phase. Rapid gain in weight was possible because the children were able and willing to take up to 160 calories/kg. body weight daily, compared to a daily intake of around 105 calories/kg. body weight for healthy children of the same age. It was of particular interest that as soon as the children reached their expected weight for height their appetites decreased, and they could neither be persuaded nor forced to continue at their previous level of consumption. Ashworth has suggested that these rapid weight gains were examples of the "catch-up growth" described by A. Prader, J. M. Tanner, and G. A. von Harnack[3] during recovery from various childhood illnesses and anorexic states. Ashworth's results make it clear that the abnormally large intake was in some way "turned off" as soon as the correct weight for height was reached.

These rapid recoveries are not always seen in kwashiorkor, and recovery from marasmus is nearly always slow. Dietetic treatment may be complicated by diarrhoea caused by a reduction in exocrine pancreatic function, or by intolerance to lactose or less commonly to other disaccharides.[4] A deficiency of intestinal lactase even in the healthy individual appears to be particularly common in certain races [5 6] in Africa and in the Far East: relief organizations, which usually rely upon milk preparations for their emergency dietetic feeding, need to be aware of these facts.

In areas in which malnutrition is widespread the final adult stature of the population in general is short; but this is no real disadvantage. Indeed, the greater adult height with each succeeding generation[7] in our over-nourished society may have been bought at the price of a steady increase in coronary disease[8 9] in early middle age.

Bagasse Made Safe

Bagassosis[1] is the name given to a severe, sometimes acutely fatal, fibrosing lung disease caused by the dust of mouldy, overheated bagasse, or sugar-cane residues. It is of the farmer's lung type, now termed extrinsic allergic alveolitis.[2]

First described in Louisiana in 1937,[3] outbreaks of the disease have been reported from most places where bagasse has been used in manufacture.[4] High proportions of exposed workers have been affected—for example, 10 out of 21 British workers making insulation board,[5] 69 out of 120 workers in a paper mill in Puerto Rico,[6] and an estimated 200 in a board mill in Vacherie, Louisiana, between 1962 and 1964.[7] This serious hazard prevents the full exploitation of a waste material with important potential uses. These include the manufacture of cheap but high-quality substitutes for timber products; paper and paper products and viscose rayon; and, because of its simple organic fibre structure, composite plastic materials of many sorts. For the, usually poor, sugar-producing countries with their otherwise limited resources the problems of bagassosis and their economic well-being are closely linked.

Knowledge of the disease stems from studies of the clinical and immunological aspects of farmer's lung by J. Pepys and colleagues[8] at the Brompton Hospital and the biochemical and the microbiological changes in mouldy hay by P. A. Gregory and colleagues[9] at Rothamsted Agricultural Research Station. These showed that in hay with a moisture content of over 30% bacteria and fungi grow rapidly, causing a rise of temperature to 40—50°C or more. The heat encourages the prolific growth of thermophilic actinomycetes, of which one, *Micropolyspora faeni*, is the main cause of farmer's lung.[8]

A somewhat piquant development led to the application of this knowledge to the very similar changes in mouldy bagasse. A British engineer, Mr. C. Wright, unaware of the hazards, experimented in London with a manufacturing process for bagasse and developed severe respiratory disease. This was diagnosed as bagassosis at the Brompton Hospital[10] and was shown to be due to a thermophilic actinomycete, for which the name *Thermoactinomyces sacchari* was suggested.[11] The evidence in this case supported the serological findings obtained in New Orleans[12] and Trinidad.[13] Mr. Wright and Dr. J. Lacey, of Rothamsted, then applied the knowledge acquired from mouldy hay to the problems of bagasse.[11] They found that keeping the moisture content below 20% and spraying the bagasse with 2% propionic acid,[14] an inexpensive, safe, and widely used fungicide, rendered the bagasse stable and safe for manufacturing use. The detailed report[11] on this work by Sir Harold Robinson for the Government of Trinidad and Tobago, which commissioned it, describes the virtual absence of spores in general, and of thermophilic actinomycetes in particular, from the treated bagasse.

It is now possible by simple, inexpensive procedures to render bagasse safe to the workers, and it can confidently be predicted that the sugar-growing countries will derive handsome economic benefits from its wider use—a satisfying outcome to a piece of academic clinical research.

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