products....Although Stalin had a sophisticated propaganda machine for its time, the tobacco industry is using the most advanced technology available to produce a 21st-century propaganda effort. Stalin's methods were perceived as cold and calculating, but those of the tobacco industry are smooth and subtle. The marketing plans are prospective, with the result of pervasively infiltrating all facets of Russian life."²

I find Hurt's analogy entirely apt, and I urge Cambridge most earnestly to deny BAT an honour which will lower the esteem in which Cambridge is held throughout the world.

SIMON CHAPMAN
Associate professor

Department of Community Medicine,
University of Sydney,
Sydney,
Australia
simon@cmcd.wh.su.edu.au

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Cheese and salmonella infection

Distribution and retail of cheese, not just production, may lead to contamination

EDITOR,—Anita Rampling's editorial serves as a timely reminder of the dangers of consumption of cheeses made from raw milk.¹ Although she notes in passing that infection has also been associated with cheese made from pasteurised milk, we wish to re-emphasise the potential importance of such products in the epidemiology of human listeriosis. The protracted outbreak of listeriosis in Switzerland between 1963 and 1987, with 122 cases and a case fatality ratio of roughly 25%, was associated with cheese derived from pasteurised milk that had been contaminated during production.² Additionally, Bind reported that cheeses made from pasteurised milk are just as likely to be contaminated with *Listeria monocytogenes* as are those manufactured from raw milk.³ Although contamination of pasteurised milk cheeses can occur at any stage during the production process, the possibility of contamination in the retail environment is often overlooked.

After an invitation to examine a variety of soft cheeses from a specialist outlet we found that, of 11 samples from 10 brands, six grew *L. monocytogenes*, with two yielding counts in excess of 10⁶ colony forming units/g. A repeat sampling exercise yielded a similar frequency of contamination. The retailer accepted cheese for sale only if a batch was accompanied by a certificate from a microbiology laboratory attesting that the cheese was free of listeria. Accordingly, samples of one brand found to be heavily contaminated were sent direct to our laboratory, but they did not yield *Listeria* spp on direct or enrichment culture. A portion of the sample was held at 4°C for one month, retested, and again found to be free of listeria. On a subsequent visit to the retailer's premises it was noted that the cheeses were displayed unwrapped on a bed of straw, material from which has been shown to be contaminated with *Listeria* spp. Requests to sample this, however, were denied. Currently we are typing these isolates of *L. monocytogenes* by random amplification of polymorphic DNA by the polymerase chain reaction⁴ to examine the possibility that the straw may have acted as a reservoir for contamination with this bacterium.

We agree with Rampling that food manufacturers strive to ensure that their produce is microbiologically safe, but those who distribute and retail products after they leave the factory must acknowledge that they too have responsi-

bilities if the consumer is to be fully protected against foodborne disease.

K G KERR
Senior lecturer
CHRISTOPHER S NICE
Registrar

Department of Microbiology,
University of Leeds,
Leeds LS2 9JT

RICHARD W LACEY
Professor of clinical microbiology

Chapel Allerton Hospital,
Leeds LS7 4RB

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Cheese lovers should not be condemned to a pasteurised and tasteless product

EDITOR,—Anita Rampling's editorial will have struck a chill in the hearts of many food lovers.¹ Her suggestion that, with pasteurisation as the first stage of production of all milk products, "all cheeses could be relied upon as delicious ...foods" does not stand up to scrutiny. If acted on it would deprive us of much that is delicious.

While I would not question Rampling's knowledge about outbreaks of food poisoning, I would challenge her assertions that "many cheese makers who produce prize winning gourmet cheeses use pasteurised milk" and that pasteurisation eliminates "bacteria and yeasts which may spoil the flavour." Davis, the author of a magnum opus on cheese, states that "raw milk cheese nearly always has a fuller flavour than pasteurised milk cheese."² The great cheese guru, Rance, reported how he found the plummeting sales of one particular cheese inexplicable until he learnt that the producer had switched to pasteurised milk. At Wells Stores in Abingdon, the cheese shop founded by Rance, more than half of the list of over 120 British and French cheeses is made from unpasteurised milk. A double blind tasting would quickly show which are the more delicious.

Already food hygiene regulations mean that cheese served in many restaurants is too cold to be enjoyed; we do not need any further intrusions into our pleasure. Of course food poisoning is serious, particularly when deaths occur, but outbreaks due to cheese are extremely rare and must pale into insignificance when compared with those due to "factory chicken." The answer is surely to increase hygiene and testing among milk producers rather than to condemn cheese lovers to a pasteurised and tasteless product.

ERIC ROSE
Secretary of local medical committee

3 Sandpiper,
Watermead,
Aylesbury,
Buckinghamshire HP19 3FP

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All milk products should be heat treated

EDITOR,—We support Anita Rampling's recommendation that pasteurisation should be the first

stage in the production of all milk products.¹ The European directive 92/46/EEC sets standards for raw milk, heat treated milk, and milk based products. While the directive sets microbiological criteria for certain milk based products, member states may grant derogations from the regulations. The enforcing Dairy Products (Hygiene) (Scotland) Regulations 1995 make it possible for "milk-based products with traditional characteristics" to be given a derogation. Such derogations are illogical and endanger public health.

In Scotland the fitness of a batch of a particular cheese for human consumption has recently been tested in the courts.² *Listeria monocytogenes* was identified in retail samples, and a condemnation order under section 9(6) of the Food Safety Act 1990 was sought. This was the only legislative route open to the enforcing authority as, though the cheese did not meet the terms of the directive, the regulations of 1995 were not then in place. The order was refused, the sheriff finding that "the evidence did not support the claim that all strains of *L. monocytogenes* should be regarded as potentially dangerous—and hence, likely to be injurious to health." If the presence of potentially pathogenic organisms in a cheese, determined by best professional advice, is not sufficient proof of a risk to health for legal purposes, where does this leave local authorities as enforcement agencies under the act, and health boards and health authorities as their medical advisers? Is the proof of human disease required before intervention can take place?

While some pathogens are inactivated during the cheese making process, others survive or increase; whether they do so is determined by the microbiological, biochemical, and physical properties of the particular cheese. Thus the manufacturing process itself, despite the application of risk assessment, cannot be guaranteed to produce a product free of pathogens without prior pasteurisation. Cheeses, especially traditional cheeses, are often sold in outlets or restaurants where a health warning is impractical. Informed choice is therefore not possible. In Scotland pasteurisation of cows' milk that is for sale has been compulsory since 1983. Outbreaks associated with milk (other than those due to the failure of plant or avoidance of treatment) have ended. The present position places the public's health in jeopardy. Pasteurisation, or similar heat treatment, should be used for all milk products sold for human consumption, however produced.

D M CAMPBELL
Consultant in public health medicine
J M COWDEN
Consultant in public health medicine
G MORRIS
Consultant in environmental health
W J REILLY
Consultant in veterinary public health
S J O'BRIEN
Consultant in public health medicine

Scottish Centre for Infection and Environmental Health,
Ruchill Hospital,
Glasgow G20 9NB

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Exceptional cheeses can be made only from raw milk

EDITOR,—While Jean-Claude Desenclos and colleagues' article on an outbreak of *Salmonella enterica* serotype *paratyphi B* infection caused by a goats' milk cheese is factual,¹ Anita Rampling's editorial draws unjustified conclusions and contains contentious assertions.² Rampling asks, "Is the notion that raw milk cheese tastes better just a myth?" Desenclos and colleagues say, "In