writ that, in any experiment, as many variables as possible should be controlled, but it is also a fact that the more narrow a treatment protocol the less validly can its results be applied to real clinical practice.

Had Ornstein and his co-workers been more reserved in their conclusions and more modest in their choice of title their paper might have escaped condemnation. It does allow a conclusion to be drawn but it is a modest one—namely, that if you take a patient with mild irritable-bowel-type symptoms and diverticula on his barium enema and give him a small dose of bran in biscuit form he is unlikely to be cured. Such a conclusion will surprise few experienced physicians. And most will go on giving bran in individually tailored amounts to their patients with typical severe symptomatic diverticular disease. It will need a different study from the Ornstein one to change this practice.

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Doubts about diverticular disease

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"It is what we think we know already that often prevents us from learning"—CLAUDE BERNARD¹

The treatment of diverticular disease of the colon exemplifies the capricious nature of medical fashion. Before the 1920s dietary fibre (known as roughage, crude fibre, or fibre) was popular; there then followed a vogue for fibre-free, so-called "soft" diets, which lasted until the late 1960s. Fashion has now turned full circle and, apart from the occasional voice of caution,²⁻⁴ dietary fibre is becoming increasingly popular. This trend has followed two separate paths: the "fibre hypothesis" of Cleave⁵ and others⁶ (concerning fibre depletion as the cause of such diverse conditions as carcinoma of the colon and ischaemic heart disease) should not be confused with the present debate concerning the therapeutic role of dietary fibre in established diverticular disease. The former is difficult to test in a clinical study but the latter should be amenable to scientific inquiry.

For this reason a working party of the Medical Research Council asked us to investigate what many colleagues had come to accept on the evidence of uncontrolled observations—that bran was an effective treatment for diverticular disease. The subject is more complex than it at first appears because bran is only one mixture of a group of substances called dietary fibre with differing physiological properties. We therefore included ispaghula, another fibre preparation widely used in Britain, in our trial.

We are pleased that Dr Heaton complimented the design of our study. Nevertheless, all controlled studies are easy to criticise, and the same exacting standards should be applied to studies giving different results.

Selection of patients

Uncontrolled studies (including Taylor's study of bran tablets⁷) are little better than clinical impression, and there have been only four placebo-controlled trials. Two do not support the argument that dietary fibre is effective treatment (though one is only reported in abstract⁸ and the other used methylcellulose tablets⁹). One of the remaining two has been reported only in the discussion periods of symposia on dietary fibre¹⁰ and cannot be properly assessed—indeed, several questions need to be answered before this study can be accepted. The other is the Oxford study by Brodribb,¹¹ which we have already criticised (11 July 1981, p 140). Fortunately this study and ours used biscuits from an identical source so that direct comparison is unfettered by arguments about the quantity (the apparent discrepancy is made clear in our letter) and quality of fibre given. The scoring system, selection of patients, intake of basal fibre, etc, are not fully described, but we understand that Mr

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Brodribb selected patients with severe symptoms. Since the average pain scores of our patients were lower than in the Oxford study, we have looked separately at those with the highest initial scores; the table shows that they responded in the same way as our patients as a whole, with an improvement from initial scores but no significant differences between the three treatment periods. We did not select our patients (beyond the absence of previous surgery or other gastrointestinal disease), and they should be a representative sample of patients with uncomplicated diverticular disease attending a district general hospital—one of the basic requirements of good trial design.

Dr Heaton asks why our study came up with a negative result, but there are other pertinent questions to be discussed. For instance, there are even doubts about the nature of this condition we call diverticular disease, and the term dietary fibre is ill defined. Parks,¹² in his classic study of the natural history of diverticular disease, noted that 82% of patients with recurrent acute diverticulitis had mild or absent symptoms between attacks (hence our exclusion of patients presenting in this way); and Avery-Jones¹³ has pointed out that there is a very wide range of symptoms. The symptom complex of diverticular disease overlaps that of the irritable bowel syndrome,¹⁴ and the Bristol group has also found these symptoms in 23% of normal people.¹⁵ Barium enema or follow-through appearances are at present the only way of separating diverticular disease from other colonic conditions, but the distinction is scientifically imperfect. The finding that none of our 58 patients had alternating constipation and diarrhoea suggests that such a combination is uncommon and, finally, a feeling of incomplete evacuation cannot be an essential part of the symptom complex of constipation as patients with diarrhoea may experience a similar sensation.

Colonic function and diverticular disease

What is the relation between colonic function and diverticular disease? Unfortunately, one cannot rely on tests of colonic function as a guide to the presence of diverticular disease because there is considerable overlap with normal values. Dr Heaton gives one idea of normal colonic physiology in the United Kingdom, but other studies show mean daily stool weights as low as 79 g¹⁶ and 80 g¹⁷ and a range as wide as 39–248 g.¹⁸ Other authors measuring colonic function in diverticular disease have published results similar to ours. For example, Parks¹² noted that 38% of patients had normal bowel habits and, in another study,¹⁹ recorded an average daily stool weight as high as 96 g in 40 patients with diverticular disease taking a low-fibre diet (unspecified); Tarpila *et al*²⁰ found a mean stool weight of 190 g daily in 22 patients with symptomatic diverticular disease; Eastwood and colleagues,¹⁷ who studied 40 patients and found an average daily stool weight of 98 g, commented that their results for stool weight, transit time, and colonic motility fell within the normal range of their city's population. The same group reported²¹ a paradoxical increase in colonic pressure with ispaghula despite symptomatic improvement and raised "some doubt about the importance of features of diverticular disease—stool weight, prolonged transit time, and raised intraluminal pressure—which were formerly thought to be hallmarks of this

disease." Furthermore, mean values for oroanal transit time cannot be interpreted in isolation—our results, in agreement with those from Bristol²² and Oxford,²³ suggest that dietary fibre supplements reduce fast transit as well as accelerating slow transit. Thus our patients' colonic function was not necessarily abnormal nor was it at variance with published figures for patients with diverticular disease. Moreover, we showed appropriate changes with dietary fibre supplementation: stool weight and frequency of defecation increased while the stools became softer. Interestingly, during the ispaghula period (largely ignored by our critics) greater changes in colonic function were measured yet symptom scores were slightly worse than during the placebo period.

We have been criticised because our patients' dietary fibre intakes are slightly below the average reported figures (but as dietary fibre is a major component of faecal residue our patients should have had lower than average stool weights), but no other controlled studies have included this information. Possibly Mr Brodribb's patients had different initial intakes of dietary fibre, and this would be another explanation for the differing results, but equally he may have decreased the highest dose they received by asking them to take their biscuits instead of bread. Future studies should include a dietary assessment (excellent food tables are now available²⁴) and details of the unavailable polysaccharide content of the supplements used.²⁵ From the information available we used as much dietary fibre as any of the other controlled trials.

Fascination with bran

We cannot understand the fascination with bran—it is merely one of many dietary fibre supplements. Indeed, bran is a heterogeneous material supplying from 22 to 46 g of dietary fibre per 100 g depending on its source.²⁶ Thus, the suggested daily dose of 20 g bran amounts to 4.4–9.2 g dietary fibre, and the extra dietary fibre received by our patients in both active periods falls within this range. Cummings and colleagues²⁷ in Cambridge have shown how widely the colonic response varies with different fibre supplements (stool weight increases ranged from 40% on apple to 127% on bran). As Dr Heaton understands well, the general impression that bran and dietary fibre are almost synonymous is false, and we hope that the discussion that has followed our study has drawn wider attention to this. Certainly, wholemeal bread and breakfast cereals are among the most palatable preparations of dietary fibre; but some of our patients, 18 months after the trial, continue to purchase and enjoy both wheat (the placebo) and bran crisp-breads.

Many patients presenting with symptomatic diverticular disease are worried about having cancer, and the confirmation of a benign disease is a great relief. This may account for the large placebo response. We believe that reassurance should be the mainstay of treatment, with dietary fibre supplements for constipated patients. Doctors should not be too disappointed if abdominal pain is not relieved by dietary fibre, though some patients do improve. Recent studies^{28–29} of the irritable bowel syndrome suggest that fibre supplements, antispasmodics, and anxiolytic agents may be more effective in combination than

Composite symptom scores at start of trial and for each of three random 16-week treatment periods for the 12 patients with the highest initial scores. (There are no significant differences between the periods—assessed by analysis of variance and Wilcoxon matched-pairs signed-ranks sum test)

	Treatment periods								Standard error of difference between either bran or ispaghula mean and placebo mean
	Initial score		Bran		Ispaghula		Placebo		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Pain score	61.7	27.6	22.3	19.4	29.9	22.6	29.9	22.6	4.08
Lower bowel symptom score	109.2	31.2	54.7	36.1	57.9	34.9	70.0	37.1	6.18
General score	20.8	9.0	11.7	8.1	12.6	8.6	15.2	10.1	2.06

singly; such an approach *may* be appropriate for diverticular disease. Our title merely posed the question: we do not claim to have provided all the answers—despite vehement suggestions to the contrary.

Requests for reprints should be addressed to Dr I McLean Baird.

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MATERIA NON MEDICA

Galway Boy and the Connemara men

In 1949 I rode in my first and last race. The family holiday in Connemara coincided with the annual Clifden Races, an event which, for the money gambled and the liquor consumed, is matched only by the races two weeks later on the sands of Letterfrack.

The fourth race on the card was the ladies' race, so, having observed that the cross-country fences had been demolished by the riders in earlier races galloping straight through them, I acquired a pony called Galway Boy from a group being offered to would-be riders. I could see only one other female competitor, incongruously dressed in formal hunting attire and mounted on a sedate bay hunter. Well, I thought, at worst I was bound to come second. On arriving at the start, however, I discovered that "ladies' race" was something of a misnomer. There was a field of about a dozen tough-looking men to accompany us. Too late for second thoughts: Galway Boy took the bit in his iron mouth and we were off.

I quickly realised that staying in the saddle was the prime consideration, relinquished control, and clung to my pony's mane. To my horror, once out of sight of the crowd, the men in front started to belabour each other across the shoulders with their sticks. Some fell off and others bolted from the course. By the time we had nearly completed the circuit few of us were left and there was no sign of the lady on the hunter. Suddenly, sensing possible victory, I decided it was time to try to ride Galway Boy; so, letting go of his mane, I took up the reins. Too late I realised my mistake. Feeling the knee of the man alongside coming up behind mine was the last I remember of Clifden Races. I should have known that they would never let a lady win the ladies' race.—BARBARA PHILLIPS, clinical assistant, Bath.

The past alive and well

To be grown up 50 years ago (and fortunate enough to be able to record it) implies one can be a connoisseur of the aging process, only tactfully referred to by our friends, even to the extent of denying its existence in respect of ourselves. An unfailing criterion, of course, is the inability to adapt to those features of the modern world the

younger take in their stride. Continuing relics and practices of the old days are especially welcome, and I can recall not that many years ago when in a P & O ship with my wife the Indian steward asking what the memsahib would like for breakfast. Her ever-loving, presumably the Tuansahib, then told her that this was the first and last time she would ever be so addressed, and so it has proved.

Only recently we had a similar comforting experience when on tour in Sri Lanka, where, as a result of altered hotel schedules at Nuwara Eliya, we were put up at the Club, much patronised by the tea estate managers in the old days.

Outwardly it was an austere sort of place. On entry, by turning right, we found the reading room with deep club armchairs and all the current magazines and papers; to the left was a bar labelled "Men Only," followed by a mixed bar, the dining room, and, finally, the lounge, with log fire and cucumber sandwiches for tea. Labour being plentiful, there were acres of brightly polished floors throughout. Tipping was strictly forbidden, so white-gloved staff would trundle back with the odd 50 cents change. The bedrooms were similar to club bedrooms at home; the notice on the inside of the door stating that collars and ties must be worn at dinner was unusual, though reasonable, as the dining room was impressive, with a large sideboard displaying some fine French wines. A further note that ties could be hired, and that one's key should be left on a hook outside the door so that hot water bottles could be put in when the sheets were turned down, could only be regarded as helpful, as at 6000 feet it gets a touch nippy at nights.

On leaving the next day we noticed a wicker wastepaper basket in the hall labelled "For the Staff" and encouragingly full of rupee notes, to which we were pleased to add. Outside it was a beautiful fresh morning, like the start of an English summer day, with the illusion otherwise remaining complete: there was a golf course, a well-kept municipal park, a Post Office with Victorian brick façade, and many detached bungalows of Metroland circa 1930 style. The best tea comes from these high-altitude estates, and the old-style managers clearly knew how to do themselves well. One descends from this Sri Lankan Simla by a gradual descent through meticulously cultivated terraced valleys to the steamy coastal plain beneath where the mosquitoes clearly had advance information of our impending arrival.—ROBERT CUTLER (dental consultant, Surbiton, Surrey).