rate and thus afford equally as good results as for photon therapy in HPO or irradiation with fast neutrons. Such a trial might conflict with the individual preferences of radiotherapists but not with ethical considerations. Also it should be undertaken before less advanced, more curable cancers are submitted to trial by radiotherapeutic management by the techniques of HPO-photon or neutron therapy, whose advantages necessarily remain sub judice for lack of decisive information about optimal fractionation of dose "in air."

This baseline would also greatly assist the experimental radiotherapist, who seeks to apply clinically knowledge derived from laboratory experiment of differential radiosensitisation of tumours by physical and chemical means (including HPO and neutrons). Radiobiologists have provided much useful information which clinicians can tentatively use to plan radiotherapeutic treatments which vary in the number and size of dose fractions. But no amount of further test-tube or animal experimentation will serve to provide a definitive answer to the question of optimal dose fractionation using conventional x- and γ -ray facilities to treat cancers in humans and thus pave the way to the trial of new modalities.

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¹ Churchill-Davidson, I, Sanger, C, and Thomlinson, R H, *Lancet*, 1955, **1**, 1091.

² van den Brenk, H A S, *American Journal of Roentgenology*, 1968, **102**, 8.

Commitment to oncology

SIR,—I am glad Professor K D Bagshawe has written (18 June, p 1597) about the development of "medical oncology." No single specialty either can or should make an exclusive claim to the "control of non-surgical cancer work." Even surgeons themselves do not wish to restrict their work to the operating theatre only. Many in my own specialty, however, naturally feel that many years' whole-time experience of treatment of cancer has some value and that too extreme advocacy of cancer chemotherapy should not be accepted uncritically. There are hawks and doves on both sides, as the correspondence columns show.

British radiotherapy departments have created some of the recent advances in cancer treatment (including some in chemotherapy)—the treatment of lymphoma, testicular tumours, the early introduction of random controlled trials, and technical aspects such as the use of fast neutron therapy and of computers are examples I should not need to quote or amplify. Radiotherapy has achieved this in spite of suffering for too long not only from having a heavy service work load but also from having far too few properly staffed academic university departments. The initiative of the cancer research funds in supporting departments of medical oncology has been of value, but it would also now help if there could be endowment of a few more similar departments of radiation oncology. Many of our best young people also emigrate for lack of opportunities in Britain.

Our training in radiotherapy and oncology has been changing steadily and will continue to do so, both in terms of syllabus and examination content and examination framework, with even greater emphasis on cancer management in general—that is, "oncology." Some medical

oncology trainees themselves have already asked whether they may come to the Royal College of Radiologists' London day release course. No detailed proposals have yet been made for any common pathway for training in medical and radiation oncology, but it would surely be of great value for there to be combined training for at least part of the time. We ought to discuss the idea, with the views of senior and junior oncologists of all disciplines being welcomed. The present training of radiation oncologists lasts as long as that of a medical oncologist. The techniques of radiotherapy and of chemotherapy only take up a part, even though they are very important. The major part for all oncologists should be the clinical care of cancer, its natural history, diagnosis, and management, and the relevant basic sciences, pathology especially in the widest sense, medical statistics, and research aspects.

The number of patients being referred to radiotherapy and oncology departments continues to increase, and chemotherapy so far seems needed not to displace but to supplement either radiation or surgery or both. I do not think many of us will wish to replace radiotherapists with chemotherapists but we will support new posts of any kind in oncology if their value is demonstrated.

May I repeat that collaboration is needed rather than competition? I would personally be extremely glad to receive detailed suggestions from anyone interested.

KEITH HALNAN

Glasgow

. This correspondence is now closed.—ED, BMJ.

Incidence of animal bites in Leeds

SIR,—Since the publication of my note on this subject (2 July, p 53) it has been pointed out to me that the figure of £2m I quoted as an estimate of the cost of bite injuries in Leeds in a year seemed very high. I must apologise for a misunderstanding here. The figure represents my best, admittedly very rough, estimate of all costs to the Leeds metropolitan community, direct and indirect, arising from bites and not, as the article suggested, direct costs alone.

I would recall that it was clear from inquiry that bites treated in hospital are only a fraction of the total. Considerable general practitioner work is also involved; bites caused time lost from work; dogs wasted school-teachers' time and in a number of ways gave rise to calls on the public services. Nevertheless I regret the misleading impression. Direct costs to the hospital services would be about £30 000 for the year investigated.

ELIZABETH HERVEY

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Impacting the wax

SIR,—May I use a short space in your columns to condemn the use of cotton-tipped "buds" in ears?

My experience in conducting busy otological clinics has impressed me with the increasing number of patients who have wax impacted in the deeper part of their bony meatuses. They have admitted to using cotton-tipped "buds"

which are sold over the counter in chemist's shops or in supermarkets. Many of them have followed advice passed on from previous generations of the importance of cleaning the ears thoroughly. This advice has been given without the knowledge that the meatal skin has the natural tendency to extrude the wax as part of the self-cleansing mechanism. A cotton-tipped "bud" acts as a plunger and pushes the wax into the deeper part of the body canal, making removal by direct vision very difficult. I have also had to deal with ear drums that have been damaged when the patient has been cleaning the ear with such a "bud" but has had to answer a telephone call without removing the "bud" and then pushed the probe against the wall and consequently through the drum.

In order to avoid such further problems, I would suggest that a warning notice be printed on each packet restricting the use to the orifice of the external canal. I personally have advised all my patients against them and hope that their use in the future will be seriously discouraged.

J SIEGLER

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Schistosomal myelopathy

SIR,—The evidence presented by Dr J Cohen and others (14 May, p 1258) on the acute necrotising schistosomal myelitis of their Greek patient being "partly mediated by the immune response to either worm or ova antigen or both" did not convince me. With regard to diagnosis as well as prognosis I found the term "necrotising" especially disturbing. We should not speak of a "necrotising" process unless we have seen the histological evidence. I understand that the patient is still alive. I wonder also if the term "ascending myeloradiculopathy" would have described the clinical picture more accurately as compared with "transverse myelitis."

A single negative myelogram never proves that a granulomatous schistosomal lesion of the spinal cord is lacking. A negative myelogram may become positive in the course of time.¹ Neither does a positive myelogram exclude myelitis. The article does not make it clear how the authors came to the conclusion that the IgG of the CSF included antibodies to *Schistosoma mansoni* ova and worms.

I beg to disagree with the authors on the relevance of their citations of the literature. (1) The article by Phillips and Draper² deals only with immune complexes, which were not found to be present in this patient. (2) The article by Wakefield *et al*³ has been wrongly cited: "the characteristic findings in the CSF of lymphocytic pleocytosis with raised protein concentrations. . . ." But Wakefield *et al* wrote: "we feel that the important finding in our cases was the presence of eosinophilia in the spinal fluid. . . ." (3) The article by Bird⁴ has been wrongly quoted: "The importance of the individual allergic response to acute infestation with *S. mansoni* has long been recognised. . . ." But Dr Bird writes: "it would appear that direct invasion by worms is more likely to occur within the spine than within other organs because of the venous anastomoses referred to. The distribution of the lesions in the lower parts of the cord, not only in our cases but also in all those referred to in the literature, tends to confirm this hypothesis. . . ."

(4) It remains unproved that the myeloradiculopathy in this patient was in fact due to an allergic process alone. It may be more logical to assume that the myeloradiculopathy in this patient was the result of direct invasion by ova or worm or both.³ (5) Long before the claim of Cohen *et al* to priority

("an observation not previously made") Hillyer⁵ wrote in 1971: "the results suggest that auto-immune and/or localised in vivo antigen-antibody reactions may play a significant role in the pathogenesis of schistosomiasis. . . ." In 1930 Muller and Stender reported a similar case.⁶

EEG, EMG, and spinal cord evoked response studies of the reported case must be most relevant. It is regrettable that these studies were not mentioned in the article. The treatment given to this patient (niridazole 25 mg/kg twice daily for 14 days and then prednisolone 10 mg three times daily, reducing to 5 mg daily after one week) must be considered too little and too late. Why were hycanthone and higher doses of prednisolone not tried in this utmost neurological emergency? What could have been the relative or absolute contraindications?

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- ¹ Ross, G L, Norcross, J W, and Horray, G, *New England Journal of Medicine*, 1959, **246**, 823.
² Phillips, T M, and Draper, C C, *British Medical Journal*, 1975, **2**, 476.
³ Wakefield, G S, et al, *Brain*, 1962, **85**, 535.
⁴ Bird, A V, *Neurology*, 1964, **14**, 647.
⁵ Hillyer, G V, *Proceedings of the Society for Experimental Biology and Medicine*, 1971, **136**, 880.
⁶ Muller, H R, and Stender, A, *Archiv für Schiffs- und Tropenhygiene*, 1930, **34**, 527.

Professorial pulchritude

SIR,—Referring to the obituary tribute to the late Professor M F Lucas Keene (28 May, p 1422) in which this comely teacher is described as "the first woman professor of anatomy," I am prompted to draw attention to the following fact.

In Wilfred Blunt's book *Sebastiano* about the travels of a Bolognese priest to Paris and back in 1664-5 it is stated that "Bologna was the first university to institute a chair of anatomy, and the first perhaps to have a woman professor—Novella d'Andrea, in the fourteenth century. (Such, however, was that lady's beauty that she was obliged to deliver her lectures behind a curtain.)" Similar restrictions were not practised 600 years later when the histrionic Professor Lucas Keene gave her lectures, which, no doubt, were a conspicuous success.

VALENTINE SWAIN

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Megaloblastic anaemia associated with sulphasalazine treatment

SIR,—Drs R E Schneider and Linda Beeley (25 June, p 1638) report a case of anaemia with megaloblastic change in the marrow which, they feel, resulted from treatment with sulphasalazine. The use of this agent may be questioned in a patient in whom a diagnosis of ulcerative colitis was excluded by normality of the rectal mucosa. The symptoms reported may merely have been the result of an irritable bowel syndrome and haemorrhoids.

The microbiological serum folate level would be invalidated by concurrent antibacterial therapy,^{1,2} and only an isotope dilution technique would have been acceptable.² However, the serum vitamin B₁₂ level (presumably measured by the *Euglena gracilis* or isotope dilution method) would be resistant to antibacterial interference and was low compared with stated normal ranges. Since no details of gastric antibodies, peak acid output, or Schilling test are reported B₁₂ deficiency

cannot be excluded, and the response to high-dose folate therapy is not specific to folate depletion. It has been suggested that patients with B₁₂ deficiency may be especially prone to sulphonamide-induced blood dyscrasias.³

More information, including adequate documentation of dietary folate and some investigation of the small bowel, is required before sulphasalazine is blamed for the megaloblastic anaemia in this patient.

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- ¹ Herxheimer, A, *Journal of Antimicrobial Therapy*, 1975, **1**, 346.
² Bateson, M C, Hayes, J P L A, and Pendharkar, P, *Lancet*, 1976, **2**, 339.
³ Chanarin, I, and England, J M, *British Medical Journal*, 1972, **1**, 651.

Bites from house martin parasites

SIR,—Insect bites are common but often the causative insect is not identified.

In late April neighbours started to suffer a series of severe insect bites, with bullae and marked surrounding erythematous induration, principally around the ankles but also elsewhere on the limbs. The pruritus lasted for over a week despite treatment with local and systemic antihistamines. One of the insects was identified by Dr S F Barnet, of the Department of Clinical Veterinary Medicine, Cambridge, as *Oeciacus hirundinis*. These small brown parasites of swallows and martins are similar to bed bugs. There have been no recent published reports of this insect emerging from house martins' nests to bite humans.

It appears that the insects over-wintered in the remains of last year's nests and became active at the start of spring, just before the martins returned from Africa. Many of the insects entered the houses around the window frames and, usually at night, crawled over the ceiling, falling on to the bed and biting their human victims. Hiding from light by day they were not initially apparent.

The victims had not suffered similarly in previous springs, although the martins had nested under the eaves within inches of the windows for two years past. The succession of good summers and mild winters may have allowed the bugs to build up to large numbers, such that with the coming of the warmer weather they spread further afield in search of their usual prey and found humans instead.

This year attacks abated with the complete clearance of all traces of old nests and extensive spraying of the area with domestic fly spray, to which the bugs are susceptible. As an ornithologist may I ask that the nests are not knocked down till after the end of the breeding season?

N I MCNEIL

Cambridge

Beckett on biofeedback

SIR,—Your informative leading article (11 June, p 1491) on biofeedback considers some recent publications on this concept, but perhaps the most extreme example of voluntary cardiac control was vividly described as long ago as 1938.¹

"Murphy had lately studied under a man in Cork called Neary. This man, at that time, could stop his heart more or less whenever he liked and keep

it stopped, within reasonable limits, for as long as he liked. This rare, faculty, acquired after years of application somewhere north of the Nerbudda, he exercised frugally, reserving it for situations irksome beyond endurance, as when he wanted a drink and could not get one, or fell among Gaels and could not escape, or felt the pangs of hopeless sexual inclination."

It is, perhaps, not surprising in a land in which the heart more often than not rules the head, that Murphy himself should have some cardiologically peculiarities, but Beckett's insight into cardiology—or, perhaps more correctly, into cardiologists—is fascinating; might not Neary have as easily created the words inotropy, chronotropy, or bathmotropy?

"Murphy's purpose in going to sit at Neary's feet was not to develop the Neary heart, which he thought would quickly prove fatal to a man of his temper, but simply to invest his own with a little of what Neary, at that time a Pythagorean, called the Apmonia. For Murphy had such an irrational heart that no physician could get to the root of it. Inspected, palpated, auscultated, percussed, radiographed and cardiographed, it was all that a heart should be. Buttoned up and left to perform, it was like Petrushka in his box. One moment in such labour that it seemed on the point of seizing, the next in such ebullition that it seemed on the point of bursting. It was the mediation between these extremes that Neary called Apmonia. When he got tired of calling it the Apmonia he called it the Isonomy. When he got sick of the sound of Isonomy he called it the Attunement. But he might call it what he liked, into Murphy's heart it would not enter. Neary could not blend the opposites in Murphy's heart."

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- ¹ Beckett, S, *Murphy*. London, Routledge, 1938.

Zinc, acrodermatitis, acne, and prostaglandins

SIR,—You have twice recently drawn attention to the importance of zinc in human metabolism.^{1,2} In zinc poisoning there are gastrointestinal upsets, fever, muscle pain, hypotension, cardiac arrhythmias, and renal and hepatic damage.¹ In acrodermatitis enteropathica there is a zinc deficiency.^{2,3} Acrodermatitis responds to treatment with either halogenated 8-hydroxyquinolines or zinc.³ In one patient zinc treatment brought the plasma level of the metal from 400 µg/l up into the normal range of 700-1150 µg/l.³ A patient with acrodermatitis and acne showed improvement in both conditions during zinc treatment⁴ and zinc has been shown to bring about improvement in other acne patients.⁵

In acrodermatitis enteropathica there is evidence of abnormal essential fatty acid metabolism and prostaglandin deficiency.⁶ Using a rat vascular preparation we have recently shown that zinc is a powerful stimulator of the production of a substance which has the characteristics of prostaglandin E₁. The threshold zinc concentration for the effect was 500 µg/l, which is very close to the threshold for a therapeutic effect in acrodermatitis. Excess stimulation of prostaglandin synthesis could account for a number of the features of zinc poisoning. It suggests that prostaglandin synthesis inhibitors, like aspirin and indomethacin, and prostaglandin antagonists might be of value in this situation.

We have not tested the halogenated 8-hydroxyquinolines, but we have shown that the related compounds chloroquine and quinine can act as either prostaglandin agonists