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MAD COWS, FRENCH FOXES AND OTHER RABID ANIMALS IN BRITAIN, 1800 TO THE PRESENT

Michael Worboys

INTRODUCTION

Mad cows were not an uncommon sight in British towns and cities in the nineteenth century. There were many newspaper reports of ‘crazed cattle’ causing mayhem and injuring, occasionally killing, people. Most cases seem to have been animals that, after being frightened or mistreated, escaped from urban dairies or ran wild while being herded from the countryside to urban markets or slaughterhouses. Such an event occurred in Bermondsey in November 1861, when a cow ‘overturned a donkey and cart laden with vegetables’, ‘flung a fruit stall high in the air’ trampling its owner, and gored a horse in its flank before being recaptured. Similar incidents occurred in London in March 1872 and May 1877, and were pictured in the Illustrated Police News. (Figs 1 & 2)

Fig. 1 Alarming Freaks of a Mad Cow (The Illustrated Police News etc London, England, Saturday, March 16, 1872; Issue 422.)
Chases of ‘runaway horses, mad dogs, crazed cattle, sturdied [shaking] sheep and rogue elephants’ were an opportunity for tumult and spontaneous street violence and often required a vigorous reaction from the authorities. The Scottish alienist William Lauder Lindsay described a typical event: ‘the aid of the police and even the military is invoked; the animal is pursued not only with stick and stones, but also with lassoes and fire-arms, with **** yells of the most discordant and distracting kind’. The similarity with the equally common mad dog chases is striking and from the point of view of the public, any animal running wild in the street might have been suffering from rabies. In some cases they were undoubtedly correct as rabies can affect any mammal and when the disease was prevalent in dogs in Britain, as it was until 1902, it also spread to other animals.

In this article I discuss non-dog rabies in Britain from the 1830s to the present day. I begin with a discussion of the well known story of rabies in urban dogs up to its eradication in 1902. I then widen the lens and take a cross-species
perspective to look at how rabies was seen in cats, livestock, horses and deer. With these species, public and scientific interest was less in the disease, as, apart from cats, humans were unlikely to be attacked; rather it was in how the infection changed the animal, exposing the veneer of domestication, even turning herbivores into carnivores. For the twentieth century, I discuss responses to the threat of fox rabies, which spread from eastern to Western Europe in the post-Second World War years, arriving near Channel ports in the 1970s. Finally, I consider responses to the first death from indigenous rabies for 100 years in 2002, after an infected bat bit a conservationist. Subsequent investigations have shown a very low incidence in bat rabies in Britain and a near negligible public health threat; however, this has not inhibited the press from continuing to exhibit, what the New York Times called ‘Britain’s Rabid Obsession’, by regularly carrying stories of deaths caused by rabid vampire bats in South America.  

RABIES

Histories of rabies in Victorian Britain have almost exclusively considered the disease in urban dogs, but the disease was found in rural areas in livestock, game and wildlife. Indeed, it is likely that wild mammals were one reservoir of infection for urban dogs, not least because the urban-rural boundary was less well defined then. A typical rural incident occurred in Cuckfield, Sussex in August 1869. A cow that was being driven in for milking started to kick wildly. It was reported to have been ‘attacked with a raging fit, dashing herself against the sides of the building, tearing down everything in her reach, lacerating herself terribly and occasionally bellowing in a frightful manner’. Next morning the farmer shot her dead. The cow was assumed to be rabid because a horse had died locally with similar symptoms after being bitten by a dog. In May 1874 in Baslow, Derbyshire, over several weeks, a cow became rabid, a horse went mad and sheep were affected. In towns rabies tended to be sporadic, typically a single rabid dog attacked one or two people before being caught and destroyed. In rural areas the disease was also sporadic, but could become epizootic. Outbreaks could cover a large area, last weeks and affect farm and wild animals. For example, around Stratford-upon-Avon in the winter of 1835-1836 there was a report of the deaths of 22 sheep, 7 dogs, 2 horses, 2 oxen and 1 ass.  

In Britain in the period from 1840, from when deaths were first reliably recorded, to 1902 and the eradication of rabies, the disease was epidemiologically insignificant, causing just over a thousand deaths. However, the melodrama that surrounded mad dog chases and its reputation as the worst of all possible deaths, with mind and body out of control, meant that it had a special place in the public imagination. And the imagination had much to dwell upon. Victorian streets were full of dogs; many were feral, but most were family
pets left to roam the streets, where packs would form and fights common. Anyone threatened by a dog had no way of knowing if it was just being aggressive or was carrying a deadly disease. While if bitten by such an animal, the victim faced many months of anxiety as the incubation period of rabies was variable, with some cases taking a year to develop. Measures to control the disease relied on local authority orders requiring the muzzling and control of dogs until the late 1880s, when rabies was added to the provisions of the Contagious Diseases (Animals) Acts. These Acts had been introduced in the 1860s to control the cattle plague outbreak and other livestock diseases, such as foot-and-mouth. It is from this date that there are figures for the rabies deaths in animals. There is no record of deaths in animals until 1887. In that year, the numbers of different animals ‘attacked’, no doubt underreported, were: dogs – 217; cattle – 11, sheep – 5; swine – 3; horses – 4 and deer – 237, the latter in an outbreak in Richmond Park that I discuss later.

Veterinarians in the nineteenth century complained that they were not routinely consulted on dog rabies, as the public favoured rapid and summary execution of suspected canines. They hardly ever saw rabies in other animals, as victims were also promptly slaughtered and their bodies burned or buried to prevent cross-infection. In my extended research on the history of rabies in nineteenth century Britain, I have found no reports of the disease in wild animals, though it is likely that it was present and a reservoir for the infection of dogs and other animals. Current knowledge would suggest that if wild animals had suffered from rabies, they would have mostly died quietly, if not quickly, on their own as the infection produces lethargy or rage. One of the curiosities of urban rabies in the nineteenth century was the lack of interest amongst contemporaries in the origins of particular outbreaks. This can be explained up to the 1870s because the common view was that rabies arose spontaneously, when anger, agitation and thirst unbalanced the body’s humours and generated the infection, a view that began to change with discovery that microbes cause infections. Before then, the favoured conditions for its development were the heat of the ‘Dog Days’ of July and August, when the combination of thirst, putrid food, contaminated water, and ill-treatment generated the rabies poison. All these eventualities were much more likely to befall the working class curs, who were allowed to roam the streets, form packs and perhaps unlearn their ‘domestication’. Most curs were crossbreeds or ‘no breed’ mongrels, however, there were no suggestions that pure, highbred dogs enjoyed immunity. Sex was also a factor. Rabies was more common in dogs than bitches; but it was uncertain whether this was simply due to greater exposure of the more aggressive males, or to the poisonous effects of putrid semen on the bodies of frustrated males.

Before discussing the inter-species character of rabies it is worth noting that the disease was quite variable in dogs. To begin with, while most dogs suffered
from so-called ‘furious rabies’, a small percentage suffered from so-called ‘dumb rabies’. There were obvious parallels between ‘furious’ and ‘dumb’ rabies and insanity in humans, which at this time was being classified around two poles: mania and melancholia. Indeed, anthropomorphism coloured almost all understanding of dog rabies. In human sufferers, there was assumed to be a struggle between the maddening effects of the poison and the person’s moral and rational self; so in the dog there seemed to be a struggle between the impulse to bite and spread rabies, and loyalty to its owner. The leading veterinarian and authority of rabies George Fleming wrote at length on this conflict: ‘This sentiment of affection of the rabid dog for its master is so powerful and tenacious, that it dominates it even in the furious stage of the malady, remaining stronger than the rabid impulse’. 11

CATS, SHEEP, HORSES, COWS AND DEER

Rabies in cats was more feared than the disease in dogs. Veterinarians assumed that a cat’s teeth, though small, were sharp enough to be effective inoculators of the virus. George Fleming wrote that once rabid, the cat’s ‘tiger-like nature is thoroughly awakened’, a view seemingly confirmed by reports of cats fastening their jaws and having to be beaten off. 12 Victorian assumptions about the character of cats was often defined against that of the dog, with cats assumed to the more individualist, selfish and less loyal – loners happy to wander off on their own, but return to their human companion for food and protection. Fleming wrote that the domestic cat had merely been ‘tamed rather than thoroughly domesticated’, which meant that under the influence of the rabid poison it readily ‘reassumes all its ferocious instincts and freely abandons itself to them’. In other words, in cats the rabies poison was understood to release the carnivorous beast lying behind the thin veneer of domestication.

In sheep, rabies tended to affect herds rather than individuals. Compared to dogs, sheep are slow moving and timid, with few ways of defending themselves. Rabid dogs occasionally killed sheep outright, or savaged them badly, particularly around the head and neck – biting elsewhere through thick wool would obviously be difficult. On one occasion the survival of most of a herd was explained by the teeth of the dog gradually being cleaned of the virus in each successive attack. 13 A similar phenomenon was said to explain why no London policeman never developed rabies despite handling thousands of dangerous dogs, as their the thick wool serge cloth of their uniform wiped the biting tooth clean of the virus. The incubation period in sheep was often quite short – unsurprising in the light of modern knowledge of the passive movement of the virus in nerves from the bite to the brain – and the symptoms fairly consistent. The most common behaviour was butting not biting: sheep would bash their heads into walls, gates, pens, and each other. They also became excited, stared
vacantly, chased each other, and salivated. The effect of the rabies poison on sheep was seemingly to change their character, to make them aggressive and excitable like dogs. Though sheep were thought to lack intelligence, they were sensitive, which was seen when sheep that had not been attacked seemed to die of fright from the trauma of witnessing the attack by a rabid dog.

What the rabies poison seemingly did to the horse was to release its power, which was otherwise controlled mentally by the discipline of having been broken in and physically by stabling, reins and rewards. The horse was seen by contemporaries to be noble yet also quite simple and malleable as when broken in. The characteristic symptoms of rabies in the horse were biting, excitement and destructiveness; horses would kick at their stable walls and bite into objects, even their own legs. Rabid cows also became aggressive, excited and twitchy, but rather than bite they bellowed incessantly. They were easily frightened. With all herbivores, veterinarians had to make a differential diagnosis between rabies and staggers or sturdy, shaking conditions that were traced to lesions in the brain. The key differences were in mood and behaviour, with staggers characterised by ‘dullness, stupidity and ... not effecting to bite anyone.’

Rabies in deer attracted special attention in 1887 when it appeared that an outbreak in Richmond Park had been spread by transmission between the deer. Had the disease turned herbivores into carnivores? Previous reports of rabies in deer had been linked to bites by rabid dogs and had attracted attention because of the large numbers of animals affected. Two incidents had made headlines: in 1856 an outbreak at Stainborough Hall near Barnsley, saw over 100 deer fall victim and in 1872 at Eaton Hall, Cheshire, 350 died. The outbreak in Richmond Park, between from September 1886 to the September 1887, in which 257 deer died drew particular attention because it coincided with the medical and press attention given to Louis Pasteur’s work on the disease. Pasteur’s investigations, which had relied on cross-species transmission between dogs and rabbits, had produced an effective treatment that has been styled the world’s first ‘medical breakthrough’. Thousands of dog bit victims travelled to Pasteur’s institute from around Europe and the world, from as far as the United States and India, for treatment, which took advantage of the long incubation period of the infection. Also, the outbreak coincided with the deliberations of a Committee of Inquiry into how to combat rabies in Britain, the report of which offered two options: keep the existing dog muzzling and other control measures and establish a Pasteur treatment centre in London; or try to achieve eradication via isolation, quarantines and slaughtering affected dogs. The latter was adopted, in part because Pasteur’s methods required extensive use of vivisection, which was quite strictly controlled in Britain, and in part due to chauvinism. It was accepted that eradication would take many years and in the interim British dog
bite victims continued to travel to Paris to take advantage of the Pasteur’s treatment.

The investigation of the outbreak in Richmond Park was led by Alexander C. Cope, the Chief Veterinary Inspector of the Department of Agriculture, who contracted Professor Victor Horsley, University College London, to help with laboratory investigations. Horsley was only too willing to help, as he was the Chair of the Committee of Inquiry and keen to advance the claims of laboratory medicine. Cope’s report stated that, at first in September 1886, the deer in Richmond Park were first thought to have been eating poisonous vegetation. Their behaviour was erratic: ‘constantly rubbing their heads against the stems of trees or on posts’ removing the hair on their head and ‘biting the skin about their shoulders and bellies until they were perfectly raw, tearing out their hair and at times charging at others’. Moving the deer to another pasture made no difference and led to the suspicion of rabies, as it was rife in dogs in London at the time. Horsley confirmed that the deer had rabies using the standard diagnostic test of the time: inoculation of samples of brain or spinal cord of affected animals into dogs and then waiting for symptoms to appear.

The next question was could it spread from deer to deer? The possibilities were via infected saliva on vegetation, the licking of sores and wounds, or by biting? The latter was tested in an ‘experiment’:

A rabid doe was placed in a shed with a healthy buck, which had been previously entirely isolated from the infected heard. Immediately the rabid doe was placed with the other animal she flew at it like a dog, and bit it about the ears and neck; the healthy deer was carefully watch, and on the morning of the 19th day it showed symptoms of disease, it became furious, and died in a very short time.

The positive result was surprising as deer lacked the upper incisor teeth that would penetrate a hide. However, this seeming weakness was turned to advantage and used to explain the slow the spread of the disease amongst deer, as inoculation by non-biting teeth was likely to have been uncertain, with small amounts of saliva in superficial wounds, so that the virus would take longer to multiply and reach the brain. In the event, the outbreak was contained by isolating affected herds and pre-emptively shooting any deer showing symptoms.

Through the late 1880s and 1890s, the eradication of rabies in dogs was pursued by vigorous application of controls on dogs, from the requirement of muzzling and leading to streets, to quarantines at ports. The number of incidents declined and in 1902, what turned out to be the final cases were dealt with. These were in
rural in rural south Wales, in the Brecon Beacons and Pembrokeshire, in sheep dogs. Rabies returned to Britain at the end of the First World War, seemingly in dogs adopted as pets by soldiers in France, but was readily contained. The country remained rabies-free, apart from infected imported dogs dying in quarantines and deaths from travellers who had been infected abroad until 1969, when a new danger emerged – the French fox.

FOXES

The background to this new threat was that in the early part of the year the World Health Organisation (WHO) had warned of the ‘particularly disquieting’ epizootic of fox rabies that had started in Poland in the late 1940s and had crossed Germany and was now in eastern France. Thus, Western Europe faced a new problem, not the dog rabies of the nineteenth- and early twentieth century, but rabies in wildlife. A report in Nature warned that there was a large enough reservoir of susceptible animals in Britain for a new epizootic to develop from just one imported case. However, it was not French foxes that sparked public alarm, but an imported dog from Germany.

Fritz, the pet of a soldier previously stationed in Germany, developed rabies in October 1969, even after six months in quarantine. Restrictions were imposed on the movement of dogs in the area and muzzling required. While there was no evidence that Fritz had been ‘on the march’ in the local area, the Ministry behaved as if he had, taking draconian measures with a cull of local wildlife through poisoning and shooting. A ‘mass extermination’ took place on 30 and 31 October, bagging 11 foxes, 102 squirrels, 1 rabbit, 5 jays, 7 magpies and a crow. There were no further cases in the area but the episode was taken as warning of the dangers of rabies and quarantines were extended to eight months.

There were further incidents with imported dogs in succeeding months and a further tightening of regulations. However, there was now the new awareness of wildlife rabies and particularly of the threat from foxes, which had become more common in urban areas. In Continental Europe, where rabies remained endemic, the situation had changed from the early twentieth century. Then, 99% of reported cases were in dogs and domestic animals; by the 1960s the figures were 7% dogs, 15% other domestic animals and 78% wild animals, mostly foxes. Yet, experts were divided on how readily fox-rabies would transmit to pets. On the one hand, some warned that ‘a single case in a fox might result in an enzootic [endemic] situation’ and there was an official warning that fox rabies was soon likely to reach the Channel. On the other hand, the evidence from Europe was that the fox virus was not easily transmissible to other species, plus the fact that the fox was a scavenger and only a predator of small animals.
like mice, rabbits and birds, though they were known to attack cats and small dogs.

Britain joined the European Community (EC) on 1 January 1973. The anticipated rise in the volume of trade, travel and tourism was expected to increase the risk of the importation of rabies. All the more so because of the eastward march of fox rabies was reported in the British press on maps, with sweeping arrows, that echoed the advance of the Nazi forces in the Second World War. Such maps were familiar as they were used in the opening credits of the popular comedy show Dad’s Army. A new Rabies Act in 1974 included regulations to deal with a post-quarantine outbreak, which included controls on animal movements and powers for the destruction of wildlife in affected areas. The latter measures were seen by many observers as preparation for the ‘inevitable’ entry of fox rabies. The Ministry of Agriculture, Fisheries and Food (MAFF) and the veterinary profession encouraged a siege mentality. They painted a picture where the invasion of rabies, though fifth column smugglers or the incursions of wily foxes, had to resisted by measures that were demonstrably tough and might include the summary execution of pets.

Rabies was back in the headlines in the summer of 1975. The WHO warned again that fox rabies was advancing 20-30 miles eastward each year, which was reflected in headlines such as ‘The deadly virus marching across Europe’. The government produced multi-language posters to be displayed at ports in Britain and Europe, with leaflets, and television and radio campaigns before and during the holiday season.

The summer of 1976 was the hottest on record in Britain, and saw in some ways a return to the fevered Dog Days of the nineteenth century, as, in the words of one correspondent, the country was gripped by ‘rabies hysteria’. MAFF started things off with its usual publicity drive, which included new posters, more inspections and encouragement to magistrates to use higher fines and prison sentences. Over the summer many smugglers were fined and in July two people were jailed for three months. Criminal activity and graphic warning made good copy for the popular press and produced deadlines such as, ‘Rabies – It’s 22 miles away’ and the ‘Hounds of Hell’. Public perceptions were fed by a Eurosceptic press and uncertainties about what membership of the EC might bring. In 1978, one official was reported as saying, ‘One tends to get the reaction that now we are in the Common Market, we should get everything they have got, including rabies’. That Britain was rabies-free and tough on rabies controls became an important feature of British identity, especially for the responsible classes who followed the quarantine rules and for politicians seeking a special place for the country in the EC.
In 1982 reports showed that fox rabies in northern Europe was once again on the increase, which led the British government’s publicity machine to move into overdrive on the issue, producing leaflets in thirteen languages as concern had switched from sentimental or ignorant British tourists to complacent, blasé foreigners. MAFF, local authorities and veterinary organisations continued to refine and rehearse their contingency plans for containment should just one rabid cat, dog or fox slip through. The government line, that other European governments took rabies too lightly, began to be echoed in Brussels and amongst European veterinarians, who started to discuss the possibility of eradicating the disease in EU countries. They were encouraged by the opportunities opened up by new vaccines, produced by cell culture and other techniques, which could be given orally to wildlife in bait. While MAFF welcomed the policy in principle, they were extremely troubled that this was immediately linked to the scenario where, a rabies-free Common Market would have common, community-wide regulations that would effectively allow the free movement of all animals, in which case, Britain (and Ireland) would no longer need their rabies quarantines.

In 1983, the idea of rabies arriving in Britain was the basis for the three-part primetime drama series, The Mad Death. The drama followed the familiar idea of rabies introduced into the country through a smuggled pet which, unbeknown to its owner, had been bitten by a rabid fox. The narrative echoed fears that closer European integration was weakening Britain’s border controls. The question of the harmonisation of regulations across the EC was the central issue at the political summit in December 1985, at which Britain and France ‘came to blows over the notion of a Europe without frontiers’. In the negotiations Britain’s special position with rabies was used time and again to illustrate the folly of moves towards the free movement of everything. In a sense, the menace of rabies allowed Euroscepticism to be naturalised – a disease-free island next to an infected continent had to have special consideration.

In many EC debates, the need to protect the country from rabies was linked to other diseases (brucellosis, foot-and-mouth disease, and Colorado beetle) and to fighting terrorism, drugs, and illegal immigration. Often it was the iconic, and assumed to be unanswerable, illustration of Britain’s claim for exceptions to rules that suited the rest of the EC. In 1985, when Sir Geoffrey Howe, the Foreign Secretary, dismissed claims that Britain was seeking economic advantages from its opposition to reforms, he stated ‘that Britain’s natural concerns over rabies and drugs were not an excuse for protectionism’. Margaret Thatcher told the Conservative Women’s Conference in 1989 that ‘although we want to make it easier for Europe's citizens to move around Europe, that doesn't mean giving greater freedom for illegal immigrants, nor for terrorists, nor for drug dealers, nor for rabies and other animal diseases’.
As early as 1973, the implications of a tunnel under the Channel for rabies had been discussed by British veterinarians. Stringent anti-rabies features were required in the construction and operation of the tunnel: ‘sealed trains, physical barriers and grids at entry points, regular inspections, rigorous cleaning programmes, and the continuous deployment of baited traps in both tunnel and terminal areas’. Over the period of construction, MPs wanted further assurances that wildlife would be kept out. By the time the tunnel opened in 1994, the government was confident that it was no more dangerous than ferries, aircraft or the many other ways that animals were brought into the country. However, Julian Barnes, a well-known Francophile, wrote that on the day of its inauguration in May 1994,

‘It was as if, lining up behind Mitterrand and the Queen as they cut the tricolour ribbons at Calais, were packs of swivel-eyed dogs, fizzing foxes, and slavering squirrels, all waiting to jump on the first boxcar to Folkestone and sink their teeth into Kentish flesh.’

The portrayal of rabies remained that of sentimental or ignorant tourists and European foxes. However, the position of fox rabies in Continental Europe was being transformed by the vaccination of foxes. Julian Barnes might have been right about the British imagination, but on the ground in reported cases of rabies in France had fallen from 2,500 in the mid-1980s to 200 in 1994; with most cases concentrated on the German border, a long way from Calais. By then it was much harder for British politicians to boast about the country’s own record on human-animal health because of BSE and the fact that Britain had been exporting diseased animals and meat around Europe for years. None the less, the EC officials maintained that countries were on track to eradicate rabies by 1998.

As early as 1992 and buoyed by initial success, the Commission’s Standing Veterinary Committee passed a resolution looking towards a community-wide, post-eradication policy of vaccination, blood tests, and the free movement of pets. This proposal was swiftly condemned by the British Veterinary Association (BVA), the RSPCA, the Quarantine Kennel Owners Association and MAFF, and was rejected in a motion passed by the House of Commons. They again pointed to Britain’s uniqueness: its island geographical and longstanding success with quarantines, to which was added its higher proportion of urban foxes. They argued British foxes were different to those on the Continent, living at higher densities, being more sociable and likely to lick each other. Models produced by epidemiologists projected that if rabies reached Britain, 92% of foxes would need to be culled, or 95% vaccinated, both were said to be impossible targets. Officials pointed to a range of problems with any passport scheme: accuracy of the blood tests, out of date vaccinations, false
passports and the ease of ‘impersonation’! An additional problem was that the government that had abolished the dog licence and would now have to introduce a registration scheme.

However, radical change was afoot and the key year was 1997. The new Labour government, wishing to signal its positive view of the EC, instituted an inquiry into the feasibility of a Pet Passport scheme, based on vaccination, to replace quarantines. There had been pressure for change from Conservative politicians, veterinarians and celebrities, all pointed to the effective eradication of rabies in domestic and wild animals in the near Continent. The inquiry recommended Pet Passports and the scheme began on 28 February 2000.

CONCLUSION

Indigenous rabies returned to Britain in November 2002. A conservationist handling a bat in the Scottish Highlands was bitten and developed rabies; he died several weeks later. That bats could carry rabies was known in the 1930s and there had been a few reported cases in Europe, where the particular form of the infection - European Bat Lyssavirus (EBL) was common. The risk was known as there had been reports of the disease in bats previously, but it was only after this incident that the public were warned not to handle dead or dying bats they found. Surveillance has shown the infection to be rare in bats in Britain, none the less, the fact that infection is invariably fatal means that cross-species transmission continues to attract attention. The death of the very unlucky death naturalist did not linger in the news nor change public attitudes to rabies, which continued to be dominated by fears of imported dogs and the risk to those visiting countries where the infection is endemic in dogs and other mammals. However, the press, ever on the look out for a headline grabbing story about rabies, has regularly reported on bat rabies in South America, with gothic horror story of vampire bats causing multiple deaths in the Amazon regions of Brazil and Peru.

In the nineteenth century, medical and public interest in rabies in animals other than dogs was principally in how the infection changed the character and behaviour of the animal affected. Rabid cats slipped back down the evolutionary ladder to become for tiger-like, rabid horses returned to their pre-domesticated wild state, and herbivorous cows and deer, when rabid, became carnivores. Apart from cats, they were curiosities, or offered insights into ‘animal psychology, they were not threats to public health. However, in the last quarter century a different picture has emerged of rabies in wild animals, where rabies was seen to make them wilder and more dangerous. Rabid foxes might attack humans and bats become biting vampires. The public perception of risk is rarely rational, so although the prevalence of rabies in foxes and bats in extremely low,
fears are stoked by gothic images and, as in the nineteenth century with dogs, sensational newspaper coverage.

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