epistaxes and less frequently as large haematomata, haematemesis, or melaena. When phenindione or ethyl biscoumacetate are being taken, 25–50 mg. of vitamin K₁ orally is usually sufficient to restore prothrombin levels to normal within 18 to 24 hours. 10–20 mg. of vitamin K₁ given intravenously will have a quicker effect, but this is seldom necessary for a minor haemorrhage, since vitamin K₁ is active within three hours of its oral administration. Indeed, since anticoagulant therapy will be continued after the haemorrhage has stopped, only the omission of the anticoagulant for one or two days is usually all that is necessary for superficial bruising. It is undesirable to administer vitamin K₁ in the presence of minor bleedings, since the abrupt return of the prothrombin time to normal is sometimes associated with the development of further thrombosis. With the longer-acting coumarin derivatives, 50–100 mg. of vitamin K₁ orally or 25 mg. intravenously will be necessary in the event of a haemorrhage. If the family doctor finds it necessary to give vitamin K₁ or to reduce or stop the anticoagulant, he should refer the patient to the hospital or laboratory which is controlling the prothrombin time as soon as possible.

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THE TARDY CONVALESCENT

BY

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The Mundesley Hospital

One of the most memorable French exercises I was ever made to perform—I must have been 9 or 10 at the time—was to translate into French a little anecdote which ran thus: “A lady called upon a doctor to examine a spot on her finger. ‘It is a very good thing you lost no time,’ he said. ‘Why? Is it so very serious?’ she asked. ‘Had you waited until to-morrow, it would have disappeared,’ he said, ‘and I should have lost my fee.’” (“J’aurais perdu mon lolly,” dit-il.)

I have always found this story very comforting; indeed, it may have unconsciously influenced my choice of profession: I don’t know.

The fact is, luckily for most of us, that the animal body, the human psyche, and the divine spirit all strive to heal themselves when damaged, and to compensate themselves (in the non-litigious sense) when the damage is irreparable. This sometimes happens with our patients before we have got round to making a diagnosis. If we doctors ceased to exist, a working majority of our patients would get well of their own accord; and the human race would persist, not quite so uncomfortably overcrowded, perhaps, and not so geriatric-ridden; but it would get by. This may be the real reason why we never dare go on strike.

After the disease process has in the natural course of events burned itself out, after the physicians and surgeons have implemented such measures as stop the patient going downhill, by giving him something or taking something away, you might think that the patient would inevitably heal himself and regain a near-perfect state of health under his own steam? Not a bit of it. He will if he is an animal—a cat will streak across the

lawn on three legs after a bird before the stitches are out of his amputation stump—but not if he is a human with the normal human fear of the unknown and human suggestibility. He usually enters a stage of convalescence; and how soon he will emerge from that stage into exuberant or subdued health depends upon several factors, of which the possession of sound wind and limb is, oddly enough, one of the least important.

Why is this? What are the forces that militate against return to full health?

Fear

First and foremost, obviously, is fear: fear born of ignorance or incomplete comprehension. Many patients, I find, embark on their convalescence without any clear idea of what has been happening to them; what has been done for them; the whys and wherefores; and what they may expect next. And with the vast majority of them, what they fear in their imaginings is much, much worse than the truth.

A middle-aged doctor surprised me at my first interview with him, before I had even outlined a tentative policy for his rehabilitation. He had had a small patch of bronchopneumonia with great constitutional upset. He had never had a day’s illness in his life, and it had shattered him. He said, “I suppose I shall have to be pretty careful from now on? My wife has brought me long-sleeved vests and pants. Good thick ones, too. Like that stuff you stand typewriters on. They are going to take some getting used to. I’m used to wearing a thin singlet and shorts summer and winter alike.” It was no use arguing with the man. It had to be deeds and not words. His rehabilitation took the practical form of nine-mile tramps around the country in all weathers, bicycling, sunbathing, and swimming. It took just over a fortnight, and he left in very good heart.

Women who have been parted from a nine-pound uterus which used to bleed furiously in and out of season don’t realize that its removal enables them to enjoy better health and greater activity than they have experienced for years. They are often under the impression that the operation was performed merely to prevent them from getting worse; and they expect nothing better. The same applies to some who have had radical operations for prolapse or hernias. They have been mutilated and weakened, and must therefore be very, very careful in the future.

Where did they pick up these ideas? From the surgeons? It is most unlikely, except—and I shall return to this point later—where there is an ominous uncertainty implied by the request that they should attend the out-patient department in one, two, or three months’ time. They feel they had better go slow until they have had this final “all clear.”

They may have got the idea partly from hospital ward discipline, which lays such emphasis on bed rest, and allows no more exertion than sitting and strolling about the ward in dressing-gowns. It is possible that the last week or so of their hospital treatment is geared too low for their actual potentialities. Ward routine demands that after a certain point they seem to make no further progress.

And then, of course, they talk among themselves and compare notes. And they certainly have much to discuss. At Mundesley their discussions are unending and terribly inconclusive, for the patients are a random

collection from a number of different East Anglian hospitals who exhibit—I must not exaggerate—not quite 57 varieties of treatment for the same complaint. Billroth gastrectomy patients from one surgeon will be anxiously pingling a Witt III diet, while those from another surgeon are whacking into bottled beer and chops. One surgeon wants his herniorrhaphy cases to have three weeks of absolute bed rest, bed-pans and all; another will send them home on the third day with a memorandum to relinquish the stitches in a week, believing that, having removed a congenital sac, there can be no recurrence. Obviously the former patients will regard their cases as having been much more serious than those of the latter. They will have to be careful in the future and never lift a suitcase lest the wound bursts open and the hernia pops out again, and pops right out this time into their laps.

I mentioned bed-pans just now. May I digress? One of my great sorrows is that my late senior partner, Dr. Vere Pearson, never published his work on bed-pans. It was the fruit of really extensive research. Quite simply, he compared and contrasted bed-pans with bedside commodes as exercise-tolerance tests; and he found invariably that a patient's pulse rate and respiration rate were increased much more after using a bed-pan than they were after he had used a commode: thus confirming what all patients have repeatedly been telling us throughout the years: that it's a damned sight less exhausting to slide out of bed on to an adjacent commode than it is to balance and strain on an unfamiliar perch.

Complacency and Reluctance

Another reason, within the patient who makes a tardy convalescence, is *complacency*. Some patients, who are only too glad to be alive and freed from their pain, are undoubtedly inclined to rest on their oars. Especially is this true of the patient to whom his specialist has said, "Well, it was touch and go with you, old man; we nearly lost you." This gives him a special cachet, turns him almost into a museum piece to be admired and marvelled at, and a need to remain thus interesting as long as possible. This patient is quite the opposite of the one who boasts, "My surgeon said he'd never seen anyone who got on so quickly as I did." With her—and it's usually a she—I know I'm on a good wicket. She will press on like mad to retain her world title.

And then there is reluctance to be parted from the invalid's privileges. This I find is rarer than I had imagined; but when it is present there is no doubt about it. One of the reasons why I insist on seeing the patient's full case history before I see the patient is to get a bird's-eye view of his whole past health-sickness record and so know roughly what line of attack I should take at my first interview.

Recently I found myself addressing a professional invalid in these words: "Are you quite sure you really want to get perfectly well? Supposing I could wave a magic wand over you and make you fit, just think what it would mean. It would mean giving up bossing people around and making them fit in with your wishes. You'd have to find other things to talk about, other things to think about. *You might even find yourself having to do things for other people.* The sacrifices would be terrible. You've quite forgotten what it is like to be well. Are you sure you can make this sacrifice? I don't want your answer now. Think it over. Sleep on it. Take your time. I'm in no hurry. If you really

want to get well, I think I can help you to help yourself. But you'll have to do all the work. There's no magic wand." And I wouldn't listen to any expostulations, but bade her sleep on it.

She didn't sleep very well that night. The next morning, when she told me she really did want to get well, I just shook my head in disbelief, and there I let the matter drop.

The days went by. She made a perfectly good convalescence. As she crossed the front hall carrying her suitcase to the waiting car and I went across to say good-bye, she turned on me in front of all the other patients loitering there—"You are a fine doctor, I must say, talking to me as you did when I first came here. I've never heard the like. I shan't come back here in a hurry." I bowed my head in shame. She got well to spite me.

I should mention one important extrinsic factor which may all too easily militate against convalescence and which I proudly claim as my own discovery.

A patient, when just ticking over 24 hours a day in bed in a hospital ward kept at a temperature of 70°, needs fewer calories than he does when he's up and about outdoors all day in a bracing sea climate and tramping five to six miles daily. At this stage he needs *more* calories; and *more still* if he is to regain the body weight he lost while in hospital. The effect of regaining this lost body weight on a patient's morale is incalculable. In a nutshell: inadequate food impedes convalescence.

An Early Experience

My first impact with convalescent homes was 30 years ago. In those days they were charitable institutions supported by voluntary contributions. Each one was associated with its own mother hospital, in whose gift its benefice lay—and a pretty rich gift it was too in those days for folk who could never afford to go away on holiday to be sent for a week or a fortnight to a seaside convalescent home. The honoraries and the ward sisters would confer and agree on which were the deserving cases.

My concept of the home itself, which I have cherished for these 30 years, and which may or may not be out of date by now, was that of a seaside establishment where these selected patients were sent as soon as they could make their own beds. It was presided over by a dear, chubby, soft-faced matron. The local doctors, who dropped in once or twice a week to sign certificates or take a look at problem cases, were so respectful towards her as to appear completely under her thumb, even if they didn't realize it.

After mooching about for the statutory 14 days, spent mostly in the common-room with the windows closed, smoking, playing billiards or cards, or listening to the wireless, the patient was sent home.

His G.P. now suddenly came back into the picture, completely clueless and unwillingly impressed by the patient that he must have been extra-seriously ill, because they had to send him away to the "Convalescunks" and he's only just back. So under the patient's guidance he prescribed a good strong tonic to build him up again, and issued still more club certificates pending some authoritative news and views.

Now this set-up obviously had its place, may still have its place. I am not decrying it; but even its most ardent supporters would allow that there might be room for improvement.

Presumably with something like this in mind, the East Anglian Regional Hospital Board decided by way of experiment to try opening a rather more high-powered convalescent hospital (or post-acute hospital as it is sometimes called) and rehabilitation unit; and I was put in charge, also experimentally.

Steps to Rehabilitation

Certain desiderata were mapped out, and more have emerged during the 21 months we have been functioning.

First, that rehabilitation should begin the very first day of arrival. If this is not to be mere lip-service to a good idea it involves an initial interview with the patient alone: alone, with no one else within earshot. A strange fellow-patient in an adjacent bed may embarrass and inhibit the newcomer; and if there is a sister in attendance I find I talk too loudly and start showing off. The interview has to be leisurely and of indeterminate length. It involves discussion, explanation, investigation into the patient's home set-up in some detail, and an assessment, usually only an impression, of the zest with which the patient faces the future—or his lack of zest.

Second, that rehabilitation should be progressive. Each day should bring "a step forward" whenever possible: hours up, exercise taken, and so on. This involves incessant exhortations, encouragement, praise and admiration, and a bit of mild bullying. Many elderly people, who for years have never ventured further than round the corner to the shops or to the nearest bus-stop, are amazed to find themselves, in less than a fortnight, rejuvenated, tramping the three hilly miles to the seashore and back with zest.

Third, that the patient should not only become fit but that he should become confident that he is fit. This is not always possible. Should his illness have left him with a partial incapacity, he needs to discover the extent of this residual disability and learn to live, and to live confidently, within his new limitations. This makes the job really worth while and enviable, for it means quality rather than quantity. Each patient has to be studied individually. With some, the end-point is reached when they "haven't felt so well for years," and are ready to plunge back into their normal employment without any qualms—and without further weeks on sick benefit. With others it may mean only going home, living on the ground floor, and having the minimum amount of home help.

Oddly enough, this criterion does not interfere with turnover as much as I had expected: for the average length of stay is only 22.7 days. It is also the hardest criterion to fulfil. The patient who has had a couple of coronaries while in hospital doesn't feel completely foolproof, even after he has demonstrated to himself that he can climb stairs and walk three hilly miles to the seashore and back. Girls under their mother's domination—and I've had as many as four of these at one time—have not got the same inner drive to get back into harness as girls on the brink of matrimony have. Sometimes something can be done by almoners, welfare officers, and such to alleviate the conditions which face the patient at his discharge. Sometimes the patient can come round to a more tolerant, more creative, attitude towards his difficulties. More often than not, a lot of work and thought can be expended in this field without showing any results at all; but the results, when they do come, are richly rewarding.

Fourthly, that the G.P. should be put into the picture no later than the same day the patient gets home. This is really very easy. Notes have got to be made up and letters written some time, so why not on the day before the patient leaves instead of several days later?

Specialist Follow-up

Comes the day when I make up the final notes and draft the report to the G.P.; and I look at the original application form. Does the hospital consultant want to see the patient in his out-patient department? In 19 cases out of 20 the answer is yes, he does. "To come up in a month's time."

In at least three cases out of ten that pass through my hands a specialist follow-up is entirely unnecessary.

Obviously in cases of malignant disease and cases of chronic progressive disease results and progress should be checked and followed through by experts with all their armamentarium of x-ray films, cardiographs, pathological investigations, and expert knowledge. Consultants naturally wish to follow up cases of unusual interest, and they should be allowed to do so, if the patient's family doctor feels it is not likely to prove detrimental to the patient concerned. It must be rather nice, too, for them occasionally to see an ex-patient whom they have successfully helped to regain his health, amid their schools of recurrent chronics. One should not deprive them of all their fun. But so very often it is their registrars who see the old cases. In at least three out of ten cases which have undergone routine surgical operations or run-of-the-mill medical episodes, the specialist follow-up is an unnecessary ritual. It is also harmful.

The patient concerned is not allowed to put his illness or his operation into the past where it belongs. He is not allowed to cease being a patient. Looming ahead of him lies that visit to the hospital; presumably, he thinks, to make quite, quite sure that all is well. So there must be some doubt about it even now. So he is subjected to further anxiety and suspense. It also hamstring the patient's G.P., who dares not make any radical changes in the patient's regime while he is still under hospital treatment. The G.P. is no longer in control. He dare not even allow the patient to go back to work, lest it seem premature. Should he do so, when the out-patient appointment falls due, the patient will have to lose a day's work, and fight against terrific odds to get free transport laid on for him.

Role of Nurses and Orderlies

No account of rehabilitation would be complete without reference to the part played by nurses and orderlies.

Nurses receive their training in the wards of general hospitals, where the patient is very much the under-dog. On admission he is divested of his clothes, so he cannot walk out in a huff, as you and I would walk out of a hotel where we did not get the service we expected. At the outset, too, he is broken in by being kept in bed. This does not merely strip him of his manhood: it reduces him to infancy and an infantile dependence upon the mothering nursing staff. The association of ideas between "being a bad boy" and "being kept in bed" seems ineradicable. A bed-patient will say of a relapse, "I've been misbehaving myself again, doctor":

a remark which no patient clothed and in his right mind has ever been known to utter.

The ward set-up is matriarchal. For 24 hours of the day he is at the tender mercy—and I am not denying that it is a tender mercy—of the nursing staff. Every day, Daddy, in the shape of consultant, registrar, houseman, or whatnot, drops in for a comparatively short time, not much more than 10% of the total hours; and he seems concerned mostly with temperature and urine output charts, x-ray films, and pathological reports—the good behaviour, medically speaking. With matters of ward routine he rarely interferes: in these matters “Mummy knows best.”

There is a school of thought that discerns a hierarchy, a Pecking Order, within the matriarchal group. It maintains that the fledgling nurse in a hospital ward is a bit scared of everyone, including even the patients; but with the patients—obviously the lowest form of life—she feels she has something in common, and she may actually take their side at first. But she soon grows out of this, and when she demonstrates complete ascendancy over all patients she is given her colours; ascendancy over housemen and registrars and she's a staff nurse; over visiting consultants a sister; ascendancy over the whole boiling lot, including house committees and hospital management committees, and she's a matron.

Now, I'm not quarrelling with this set-up. It has stood the test of time. Although not necessarily perfect, there is nothing to beat it as a haven for the sick and weary. I would even go a long way with the Freudians, who claim that illness necessitates regression to childlike reactions and behaviour, and needs loving care from mother and father figures. And I would go further. The return to full health involves a growing-up, a weaning from the mother, and, eventually, a rebellion against paternal domination.

To revert: until the day of his discharge the patient in a general ward usually remains deprived of his clothes, and leads at most a slipshod existence in pyjamas and dressing-gown. Bed is obviously the right place for him: to be allowed out of bed is a privilege. He has to hop back into it again for the doctor's rounds, and for visiting hours. In between whiles the more ambulant patients may be given little errands and other servile jobs to do, and so earn some good marks. How eagerly and officiously do they comply.

Not only is the patient assumed to be helpless, he is also assumed to be dim-witted and irresponsible. Maybe quite rightly; he may have been helped to regress so successfully that, no matter how mature, responsible, and integrated he used to be in everyday life, under ward conditions he has travelled backwards to the mental age of 3 minus. He cannot be trusted to take his own temperature or his own medicines. At appointed hours a nursing trots round and spoonfeeds him. His lifelong experience concerning which aperient or hypnotic or what diet suits him best is ignored; and he does not endear himself if he proves that, as he foretold, the routine stuff fails in its purpose. In next to no time the word goes round that he is a difficult patient, subversive, a trouble-maker, and a bad influence on the ward morale, to be treated with hauteur and to be got rid of as soon as possible.

I know what I'm talking about because it has happened to me, a most inoffensive chap. I merely pointed out— But I won't go into all that.

The ideal patient is one who conforms utterly, submits to absolute regimentation, and, of course, exudes appreciation at every pore.

I have painted this picture in good strong colours because I want to make the point that when nurses, who have trained and worked quite happily in that night-nursery climate—when they undertake convalescent nursing, they often don't like it at first. In fact, they may never come to like it, for it needs considerable reorientation.

As I have said elsewhere, it is most noticeable that nurses prefer their patients to be helpless, and the more helpless the better. Why? A heavy case means hard work, and hard work is always satisfactory; but in addition the helpless patient, however crotchety, is emotionally rewarding, giving the nurse the heart-warming feeling that she is *needed*. To lose this status of being needed can be almost as upsetting as being jilted.

Nurses are not alone in displaying this reaction. After all, the patient is merely a neighbour to whom we are able to offer timely help. We are all apt to forget this, and to regard him as a personal possession, a loyal private in our little army. Should he desert to another leader, we feel smaller in stature, and mourn, not our financial loss but our loss of prestige. We tend to cling most to those patients who are emotionally rewarding, and to prolong their dependence upon us. Conversely, some of our patients seem to postpone their complete recovery almost indefinitely in order to maintain their bond of union with us. That is by the way, but it helps to emphasize the tremendous part that interpersonal relationships, operating unseen, play for good or bad in the healing art.

To return: We are all very much better at helping a patient than at helping the patient to help himself. It is easy and quite instinctive to support—almost to carry—the tottery bedridden patient on his first walks; but the subsequent stages of “one hand” control, and then “one finger” control, and the stage of “being there ready,” accompanying but not in actual contact with the patient, are nothing like so alluring. Why? I suppose because “doing” is rated more highly than “being”: it is more showy.

It is traditional for the patient while in hospital to have his medicines administered dose by dose at the appointed hour—like a child. When he is destined to take his digitalis pills for a considerable time after he gets home, you might think that he should be helped to grow up, and be trained to help himself, unprompted at the right hours, from a private personal store, to be replenished every week. Should he then slip up with either an overdosage or an underdosage he is still in the right milieu for this accident to be dealt with.

If the patient is a slightly ga-ga grannie who is going to be looked after by an ever-loving unmarried daughter this training is unnecessary. Each case should be decided upon its merits; but self-help should be the rule and not the exception.

So you would think. But with what hostility does this unorthodoxy meet whenever I suggest it. Oddly enough, patients can be taught to manage their own colostomy toilets, the diabetics to measure out and inject their own insulin, and the asthmatic is allowed to keep his atomizer at hand and sometimes even his own emergency “franol” tablets and aminophylline suppositories. But there the line is drawn. Patients to

(Continued at foot of next page)

To-day's Drugs

With the help of expert contributors we publish below notes on a selection of drugs in current use.

Lapudrine (Imperial Chemical Industries).—This is chlorproguanil, a new antimalarial having pharmacological properties similar to those of proguanil but with the important difference that it is more persistent in the body. It may thus be administered in a weekly dosage instead of daily, as is required for prophylaxis with proguanil. It is effective against asexual erythrocytic forms of all malaria parasites, but is especially active against primary exo-erythrocytic forms of *Plasmodium falciparum*, against which parasite, therefore, it acts as a causal prophylactic. Tablets of 20 mg. are available.

The recommended dosage is 20 mg. weekly, the initial dose being taken on entering the malarial area and at least one dose being taken after leaving it. The drug is well tolerated even in amounts considerably in excess of that recommended, and side-effects are unlikely to occur. A very carefully conducted series of trials had been held on this drug, and it promises to be a useful and cheap addition to the existing range of malarial prophylactics.

N.H.S. basic price: 200 tabs. 16s. 3d.

(Continued from preceding page)

take their own medicines two or three times a day or at night? Good gracious me, no. The objections range from, "Supposing they forget, or take an overdose, who would be responsible?" to, "You will lose all your nurses if you take away all [sic] their duties and responsibilities." I am intimidated by bogies and blackmail, on top of conservatism.

Conclusion

The rehabilitation of convalescents is like the wise upbringing of children: it entails a change in relationship. The baby in its cot must grow up to full adulthood and reach equality with his parents, real or surrogate. Domination and ascendancy must be relinquished with good grace. During the growing-up period it also entails being alert and ready in case of a fall, and suffering agonies in silence when they start climbing trees and riding bicycles in the High Street. But play for safety, hedge around with apron-string restrictions, check initiative, curb experiment, and you inhibit the child's growth and development. It needs courage and fortitude to take the inevitable risks.

Risks have to be taken which never arise under hospital ward regimentation. How can one know when a cardiac case can safely cope with his stairs at home until one has tried him out walking up a flight in the hospital? A moment comes when the risk is adjudged slight enough to be justifiable. The peptic ulcer patient must learn by trial and error how far he can stray from his GIII diet. The housewife, blithely put on a salt-free diet, is eventually going to find the dual cooking involved too much for her, and inevitably will abandon it sooner or later. Should she not try abandoning it while under medical supervision to see whether in her particular case it is really necessary?

The occasional setback, the occasional error of judgment, are inevitable, but when explained and discussed frankly they add to the patient's self-knowledge. They are worth it: for the alternative to taking risks is to eject patients back into their world uncertain, fearful, half-cock, and very often a burden to others; and what is worse—still patients.

Correspondence

Because of heavy pressure on our space, correspondents are asked to keep their letters short.

Top Surgeons

SIR,—I am reassured to find that you share my feeling of distaste for the methods being employed in the present publicity campaign of the English Royal College of Surgeons (*Journal*, April 25, p. 1100). I was wondering if I was being a bit priggish. Apart from its shameless vulgarity, on which you have commented, the exaggerations and false implications of the campaign give the impression that the College has allowed the advertising company handling its "account" to apply too freely the lessons of its previous experience in the promotion of detergents. I wonder what the Edinburgh College thinks about it?

Is it true, for instance, that the College of Surgeons of England bears the main responsibility for education in surgery? I thought that it was an examining rather than a teaching body, and that for over a hundred years the main responsibility for all aspects of medical education had lain with the medical schools. Can Sir Alexander Fleming and penicillin be claimed as products of the College? I had heard—but perhaps the story is untrue—that the officers of the College themselves did not realize that Fleming had years before obtained the fellowship of the College by examination until they offered him an honorary fellowship after he had achieved fame by the discovery of antibiotics. Is it justifiable to imply that the College has been a major contributor to the development of such medical sciences as biochemistry and pharmacology? I had the impression that in as far as members of the medical profession had contributed to the development of such sciences they had usually been physicians rather than surgeons.

This sort of publicity technique both in overt advertisements and in "editorial publicity" has led the consumer to develop a cynical and sceptical attitude to much of what the advertisers say. It will probably have the same effect upon the public's attitude to one branch of the medical profession, for it gives the impression that the officers of the College are prepared to do or say almost anything to get money for it.—I am, etc.,

Leeds.

G. R. HARGREAVES.

Food-poisoning and Food Hygiene

SIR,—In your leading article (*Journal*, April 18, p. 1023) you mention the need for an expansion of education in the important field of food hygiene. You rightly point to the value of courses of instruction for public health inspectors and for those concerned in the preparation of meals. Yet it seems to me that one valuable means of propaganda remains unused.

Every housewife and, I suppose, many institutional cooks use cookery or recipe books. In my own household we have half a dozen of these (including one published by the British Medical Association), but in none is there any advice on the prevention of food-poisoning. A short but authoritative chapter in the popular cookery books, such as those issued by makers of gas and electric cookers, explaining the nature of food-poisoning, its manner of spread, and the methods of preventing it would reach many more cooks than