Milk drinking in England and Japan. Alan Macfarlane

Despite Cobbett's robust belief that 'to suppose the milk contains any thing essentially unwholesome is monstrous',[1] animal milk was a source of human infection. A host of bacteria breed and spread through milk. As Clegg describes it: 'milk is a solution of proteins containing a suspension of fat globules, mineral salts, vitamins, and milk sugar. It provides an ideal medium for bacterial growth and multiplication.'[2] The diseases it carries include bovine tuberculosis, Brucella, septic sore throats and scarlet fever, human tuberculosis, bacillary dysentery, infectious hepatitis, typhoid and paratyphoid fevers and diptheria.[3]

The contaminations start in the milk itself. 'Even under the cleanest conditions milk which is freshly drawn from a healthy cow is never sterile. A mixed population of bacteria is always present in the milk ducts and teat canals of the udder of a healthy cow, and freshly drawn milk contains about 20,000 bacteria per cubic centimetre of milk.' Dirt accumulates on the udder; 'unless they are kept scrupulously clean, the udder and hind quarters become soiled with excreta, and may even be caked with the dried material'[4] As McKeown puts it milk was 'probably the most important vehicle for food-borne disease. It forms an excellent culture medium for many pathogens and was responsible for outbreaks of dysentery, typhoid and para-typhoid fever, streptoccocal sore throat and infantile gastro-enteritis.'[5]

The cowshed adds further dangers. The 'dust and dung in the cow shed..the vessels used for collection and storage of milk...the hands and clothes of the milker and the contaminated water used for washing utensils or cooling the milk. Cow dung contains over a million bacteria per gramme, and the litter in a dirty cowshed may contain more than ten times this population per gramme...'[6]

All these dangers assail milk before it even leaves the cow shed. In the conditions of transit before the later nineteenth century, it is not difficult to envisage further pollution. A rather extreme, but graphic, account of some of the dangers was given by Tobias Smollett in 1771. 'The milk...lowerd with hot

[1]Cobbett, Cottage,p.112.

[2]Clegg, Man Against, 125; cf also Davidson, Nutrition, 218

[3]Clegg ibid

[4]Lane-Claypon, Hygiene, 240

[5]Modern Rise, 111

[6]Clegg, Man, 125-6

water, frothed with bruised snails; carried through the streets in open pails, exposed to foul rinsings, discharged from doors and windows, spittle, snot and tobacco quids, from foot-passengers, overflowings from mud-carts, spatterings from coach wheels, dirt and trash chucked into it by roguish boys for the joke's sake, the spewings of infants...'[7] Although some have argued that the treatment of milk improved dramatically in the later eighteenth century [8], it would appear that nothing very significant could be done until the end of the nineteenth century. 'The work of Louis Pasteur....did not affect the handling of milk until almost the end of the nineteenth century.'[9] Drummond points out that 'It cannot be said that the bacteriological knowledge which resulted from Pasteur's pioneer studies had much influence on the handling of milk until nearly the end of the century...pasteurization was first used in the dairy industry about 1890, more as a means of increasing the "life" of the milk than to kill the germs likely to cause harm to the consumer.' Only in about 1896 did it begin 'to be appreciated that pasteurization also provided a valuable protection against milk-borne disease.'[10] The only real precaution is to boil milk for a reasonably long time - which is perhaps why shepherds such as the Gurungs or Tibetans drink their milk in a boiled form, either on its own, or with tea.[11]

In view of all this, we may wonder how much of this dangerous substance was drunk unboiled by the English population. It is known that there were vast herds of milking animals, which yielded milk for butter and cheese. But was whole milk drunk on its own? This is a topic needing further research,[12] but it may well be that Ferguson is right in concluding that 'Until the nineteenth century milk was considered more as a source of butter and cheese than as a drink in itself...' Certainly there were large quantities of milk both in cities and the countryside.[13] We also know that it was drunk by labourers in the seventeenth century, but how it was drunk.[14] Yet there seem to have strong prejudices against drinking it raw[15] and I

[7]quoted in Ferguson, Drink, 46-7

[8]see Beaver in P and Present.

[9]Ferguson, Drunk, 49

[10]Drummond, Food, p.301.

[11] For further comments on the dangers of milk, see Drummond, Food, 72,193; Smith, People's Health, p.212ff.

[12]cf Drummond, Food XXX

[13]cf Houghton, Husbandry, ii, no.156 for one estimate of London milk consumption in 1695

have come across little positive evidence that it was drunk in large quantities in a whole form.

It may be that the normal way in which milk was drunk was in a form which would rid it of the major portion of the harmful bacteria. It was drunk very extensively as whey, that is the liquid remaining after taking off the rich part to make cheese. As Drummond writes 'very considerable amounts of whey were drunk'.[16] It was also drunk after the fatty part had been taken off to make butter, in the form of skim milk. It is interesting that Cobbett, having argued vehemently that cows were very clean beasts and 'how then, is it possible, that unwholesomeness should distil from the udder of a cow!', and recalled that 'I have drinked little else for the last five years', added, 'Skim-milk I mean'.[17] It may have been important as a supplementary food and in this context it is worth noting Beaver's thesis that the rapid decline in infant mortality from about 1900 was largely caused by the pasteurization and bottling of milk and speedier communications.[18] Certainly the presence of beer and tea as the major drinks put less pressure on people to drink milk.

In the case of Japan, there was no danger of infection by milk until the later nineteenth century. As we have seen above, the Japanese did not keep milking animals in any quantity between the tenth and nineteenth centuries. The absence of grazing and a possible religious avoidance of the products of four-footed beasts, meant that they had few milk products. By the nineteenth century, as we have seen earlier in this chapter, even the slightest hint of animal milk made the Japanese metaphorically and literally sick. It would appear that they shared that lactose intolerance which was common to most non-pastoral societies and hence made it impossible for adults to absorb milk products.[19] Thus for a

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[14]Everitt in (ed) Thirsk, Agrarian History, iv, 452-3

[15]cf Houghton, Husbandry, ii, no.147

[16]Drummond, Food, p.72.

[17]Cobbett, Cottage, 91.

[18]Beaver, Milk (xerox)

[19]For lactose intolerance, see Anthropology of Medicine, 186; Tannahill, Food in History, 124-127; Kiple (ed), Diseases, 814-6. Fr an overview of lactose intolerance, which was found throughout Japn and China, see David M.Paige and T.M.Bayless (eds.), Lactose Digestion. Clinical and Nutritional Implications.(Baltimore, Johns Hopkins Press, 1981). For the lactose tolerance of Norse peoples, see Crosby, Ecological, p.48.

combination of reasons they had reached the position described by von Siebold in the early nineteenth century where 'The use of milk...in any form, is unknown, or, at least, strictly prohibited in Japan.'[20] The Japanese may have lost out on the protein side, but before the discoveries of Pasteur, they probably avoided an immense amount of illness, including tuberculosis and enteric illness, from never drinking animal milk. This suggests a positive selective advantage of lactose intolerance, a factor not often considered in the debate on its origins.

[20]Siebold, Manners, 121