulmonary (Secondary) Osteo-arthropathy	Surgical Unit
B. 17a	Rheumatoid Arthritis (Synovial Membrane—active stage)	Mr. Manning
B. 17b	Rheumatoid Arthritis (Knee Joint)	Mr. O'Connell
B. 19a	Rheumatoid Arthritis (Knee Joint—late stage)	Sir R. Bodley-Scott
B. 72	Osteo-arthritis of Knee Joint	Dr. Oswald
B.114	Cyst and Tear of Lateral Meniscus	Mr. Aston
B.249	Synovial Chondromatosis with Chondrosarcomatous Change (Knee Joint)	Presented by the Royal College of Surgeons
E. 5a	Transposition of the Great Vessels	Dr. Franklin
E. 84	Subacute Bacterial Endocarditis (Composite specimen)	Dr. Hayward
E.132	Aortic Valve Disease in Reiter's Syndrome	Dr. Balme
E.175	Old Myocardial Infarction	Prof. Taylor
E.206a	Myxoma of Left Atrium	Dr. Hamer and Mr. Hill
E.242	Excised Mitral Valves	Mr. Tubbs and Mr. Hill
F.211	Granulomatous Aortitis	Prof. Taylor
F.215	Wegener's Granulomatosis (Composite specimen)	Dr. Spence and Mr. Fuller
H.120	Bullous Emphysema associated with Pulmonary Fibrosis and Bronchiectasis	Dr. Black
H.140	Bronchopneumonia	Mr. Tuckwell
H.140a	Monilial Bronchopneumonia	Mr. Todd
H.142c	Pulmonary Aspergillosis (Mycetoma)	Mr. Hill
H.200	Advanced Pulmonary Tuberculosis	Mr. Hill
H.244	Unusual Lung Tumour associated with Cushing's Syndrome	Mr. Tubbs
H.254a	Bronchogenic Carcinoma	Mr. Tubbs
H.286	Radiation Pneumonitis	Dr. Hayward
K.179	Chronic Peptic Ulcer with Erosion of Pancreas and Splenic Vein	Dr. Hamer
N. 56	Early (Rapid) and Late Portal Cirrhosis	Sir R. Bodley-Scott and Mr. Hunt
N.118	Kupffer-cell Sarcoma (Haemangio-endothelioma) of Liver	Mr. Hunt
N.282	Acute Haemorrhagic Pancreatic Necrosis	Sir R. Bodley-Scott
P. 1a	Infarction of Bone Marrow	Prof. Scowen
P. 13c	Chronic Myeloid Leukaemia (Composite specimen)	Sir R. Bodley-Scott
P.142	Hodgkin's Disease (Spleen)	Sir R. Bodley-Scott
P.179	Primary Thyrotoxicosis	Dr. Black
P.240	Lymphosarcoma (Composite specimen)	Dr. Fairley
Q. 4a	Amyloid Disease (Kidney)	Dr. Black
Q. 37e	Polyarteritis Nodosa (Kidneys)	Dr. Cullinan
Q. 52	Bilateral Old Renal Vein Thrombosis with Nephrotic Syndrome and Secondary Malignant Hypertension	Dr. Black
Q. 58a	Phenacetin Nephropathy	Presented by the Royal College of Surgeons
Q. 58b	Phenacetin Nephropathy and Malignant Hypertension	Dr. Spence
Q. 58c	Renal Papillary Necrosis and Cortical Atrophy (Probably Chronic Phenacetin Nephropathy)	Mr. O'Connell
Q. 71	Acute and Chronic Pvelonephritis	Dr. Oswald
Q.235	Adenocarcinoma of Kidney	Dr. Spence
Q.235a	Adenocarcinoma of Kidney	Mr. Badenoch
T. 70	Tuberose Sclerosis (Composite specimen)	Dr. Hayward
T.147a	Pinealoma	Mr. O'Connell
U.131	Retinoblastoma	Mr. Dobree
U.164	Amelanotic Melanoma (Eye)	Mr. Stallard
W.283	Sarcoma of Cervix	Mr. Fraser
Y.120	Carcinoma of Male Breast	Mr. Tuckwell
Z. 85	Acute Tuberculosis (Composite specimen)	Mr. Tubbs
Z.139	Subcutaneous Lipoma (Buttock)	Mr. Todd
TE. 39	Meningo-encephalocele	Dr. Franklin
TE.169a	Hypoplastic Kidney	Mr. Badenoch
TE.239	Malformation due to Thalidomide (Young Rabbit)	Presented by Dr. D. A. Willoughby

## TWO SPECIMENS OF PARTICULAR INTEREST

by W. J. HANBURY

Curator of the Pathology Museum

### F.211—GRANULOMATOUS AORTITIS

Portions of the wall of the abdominal part of an aorta showing marked thickening by dense, firm, whitish, fibrous tissue.

#### Microscopic Examination

Sections show a granulomatous arteritis with extensive chronic inflammatory fibrosis involving the surrounding adipose and connective tissues. There are large numbers of plasma cells, lymphocytes, neutrophil and eosinophil polymorphs as well as histiocytes and fibroblasts, but no giant cells can be seen. Many small blood vessels show inflammatory cell cuffing and endothelial proliferation, and some larger arteries and veins are occluded or narrowed by old thrombus and intimal proliferation. While the precise aetiology of this condition is not apparent, the appearances suggest that this case belongs to the "pulseless disease"—giant-cell aortitis group.

Removed at operation from a man, aged 55, who had a two months' history of gradually worsening pain in the right iliac fossa, with radiation down to both groins. An abdominal aortic aneurysm was diagnosed clinically, and the diseased part was resected, with a dacron replacement. Many surrounding adhesions were found, making cleavage and resection difficult. The patient made a good recovery.

### F.215—WEGENER'S GRANULOMATOSIS (NECROTIZING RESPIRATORY GRANULOMATOSIS)

Portions of lung, heart, spleen and kidney from a case of Wegener's granulomatosis. The lung slice shows a peripheral greyish necrotic lesion, multiple similar lesions having been

found in both lungs at autopsy. The piece of left ventricle shows patchy yellow areas of infarction in the myocardium as well as pericarditis. The spleen also shows multiple yellowish infarcts. In the kidney the cortex is swollen and there is evidence of further infarction.

#### Microscopic Examination

In the organs shown (as well as in many of the other organs examined post mortem) there is a widespread focal vasculitis, many vessels, particularly the small arteries, showing severe inflammatory necrosis and thrombosis. The greyish lesion in the lung is a necrotizing granuloma resulting from the vasculitis and includes typical giant cells as well as polymorphs, plasma cells and histiocytes. The myocardial and splenic infarcts have likewise resulted from the focal vascular disease with the characteristic granulomatous reaction. In the kidney there is a focal glomerulonephritis with necrotizing glomerular and vascular lesions, widespread inflammatory cell infiltrations and areas of infarction.

From a man, aged 41, who had a history of recurrent otitis media as well as an old chest wound which failed to heal. (Characteristic appearances of Wegener's granuloma were found post mortem in the left middle ear). Two months before death the patient had blood-stained sputum with pleuritic pain, and a chest X-ray revealed several opacities in both lungs. Following this there were severe headaches with some neurological signs and, later, haematuria and albuminuria. A clinical diagnosis of disseminated malignant disease was made, and the patient eventually died from cardiac failure and uraemia.

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