

week.³ The percentage rises after this time, but again there is much variation in individual cases. Further analyses of the liquor chemically are being made to try to improve accuracy in interpretation, but these too are likely to show much variability. The oldest method of all is probably radiography in the hope of showing centres of ossification. These can be obscured by maternal shadows, but the lower femoral epiphysis appears at about 36 weeks and that of the upper end of the tibia at 40 weeks. They too are variable.

Two things are wanted. One is a measure of the weight of the fetus in an individual case at any time in pregnancy. So often it is the weight of the fetus which determines whether induction of labour or caesarean section should be performed. The second is an estimate of the time that has elapsed from the beginning of pregnancy when the date of the last menstrual period is not known with reasonable accuracy. It should be noted that the modern tests of placental function all require that the gestational age should be known. In some cases, therefore, it might be wise for the family doctor to advise a woman to keep a note of her periods.

Time and growth are fundamentals in biology, nowhere better exemplified than in pregnancy. Much is known about them in the statistical sense, comparatively little in the individual. But this is what is needed in clinical practice.

Progress in Physiotherapy

Soon after the renewal of interest in massage or "medical rubbing" at the end of the nineteenth century the Society of Trained Masseuses was founded to regularize this treatment. In 1900 the society became incorporated, and in the next two decades it introduced examinations in remedial exercises and in medical electricity. By 1920 the society had merged with the Institute of Massage and Remedial Gymnasts, and in that year it was granted a charter to become "The Chartered Society of Massage and Medical Gymnastics." At this time men were first admitted, and landmarks since include the adoption of the name "Chartered Society of Physiotherapy" in 1942, and the initiation of state registration in 1960.

Now, 50 years after the granting of its royal charter, there are just over 30,000 members of the society, of whom just under 10,000 are practising in the United Kingdom. Last year 740 physiotherapists qualified from the 38 training schools. What these statistics do not show is that there is a shortage of trained staff physiotherapists, and that there are not enough teachers or suitable applicants for places in physiotherapy schools. The Chartered Society is playing an active part in helping to improve the situation, and supervises training, examination, and registration. The national shortage of physiotherapists is estimated to be about 20%. Nevertheless, this shortage is patchy, and it is made worse by a "wastage" of trained physiotherapists, some of whom marry or take other posts outside physiotherapy. This wastage would certainly be lessened by improvement of the career and salary structure of the profession, which lags far behind other fields open to young women.

With the current shortage of physiotherapy teachers possibly the training schools could be reorganized on a more

efficient basis. Most physiotherapy schools have grown where there has been a demand for therapists, and the reduplication of small schools is wasteful of teachers' time. It has been proposed that there should be fewer schools with a larger and less frequent intake, and that teaching should be shared with other auxiliary medical professions or with medical schools. Logically, training schools should be organized at regional centres so that both training and staffing can be spread more uniformly over the country.

The value of physiotherapy for patients in rheumatology, orthopaedic, neurology, and intensive care units is not questioned, and often a demand for a 24-hour service is being met. Nevertheless, the responsibility for the efficient use of physiotherapists' time rests with doctors. Though few medical students or junior doctors have any illusions about the social benefits of physiotherapists, few have been taught about the uses and abuses of physiotherapy itself. Equally, good clinical trials of the effectiveness of physiotherapeutic treatment have been scarce, though every clinician has the responsibility to establish that his prescriptions are effective. Recently a lead has been given by the British Association of Physical Medicine and Rheumatology with trials of treatment of pain in the neck and arm,¹ and of preoperative and postoperative physiotherapy,² the former with the help of leading physiotherapists and the latter with the co-operation of the Chartered Society. The support of this kind of project by the Department of Health and Social Security shows the growing interest in the cost-effectiveness of various types of physiotherapy, and there seems little doubt that the results of these will support the present trend away from electrical treatment towards physical methods.

The medical pharmacopoeia could be greatly reduced in size if only drugs of proved effectiveness were prescribed; similarly, the bulk of work and consequent shortage of physiotherapists might well be reduced if prescriptions were confined to those of established value.

Absence from Work

Increasing absence from work attributed to sickness is causing mounting concern in industry and commerce. Three hundred and ten million working days of National Insurance sickness benefit supported by medical certificates are now being paid in this country each year, an increase of about 15% in 15 years. In addition to the cost of sickness benefit (£300m. per annum), the country loses the value of the absentee's production and his contribution to income tax and to the National Insurance fund.

The chronic sick (the 1 to 2% of the insured population who have been sick for more than a year) account for a third of the total working days lost and for some of the increase in sickness absence in recent years. Apart from the chronic sick the increase in sickness absence has occurred mainly in the younger people.¹ In the 15-year period the average number of spells of absence per person under 45 has increased by about 80% and the average number of days by 90%, whereas there has been little change in people of over 45.¹ The National

¹ British Rubber Manufacturers' Association, *Abridged Proceedings of the National Health Conference*, London, B.R.M.A., 1969.

² Raffle, A., *Proceedings of the Royal Society of Medicine*, 1970, 63, 731.

³ Froggatt, P., *British Journal of Industrial Medicine*, 1970, 27, 199.

⁴ Froggatt, P., *British Journal of Industrial Medicine*, 1970, 27, 211.

⁵ Froggatt, P., *British Journal of Industrial Medicine*, 1970, 27, 297.

¹ *British Medical Journal*, 1966, 1, 253.

² Nichols, P. J. R., and Howell, B., *Rheumatology and Physical Medicine*, 1970, 10, 321.