Association of
Respiratory
Technicians
&
Physiologists

ISSUE NO 6 DECEMBER 1977

BREATH

SPRING MEETING OF THE ASSOCIATION
March 11th 1978
at
DERBYSHIRE ROYAL INFIRMARY

CONTENTS

Very best wishes for 1978
to all our Readers

JUBILEE – SOME EVENTS OF 1952

Journals, magazines and newspapers for the year 1952 have of late been prised from their secluded haunts, dusted off and perused to an extent that they will probably not experience for another 25 years. Jubilees are a gift to editors and leader writers and much potted wisdom can be displayed in articles on the momentous changes that have, or have not, taken place, as they shake their heads over missed opportunities and over failures to use the lessons from the past which should (in retrospect, of course) have seemed so obvious. Determined not to be outdone therefore, this journal trundled into the Medical Library to see what was news in those far off times.

Running through the index of the British Medical Journal we come to the heading (surprise, surprise) "Tobacco". This relates to a parliamentary report of January 31st 1952, when in reply to a question put to the Minister of Health, it was stated that there was not yet sufficient evidence of the exact relationship between heavy smoking and cancer of the lung to justify a publicity campaign, and that further investigations were in progress.

They were indeed, in the shape of another massive article from Richard Doll and Bradford Hill. They had studied 1465 cases of lung cancer, each one matched with a control. The whole study took about four years and showed convincingly that cigarette smoking was the main risk factor. Following this, the author of a leading article commented that statistics "cannot prove causation .... but can show that the probability of a causal connection between an agent and a disease is so great that we are bound to take what preventive action we can .... it would seem that such a position has now been reached with lung cancer". We have surely been saying the same thing for the last 25 years.

Atmospheric pollution also seemed to be a significant though smaller risk factor for lung cancer, when dwellers in town and country were compared. The appalling atmosphere of London had been severely criticised since Elizabethan times or even earlier when the custom of burning "sea coal" (coal brought by sea from Tyneside) became established. Fog was a traditional feature of London life for centuries, and the word "smog" was certainly in use over 70 years ago. So, on practically the last page of the December 27th issue of the BMJ for 1952, another one of these parliamentary reports appears. The bare facts speak for themselves. Deaths in Greater London for the week ending December 13th amounted to 4703, as compared to 1852 in the corresponding week of 1951 and emergency hospital admissions doubled to over 2000. This was quite simply an epidemic of acute respiratory disorders, the brunt falling on the elderly and on those with chronic disease. It was brought about by one of the worst smogs on record, which started on December 5th and lasted for nearly a week. Its disastrous effects started a public outcry culminating in the passing of the Clean Air Act of 1956, which banned the burning of soft coal in open grates.

Although cancer of the lung had obtained more news coverage, tuberculosis was still an important part of the scene. No less than 8200 patients were waiting to enter TB sanatoria; today many of these same institutions have closed or been converted to other use. The new drugs like streptomycin were still being evaluated and one difficult problem was the emergence of drug resistant strains of tubercle bacilli. An MRC report of that year demonstrated that this could be prevented by simultaneous administration of para-aminosalicylic acid. Although both these drugs are now seldom used having been replaced by less toxic and more powerful agents such as Rifampicin, the prevention of drug resistance by a combination of drugs remains of critical importance in the treatment of TB.

On the technical side, the paper of Bernstein, De Silva and Mendl in Thorax pointed out the deficiencies of the recording spirometers in use at the time. It was customary to measure the maximum breathing capacity (MBC) as the FEV had not come into use, but their comments are equally relevant to the latter measurement. One of the main problems in making accurate recordings of fast changes was the inertia of the moving parts in the older spirometers. Bernstein and colleagues, using light materials and a careful design, constructed a new spirometer with which faithful recordings could be made under any conditions likely to arise. The "Bernstein" spirometer is still widely used though dry spirometers look as if they are taking over.

No records appear to have been kept, unfortunately, on the activities of Respiratory Technicians. Readers may however, wish to note that the Jubilee of this Association will take place in the year 2002–so watch this space!

TOWARDS THE GLOSSIES

A new format for the Newsletter:

We decided that our Association Newsletter ought to have a rather more professional look and we have enlisted the help of Mr K.D. Welham of Amicus Limited, the South London printing and publishing firm. This is rather more expensive to produce than our previous efforts, but we think the improvement in presentation will be worth it.

We also publish as a separate Supplement an article by Barbara Minty on "Quality control of blood gas analysers" This is intended to give some guidance to technicians on how to obtain the most reliable results, how to detect the various possible faults and how to correct them. This is we hope, just the first of a series of such articles.

Readers may have noticed that the Newsletter has acquired a new title, and we hope that this meets with approval. We feel that a title of this kind would be preferable to something ponderous like *J. Assoc. resp. Tech. Physiol.;* after all, the Lancet with quite a simple title has been going strong for 154 years.

FORTHCOMING EVENTS

SOCIETY OF ANAESTHETIC LABORATORY TECHNICIANS

The secretary, Anne Barrett, has asked us to draw the attention of ARTP members to the following meetings:

Symposium on
"ASPECTS OF ARTIFICIAL VENTILATION"
to be held at the
QUEEN ELIZABETH HOSPITAL, BIRMINGHAM
on
Thursday 13th April 1978

Details from:
Mrs. Barbara Minty
Division of Anaesthesia
Clinical Research Centre
Watford Road
Harrow
Middlesex HA1 3UJ.

This follows the Spring Scientific Meeting of the Society (Wednesday 12th April).

Details from:
Mr A. W. Wood
University Department of Anaesthetics
Queen Elizabeth Hospital
Birmingham 15.

BREATHING CLUB

Saturday 21st January 1978
9.30 a.m. at
THE CARDIOTHORACIC INSTITUTE
Brompton Hospital
Fulham Road
London SW3

Half-day meeting:
"RESEARCH IN PROGRESS"

Joint whole-day meeting with the Measurement in Medicine Section of the RSM
to be held at the
ROYAL SOCIETY OF MEDICINE
on
Monday 20th March 1978
"STUDY OF LUNG VENTILATION AND PERFUSION BY MASS SPECTROMETRY"

Speakers at this meeting include Leon Farhi *and* Peter Wagner.

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CORRESPONDENCE TO THE EDITOR

PROBLEMS AHEAD!

I have always considered ONC and HNC courses as excellent academic hurdles but I have to agree with those who take the view that they are not the ideal course for Physiological Measurement Technicians. Too little of the course material is directly relevant to the day to day laboratory work, the syllabus varies from college to college resulting in different standards throughout the country, and the association representing each discipline has no influence on the content of the college-based course. The 'O Tec' course may go some way towards rectifying this position, but it gives rise to concern on a number of other points.

Direct recruitment of student technicians by individual laboratories will cease; instead they will be recruited centrally by the Regional Hospital Authority on a supernumerary basis, the number of students recruited being based on an *estimate* of how many vacancies are likely to occur. As there are nine different physiological measurement disciplines, does central recruiting mean that there will be nine chief technicians on the interviewing panel? I doubt it. And if not, who will make the selection and is the Authority going to ignore the chief technicians' judgement and ability to select those applicants most suitable for their laboratories?

The recruits will spend 6–8 weeks in each discipline and, on completion of this period, a further 24 weeks in the department of their choice, presumably subject to a procedure ensuring that they don't all end up in the same place! Now how can the DHSS accurately estimate how many Physiological Measurement Technician vacancies are

going to occur and in which disciplines? We cannot be regarded in the same way as nurses and doctors who are always in great demand and are required at different hospitals in many different areas. PMT vacancies are few and far between and one usually has to wait some time before coming across a suitable post in the right discipline and even longer if one is fussy about the area in which one works. I thus envisage a situation where there are several recruits qualified to this 'O Tec' standard who, because they were supernumerary and sponsored by the DHSS for the period of the course only, will either be unemployed thereafter, or will have to enter a discipline in which they have had only 6–8 weeks experience. Alternatively the DHSS may underestimate the number of vacancies that may occur and what happens then? Does a department with a vacancy have to wait up to two years for the Area Health Authority to produce a newly trained recruit?

The DHSS must not be allowed to take the view that a person trained to O Tec level in physiological measurement is immediately suitable to be placed in any physiological measurement department. It takes much longer than 6–8 weeks to become fully conversant with all aspects of any one specialist discipline and yet the newly trained recruit will be deemed a technician. Does the DHSS envisage a pool of Physiological Measurement Technicians? Perhaps the 'Jack of all trades, master of none' situation is not too far off.

The supernumerary students will require supervision and tutorials during their period of rotation spanning 72 weeks. It is part of the Chief Technicians' responsibility to train students who wish to specialise in their particular discipline but they just do not have the time to train people who want to specialise in something else. The DHSS have apparently suggested course tutors but as each discipline is highly specialised, it would be extremely difficult to find in each training area a person who had sufficient up-to-date expertise in every discipline of physiological measurement – I doubt if such people exist.

And what about non NHS establishments such as the Medical Research Council? Will they be happy to employ a student technician whom they will only see for six months within two years?

To revise the educational system in the manner now proposed will only lead to chaos, confusion, inefficiency, demoralisation and a general lowering of the standard of service to patients. The ONC course can surely be revised without causing such an upheaval. Now is the time to voice your opinion before it is too late!

KELVIN HOUSTON
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Please address correspondence to The Editor:

DR D C S HUTCHISON
Chest Unit
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London SE5 8RX

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SECOND ANNUAL GENERAL MEETING

The Second Annual General Meeting took place on Saturday, 8th October 1977 at the Cardio-thoracic Institute, The London Chest Hospital, London, E2. In the scientific session, we heard three papers of great interest. In the first Bill Crosbie gave us some insight into the medical problems of divers working in the North Sea; he was followed by Jim Reed who entertained us with a paper on exercise testing and finally Jim Milledge gave us a most interesting talk on physical work and adaptation at high altitude in the Himalayas. David Denison took the chair for this session at very short notice, and we are most grateful to him and to our three speakers for giving up their time for our benefit.

We also owe particular thanks to Jane Jones and Pat King, who did most of the local organisation. Jane also prepared a splendid buffet lunch and Philip Morgan contributed £20 towards the cost. Very many thanks to all concerned.

SCIENTIFIC MEETING

Dont forget the Diver!
Dr W. A. Crosbie, Chest Unit, King's College Hospital

Dr Crosbie has been interested for some in the medical problems of divers in the North Sea oil fields. He has recently visited one of the drilling platforms after what sounded like an extremely rough voyage and showed us a series of slides of the divers at work. Some of the drilling takes place in 600 ft. of water where the pressure is no less than 25 atmospheres, so a completely new technology of diving has had to be developed. We were left in no doubt of the extremely arduous and hazardous nature of this work, and that very high standards of physical fitness are required for those undertaking it. The main requirement for those undertaking the investigations is a plentiful supply of anti-seasickness tablets.

Exercise Testing – uses and abuses
Dr J. W. Reed, Chest Unit, King's College Hospital

Dr Reed brought us back to dry land by taking us through the whys and wherefores of exercise testing. The main problem with many patients is shortness of breath on exertion so it seems entirely logical to carry out a test which stresses the system and indicates the weak points. The older "steady-state" type of exercise has been replaced by the "progressive" test which can actually yield more information in a shorter time; cardiac, respiratory and functional disorders can be readily distinguished. There was some difference of opinion as to whether a certain line on one of the diagrams should or should not pass through the origin, but disappointingly, the argument ended quite peacefully.

Fun and Physiology in the Himalayas
Dr J. S. Milledge, Northwick Park Hospital

The atmospheric oxygen tension at an altitude of 19,000 ft. is about half the sea-level value and an unacclimatised person suddenly exposed to this degree of hypoxia would before long lose consciousness. After acclimatisation as Dr Milledge graphically showed us, one can remain compos mentis (or nearly so) and can carry out quite hard physical work for short periods. A whole physiology laboratory including a cycle ergometer was carried up to this altitude and Dr Milledge showed us some fantastic (no exaggeration) slides of the scenery. The view from the laboratory window must have been the finest ever, and how any work was done is hard to understand. Two of the expedition members exercised on the ergometer at 24,400 ft. (barometric pressure 300 mmHg) – fun for some!

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Mr J. W. Jaycock
Unit Administrator
Western Hospital
Southampton SO9 4WQ

Further particulars from Dr G. M. Sterling *at above address*

BUSINESS MEETING

Chairman's Report

The Chairman, Len Smith, summarised the activities of the Association over the last year and stressed the amount of work that the Executive Committee and other members have done to make the Association a working unit. The Association is a founder member of the Federated Associations of Medical Technology through which we have direct representation at the DHSS. The Executive Committee had formed a sub-committee on education, and our member, Jim Reed, is a member of the FAMT working party which is discussing education with the DHSS.

The Chairman said that he would like to see more "workshops" where members could discuss their difficulties with equipment and techniques.

Finally, he felt that more feedback was needed from members on how they would like the Association to be run.

In discussion, it appeared that the regional organisation of the Association has not been entirely successful; it was suggested that some regions with very low membership might amalgamate. The possibility of selecting a Public Relations Officer to recruit more members was discussed.

An important problem raised by Mrs Gessey was the lack of funds available to send students on courses or to pay their expenses for attending scientific meetings. This seems to be a universal problem and it was felt that funds might be easier to obtain from the Finance Officers if the programme of Association meetings were available at an earlier date.

Treasurer's Report

Membership for the year ending April 1977 was 106 and this had dropped to 77 for the year starting May 1977. The Association appeared to be quite solvent, however, and a healthy positive balance of £408.53 appeared on the balance sheet. A number of donations to our funds have been gratefully received.

Education

Jim Reed, the FAMT representative on the DHSS working party on education outlined the events of the last few months. The working party was made up of members from the DHSS, regional scientific officers and members of the FAMT.

Dr Reed felt that after five meetings in seven months little progress had been made though the working party had now reached agreement on entry to the 'O Tec' course: four 'O' levels – Maths, English and two Science subjects. This course would consist of a college day release with in-service training. It would mean each student spending six weeks in nine departments dealing with physiological measurement during the first year and in the second year more time and detailed study on their elective subjects. Dr Reed commented that the Trent region had compiled a comprehensive document for the college based course and this was to be submitted to the O Tec committee.

In discussion it was apparent that there was a good deal of disagreement among members on how the education courses should be run.

Editor's Report on Newsletter

The Editor felt that the Newsletter had fallen somewhat short of the monthly glossy magazine, but five copies had been produced in the preceding year. It was hoped that a series of scientific articles would be produced and there were plans for producing the Newsletter in a more professional format.

Election of Officers

The following Officers and members of the Executive Committee were elected:

Chairman:	Len Smith	(Re-elected)
Treasurer:	Ann Watson	(Re-elected)
Secretary:	Sally Gough	(Re-elected)

Executive members:

Jane Jones (Re-elected)
Derek Cramer
Kelvin Houston
Gloria Gessey

Other business

It was felt by some members that voting for the Executive Committee should be open to all members of the Association, and it was suggested that the Constitution might be amended in this respect.

Date of next Annual General Meeting:

early autumn 1978

EXECUTIVE COMMITTEE

Some differences of opinion

Report by Kelvin Houston

Much of the meeting of 25th October was taken up by a discussion on education and it appears that there was a lively exchange of views when Jim Reed presented a report on the position of the newly proposed 'O Tec' courses. It looks as if this system is definitely going to be introduced. The Executive seem to be deeply divided on this issue, and two separate proposals have been made:

1 Some take the view that the 'O Tec' course should be general and that the whole of the two years should be equally proportioned between the nine separate disciplines (Nuclear medicine, electronics and instrumentation, radiation physics, cardiology, audiology, neurophysiology, respiratory physiology, anaesthetics, renal dialysis). The student on completion of the two years would then apply for a vacancy in his preferred discipline and would start to specialise at that point.

2 The alternative view is that there should be a period of six weeks in each specialty followed by a year in the department of one's choice. If there were no specialisation within the two year training period the DHSS might be able to say that the end product of the course is an "all-rounder" technician capable of working in any physiological measurement department when the occasion demands.

It was eventually agreed that there should be an elective subject, but that the period of secondment should be eight weeks.

Zuckerman Report

Discussions are taking place with the Whitley Council on the possibility of introducing a Senior Chief grade to the physiological measurement scales.

Respiratory Physiology Laboratory based Courses

Films on various techniques are being made and will be available at some time in the future.

Recruitment

Kelvin Houston will look at ways of improving recruitment.

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