

the soul which led to the renunciation of all vegetarianism came in the wake of the adverse publicity given by the press to the death on June 14 of an elderly woman who died of malnutrition after living on a vegan diet. In the past month, the Selene Community, which has only a handful of residents but a fair number of sympathizers and subscribers to its journal, has de-escalated its eating habits by changing to non-vegan food, but expects the gradual change to ordinary food will take longer.

## NUTRITION

### Iron in Flour

By law, and with the intention of making good the iron lost from wheat during milling, all flour sold in Britain must contain at least 1.65 mg of iron per 100 g. During the past two decades there have been several studies to determine how much of the iron in bread is actually absorbed, but the results have often been inconclusive and contradictory. This and more recent work has now been reviewed, in a report published last week by the Ministry of Health, by Dr P. C. Elwood of the Medical Research Council's Epidemiological Research Unit in Cardiff (*Iron in Flour, Reports on Public Health and Medical Subjects, HMSO, 7s.*).

In Dr Elwood's own investigations, volunteers were fed a standard breakfast containing 5.5 mg of iron in the form of one or more of the following: reduced iron or ferrum redactum, ferric ammonium citrate (either the green or the brown form), powdered iron (electrically precipitated iron) and ferrous sulphate. Absorption of iron was estimated on the basis of the whole body content of  $^{59}\text{Fe}$ . Dr Elwood showed that electrolytically precipitated iron—which is one of the main forms of iron added to flour in Britain and elsewhere—is much less available than the other three forms, particularly for iron-deficient patients. In patients with achlorhydria (absence of hydrochloric acid from the gastric juice), both powdered and reduced iron are poorly available.

PERCENTAGE MEAN ABSORPTION OF IRON

	Pow- dered iron	(Ferrous sulphate)	Re- duced iron	(Ferrous sulphate)	Ferric ammon- ium citrate	(Ferrous sulphate)
Bread + egg	0.20	2.05	0.72	0.87	0.94	0.80
Bread alone	0.86	18.30	3.55	7.95	10.35	12.60

It is something of a surprise that omission of an egg from the standard breakfast leads to enhanced absorption of all four iron preparations—the uptake of ferrous sulphate being noticeably greater in its absence than in its presence. Dr Elwood suggests that although it might be that subjects were absorbing the iron in egg in preference to that in bread, he considers this to be unlikely in view of findings by Moore and Dubach which suggest that the iron in eggs laid by radioactive hens is no more readily available than iron in any other foodstuff. Furthermore, Chodos and his colleagues found that egg iron was poorly absorbed by their fourteen subjects.

Although the data are limited, it seems that no adverse effect on the availability of iron is caused by the addition of calcium carbonate to the flour, the baking

process itself or the storage of flour to which iron had been added 6 weeks before baking. In conclusion Dr Elwood tentatively advocates the addition of ferric ammonium citrate to replace lost wheat iron but, in the same breath, points out the need for long-term, large-scale community based trials to establish the real effect of the addition of iron salts to foodstuffs on iron balance.

In a letter in last week's *Lancet*, Dr Elwood suggests that a more realistic test of the value, if any, of ferric ammonium citrate as an additive to flour would be to incorporate this into the entire bread supply of a number of anaemic women and to maintain this supply for a period of at least 9 months (*Lancet*, ii, 516; 1968). He and his colleagues have therefore fed bread containing the statutorily required amount of the iron preparation to 113 anaemic women. In addition, 124 anaemic women have been fed with "ordinary bread". So far, the haemoglobin levels of the two groups of women have remained the same, and Dr Elwood maintains that this shows how complex the whole problem is.

## GENERAL PRACTICE

### Make or Break

from our Social Medicine Correspondent

GENERAL practice has been the subject of much speculation and controversy over the past few years, and the urgent need for reorganization, both from within and in relation to other parts of the health service, has become increasingly obvious. But reorganization costs money, and in comparison with, for example, the hospital service, general practice fares badly. Although the total expenditure on general medical services increased from £54 million in 1949 to £108 million in 1965, the proportion of the National Health Service expenditure devoted to this actually fell from 12.5 per cent to 7.5 per cent in the same period. At the same time, the proportion of the national income absorbed by these services has fallen since 1949, though it has remained relatively constant during the past decade at about 0.4 per cent of the national income. These are some of the figures quoted in *General Practice Today* (Office of Health Economics, 2s. 6d.) which examines the changes that have taken place in general practice over the past twenty years, the possible changes that will take place over the next twenty, and the way in which general practice is preparing itself for the future.

One well-documented sign of the times is the decline in the number of single-handed practitioners and the move towards partnerships of doctors, particularly group practice. Not only does this enable an efficient appointment system to be worked out—and more than 40 per cent of British doctors are now using a full or partial appointment system—but it will probably lead to some degree of specialization within the group. To a certain extent this will in turn meet McKeown's criticism that one doctor is no longer competent to deal with all age groups, and that personal doctors should therefore be divided into obstetricians, paediatricians and so on, along lines similar to the American systems. Nevertheless, there are still over 4,500 single-handed practitioners in Britain (a quarter of the total) and a further 29 per cent are in partnerships of only two.

As more attention is being attached to the idea of