

Seamons, Colleen

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From: Jo Douglas [jo.douglas1@optusnet.com.au]
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Raw Milk and TB

The health concerns surrounding the spread of disease from milk have been mainly addressed with the improvement of sanitary conditions for example...

Coincident with the increasing use of pasteurized milk, the death rate among infants and young children dropped dramatically, circumstantial evidence that poor quality, contaminated raw milk was indeed the cause of much illness. Infant mortality began dropping in the years immediately following the establishment of the first milk depots. With widespread pasteurization, it fell further, from a rate of 160 deaths under one year of age for every 1,000 births in 1906 to 90 in 1916. Deaths from typhoid fever in New York fell as well, from 15 per 100,000 in 1908 to 4 in 1916. But chlorination of the water supply to New York City began during these years, eliminating a potential source of typhoid. Automobile use grew, and fewer horses and their excrement polluted city streets and water supplies. Other changes as well led to more sanitary conditions in New York and other cities, and it is impossible to know to what degree these factors and pasteurization itself affected the mortality figures.

Excerpted from *The Untold Story of Milk* by Ron Schmid, ND,

Another concern has been about tuberculosis in milk. I attach several pages scanned from *The Untold Story of Milk* by Ron Schmid, ND, that investigates and answers these concerns. I have placed this into two emails due to the size of the attachment. Would you please review this information.

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TUBERCULOSIS

When milk pasteurization was introduced and then popularized as a solution to "the milk problem" around the turn of the century, tuberculosis was the scourge of the modernized world, a killer on a huge scale. While characteristic lesions of tuberculosis have been found in Egyptian mummies,¹⁶ and while the disease was described by Hippocrates in 400 BC,¹⁷ it was not until the rapid industrialization and attendant poverty of the 1800s that incidence exploded. People crowded into cities and, by choice or by chance, many ate poorly, a factor that undoubtedly contributed to susceptibility.

The victims were often young and gifted—Chopin, Keats, Stevenson, Chekhov, Orwell and the Bronte sisters—which lent a certain morbid romanticism to the disease. "The roll call of genius," wrote Thomas Dormandy in *The White Death, A History of Tuberculosis*, "reads like an anthem for doomed youth."¹⁸ Tuberculosis was "white" not because it was thought to be associated with milk, but because the pallor of anemia was an almost invariable clinical feature and because the disease had long been associated with childhood and innocence.¹⁹ Tuberculosis is not merely a disease of another era, for even today it takes over 1,500,000 lives each year worldwide, including some 1,800 in the United States. But milk-borne tuberculosis infections in developed countries have been virtually non-existent since about 1960. Proponents of compulsory pasteurization nevertheless often allude to tuberculosis as a threat to people who drink raw milk. The history of this perception, the perception that tuberculosis is caused by raw milk, reveals a great deal about how most people accepted pasteurization as a necessity, and condemned raw milk as a pariah.

The link of tuberculosis and milk in the public mind dates back to 1882 when Robert Koch announced his discovery of the tubercle bacillus as the cause of TB. In the same paper, he stated his famous four postulates that define how a particular infectious agent can be proven to be the cause of a particular disease. Hailed as the greatest scientist of his day, Koch announced a few years later that he had found exactly the same bacillus in the sores of tubercular cows and their milk. Meanwhile, Pasteur discovered that heat treatment of milk—later named pasteurization—would kill the tubercle bacilli and presumably save children from tuberculosis. These an-

ouncements were met with great excitement everywhere, for pasteurization promised to be the solution to the whole problem of tuberculosis. The promise was illusory, and the disease would not be controlled until the advent of antibiotics in the 1940s (and many still die of tuberculosis, in spite of the use of antibiotics). But significantly, in the years following Koch's and Pasteur's discoveries, great commercial possibilities opened up. Large sums of money were invested in the fledgling business of pasteurization—the foundation of the modern dairy industry.

In 1901, however, Dr. Koch announced that a prolonged series of experiments had proved that the human and the bovine tubercle bacilli were neither identical nor transmissible, and that humans had little to fear from the bovine bacillus. "The human subject is immune against infection with bovine bacilli," he wrote. "Human tuberculosis differs from bovine, and cannot be transmitted to cattle." This announcement too had great impact and although it sparked tremendous controversy, earned Koch the Nobel Prize four years later. But by then, pro-pasteurization proponents had taken action to refute Koch's findings. In 1904, a Royal Commission on Tuberculosis was established in England. The Commission declared that Koch was wrong, that tuberculosis in animals and in man was the same disease, and that the causative organisms are varieties of the same species. The Commission's wordings were vague, stated in terms like "it seems probable" and "it is not possible at present to say." Despite Koch's evidence to the contrary, the alleged spread of tuberculosis in milk to large numbers of children continued to be the major impetus behind the push for pasteurization.²⁰

Today, it is accepted that Koch was correct, that different types of tuberculosis are caused by several distinct species of the genus *Mycobacterium*, including human, bovine and avian.^{21,22} Human tuberculosis is spread primarily by inhalation, and may be spread in raw milk if a milk handler with tuberculosis coughs into the milk, or even by the milker's hands if the cow is milked by hand. Undoubtedly this played a role in the spread of the human strain of tuberculosis in the past, when tuberculosis was widespread. It was the advent of modern, closed-system milking machines, starting in the 1920s, and not pasteurization, that reduced the spread of the human strain of tuberculosis in milk to nearly zero.

Unlike human tuberculosis, bovine tuberculosis is extremely rare today—the disease has been almost completely eradicated through the testing of cows and the slaughter of those testing positive in herd certification programs that began in 1917. The history of those programs in both England and the United States sheds light on the still unresolved issue of whether and how much bovine tuberculosis has ever been spread to humans in milk. In a 1947 monograph ("Pasteurized Milk, A National Menace: A Plea for Cleanliness"), James C. Thomson described the situation in England: "We are told that cow's milk in its raw state is the cause of bovine tuberculosis in children and that pasteurization acts as a preventative. If this were true, what is called bovine tuberculosis should be found in the villages where only raw milk is consumed, and there should be none in the towns where pasteurization is the rule. In point of fact the situation is exactly reversed. This is hard fact number one."²³

Thomson then quotes Henry E. Armstrong in the September 19, 1919 *Journal of the Royal Society of Arts*: "It may be that the food value is so lowered [by pasteurization] that effects are produced which render the system specially sensitive to tuberculosis infection. Moreover, when milk is sterilized the lactic organism is destroyed, and it becomes a particularly favourable nidus for the putrefactive organisms, and is therefore a potent cause of infantile diarrhoea." Thomson points out that while London by then (1943) consumed 90 percent of its milk pasteurized, the city had had great increases in both pulmonary and non-pulmonary tuberculosis. The latter was usually called bovine tuberculosis, historically attributed to the consumption of raw milk.

Thomson then tells about 4,000 farmers who went to the Iowa state capital to protest against the corruption that had arisen out of the compulsory tuberculin-testing of cows. The farmers believed that the test was useless and was being used to enrich the meat packers, who were buying up condemned cows cheaply. The farmers asserted that healthy cows often tested positive; the positive test merely indicated that these cows had immunity to tuberculosis. There was strong feeling that even in cattle that tested positive, the tubercle organisms were not passed directly into the cows' milk.

That strong feeling was backed up by expert opinion. In 1933, Will-

iam Savage, cited by Dr. Ryser in *Applied Dairy Microbiology* as an authority on human and bovine tuberculosis,²⁴ published the following statement in the *British Medical Journal*:

"The cow which gives a positive reaction to the tuberculin test, but with no clinical signs of tuberculosis, usually is a valuable animal and a good milker. The reactors with no clinical signs are mostly in good health, giving normal milk, and as shown above, are not excreting tubercle bacilli or only very occasionally."²⁵

Returning to the Iowa farmers, Thomson continued, "As a climax to their case, that year an Iowa farmer's daughter, Marian E. Snydergaard, was chosen as the 'Healthiest Girl in the United States.' Out of a possible 100 her score was 99.7. Meantime it was 'proved' by the tuberculin test that all seven cows on the Snydergaard farm—whose milk Marion drank daily—were tubercular. As usual, however, the press and the radio proved their loyalty to the great vested interests. No national newspaper and no film or broadcasting company gave any publicity to the disturbing facts. Marian was main page news but no mention was made of the scandalous fact that she drank milk from tubercular cows. The AMA, the serum manufacturers and the packers won. With their control of the law, the newspapers, and the radio, they could not fail."

Two separate questions about the possible relationship between tuberculosis in cows and tuberculosis in human beings present themselves. First, to what extent can the bovine tuberculosis bacilli pass directly into milk? Second, if transmitted in any way, can the bacilli cause tuberculosis in human beings? The answer to both questions appears to be, "Minimally, if at all." Clearly the tubercle may be passed through a tubercular lesion on the udder, which occurs only when the disease in the animal has become generalized and obvious. The organism may also contaminate milk via manure from a tubercular cow with lung lesions (the cow swallows its mucous, infecting the feces with bacilli; the feces may then contaminate the milk through sloppy milking and handling). Contamination by these routes was undoubtedly common in the days of the distillery dairies, and would be expected to have occurred at times anywhere cows were kept in less-than-optimal conditions during the years when tuberculosis in cows was widespread.

In the authoritative textbook *The Market Milk Industry*, the authors describe these routes of contamination but make no mention of any direct route from the cow's blood into the milk.²⁶ Passage of the organism directly into the milk, in the absence of tubercular lesions on the udder, has never been proven. Yet many authors, including Ryser, state as fact that cows can shed *M. bovis* in their milk as a result of infections, and that the organism was commonly found in raw milk throughout the 1900s.²⁷ The accuracy of this and similar claims has been seriously challenged in recent years by scientists who question the ability of laboratories to reliably distinguish human from bovine bacilli.

Ironically, this information is provided in another of Ryser's references, a 1983 paper from the *Journal of Applied Bacteriology*, "A Review—the Bovine Tubercle Bacillus." Authors Collins and Grange write: "The search for a simple test to identify reliably a strain as *M. tuberculosis* [the human species] and preferably, to distinguish human from bovine variants has not been a fruitful one. . . no single method is entirely reliable." A description of the shortcomings of the various tests follows. Regarding these tests, widely used by the public health agencies, the authors state: "These tests have been used in the Public Health Laboratory Service tuberculosis laboratories [in Great Britain] for a number of years to identify *M. tuberculosis*. Unfortunately, they do not differentiate between the human and bovine variants. . . experience has indicated that no single test can be relied upon to make a clear distinction."

But the tests are unimportant anyway, Collins and Grange assure us. "The differentiation of *M. tuberculosis* into human and bovine strains is of no clinical value. . . when it could have been of epidemiological value the culture and identification of mycobacteria were confined to a few laboratories and were not regarded by physicians as being particularly useful in the diagnosis of tuberculosis."²⁸ The authors refer to the first half of the twentieth century, and we may assume that differentiation of the human and bovine strains was no more accurate then than it is today.

This and other sources make it clear that the diagnosis of bovine tuberculosis in human beings—and claims that many cases were of bovine origin—have never been more than guesswork. Data generated became propaganda for the proponents of compulsory pasteurization. As the center-

piece of over 80 years of vehemently anti-raw milk public health policy, we have a "scientific" argument based on laboratory "evidence" that the dairy industry's own experts admit is unreliable and inaccurate.

TB FROM COWS

The preceding information allows for several reasonable conclusions:

- The spread of tuberculosis historically through raw milk is known with certainty to have occurred only when tuberculous milkers or handlers had contact with the milk.
- When grossly tuberculous cows with lesions on their udders were milked, or when the feces of cows with tubercular lungs contaminated the milk after milking, bovine tubercle organisms were found in milk. This may or may not have caused tuberculosis in humans; the evidence is conflicting.
- Animals that react to the tuberculin test are by no means necessarily diseased at all; and even if they are, it appears that the organism does not pass directly into the milk.

These conclusions, together with the fact that a positive test for tuberculosis in a dairy cow today is extremely rare, make it abundantly clear that the chances of contracting tuberculosis today from any raw milk, much less from that produced in a sanitary manner, approach zero.

Thus, scientific uncertainty and controversy about the possible relationship between bovine and human tuberculosis remain, particularly since the publication of the article cited above showing the inaccuracy of laboratory evidence. Despite this, Ryser asserts that ". . . in milk-borne cases involving *M. bovis*. . . prognosis was poor, with 2000 of 4000 childhood cases in Great Britain ending terminally in 1932. . . *M. bovis* infections were relatively common, with this organism accounting for 7% of all tuberculosis cases observed in New York City and 9% of all such cases reported worldwide. Reports circumstantially linking raw milk consumption to tuberculosis also abound in the early literature."²⁹

But now, after this diatribe against raw milk, with his very next sentence Ryser reveals his entire argument as a smokescreen, a figurative house

of cards. "However," he writes, "only three reports are supported by strong bacteriological evidence. In the first of these outbreaks, *M. bovis* was recovered from raw milk consumed by 3 of 45 Canadian children in whom nonpulmonary tuberculosis developed." This was in 1934. So, we have three reports in the past 80 years, and in the first, a laboratory test (which we now know cannot reliably distinguish between the bovine and the human tuberculosis bacillus) indicated the bovine organism was present in 3 of 45 raw milk-drinking children with tuberculosis. This is what Ryser calls "strong bacteriological evidence."

"The second outbreak," Ryser continues, "occurred in 1936 and was traced to a small Swedish village. Milk from a cow with active tuberculosis of the udder was reportedly consumed raw. . . tuberculosis developed even though the local dairy farm had a rigorous tuberculosis screening program in place at the time of the outbreak." Ryser's reference is an editorial in *The American Journal of Public Health*, from which we learn that *all* of the townspeople drank raw milk from the dairy (except those who had their own cows). Yet a total of only 56 people were reported to be "infected." We are not told how many showed symptoms and how many were symptom-free positive reactors. Most strikingly, we also learn that "There is no statement that tubercle bacilli were isolated. . . and proved to be bovine."³⁰ The cow with a tuberculous udder was found to be shedding tubercle bacilli into her milk; this is apparently Ryser's "strong bacteriological evidence" for this case. Note the implication that even "a rigorous tuberculosis screening program" is no protection against the scourge of raw milk today.

Ryser's third "outbreak" is a single case. "A young boy living on a Michigan farm reacted positively to a tuberculin skin test after ingesting raw milk from his parents' herd of 34 dairy cows, several animals of which were heavily infected."³¹ That's all Ryser has to say about this "outbreak," his final report of "strong bacteriological evidence" linking raw milk consumption to tuberculosis. His reference is a report by Michigan veterinarians, from which we learn that a cow sent to slaughter was found to have tuberculosis by a meat inspector. Tests on the herd of 182 animals (not 34 as Ryser stated) found 181 had positive reactions. Several were found at slaughter to have extensive disease.

The veterinarians' article also stated that "Seven family members all

drank raw milk from the herd. Chest X-rays on all 7 family members were normal; skin tests revealed 1 positive reactor."³² This was the young boy to whom Ryser refers, who was in good health and had a complete lack of symptoms. Although it is not at all clear why, the entire family was nonetheless placed on anti-tuberculous drugs.

This family actually offers "strong bacterial evidence" that the bovine tubercle does *not* cause tuberculosis in humans. To find that one family member in seven is a healthy tuberculosis reactor is not unusual; the boy could have been exposed to tuberculosis in any number of ways and developed immunity. The other six family members were not reactive, indicating no exposure to tuberculosis despite drinking raw milk from a herd in which 181 of 182 animals tested positive for bovine tuberculosis and of whom several had "extensive disease."

The fact that there have been *no* cases of tuberculosis even linked to milk during the last forty years, and that no substantial evidence proves an association between bovine and human tuberculosis, does not stem the tide of polemics about raw milk and tuberculosis. A few examples:

- Bovine tuberculosis ". . . could be transmitted through the milk of diseased cattle." The implication is that all cattle that test positive are diseased. This is followed by a graphic description of the horrors of tuberculosis, complete with an 1880s photograph of children in a New York City sanitarium. This is in *Milk, the Fight for Purity*, a book designed for school libraries.³³
- "*Mycobacterium bovis*, which usually infects cows, causes bovine tuberculosis in people. Humans usually get it by drinking unpasteurized milk from infected cows."³⁴ Again the implication is that any cow testing positive is "infected." The quote is from a microbiology textbook for college students.
- "Cows that were infecting the milk supply could now [through tuberculin testing] be eliminated before they transmitted the disease to countless millions of people."³⁵ This is from *The Dairy Industry in America*, an industry version of dairy history designed for libraries.

Misinformation serves a purpose; the public becomes conditioned to accept half-truths and deceptions. Public health authorities still regularly raise the spectre of tuberculosis in their campaign against raw milk, in books, articles, statements to the media and legislative hearings about raw milk.

TB AND HERD DEPOPULATION

William Campbell Douglass, an iconoclastic medical doctor, provides us with a final story about tuberculosis in *The Milk Book*.³⁶ Douglass, a long-time and vocal advocate for raw milk, relates that in South Carolina in 1982, state Senator T. Ed Harrison, a dairy farmer and chairman of the Agriculture Committee, introduced a measure before the state legislature to allow commercial sales of raw milk in the state. Cows producing such milk and the milk itself were to be inspected and tested on a regular basis.

An editorial in *The Columbia Record* (April 27, 1982) reports on the legislative debate about the measure. C. E. Boyd, the state veterinarian, "... told the story of a herd of 385 dairy cows that had to be 'depopulated' when more than half were found to be tuberculosis reactors. Milk from those sickly cows was pasteurized before it went to market. 'I can't predict what would have happened if that milk had been sold raw,'" Boyd is quoted as saying. The editorial then urges defeat of the measure.³⁷

Douglass writes, "Boyd knew perfectly well that a positive skin test for tuberculosis, a 'tuberculosis reactor,' did not mean the animal had tuberculosis. Ninety-nine percent of the time it means that the animal (or person) is immune to tuberculosis. I testified that half of the hundred people in the hearing room undoubtedly had positive skin tests for tuberculosis, but that did not mean they had to be treated. Even if the cows had TB, I said, the milk would still be okay to drink. I pointed out that tuberculous people, not cows or cows' milk, give tuberculosis to people."³⁸

Boyd also knew that any cows producing commercial raw milk would be regularly tested for tuberculosis. And we may assume that as a veterinarian he knew that tuberculosis organisms, whether bovine or human, find their way into milk only if the cattle are diseased or the milk is grossly mishandled. Douglass' story again demonstrates the distortions and deceptions to which officials and writers resort in their efforts to discredit raw milk and block legislation that would allow the public a choice.

RAW MILK PROTECTS AGAINST TB

A few historical points make it clear that raw milk can be consistently produced in a manner that completely eliminates any danger of tuberculosis. Recall our discussion of Weston Price's studies of the Swiss people of the Loetschental Valley in 1931. Tuberculosis at that time took more lives in Switzerland than any other disease. Yet Swiss government officials reported to Price that a recent inspection of the valley had not revealed one single case. Astonishingly, Price's thorough study of records of death certificates revealed that no deaths had occurred from tuberculosis in the history of the valley.³⁹ The chief source of calories among the Swiss of the Loetschental Valley was raw milk.

Several other traditional cultures that used raw milk as the principal food were discussed in Chapter 8. In none was there any evidence of tuberculosis. Recall also that Francis Pottenger made extensive use of raw milk in his therapies for chronic diseases, including tuberculosis, and that Dr. Crewe's milk cure at the Mayo Foundation during the 1920s proved efficacious in treating the disease. As often seems to be the case, the truth here lies at the opposite extreme of what the "experts" would have us believe. Since before the dawn of recorded history, raw milk has been one of mankind's chief protectors from the ravages of tuberculosis and other dreaded diseases.

BRUCELLOSIS OR UNDULANT FEVER

Although fewer than 200 cases of human brucellosis occur annually in the United States, this disease is still considered the most important illness to afflict both animals and humans. The vast majority of cases occur in meat-packers, veterinarians and farmers because the causative bacteria, *Brucella* species found in infected cattle, sheep, goats and pigs, can be acquired through contact with the animals through even a minute break in the skin. The symptoms can be severe, including relapsing fevers (thus the alternate name undulant fever), weakness, malaise, pain and loss of appetite, but with few physical abnormalities. There are occasional deaths.

Brucellosis has been almost completely eliminated from cows through testing and herd eradication programs begun in the 1930s. Most cases in this country today are caused by *B. suis*, which occurs in pigs. But outside

the United States, brucellosis is considered endemic, especially in northern Mexico and in many South American, Latin American, Mediterranean, Middle Eastern and African countries.⁴⁰

Brucellosis in cows can cause abortion, and the organisms can persist in the udders of cows for years following an abortion. The organisms are intermittently shed into milk in significant numbers.⁴¹ Outbreaks have indeed been associated with raw milk. In January and February of 1946, 28 cases of human brucellosis were reported in a small town in eastern Maryland. *Brucella* organisms were isolated in the Maryland State Health Laboratory from two human cases. The other human cases had positive blood tests and clinical symptoms of the disease, but there were no deaths. The outbreak was attributed to infected milk from an uninspected source that was distributed during the Christmas holidays by a local raw-milk dealer when there was a shortage of milk. One of the dairymen supplying the milk had 14 cows of which 7 reacted positively to the test for brucellosis.⁴²

Another milk-associated outbreak in 1934 apparently resulted from porcine infections in dairy cattle on an Iowa farm where cattle had been allowed to intermingle with hogs—not good farming practice. *B. suis* is the most virulent of the *Brucella* bacteria. Twenty-seven cases occurred among 350 regular patrons of a raw milk dairy over a period of three months. But again, there were no deaths.⁴³

One wonders about the 323 regular patrons of the dairy who did not become ill. In the 1940s, when brucellosis in both cattle and humans was much more commonplace, Francis Pottenger studied some 1800 cases. “The suspected and reported sources of the *Brucella* infections were numerous,” he wrote. “However, less than three percent could be attributed to milk as the possible source. Very significant was the observation that almost every patient’s previous dietary habits indicated possible malnutrition long before symptoms of brucellosis or other conditions inviting the physician’s attention had ever appeared.”⁴⁴

Pottenger’s co-author was William A. Albrecht, PhD, the preeminent soil scientist of the era and the author of many classic books on the relationship between soil and health. Pottenger and Albrecht concluded that trace mineral deficiencies in the soil and inadequate nutrition were the underlying cause of brucellosis in both cattle and man. With proper nutrition, both were

immune to *Brucella* infections.

Brucellosis remains of concern today not only because of the occupational workers who contract the disease, but also because of occasional disease-related outbreaks in the US and foreign countries. Consumption of American-produced raw goat’s milk soft cheeses was implicated in outbreaks in El Paso, Texas, in 1968, 1973 and 1983. In 1994, 69 percent of the brucellosis cases reported nationally occurred in Mexican border-states, namely Texas, Arizona and California, presumably linked to eating illegally imported raw milk Mexican cheeses. In England, 28 cases were reported as acquired abroad between 1992 and 1995 during visits to various Mediterranean, Middle Eastern and North African countries, with the presumption that many of these cases were milk-borne or cheese-borne.⁴⁵ Travelers to these regions would be wise to use discretion and choose raw milk products made only by producers with outstanding local reputations for top quality.

Although brucellosis has been virtually eliminated from dairy cattle in the United States, the threat is still used to keep unaged soft raw milk cheeses out of the country. As a result, some of the tastiest and healthiest cheeses in the world are unavailable here, for the same reasons that raw milk is generally unavailable or difficult to find. But as we strive to change regulations that have restricted the freedom to choose raw milk and its products, we must recognize that if not produced with proper care, they can occasionally lead to acute illness.

This is particularly relevant in our discussion about brucellosis because advocates for raw milk have made misstatements about this disease. Douglass states flatly in *The Milk Book* that raw milk cannot transmit undulant fever, that cows cannot transmit the pig strain of undulant fever in their milk, and that undulant fever cannot be transmitted in cheese. He and co-author Aajonus Vonderplanitz repeat these errors and make several others in “The Supplemental Report,” an otherwise admirable document prepared during the successful 2001 campaign spearheaded by Vonderplanitz to reintroduce raw milk into Los Angeles County (to be more fully discussed in Chapter 16):

“Brucellosis is not contracted through milk,” the Report reads, “but by association directly with animals. The farmer or other adult milking the

cow would often get brucellosis, but his children, who drank most of the milk, seldom got the disease. It should be noted that even raw milk produced under gross conditions has rarely been proved to be associated with cause of an epidemic. All proved food-related outbreaks in the public have been caused by processed and restaurant food.⁴⁶ These statements would have it both ways. We are told that brucellosis is not contracted through milk, and the children "seldom" got the disease. But "seldom" is not "never." Raw milk has "rarely" been proven to be associated with an epidemic. But "rarely" is not "never." In other places, the report claims that raw milk has never caused brucellosis or any other disease, and numerous other claims are made in support of this notion.

Disease caused by raw milk is indeed rare, as is brucellosis caused by raw-milk cheese. The intense and biased focus of the public health authorities on these problems, which constitute a miniscule fraction of the food contamination problems in the United States, is in my opinion a disgrace and represents a failure of our institutions. But let's not abandon reason and the search for truth. Advocates for raw milk need to recognize, whether discussing brucellosis or scarlet fever, *Salmonella* or tuberculosis, that even the healthiest food, when mishandled, can cause disease.

ASTORY FROM NEW HAMPSHIRE

We conclude our section on brucellosis with an old story recounted by the same Mr. Vonderplanitz. The story originates with a New Hampshire man who gave up dairy farming in the mid-1950s.

"It took being driven out of farming to have enough time to recognize what had been done to us," the man told Vonderplanitz. "You put the final pieces of the puzzle together when you published a short reference about brucellosis being a deficiency disease. If it is, then the programs to control it are nothing more than a political football.

"When I was a boy my father and I went to see an old man who sold me his single shot 22. On the way home my father told me the story behind the man; I was young enough to not understand the implications, but old enough to remember.

"The gentleman had been a long time New England sales rep for many ag equipment manufacturers. Knew the territory and politics inside out. In

ment he had a small farm almost within the 'city limits' of a nearby town. Had eight milkers and sold his milk retail personally. Lo and behold, the State of New Hampshire pioneered a brucellosis eradication program in the early thirties. This gentleman's herd had three reactors and four suspects, which meant he couldn't sell the milk unless they were removed from the herd via a slaughter program. He kept selling milk.

"Pretty soon the State gave him a cease-and-desist order. He continued to sell milk, and was taken to court, where he asked the judge in an offhanded manner if he was allowed to have anyone testify on his behalf. The judge asked how much time was involved. 'Probably have them here tomorrow,' the farmer said. Permission granted.

"Four veterinarians, from Maine, Vermont, Massachusetts and Canada, showed up the next day. All testified that they had drawn blood on the herd recently and all were negative. Case closed, and the old gent sold milk until he died without further molestation.

"What the old gentleman probably knew, but was discreet enough to not speak out loud, was the fact that the Hood Dairy Company was trying to expand its control of fluid milk to include the 'Boston Milk Shed,' which included most of New England north of Boston. With thousands upon thousands of little farmers with four to ten cows supplying the local milk demands, Hood couldn't muscle into control. But if the little fellow was 'legally' forced to replace part of his herd overnight, he would have to close up business. That is exactly what happened. These little farmers couldn't afford to replace the brucellosis reactors and suspects that the state identified, on a short notice. This was the first step to 'big farming' in New England. Supposedly the cattle slaughtered were sent to a state-approved slaughterhouse where the carcasses were carefully examined and suspected portions were removed from human consumption.

"Many a moon later, when in the Navy on the other side of the world, I talked with a sailor from New Hampshire. . . . I discovered that he had worked in the only state-approved slaughterhouse for brucellosis-contaminated cattle. How were the supposedly contaminated parts eliminated? No different than in any other slaughterhouse he worked in—everything went into human consumption. So much for the protection of the consumer and the rape of the farmer.