

Mad Cow Disease

The Untold Story

On March 20th, a thousand US communities of all 50 states were observing the Great American Meat-out. Across the Atlantic, British Health Secretary Stephen Dorrell was conceding to a startled house of Commons that recent cases of Creutzfeldt-Jakob disease (CJD) were probably linked to consumption of beef infected with bovine spongiform encephalopathy (BSE), the dreaded 'Mad Cow Disease.'

The media rushed to judgment with banner headlines warning of the new threat of British beef. Yet, even a brief review of the evidence shows that the threat is not peculiarly British, bovine, new, or unmanageable.

What is BSE?

Spongiform encephalopathy is actually a family of diseases that afflict humans, (CJD and Kuru), sheep and goats (scrapie), cattle (BSE) and other mammals. These diseases share important traits.

The agent is a deformed brain protein molecule called a "prion," capable of deforming other protein molecules. As it involves no DNA or RNA, the prion is highly resistant to heat, radiation, and most common chemical disinfectants. Transmission occurs through ingestion of infected tissues (brain, spinal cord, spleen), transfusion, or gestation.

The pathology is an irreversible degeneration of brain tissue, forming a sponge-like structure. Symptoms include erratic cognition, emotions, behavior, and movement, followed by death within one year. These don't appear until 2-3 years after infection, in animals, and 10-20 years, in humans. Since prions do not trigger an immune response, there is no known test or cure.

The problem is not peculiar to British beef, because most industrialized countries, including the US, routinely feed infected slaughterhouse offal [trimmings, waste or by-products of butchered animals] to cattle and to all other animals raised for food. This is the most common transmission route for spongiform encephalopathy. The unusually high incidence of BSE in Britain (157,000 cases since 1986) may well be due to British dairy cows being the only farm animals allowed to live long enough to exhibit symptoms.

History of the Disease

Spongiform encephalopathy is certainly not new. BSE was first noted in 1883. Its human counterpart was described by Creutzfeldt and Jakob in Germany in the 1920's. Scrapie was observed in goats and sheep in 1942. Kuru was discovered in 1957 among New Guinea tribesmen who consumed human brains. The prion was characterized as the agent in 1980 by Stanley Prusiner at the University of California.

Handling of the disease by British and other public health officials may be characterized by a series of milestones:

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1986 - BSE first observed in Great Britain.

1987 - BSE linked to ruminant protein feed.

1988 - Britain bans ruminant protein feed.

1989 - European Union bans cattle export.

1994 - EU bans mammalian protein feed.

1996 - Britain concedes BSE-CJD link.

Nature of the Threat

The threat of CJD to American consumers is framed by two questions: "Can it happen here?" And "How does the risk compare with that of other diseases linked with meat eating?"

Yes, it definitely can and will happen here. Although import of British cattle was banned in 1989, feeding of infected offal to farmed animals has continued. Approximately 13 percent of ruminant-derived protein [ground up animal by-products] is fed to cattle, 34 percent to pigs, and 17 percent to poultry (the rest ends up in commercial pet food).

In 1985, a year before BSE was first observed in Britain; Richard Marsh at the University of Wisconsin traced an outbreak of spongiform encephalopathy in farmed mink to protein powder from rendered cows in their feed. The cows had died suddenly from the "Downer Cow Syndrome" which afflicts 20,000 animals annually in Wisconsin alone.

The Food and Drug Administration is considering a ban on feeding ruminant protein just to cattle. However, only a total ban on the barbaric practice of feeding animal flesh to the mostly vegetarian animals raised for food can wipe out the CJD threat.

On the other hand, for every consumer likely to die of CJD, tens of thousands are certain to suffer and die from heart disease, stroke, cancer, and other chronic diseases linked conclusively with consumption of animal fat and meat.

What's At Stake For the Animals?

In the short run, we may rejoice in the collective anxiety of the US beef industry and the free fall of cattle futures on the Chicago Mercantile Exchange. We may relish the likely ruin of the \$6.5 billion British beef industry. We may certainly savor the sign posted at a London McDonald's offering vegetarian burgers in place of hamburgers. But, the long-range fallout for farmed animals from the BSE scare is rather dismal.

Britain has already agreed to incinerate or otherwise destroy the carcasses of 4.7 million dairy cows over 30 months old, at the end of their productive life of 6-7 years. (No animal born after early 1993 has exhibited symptoms of BSE.) Some of the resultant meat supply shortfall will be filled by abusing and killing more cattle. Most, however, will be filled by abusing and killing 250 chickens for each forgone cow.

What's At Stake For Us?

We must alert the public that the threat of CJD from eating chickens is no less than that from eating cows. Chickens are fed more infected animal protein than cows; they are likely carriers of the disease; they just don't live long enough to exhibit the symptoms. We must convince consumers that chicken is not a 'health food,' but a reliable source of saturated fat, cholesterol, Salmonella, and perhaps 'Crazed Chicken Disease.'

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