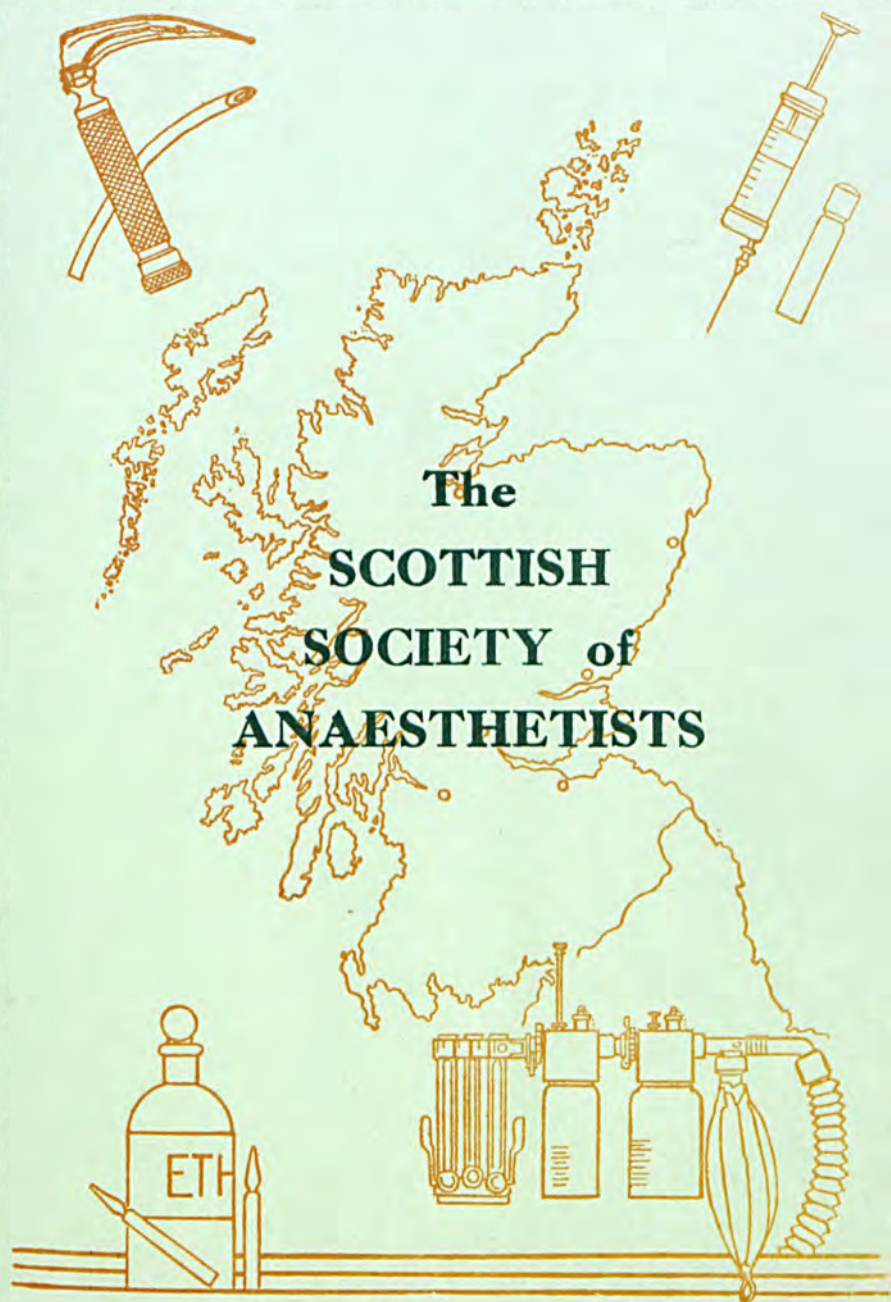


# NEWS LETTER



*Founded*  
20th February, 1914

December, 1969  
No. 10

# THE SCOTTISH SOCIETY OF ANÆSTHETISTS

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## Office-Bearers for 1969-70

President	-	-	-	-	-	Dr. MALCOLM SHAW, Glasgow
Vice-President	-	-	-	-	-	Dr. KENNETH GRIGOR, Glasgow
Past President	-	-	-	-	-	Dr. J. R. KYLES, Kirkcaldy

## Members of Executive Council

Edinburgh	-	-	-	-	-	Dr. D. J. GRUBB Dr. I. DAVIDSON
Glasgow	-	-	-	-	-	Dr. J. BRASH Dr. J. B. STIRLING
Dundee	-	-	-	-	-	Dr. S. McGOWAN
Aberdeen	-	-	-	-	-	Dr. R. G. MILNE
Inverness	-	-	-	-	-	Dr. A. BOOTH

## Honorary Secretary

Dr. DONALD CAMPBELL

19 Montrose Gardens, Milngavie, Glasgow (Tel. 041-956-2470)

## Honorary Treasurer

Dr. W. L. M. BAIRD

Pedrares, 8 Kilmardinnie Crescent, Bearsden, Glasgow

## Editor of Newsletter

Dr. WALTER NORRIS

28 Auchinloch Road, Lenzie, Glasgow

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"The objects of the Society will be to further the study of the science and practice of anæsthetics and the proper teaching thereof, and to conserve and advance the interests of anæsthetists."

"Ordinary membership will be restricted to members of the medical profession practising the speciality of anæsthetics."

—Extracts from the Constitution.

## Subscriptions

£1 per annum.

10/- per annum for Senior House Officers and Registrars.

## Presidents of the Society since 1950

- |                              |                              |
|------------------------------|------------------------------|
| 1950—Dr. John Gillies.       | 1960—Dr. A. Tindal.          |
| 1951—Dr. H. H. Pinkerton.    | 1961—Dr. J. W. L. Bain.      |
| 1952—Dr. T. J. C. MacDonald. | 1962—Dr. Margaret Muir.      |
| 1953—Dr. W. M. Shearer.      | 1963—Dr. Alex. C. Forrester. |
| 1954—Dr. I. M. C. Dewar.     | 1964—Dr. J. D. Robertson.    |
| 1955—Dr. F. G. Gibb.         | 1965—Dr. A. G. Miller.       |
| 1956—Dr. H. Bruce Wilson.    | 1966—Dr. J. A. Bolster.      |
| 1957—Dr. R. Lawrie.          | 1967—Dr. A. W. Raffan.       |
| 1958—Dr. R. N. Sinclair.     | 1968—Dr. J. R. Kyles.        |
| 1959—Dr. Alison Ritchie.     | 1969—Dr. Malcolm Shaw.       |

## Guest Speakers at Annual General Meeting

- |                                   |                               |
|-----------------------------------|-------------------------------|
| 1951—Dr. W. W. Mushin.            | 1961—Dr. G. S. W. Organe.     |
| 1952—Dr. M. H. Armstrong Davison. | 1962—Prof. W. D. M. Paton.    |
| 1953—Dr. Ivan Magill.             | 1963—Prof. E. A. Pask.        |
| 1954—Prof. R. R. Macintosh.       | 1964—Dr. Martin Holmdahl.     |
| 1955—Dr. T. Cecil Gray.           | 1965—Prof. J. G. Robson.      |
| 1956—Dr. M. D. Nosworthy.         | 1966—Prof. A. Crampton Smith. |
| 1957—Dr. J. Alfred Lee.           | 1967—Dr. Sheila Kenny.        |
| 1958—Dr. L. B. Wevill.            | 1968—Dr. R. B. Goudie.        |
| 1959—Dr. Margaret Hawksley.       | 1969—Dr. R. P. W. Shackleton. |
| 1960—Sir Dugald Baird.            |                               |

## Honorary Secretaries of the Society since 1950

- 1950-53—Dr. R. N. Sinclair, Glasgow.  
1953-57—Dr. A. G. Miller, Glasgow  
1957-63—Dr. M. Shaw, Glasgow.  
1963-67—Dr. A. H. B. Masson, Edinburgh.  
1967 —Dr. D. Campbell, Glasgow.

## Honorary Members

- Dr. D. Keir Fisher, Glasgow.  
Dr. John Gillies, Edinburgh.  
Dr. D. S. Middleton, Edinburgh.  
Dr. Margaret C. Muir, Dundee.  
Dr. W. B. Primrose, Glasgow.  
Dr. Winifred Wood, Coll.  
Dr. H. H. Pinkerton, Glasgow.  
Dr. Alison Ritchie, Edinburgh.  
Dr. J. W. L. Bain, Aberdeen.

## Senior Members

- Dr. Ellen B. Cowan, Glasgow.  
Dr. Margot W. Goldsmith, Edinburgh.  
Dr. A. McCallum Millar, Edinburgh.  
Dr. Elaine Stocquart, Glasgow.  
Dr. Sheina Watters, Edinburgh.  
Dr. A. M. Brown, Glasgow.  
Dr. Mary Brown, Glasgow.  
Dr. W. H. F. Boyd, Edinburgh.  
Dr. R. G. Grieve, Glasgow.  
Dr. Lillie S. Dummer, Edinburgh.  
Dr. Frances Redhead, Pencaitland.  
Dr. Mary Richmond, Mauchline.

# The Scottish Society of Anæsthetists

. . . Founded 20th FEBRUARY, 1914

## A. CONSTITUTION

- (1) The name of the Society will be "THE SCOTTISH SOCIETY OF ANÆSTHETISTS."
- (2) The objects of the Society will be to further the study of the science and practice of Anæsthetics, and the proper teaching thereof, and to conserve and advance the interests of Anæsthetists.
- (3) The Society will consist of Honorary Members, Senior Members, Ordinary Members, a President, a Vice-President, a Secretary, a Treasurer, and an Executive Council formed by the above Office-bearers, together with seven Ordinary Members, two from each of the regions centred on Edinburgh and Glasgow, and one from each of the regions centred on Aberdeen, Dundee and Inverness.
- (4) Ordinary Membership will be restricted to Members of the Medical Profession practising the speciality of Anæsthetics.
- (5) Senior Members may be elected from Ordinary Members who have retired from active practice.
- (6) Honorary Members may be elected on the recommendation of the Council and with the approval of the Society. Such Honorary Members would be elected from those who, either as Anæsthetists or in other spheres, have contributed in some special way to the advancement of Anæsthesia.
- (7) A meeting will be held every year, at a time and place to be appointed by the Executive Council.

## B. ELECTION

- (1) Ordinary Members may be elected by a two-thirds majority of those present, at any regular meeting, nominations by an existing Member to be sent to the Secretary one calendar month before the day of election.
- (2) Nominations for Vice-President, Secretary and Treasurer will be made annually by the Executive Council, and will be circulated to Members along with the notice of the Annual General Meeting. Any further nominations for these Offices may be submitted to the Secretary 14 days before the date of the Annual General Meeting.
- (3) Regional Representatives will serve on the Executive Council for a period not exceed-

ing three years, and on retiring from office will not be eligible for re-election to the Council within a period of one year.

- (4) Nominations for vacancies in the Executive Council created by retirement will be called for at the Annual General Meeting, and a ballot held if necessary.
- (5) The President who retires at the Annual Meeting will automatically become an additional member of the Executive Council for the ensuing year.

## C. DUTIES OF OFFICE-BEARERS AND MEMBERS OF EXECUTIVE

- (1) The President will preside at the Meetings both of the Society and Executive Council, and will have a casting as well as a deliberative vote. He will hold office for one year.
- (2) The Vice-President will act for the President when required to do so. He will automatically become President for the following year.
- (3) The Secretary will keep all the records of the Society, will notify all Members of the business of the Society, and send accounts of the Meeting to the Journals. The Treasurer will collect subscriptions, pay accounts and render a financial statement to the Annual Meeting.
- (4) The Executive Council will be consulted by the President upon all matters concerning the conduct and interests of the Society, and will be permitted to record their vote by post upon any question in dispute.

## D. SUBSCRIPTION

- (1) Ordinary Members will pay an annual subscription of £1; Registrars and House Officers will pay 10/-.
- (2) Any Member who has not paid his subscription for the current year may, at the discretion of the Executive Council, cease to be a Member of the Society.

## E. GENERAL

- (1) No alteration of, or addition to, the rules may be made save at an Ordinary Meeting after one month's notice given to the Secretary, who will place the suggestion upon the Agenda.
- (2) Personal as well as official guests may be invited to the Meetings and Dinners of the Society.

# Activities of the Year 1968-69

## Registrars' Meeting

**Dundee, 15th November, 1968**

This meeting was well attended by 41 junior anaesthetists from all parts of the country. During the morning a varied programme was offered including:—

- Closed Heart Surgery.
- Neurosurgery.
- Anæsthesia for Radiodiagnostic Procedures.
- Cardioversion.
- Major Otolaryngological Surgery.
- Epidural Analgesia for Gynæcological Surgery.
- Chairside Dental Anæsthesia.

After lunch some of the party visited the new Ninewells Hospital site, while others heard Dr. Forrest describe the hæmodynamic effects of epidural analgesia. Thereafter, the entire party saw the workings of the Feature Card Indexing System.

**The Annual General Meeting** was again held in Pitlochry Hydro Hotel and is reported in detail later in the Newsletter.

**The Scientific Meeting** this year also took place in Dundee on Saturday, 31st May, when an interesting symposium on Postgraduate Education in Anæsthesia was held. Summaries of the papers are included later in the Newsletter and the lively discussion which followed reflected the widespread interest which was aroused.

## Neurosurgical Anaesthetists' Travel Group

This Group met in Dundee Royal Infirmary on Saturday, 24th May, 1969, and were welcomed by Drs. S. McGowan and W. Shearer.

The following papers were presented and discussed:—"Measurement of Cerebral Blood Flow" (Dr. A. S. Brown), "Effects of Anaesthetic Agents on Intracranial Pressure" (Dr. J. Barker), "Diagnosis of Death" (Dr. A. H. Granat) and "E.C.G. Changes in Hypothermia" (Dr. D. Maclean).

## Payment of Annual Subscription by Banker's Order

FROM time to time, members have requested that they be allowed to pay the annual subscription to the Society by Banker's Order. It was realised that this would be of benefit to the member and to the Society alike, but with successive secretaries operating through different banking accounts it was not considered workable to inaugurate such a scheme.

Arrangements have now been made whereby those members who prefer to pay the annual subscription by Banker's Order may do so through the Head Office of the Bank of Scotland, The Mound, Edinburgh. The Society's financial year ends 31st March, and payment by Banker's Order may therefore begin with the subscription for the ensuing year, payable 1st April. The scheme is commended to members for their own convenience, for the Society's financial situation, and for the facilitation of the Hon. Treasurer's duties.

A form suitable for use is available on application to the Hon. Treasurer.

# Annual General Meeting — Pitlochry

FOR the third successive year the Annual General Meeting was held in Pitlochry and, as before, was a great success. On Friday, 45 members and guests attended a performance of "The Queen's Highland Servant" at the Festival Theatre and on their return enjoyed a film show, including a film on the art of rose growing and one on the development of the Rover 2000.

Saturday morning again found the golfers battling their way round the tantalising course, while the non-golfers were visiting Blair Castle to re-live some of the interesting parts of Scottish history.

The trade exhibition on a considerably expanded scale was well patronised and proved, as usual, a meeting place where many a problem could be discussed. Some of the exhibitors hope by next year to have developed apparatus suitable for use in anæsthetising pigeons!

In the afternoon Dr. Malcolm Shaw was installed as President for the coming year. The business part of the meeting showed the Society to be in good health both as regards membership and finance. The high standard of Registrars' papers submitted had resulted

in Council recommending that two of the runners-up should receive a cheque in recognition of their efforts, and discussion took place on the suggestion that this might be considered on future occasions when a number of high quality papers were submitted. The scientific part of the meeting, the Presidential Address, the Registrar's Prize paper, read by Dr. Newman, and the instructive paper by Dr. Shackleton are reported separately.

The Reception and Dinner were again attended by over 100 members and guests, and the stronger spirits again completed the weekend on the golf course on the Sunday morning.

The winners of the golf competition on the Saturday were:—

Gents—1, Dr. Wm. Bargh (Glasgow), 40 points; 2, Dr. W. L. M. Baird (Glasgow), 39 points; 3, Dr. James Collins (Glasgow), 37 points; booby prize, Dr. W. Christie (Arbroath).

Ladies—1, Mrs. K. B. Holloway (Glasgow), 34 points (best inward nine); 2, Mrs. J. W. L. Bain (Aberdeen), 34 points; 3, Mrs. K. C. Grigor (Glasgow), 22 points; booby prize, Mrs. R. Burtles (Edinburgh).

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## The Scottish Society of Anæsthetists

### Programme for 1969-70

1. Registrars' Meeting—Edinburgh.  
31st October, 1969.
2. Neurosurgical Anæsthetists' Travel Group—  
Enquiries to be made to Dr. Allan S. Brown, Edinburgh, or to Dr. A. Harvey Granat, Killearn Hospital, Glasgow.
3. Registrars' Prize—Entries to be in by the  
end of February 1970.
4. Annual General Meeting—Marine Hotel,  
Elie—24th - 26th April, 1970. Guest  
Speaker—Prof. J. W. Dundee.
5. Scientific Meeting—Aberdeen, May 1970.
6. Visit to Poland—September 1970.

## THE NEXT MILESTONE — WHAT CAN IT BE ?

WHAT are the ingredients of a Presidential Address and what determines its theme? Many factors, of course, go into its compilation, but, especially to a national body such as this Scottish Society of ours, paramount among them must be the fact that by the time a member comes to deliver the address he has of necessity acquired some degree of seniority. It surely follows that he has by this time come to formulate certain items of an Anæsthetic Creed which colleagues may scurrilously dismiss as coming into the category of "bees in bonnet," but which are fondly clasped to the owner's bosom as "convictions." To produce such an address as this, one of these convictions must be plucked out of its orbit, examined in the cold light of investigation, fortified by extensive reading and worked up into some form of unified presentation.

As we approach the end of the 1960s and prepare to enter the decade of the 1970s, articles are beginning to appear, even in the lay press (1), indicating the trend that world medical effort seems to be taking, and postulating which main fronts would appear to be crystallising. In the newspapers of December 1968 (2), Professor Woodruff of Edinburgh University is reported as telling the senior pupils of the Edinburgh schools that within the next ten years it is possible that artificial spare parts for the human body could be fabricated in the workshop. "It will certainly come in your lifetime," he said, "because we know already what the problems are." This amounted to a timed programme over the coming 1970s, and Professor Woodruff was in effect saying "We know what we want, we know the difficulties and we are giving ourselves ten years."

As if to set the seal on at least the title of this address there appeared an obituary notice in the British Medical Journal of 31st August, 1968. To many of the younger members of this Society the name of Dr. John Halton is not even a name; but to those of us who were on the active anæsthetic scene in March 1946 even his name can still evoke that thrill which pulsed through our entire specialty: CURARE. We remember the paper given at the Royal Society of Medicine

describing the use of this drug in a thousand cases, and called "A Milestone in Anæsthesia." Then followed a demonstration in Birmingham which was attended by upwards of four hundred senior anæsthetists. On reading that obituary notice at the time, I found myself wondering "What drug to-day, what technique demonstrated to-day, would draw such an audience?" In other words, what would be the next milestone after curare? In this anæsthetic world of ours, as we prepare to enter the 1970s, can we say with Professor Woodruff "We know what we want and we know the difficulties?"

Milestones are usually markers along a road, and there have been plenty markers along the course of progress in anæsthesia, perhaps the most recent being halothane. In this sense, however, the advent of curare was much more than a milestone because it revolutionised our specialty; it was no mere marker along a road—it opened up the flood-gates of research. I would describe it more as a watershed in the progress of anæsthesia; we can indeed speak of a pre- and a post-curare era. It is virtually impossible to transmit to our younger colleagues the thrill of using this truly wonder drug, or to convey to them how it expanded our horizons. But no matter how important it is, a milestone is not Journey's End; having had over a score of years to evaluate the drug and fit it into our scheme of things, what can we see ahead of us as requiring to be done still?

This is how I see it now: prior to the introduction of curare, had we but known it, we had gone as far along this road as we could go with the methods and agents at our command. We had come up against a kind of barrier, analogous to the barrier put on progress in the air by the combination of the piston engine and the propeller. That barrier imposed certain limits on us and outwith these limits was the POINT OF NO RETURN, the point at which the patient would become so biochemically upset that he could no longer survive by his own efforts. Recovery of his own accord was no longer possible even on abandoning the operation and withdrawing the anæsthetic: it was a biochemical death! The sad feature of this, as we look

back on these days now, is that if our anæsthetic fairy godmother had asked us at that juncture, say in 1945, "What action would you like your next milestone of a drug to have?" which of us would have been visionary enough to suggest a curare? How many of us could have spelled out a drug with the actions of curare? The answer must be—precious few, because, after all, to solve a problem it must first be admitted that there IS a problem!

Are we in a similar position to-day, even with curare, as I have postulated we were in 1945, i.e. having to work within defining limits that in all conscience we cannot define? Of course we are! We all know that our patients still have their point of no return, that point beyond which we know of no therapy which is of any avail. Our patients still die post-operatively and it is impossible to determine at which point a fatal biochemical lesion occurs, when Reversible becomes Irreversible: at some critical juncture the injury becomes mortal in spite of all our applied measures, and what we do already know is that long before deterioration can be assessed or measured functional disintegration has begun and set in at the cellular level.

What then is the problem? During the 1970s what goal still remains for us? We are all of us visionary enough to dream dreams, but to come down to realities I have always been intrigued by the description used, particularly by an older generation of surgeon, in answer to a query as to how a certain patient had withstood a very major operation, the older clinician would speak of the patient "bouncing up" after surgery and doing well, or, of course, unfortunately that he did not "bounce back" at all. The concept behind that practicality of "bouncing back" is now contained in a vast ocean of literature and couched in vastly different language: to plunge into that ocean is a daunting exercise but we must of necessity enter it at some point. The crux of our problem is that we are dealing with a body which still reacts to injury in a special way. The most prominent Reaction Pattern to TOPICAL stress is the well-known inflammation and necrosis; to SYSTEMIC stress the response is usually SHOCK of whatever definition and of whatever degree. Our distant ancestors were never faced with the problem of survival at what is now the knife-edge between reversible and irreversible states of shock; during the long ages of

what we care to call Evolutionary Development, survival value was related to the maintenance of the ability of the organism to RUN or to FIGHT effectively. No mechanism was evolved to deal with the problem of shock as we now understand it: Professor Wilkinson (3) refers to reactions of the body to injury as forming part of a very primitive device and speaks of age-old biological foundations. As Robert Ardrey says in his exciting book "African Genesis" (4), "Man has emerged after a million years with all his primate-inherited instincts . . . without very much added but a chin and a bigger brain."

We know only too well that Medicine is moving into an era when measurement is increasingly used to support clinical opinion, and to-day we are looking for an effective indicator of stress response. The harmful effects of both mental and physical stress upon the general well-being of individuals are being investigated and assessment attempted, varying from stress in a school classroom to that in a space vehicle; even in the world of industry and management they speak of an individual's "stress-threshold." There is now a vast literature on this whole concept and immense research continues on every aspect of the catecholamines, their synthesis, storage, release, etc., and their role in the shock process. The present position therefore is that we have an encyclopædic knowledge of the flood of effects that follows the infliction of trauma on the body, but there is practically NO information concerning the mechanisms that call these systems into action. Virtually nothing is known about the sensors that are stimulated to initiate the response to stress, and not much more about the mechanisms that mediate sympathetic responses. We know comparatively little of what the New England Journal of Medicine (5) calls the sensor for stress; but we do know that the surgeon by the infliction of trauma evokes a metabolic response which is the meshing together of separate endocrine activities into a uniform response pattern. As the New England Journal points out, perhaps our only chance of probing into this sensing mechanism will be that day when Nature makes a mistake and through that mistake she will reveal her secret. Call it a mistake if you will, or an accident, or the outcome of mutation, but only then will we be provided with information about this sensor for stress and about sensory mechanisms in general, thus



leading to a more rational approach to therapy.

In this orchestral response to the infliction of trauma what is our role as anaesthetists to-day? It appears to me, as Professor Nunn said some years ago (6), that so many of our efforts in our professional activities are devoted to "blocking." We are early introduced to the blocking activity of atropine; we used to speak of a spinal block and a low spinal was a saddle block; curare sets up a competitive block; there are ganglion and receptor blockers. At present, in the management of shock, all our attention is focussed not on the pressor agents but on blocking agents: it has been said in this respect that in the preservation of life our superior mesenteric artery may be as important as a coronary or a renal artery and that it must be freed from the influence of a noxious agent—it must be released by blocking, again illustrating that we seem to be spending so much of our professional lives blocking "effects."

Whatever we are doing in our anaesthetic practice to-day, one thing we do know is that although the patient is unconscious of painful impulses arriving from the periphery, it can be shown that the cortex is still receiving these stimuli (7) and that the primitive response to trauma is unabated. Although we have so many agents for blocking the effects of these stimuli, it is like trying to deal with floodwater. What can we do to minimise or obviate altogether the release of this flood? Certainly our modern relaxant technique does not prevent the release of the catecholamines, nor does the use of intravenous analgesics—either conventional or the powerful neuroleptanalgesics; even the institution of spinal block, epidural or subarachnoid, does not supply the answer. The only measure that I can find that does affect the release of these amines is one which I hesitate to mention—deep general anaesthesia! I should have said there of course "the only CHEMICAL measure . . .", because in hypnosis we observe a phenomenon which appears to modify this Reaction Pattern. The study of hypnotism is a specialty in itself and a fascinating one demanding a professional lifetime: it has raised many perplexing problems as to the effect on the entire organism of pain inflicted under the lightest of general anaesthesia covering our modern relaxant technique. We cannot even guess at the price we may be

asking our patients to pay because we literally know not what we are doing.

Last September, along with several thousand other anaesthetists from all over the world, I attended the Fourth World Congress in London. The scientific proceedings of that great congress could fairly be taken as providing a good general picture of the growing points of our specialty. After that I flew over to Paris for the Symposium on Neuroleptanalgesia and I was struck by its emphasis on the effects of trauma and of those drugs at the cellular level. But neither in London nor in Paris, although I went to these congresses with the preparation of this paper very much in mind, could I find any trace of the milestone we are looking for.

In rendering the patient unconscious and in serving up the optimal working conditions for the surgeon, we as anaesthetists are still dealing with a body whose reactions are nevertheless intact and active as before; the shock reflex would seem to be an integral built-in component of our make-up. Looking into the future and trying to discern our next milestone, what then CAN be done? That is the 64,000-dollar question and to it I may be going to give a 10-dollar answer. In accepting as we must the indisputable truth that man cannot be redesigned, it is nevertheless the challenge to our specialty that tools and drugs can! The famous "triad" will have to be redrawn; it can be likened to a three-legged stool but at present one of its legs is missing because that missing leg is our next milestone!

Supposing this fairy godmother of our came back now and offered us still ONE more drug; having given us curare, what do we want next? Just as curare opened the floodgates of research into respiratory physiology, what I am postulating now is the agent that will do the same for research into the metabolism of trauma on the human body. What I am postulating is NOT another agent that will block the effects of trauma once they are liberated in response. What I am proffering as our next milestone is that drug that will damp down and indeed extinguish the vast orchestral response that follows the infliction of trauma. Until we have this magical elixir to exhibit the homeostatic mechanism of the body will still be called into play an injury will provoke reaction as it does to-day a reaction with which we will have to deal. With this drug in our possession and having

gained the know-how of its use along with our storehouse of accumulated wisdom, I can envisage a completely new universe coming into view; an entirely new concept of things when we are no longer engaged in combating the responses to trauma, a pursuit which is commandeering so much of our professional time to-day. To-day so much of our attention is taken up with dealing with this response to injury, not only at the time of the operation but throughout the post-operative phase, and the patient is suffering unduly because of our lack of knowledge.

From our present standpoint of exploration into the ways of Nature, perhaps we can improve on them, perhaps not! Against the millions of years spent in the evolution of an efficient homeostatic mechanism for man, the one hundred years of modern surgery and anaesthesia is but a breath; but there is no use complaining of the price that Nature has set, every effort must be made to meet it. I like that saying that has been attributed to Robert Kennedy: "Some people look at things as they are and ask Why? Others look at what things might be, and ask Why Not?"

Professor T. Cecil Gray has had much to say on the benefits that have accrued from the introduction of the relaxants: in the text-

book "General Anæsthesia," Vol. 2, by Evans and Gray, he groups under three headings his reasons for declaring that these drugs have revolutionised the practice of anaesthesia in our time. The second of his three points is that they have opened the way to real control of the physiological processes of the patient during surgery. Notice that word—"CONTROL." I consider there that Professor Gray has spoken more prophetically than even he knew because curare was but a milestone along that road and there must be others—there must be other milestones on that road, that road whose goal still remains for us—"Security in Sleep."

### References

1. The Sunday Telegraph, August 18, 1968, p. 6.
2. The Glasgow Herald, December 28, 1968.
3. A. W. Wilkinson (1960). "Body Fluids in Surgery." 2nd edit., p. 100. Livingstone, Edinburgh.
4. Robert Ardrey (1961). "African Genesis." Collins.
5. New England Journal of Medicine. 1967, Editorial (July 6), p. 103.
6. Medical Annual. 1965, p. 80.
7. W. Norris and D. Campbell (1968). "Anæsthetics, Resuscitation and Intensive Care," Livingstone, Edinburgh, p. 9.

## Guest Lecture . . .

26th APRIL, 1969

### EARNING AND LEARNING

PATRICK SHACKLETON

Regional Postgraduate Dean for Wessex  
University of Southampton

A YEAR ago you did me the honour of inviting me to give you a paper at your meeting in Pitlochry. I was prevented by illness from fulfilling my part of the arrangement, but now you have given me a second chance, for which I am most grateful.

I have kept the same title as I had chosen last year as I think it expresses the problem—the conflict, if there must be a conflict—between Service and Education. Here I would remind you of the definition of the word "apprentice"—the Oxford Shorter Dictionary defines it thus "Learner of a craft, bound to serve and entitled to instruction from his employer for a specified term." This applies,

I think you will agree, to the system under which we recruit our junior staff, and you will note that it is a two-way system.

The Royal Commission on Medical Education (Todd) has produced a report which highlights the various changes which it regards as necessary in the education of the doctor. You may not agree with all these suggestions, but with the increasing complexity of modern technical medicine some changes are inevitable. And it must start with a re-drafting of the Undergraduate Curriculum which will lay the foundation of scientific preparation for postgraduate vocational development of the future doctor.

The teaching of the true basic medical sciences throughout the undergraduate period in an increasingly "applied" manner is the first vital change. By basic sciences I mean not only Anatomy and Physiology, but also Pathology, Pharmacology, Genetics, Statistics, individual social behaviour, developmental biology, and so on. These, allied to clinical studies, both in hospital and, most importantly, in the community maybe will provide the foundation upon which to build a doctor who will have to practice medicine into the twenty-first century.

The pre-registration year should be essentially practical and should be spent in the wards and clinics learning the skills of medicine and gathering experience on which good judgment will eventually depend.

If we then adopt the classification used in the Todd Report, the pre-registration year will be followed by three years of General Professional Training for everyone. Here will come the first big conflict between service and education. Hitherto the work load of Senior House Officers and Registrars has been considerable and little but lip-service has been paid to time off for study. But it must be made possible, by radical re-thinking and re-organisation, to arrange a fair modicum of study time even under our present pressure of service work, helped, of course, by increasing manpower as it becomes available.

It is necessary to examine here the different problems as they present in the Undergraduate teaching hospitals and in the District General Hospitals. The Undergraduate teaching hospitals usually have a ratio of graduate medical staff to service demands infinitely better than the Regional Hospitals. Yet three-quarters of the doctors being educated for Hospital or Community Medicine receive this education in the Regions. This demands surely a considerable strengthening of the University and Regional Board co-operation. I cannot emphasise too often that medical education is a continuous process from Medical School entry to the last salary cheque on retirement, and the Dean of Medicine of the Medical School and the Regional Post-graduate Dean are the two persons upon whom rests the success or failure of this co-operation in education. A few attempts at rotation of Senior Registrars between University and Regional Hospitals must be expanded to embrace planned rotations at various levels both within a large hospital group or several groups of hospitals, and between Region and Undergraduate Teaching Hospital.

Similarly, training programmes between hospital and General Practice can be made to work, as we have found in our fairly successful Vocational Training for General Practice scheme which we have run in Wessex for the last decade.

Consultants, Public Health Doctors and Principals in General Practice must not be forgotten. We have found that occasional high-powered multi-discipline symposia of study days are perhaps a good and refreshing idea; and if we anticipate General Practitioners wanting to participate in hospital doctoring, then departmental attachments need organising.

But time is the enemy; time and tiredness. Time to learn, time to teach and time to think. I don't think money is such a problem. In Wessex we manage to maintain about fifty per cent. of our junior staff on day release courses; run symposia perhaps not frequently enough; slowly enlarge our General Practice vocational training; develop a Regional Library Service which integrates medical and nursing libraries under a Regional Librarian and four Area Librarians; run a Department of Medical Illustration and of Anatomy for postgraduates. We have now eight post-graduate centres with fairly good facilities for all sorts of educational exercises, and a Regional School of Psychiatry for the mental hospital junior staff and for General Practitioners' vocational and continuing education. And surely what one Regional Board can do together with its University, all the others can do too?

But if we implemented in toto the Department of Health's H.M. (67) 22 we should need 27 more registrars in the Region, at least ten more consultants with postgraduate teaching sessions written into their contracts, and £93,000 more per annum as a minimum!

What I have said is, of course, applicable to Anaesthetists just as to members of any other specialty. I have specially kept my remarks general and avoided the particular of anaesthesia. What I have suggested needs organisation and a new climate of thinking. The new idea of medical organisation (Cog Wheels) may make things easier: We can only go so far without more manpower, but we can go a long way on better utilisation of what we have got. The evolution of medical science proceeds with frightening crescendo. As Sir George Pickering said, "Fifty per cent. of everything you learn (or teach) to-day is obsolete five years hence—but it is difficult to say which fifty per cent."

# The Registrar's Prize

THE Society awards annually a prize of £35 for the best original paper submitted by an anaesthetist in Scotland, holding the grade of Senior Registrar or under. It is not necessary that he/she be a member of the Society.

The conditions attaching to the award are as follows:—

1. The paper must be original, i.e., it should not have been read previously at any meeting or published in any journal. The winning of the prize is in no way a bar to the subsequent publication of the paper.

2. It is desirable that papers submitted show evidence of personal work, but papers consisting of surveys of the literature are eligible for consideration. The Council of the Society wishes to stress that intending competitors should not be discouraged through fear of their efforts being judged elementary. It is fully realised that junior anaesthetists in some peripheral hospitals may not have opportunities to deal with special types of cases or to employ advanced anaesthetic techniques.

3. Papers for adjudication *must* reach the Secretary by the end of February at the latest.

4. The winner of the prize will be required to give a digest of the paper at the Annual General Meeting of the Society towards the end of April.

The Secretary places all entries in the hands of the Award Committee which consists of the President, Vice-President and Past President. The members of this Committee have expressed the desire to be able to adjudicate without knowing the name or hospital of the writer: it is requested therefore that the name, address, etc., of the entrant be submitted on a separate covering page. This will be retained by the Secretary, but otherwise the essay itself should give no indication as to its source: acknowledgment to colleagues, etc., should not be included.

The Prize for 1969 was awarded to Dr. Joyce Newman of the Victoria Infirmary, Glasgow, for a paper entitled "Hypothermia During Vascular Surgery." The following is a summary of the paper:—

## HYPOTHERMIA DURING VASCULAR SURGERY

### Occurrence and Prevention

Over the past two years we have been keeping records of body temperatures of

patients undergoing surgery for peripheral vascular disease.

Thirty-three patients were observed. Fifteen showed progressive falls of temperature during anaesthesia comparable to those of deliberate hypothermia. Typical final temperatures were 29.8° C, 30° C, 31° C, 32° C. Eight patients were placed on an insulated electric blanket during surgery. Ten patients were placed on the blanket and were given warm intravenous fluids. Temperature falls during anaesthesia were reduced to 0.5° C or less.

Falls in body temperature during anaesthesia have been described since the late nineteenth century by authors including von Kappeler in 1880, Dastre in 1888 and Morley in 1903. Dennis Calvert in 1962 described a method of preventing severe temperature falls in infants by placing the patient on a heated mattress during the operation.

### Clinical Material

Thirty-three patients with peripheral vascular disease. The age range was 40-80 years. Twenty-two patients were between 50-65 years. Surgery fell into two groups:

1. Surgery of the femoral artery.
2. Surgery of the aorta and its main branches.

### Anaesthesia

#### INDUCTION

Group 1—Pentothal and scoline followed by intubation.

Group 2—Pentothal and curare followed by intubation.

#### MAINTENANCE

Group 1—Nitrous oxide and oxygen with halothane or Trilene and spontaneous respiration.

Group 2—Nitrous oxide and oxygen with intermittent halothane and controlled ventilation.

All patients received large infusions of Ringer lactate and replacement of blood lost.

### Methods

#### TEMPERATURE MEASUREMENTS

A thermocouple lead was placed in the oesophagus during induction. The temperature was read at 15-minute intervals during anaesthesia.

## MAINTENANCE OF TEMPERATURE

Supplying heat by a heated mattress as in Calvert's work seemed the most straightforward method of maintaining temperature. We used an insulated electric blanket.

## WARMING OF INFUSION FLUIDS

Ringer lactate was kept in a heated lotion cabinet thermostatically set at 37° C.

Blood at 4° C was heated to just below 37° C in a Taurus Blood-warmer Mark II. This heats the blood by radio frequency induction. The bottle of blood is placed in a magnetic field and absorbs radio frequency energy.

By this method the blood is heated as required. It is not hæmolyzed and proliferation of bacteria is not encouraged because the process takes less than five minutes and is non-traumatic. Very rapid infusion is possible as the viscosity of blood decreases as it is warmed.

### Results

These fall into three groups:

**GROUP I.—Uncontrolled.** This contained 15 patients, age range 40-65 years. Eleven were aged between 50-60 years. Duration of surgery was 4-10 hours. Twelve cases showed falls in temperature of 2-4° C. Final temperature in seven patients were below 32° C.

**GROUP II.—**This contained eight patients who were placed on the electric blanket during the operation. Age range was 40-85 years. Five patients were aged between 70-85 years. Duration of surgery was 2-5 hours. Only one patient had a temperature fall of 2° C. Five showed a fall of 1° C or less.

**GROUP III.—**This contained ten patients who were placed on the blanket and were given warmed transfusion fluids. Age range was 50-77 years. Seven were between 50-65 years. Duration of surgery was 3-7 hours. The lowest temperature recorded was 35° C. Three patients showed a rise in temperature. No patient showed an overall fall of more than 0.5° C.

### Discussion

Body temperature is a measure of the balance between heat formation and heat loss.

Heat is produced by basal metabolism and muscle activity.

Heat is lost from the skin and lungs by radiation and evaporation.

A number of reflexes control this balance. These are co-ordinated at hypothalamic level. On exposure to cold, heat loss is decreased from the skin by vasoconstriction and heat production is increased by increasing muscle activity. This includes shivering which causes a sharp rise in oxygen consumption and heat production and a rise in pulse rate and blood pressure.

In Group I heat formation was decreased by central sedation and loss of muscle tone. This last is possibly the most important single factor.

Heat loss was increased by cutaneous vasodilation due to the anaesthetic and by the cold environment. In addition, large wound surfaces were exposed during femoral surgery and the peritoneal cavity was opened during aortic surgery. Other factors were involved. The surgery was prolonged and the patients were old.

### Risks

The risks of hypothermia in these patients were:

The temperature fall was progressive.

Cardiac irregularities increase at low temperature.

The stresses of recovery are very severe.

The patients were miserable with cold, pale, cyanotic and shivering after surgery.

The demands of shivering are severe with a sharp rise in metabolic rate, oxygen consumption, blood pressure and cardiac rate. These were elderly patients with peripheral vascular disease. Many had definite myocardial ischaemia and current angina. They were in the age group subject to bronchitis and emphysema. They would also be suffering from post-operative hypoxæmia. Even with active re-warming, the patients took about two hours to return to normal.

### Conclusions

The effects of supplying heat to the patients were satisfactory. The patients in Groups II and III had final temperatures above 35° C and were not distressed nor shivering after operation. The combination of a heat source and warm intravenous fluids in Group III was most satisfactory.

# News from the Regions

## Western Region

Three of the main events in anaesthesia in the West of Scotland in the past year centre on the Glasgow Victoria Infirmary. Dr. I. M. C. Dewar has retired from the post of Consultant in Administrative Charge after a long and successful reign. He is succeeded by Dr. K. Grigor, who will be familiar to many Registrars from all over Scotland for his imperturbably smooth management of open heart cases during many of the Scottish Society Registrars' Meetings. Dr. A. G. Macdonald has left his Lectureship in the University Department of Anaesthesia at the Western Infirmary to become a Consultant at the Victoria Infirmary.

Travels further afield were undertaken by Dr. Winifred Finlay. She spent a year at the Hammersmith Postgraduate Medical School, during which time she was responsible for a large increase in the local canine death rate.

Dr. Walter Norris is the new President of the West of Scotland Society of Anaesthetists and it is good to see Dr. Peter Stuart coming from as far as Carlisle to be Vice-President.

The current thirst for learning is well illustrated in the West. Twenty anaesthetists attended the Course for the Primary F.F.A.R.C.S. and the Current Concepts Course was over-subscribed, but very well received by those lucky enough to attend.

It is our sad duty to report the untimely death of two faithful members of the Society, Dr. Ian Cochran and Dr. Richard Evans. Both will be long remembered and sadly missed by their many friends in the Society.

## South-East Region

We were all delighted when Professor Robertson was elected Vice-Dean of the Faculty of Anaesthetists and his Frederic Hewitt Memorial Lecture will long be remembered, based as it was on Hewitt's own diary and description of the operation on Edward VII.

Members of the Society will be pleased to learn that Dr. Alastair Masson, undaunted by his period as Honorary Secretary of this Society, has been elected to the same post in the Scottish Society of the History of Medicine.

Once again a considerable number of senior registrars are moving on to consultant posts.

Dr. Nigel Malcolm-Smith has taken up a consultant post at Bangour and the City Hospitals. In addition, several others are shortly to leave us: Dr. James Wilson to Leeds, Dr. John Mason to Dumfries, Dr. David Turner to Lowestoft and Yarmouth, and Dr. Peter Lord to Worcester. It seems that in the South they still regard wise men as coming from the East!

At present three members are overseas. Dr. Jean Horton is at the University College Hospital, Lagos, Nigeria; Dr. Peter Jebson is spending a year at the University Hospitals of Iowa, U.S.A., and Dr. Evan Lloyd is shortly to return from Toronto.

This past year has seen the inauguration of courses on the Scientific Basis of Anaesthesia organised under the auspices of the Edinburgh Postgraduate Board. Two courses were held in February and July, and were so well supported that it has been decided to make them a permanent feature. This year, too, saw the introduction of Anaesthetics as an examination subject for fifth-year students. We can happily report that all candidates eventually passed.

In the social field the Christmas Party broke new ground. Having grown too large to be housed in its traditional venue of the Chalmers Street Residency, it moved to the central if chilly heights of the Pipers Hall off Rose Street. This year the party is to move again—shades of the Highland Society Annual—to a Masonic Lodge. It will be held on 20th December and it is hoped that as many old members of the Department who can will again attend. Anyone interested can, as usual, get information from Miss D. M. Taylor. The latter has got herself something of the reputation of a sorceress after the outstanding weather for the Department Picnic at Tantallon. For the fourth year in succession it was a perfect picnic day.

The Annual Golf Competition this year produced the usual complaints about the handicapping, but it was generally agreed that it was won by Dr. David Bennie.

## Northern Region

The principal piece of news from this region is not "anaesthetic" at all. It is the opening of Craig Phadrig Hospital which is a 250-bed

institution for mentally defective children. It is a series of modern airy buildings on a spacious site, beautifully located on the slope of a hill overlooking Inverness.

The aim of the treatment will be to emphasise what the patients can do, i.e. to help them to make the most of all the mental and physical abilities that they do have, and thus to minimise their disabilities. It is going to demand hard work from a dedicated staff and all of us here wish them well.

A three-bedded intensive care unit was opened at Raigmore Hospital early this year. Already it has proved its worth both in the quality of care we can give patients and in the economy in nursing personnel effected by concentrating these very exacting cases in one location.

Unfortunately, Phase One of the new Central Inverness Hospital is not yet open. Its completion is taking just a little longer than was at one time expected; which is often the way with hospital building works—not unreasonably—as they are frequently very complex projects.

A new nurse training school is being built and should soon open to replace the rather inadequate premises the School has occupied "temporarily" for some years.

Thus our news comprises, in fair balance, the satisfaction of projects completed and the anticipation of projects pending.

## North-East Region

The main topic of conversation in hospital circles in the North-East Region at present is the current local nursing staff shortage which has entailed closing a number of beds in the Aberdeen hospitals, including 51 surgical beds.

Although this has led to less operating, we are glad to report that there is no move to declare any of our anaesthetists redundant; and indeed our department has grown in size since last year. This has allowed us, however, to improve our postgraduate training commitment with an increased level of supervision of juniors' clinical work and opportunities for tutorials, study leave, etc. We continue to have considerable help from the Departments of Physiology, Medical Physics and Pharmacology in our postgraduate teaching programme.

A new building linking the Royal Infirmary and the Medical School on the Foresterhill site is nearing completion, in which some welcome additional office and laboratory space will become available for the Anaesthetic

Department. There is still no definite news of what plans the University Authorities have for implementing our proposals to establish a full academic Department of Anaesthetics, which so many of us feel to be a fundamental lack in the Aberdeen Medical School's establishment. There is also no news of the commencement date for the postponed extensive "Phase Two" hospital building development which will provide, amongst other amenities, a modern intensive care unit, and about 2,000 sq. ft. of floorspace for Anaesthetics Department accommodation.

Amongst the staffing changes in our Department, we welcome Dr. George Robertson and Dr. Edith Beveridge as new consultants with us since last year. Dr. Beveridge occupies a newly established post, and Dr. Robertson succeeds Dr. Gordon Pledger who left Aberdeen to take up an administrative appointment with Oxford Regional Hospitals Board. We also welcome back Dr. Parry from his year's sojourn at the Massachusetts General Hospital. One of our Senior Registrars, Dr. Ion Grove-White, is on a year's leave of absence, having won a Garden Research Fellowship which has taken him to work with Professor Kelman in the Physiology Department in Aberdeen.

## Eastern Region

Perhaps it would be wiser this year not to comment on the Ninewells Teaching Hospital. No dramatic progress has been made in the building and the opening date seems to be receding. We are, however, engaged in the task of ordering equipment for the theatres and the anaesthetic department there.

This last year has been a busy one for Dundee as we have had the pleasure of acting as host to the Registrars' Meeting, the Scientific Meeting and the Neurosurgical Anaesthetists' Travel Club.

We are happy to report that Dr. W. I. K. Bisset has achieved his life's ambition by being appointed Consultant Anaesthetist in Dundee. His year's experience in San Diego, California, has added greatly to his ability and enthusiasm for teaching and he now has charge of our teaching programme for junior staff.

Dr. J. I. M. Lawson has also returned from San Diego where he held the post of Associate Professor of Anesthesiology for a year. He, too, is full of new ideas and enthusiasm.

Dr. Lawson has taken up his duties as President of the North-East of Scotland Society of Anaesthetists for 1969-70.

We were sorry to lose Dr. David Roberts from Dundee, but wish him success and happiness in his Consultant post in Dumfries.

Among the structural re-organisations, a

suite of new theatres is being built in Stracathro Hospital, Brechin, and plans are going ahead for the construction of a five-bedded intensive care unit in Dundee Royal Infirmary. This will adjoin the casualty department and it is hoped that work will start on it early in 1970.

## Editorial Notes . . .

Dr. W. NORRIS

THIS year the programme of this Society has had a strong bias towards the subject of education. Gone are the days when the trainee anaesthetist acquired the art of anaesthesia under supervision and then by experience—sometimes bitter experience—in the anaesthetic room and operating theatre, obtaining his background scientific knowledge in his own time as best he could. More recently, the National Health Service has accepted its responsibility towards training junior doctors and day-release schemes are now accepted and operated extensively. Thus, to some extent, it is possible to teach both theory and practice.

Specialist registration and vocational training are already in being in other countries—for instance, in the Common Market countries—and some system of specialist registration will almost certainly be introduced in this country fairly soon although the details are still the subject of heated controversy. Similarly, it seems likely that vocational training, as envisaged in the Todd Report, will be implemented in the future. Although the non-anaesthetic specialist rotating through the anaesthetic department will probably contribute little to our staffing problems, here again we will have the opportunity to interest these

doctors in our specialty and perhaps obtain a few recruits.

Since staffing remains a problem throughout the country, the recent reports on staffing structures, including the Godber Report, must be of more than passing interest to the anaesthetist. While many agree with the principles of this report, it has certainly been the subject of bitter criticism, particularly from English provincial hospitals. Certainly, the alternative suggestion of a structure based on large numbers of “non-consultant” staff appears unworkable in our specialty when many posts in Britain are unfilled at consultant level.

It is reassuring to read in the papers printed in this issue that the Faculty among others have been active in considering these matters. Further comfort must come from the presence on the Joint Consultants Committee (Scotland) of Professor Robertson as a representative of the Scottish Society of Anaesthetists. It is also valuable to see that anaesthetists are appearing on influential committees and the voice of the specialty is being increasingly heard. Many of our problems have in the past been due to lack of understanding rather than deliberate obstruction.



## THE ORGANISATION OF POSTGRADUATE EDUCATION IN ANÆSTHESIA

Dr. W. D. WYLIE

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Postgraduate medical education is currently very much in the news, and has been highlighted by the report of the Royal Commission on Medical Education. However, for some years now there has been widespread agreement that the position in regard to anæsthesia is unsatisfactory, even though it is better than in many specialties of medicine. The Faculty of Anæsthetists have not been backward and believe that the vocational training of anæsthetists requires review and reorganisation.

### Pattern for the Future

The Faculty's scheme for training in anæsthesia is published in detail in a memorandum, and in its pattern parallels the proposals for professional training in all specialties (including general practice) set out in the report of the Royal Commission on Medical Education.

After a pre-registration year, the Faculty envisage General Professional Training in anæsthesia for a period of three years—the first of these, an introductory year, to be spent in general experience in the specialty, where the trainee can become familiar with the techniques and apparatus of routine practical anæsthesia, including dental and obstetric anæsthesia, and with the basic pharmacology and physiology. This introductory year would also be available for those working to enter general practice, in which case it could occur at a later stage of training. The second and third years must include at least six months in posts such as General Medicine, or Physiology and Pharmacology (Clinical or Academic) or a Respiratory or General Purpose Intensive Therapy Unit. Of the remainder of the second and third years, at least twelve months must be devoted to full-time anæsthesia, including the equivalent of one month's attachment for work in the following Units:—Obstetrics, E.N.T., Ophthalmic, Thoracic, Neurosurgical, Pædiatric, Dental and Intensive Therapy (when not done earlier).

It is important to note that these three years need not be taken in the order described, though the introductory posts in anæsthesia must obviously come before any other training in anæsthesia. Throughout the period of training it is desirable that the trainee should have at least two half-days a week during the academic year (or its equivalent) free of routine and emergency work for study, in addition to normal recreational rest and off-duty. Assessment of trainees should be made in regional centres at the end of each year, partly by teachers' reports and partly by an external assessor. Proper evidence of satisfactory completion of the period of General Professional Training will be possession of the Fellowship of the Faculty of Anæsthetists, which should take account of the candidate's assessment records during general professional training. It is also worthwhile noting that this scheme of graded training and assessment would provide at the end of the introductory year evidence of the possession of a limited knowledge of the specialty, e.g. for prospective general practitioners.

A trainee must hold Higher Training in Anæsthesia appointments for not less than three years. This is the time when the prospective consultant will complete his clinical training and become proficient in all branches of the specialty of anæsthesia, including those parts of the work with which the relatively short time of three years available for General Professional Training did not give him adequate contact. During the period of Higher Training special arrangements must be made for those who undertake research and for those who work in a centre outside the British Isles.

### Comment

The current weakness of postgraduate training in anæsthesia is too much clinical apprenticeship, often without even a semblance of supervision at a very early stage in the

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trainee's career, with haphazard planning and too little formal academic teaching during the early years. The concept for the future is a flexible plan which seeks to present a sound clinical and academic base to specialist training. Flexibility must ensure, amongst other things, that any interested doctor can spend a reasonable period of time in a junior anaesthetic appointment without total commitment to a specialist career in anaesthesia, and it must assist in encouraging career anaesthetists to broaden their training by gaining experience and knowledge outside the field of formal anaesthetic practice. A potential anaesthetist should be able to foresee what a training in anaesthesia implies and to know that his training will be planned and comprehensive. He should be able to anticipate both clinical and academic education throughout the train-

ing period, but related to his experience, and with as much emphasis on assessment as on examinations. He should—provided his work is satisfactory—achieve certification as a trained anaesthetist in a reasonable number of years and without undue delay in any of the training grades.

The introduction of planned training programmes in anaesthesia must of necessity be a slow, rather than a hasty, process, bearing in mind the general shortage of medical staff. Detailed planning and implementation must take place at the hospital and regional level, and there should not be too much central control: indeed flexibility is essential at all levels. It is, however, to be hoped that the future pattern of training in anaesthesia will follow the scheme set out by the Faculty of Anaesthetists.

## ANÆSTHETIC TRAINING IN BRITAIN AND ABROAD

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### Thoughts on a Commonwealth System

Anæsthetic training in Canada is based on residency programmes, which aim to be concise and comprehensive. In the past individual hospitals have sought approval for residency training from the Royal College of Physicians and Surgeons of Canada. After 1971, recognition will be confined to programmes based upon University departments rather than individual hospitals, the clinical facilities of hospitals affiliated to the University being used. Hospitals without recognition for residency training are not debarred by law from hiring residents, but since this service does not count towards examination requirements the calibre of these residents tends to be low.

Canada has specialist registers, in addition to a general medical register. Enrolment on the specialist register in anaesthetics is dependent upon having completed a residency training programme and having passed the certification examination. Residency training must extend over four years, in addition to the equivalent of the pre-registration year. These four years must include at least two years of full-time work in the specialty, together with one year of internal medicine or of medicine and surgery. The fourth year may be in anaesthetics or in a basic science department.

There is a Fellowship examination in addition to the certification examination—F.R.C.P. in anaesthetics, which is of a high standard. The requirements for sitting the two examinations are the same and an increasing number of anaesthetists are taking the Fellowship.

There is no equivalent in staff structure to our senior registrarship. When an anaesthetist has completed his residency training and obtained his certification he is no longer eligible to occupy a training post; he will usually seek an appointment as an associate or assistant to the staff of a hospital in which capacity he will work for a year or two before being offered an appointment as a full member of the staff. Anaesthesia in Canada is very largely organised on a group practice basis, the members of the staff in an individual hospital constituting a partnership. A new man taken on as an assistant or an associate is offered a salary out of the total profits of the partnership until such time as he is offered a full partnership in his own right. The hospital is responsible only for the salaries of residents in training.

In practice, there is thus a non-consultant career grade consisting of anaesthetists who have completed their training and who have yet to pass their examinations, and of those who have completed their training and passed their examinations and who are undergoing a

probationary period as an assistant to the staff of a hospital. Many anaesthetists in this category proceed fairly rapidly to the equivalent of a full consultant appointment, others remain on a non-time-limited basis as associates or assistants and it may be many years before they pass the certification examination.

In the University of Manitoba the training programme was designed so that every resident spent at least two years in general anaesthetic work, six months in paediatric anaesthesia, six months in general medicine and six months in the intensive care unit. An elective period was included so that the better residents could select how to spend six months of their time while the less capable residents could be directed to spend an additional six months in reinforcing their weaknesses.

### **Parallels for the British Future**

The need for organised training programmes is becoming recognised. We must do better than have the "trainee" apply in haphazard fashion first for an S.H.O. post, then for a registrarship or a succession of such posts, and finally for a senior registrarship, without any guarantee that his teaching and clinical experience will be either consecutive or comprehensive. I think there is a trend in this country, as in Canada, towards University based programmes; it is certainly true that in many regions there are small hospitals which can contribute to a training programme but which are quite unsuitable for complete training on their own. It should be possible, in future, to base clinical training on district general hospitals, with which smaller hospitals are associated. Proximity to a medical school will always be important for basic science teaching.

I have some reservations about specialist registration, which is advocated by the Royal Commission and the General Medical Council. Medicine changes rapidly and it must be possible for new specialties to emerge and old ones to die. "Demarcation disputes" between tightly defined specialties would be a poor substitute for this freedom of growth. Specialist registration might have some value, however, as an assurance to the public if a non-consultant career grade is created.

A proposal for two levels of specialist qualification, by examination or otherwise, is also made by the Royal Commission. The suggestion that specialists who have completed a period of general professional training with

some further training should become Members of the appropriate College is not dissimilar from the Canadian system of residency training leading to certification. A Fellowship would be available at a later stage to those who undertook further specialist training and acquired additional experience. But however logical this scheme may be, there would surely be vigorous opposition to any suggestion that our surgical or anaesthetic Fellowships, with their great international prestige, should be re-named Memberships or cease to be awarded by examination.

The gap between completion of basic specialist training and the assumption of full consultant status poses the most difficult problems of all. It is essential to untie the trainee from the work load of the hospital. Clinical experience is a necessary part of postgraduate training, but the number of trainees, or the way in which they spend their time, must not be dictated by the exigencies of the service. We are currently examining the feasibility of introducing the Royal Commission Report recommendations in the Sheffield region; it is at once apparent that we have a far greater number of so-called training posts in anaesthetics than we really need to provide general professional training for our anticipated consultant establishment. Implementation of Todd would thus mean, in effect, withdrawing S.H.O. and Registrar posts in considerable numbers. To fill this gap with Senior Registrars, as we and the Royal Commission envisage them, is unthinkable. I see no alternative except the creation of a non-consultant career grade or a lowering of the status of the consultant. What is certain is that we cannot look at training in anaesthetics, or in anything else, without looking simultaneously at the problem of staffing and the career structure as a whole.

Planning a four-year residency programme represents a miniature exercise in introducing general professional training. The assignment of twenty or thirty residents to six month attachments in a single specialty poses quite enough problems; if we were to introduce general professional training for all specialties we should, in the Sheffield region alone, be dealing with about 500 people at a time—a formidable exercise.

One often assumes that security of tenure in a single centre throughout training would be welcomed, but in North America many residents show a healthy desire to broaden their outlook by escaping for a time to another

centre. This is a factor which must not be overlooked in planning general professional training and further professional training.

### Some General Comments on Todd

A pre-registration year, followed by three years of general professional training, followed by a further three or four or even five years of specialist training seems both ambitious and costly in comparison to the North American system. The especial danger, as I see it, is that general professional training might become a limbo for which the specialist Colleges and Faculties accepted little responsibility and during which people marked time until they could make up their minds on a career or begin their true specialist training. This would waste money and manpower, and be demoralising to those who had already decided on a specialist career. If a man wishes to train in earnest as an anaesthetist he must surely have a chance to do so without delay.

In the system envisaged by the Royal Commission, graduates have no choice about spending three years in the equivalent of our present S.H.O. and Registrar grades; in this sense the posts would be like the present pre-registration posts. Ultimately, there would be no "falling by the wayside" as with the present freely competitive system for S.H.O. and Registrar appointments, and educationally there would be nothing to be gained from a system in which the best people always get the best jobs. To make the system work would need more choice of job, for the majority of trainees, and much less of trainee, for the consultant, than we now have. I suspect that many consultants have not considered the Todd report in this light.

Finally, to return to the relationship between training and service requirements. There are two alternatives: either we try to regard all hospitals as teaching hospitals, in

some sense, or we confine our teaching activities, undergraduate and postgraduate, to specifically designated centres or units, and withdraw trainees from the other hospitals in the country. A great deal has been said about this dilemma since the famous Christ Church Conference. The trainee requires time to learn and think and study, but the consultant also requires time to teach, keep up-to-date and prepare his work. If there are no postgraduate trainees in a hospital, the staff requirements are simply those of the service load. For an increasing number of trainees, an increasing number of teachers is needed. It is generally assumed that if trainees, for instance in the Registrar grade, were withdrawn from some peripheral hospitals an increased work load would fall on the consultants. This is true only in so far as the Registrar acts as a "pair of hands." If a genuine "trainee" is withdrawn from a peripheral hospital the burden of teaching him and supervising his work is removed; the total work load is not necessarily greater. One can imagine the development of "teaching" hospitals or units, which would be over-staffed in terms of service requirements, and "non-teaching" hospitals or units which would be staffed purely for routine work. This is how some countries operate, unashamedly and effectively. Indeed, in our present system we are in a sense trying to get the best of both worlds by using the smaller regional hospitals for postgraduate teaching without providing the necessary staff. The danger of having frankly "non-teaching" hospitals is stagnation. The way to avoid this would be to have a throughput of staff and ensure that all consultants have the opportunity to spend part of their career in teaching centres and part in non-teaching hospitals. The same should apply to the advanced trainee, while the more junior postgraduate student should occupy well supervised posts in training centres.

## THE PLACE OF RESEARCH IN POSTGRADUATE EDUCATION

Dr. GEORGE ROBERTSON, Aberdeen Royal Infirmary

"Research and research training represent a means of acquiring the competence which warrants great responsibility."—Bendixen.

Research, whether it is simply "critical inquiry" or sophisticated investigation of a subject in depth, promotes and requires as a

foundation an attitude of inquiry. This is a valuable attitude in the training and education of anaesthetists, and may make the application of the basic sciences to the specialty of anaesthesia more meaningful. It is suggested that active involvement in clinical investigation

makes the acquisition of factual knowledge less tedious, but also it promotes a self-perpetuating interest in all aspects of anaesthesia and the related physiology and pharmacology, so that the trainee anaesthetist begins to see himself as something more than simply a giver of anaesthetic drugs, or an exponent of a number of anaesthetic techniques. To this end, consideration might be given to incorporating in the final F.F.A.R.C.S. examination a written report on a project, similar to the 'book' for the M.R.C.O.G.

Undergraduate medical education is now tending to be less formal and factual, and this trend is being continued in postgraduate teaching, the primary fellowship examination seeming to encourage comprehension and reasoning rather than simply the accumulation of unrelated facts. Future recruits to anaesthesia are likely to possess a more highly

developed critical sense than formerly, and it is incumbent upon the specialty to satisfy the intellectual appetites of our modern graduates. The climate in medical schools and in junior hospital staff circles is now of such a nature that one can see that doctors may be attracted to hospital practice largely because of a desire to investigate.

The anaesthetist's ready access to patients, the unique relationship with physiology and pharmacology, the self-discipline obtained from good training, and the allure of unsolved problems may be combined to offer one of the most satisfying careers, intellectually and practically, in modern medicine. Our universities and the Health Service must accept greater responsibility for seeing that there is no neglect of the role of research in the education and training of anaesthetic specialists.

## NOTICE

### ASSOCIATION OF ANÆSTHETISTS REGISTRARS MEETING

GLASGOW, APRIL 1970

The Annual Scientific Meeting for Registrars 1970 will be held in Glasgow from 2nd to 4th April inclusive. The joint hosts will be the University Departments of Anaesthesia at the Royal Infirmary and the Western Infirmary.

It is hoped to present a programme of scientific lectures and demonstrations. In conjunction with this, a scientific programme is being arranged by the Glasgow anaesthetists and it is hoped that anaesthetists from all over Scotland will be associated with this part of the meeting.

On the evening of 2nd April, a reception will be held at the University of Glasgow to which all Registrars will be invited. Consultant Anaesthetists who would like to attend this part of the meeting are invited to write to the University Department of Anaesthesia (Western Infirmary), 4 Lilybank Gardens, Glasgow, W.2. Wives or husbands of Consultants would be welcome to attend also. It is expected that the cost per person for Consultants will be about £1.

It is hoped that Departments of Anaesthesia in Scotland will make a special effort to enable their Registrars to attend all or part of the meeting.

## NOTICE

### SIMPSON MEMORIAL SYMPOSIUM

EDINBURGH — 6th MAY, 1970

The Royal College of Surgeons of Edinburgh is holding a Symposium on "The Relief of Pain" to mark the occasion of the centenary of the death of Sir James Young Simpson. This will take place in the College on 6th May, 1970, and the programme is as follows:

"A Surgeon looks at Pain" — Professor D. M. Douglas.

"A Physician looks at Pain" — Dr. K. D. Keele.

"The Surgical Management of Intractable Pain" — Mr. E. R. Hitchcock.

"Pain Relief in Obstetrics" — Dr. M. M. Lees and Dr. D. B. Scott.

"The Pharmacology of Pain" — Dr. R. E. Lister.

"The Physiology of Pain" — Dr. A. H. B. Masson.

"Simpson Memorial Oration" — Mr. J. R. Cameron.

EDINBURGH AND EAST OF  
SCOTLAND SOCIETY OF  
ANÆSTHETISTS

Syllabus 1969-70

1969

Saturday, 25th October

Combined Meeting with Glasgow and West of Scotland Society of Anæsthetists will be held in the Lister Lecture Theatre in Glasgow Royal Infirmary at 5 p.m. "The Influence of the Sympathetic Nervous System on Skeletal Muscle"—Professor W. C. Bowman, Professor of Pharmacology, University of Strathclyde. A Buffet Supper will follow the meeting.

Tuesday, 11th November

Presidential Address—Dr. A. S. Crawford.

Tuesday, 9th December

"The Author and the Editor"—Dr. J. E. Riding, Editor, British Journal of Anæsthesia.

1970

Tuesday, 13th January

Symposium on the Design of Anæsthetic Equipment.

Tuesday, 10th February

Members' Short Papers.

Friday, 27th February

Informal Dinner at the University Staff Club.

Tuesday, 10th March

"Respiratory Distress Syndrome"—Dr. F. Cockburn, Senior Research Fellow, Department of Child Life and Health, University of Edinburgh, and Dr. G. W. Stephen, Lecturer, Department of Anæsthetics, University of Edinburgh.

Tuesday, 28th April

Annual General Meeting.

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Meetings will be held in the Royal College of Surgeons, Nicolson Street, on the second Tuesday of each month, unless specified otherwise.

GLASGOW AND WEST OF  
SCOTLAND SOCIETY OF  
ANÆSTHETISTS

Syllabus 1969-70

1969

Saturday, 25th October, at 5 p.m.

Joint Meeting with Edinburgh and East of Scotland Society of Anæsthetists. "The Influence of the Sympathetic Nervous System on Skeletal Muscle Function"—Professor W. C. Bowman, Department of Pharmacology, University of Strathclyde.

Friday, 14th November

"Medical Aspects of 'Concorde' Development"—Dr. Frank Preston, Principal Medical Officer (Air), B.E.A., B.O.A.C.

Saturday, 15th November, at 10.30 a.m.

Visit to Glasgow Airport.

Thursday, 4th December

"The Central Position of the Anæsthetist in an Obstetric Hospital"—Dr. J. Selwyn Crawford, New Birmingham Maternity Hospital.

1970

Tuesday, 6th January, at  
St. Enoch Hotel, Glasgow

"Symposium on Pain"—Dr. R. A. P. Burt, The Bayer Products Company; Dr. D. Campbell, Glasgow Royal Infirmary; Mr. M. R. Bond, Institute of Neurological Sciences, Glasgow.

Wednesday, 11th February

"Symposium on Dental Anæsthesia"—Dr. A. Tindal, Dr. D. P. Braid and Mr. A. T. Thomson, B.D.S.

Tuesday, 17th March

Presidential Address—Dr. W. Norris.

Thursday, 16th April

Annual General Meeting.

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Unless shown otherwise, meetings will be held in the Lister Theatre, Glasgow Royal Infirmary, at 8.15 p.m. Tea will be served in the Board Room at 7.45 p.m.

Notice of each meeting will be sent to members.

NORTH-EAST OF SCOTLAND  
SOCIETY OF ANÆSTHETISTS

**Syllabus 1969-70**

1969

Thursday, 30th October — Aberdeen

“The Anæsthetist, Cardiac Surgery and Resuscitation” — Dr. Alan Gilston.

Thursday, 20th November — Stracathro

“Some Aspects of Safety in Anæsthesia” — Professor Alex. C. Forrester.

1970

Thursday, 19th March — Dundee

“Intravenous Ethanol” — Professor John W. Dundee.

Thursday, 14th May — Stracathro

Presidential Address — Dr. J. I. M. Lawson.  
Annual General Meeting.

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Meetings are held at 8 p.m. in Aberdeen Royal Infirmary, Dundee Royal Infirmary, or in Stracathro Hospital, Brechin.

*Printed by  
A. Learmonth & Son  
9 King Street  
Stirling*