April 2026: Voles and Frances Hatton's memorial

Around the edges of the upper and lower churchyards, where the longer grass grows and there's shrub and tree cover, both bank voles and wood mice live but are seldom seen. Bank voles have glossy chestnut coats with silver bellies, and, like all voles, small ears and eyes. The wood mice are a bit bigger and have smart grey-brown backs, cream bellies, large ears and eyes and very long tails. Well, most of them do – some have stumpy tails as, when grabbed, their tail skin detaches, leaving owls and foxes with nothing but an empty glove finger while the rest of the mouse escapes.

Although bank voles can climb, they largely scurry along the ground and it's the wood mice who are the real athletes. They climb bushes and trees (having a stumpy tail probably hampers this a bit, though) and can jump vertically about 30cm from a standing start – relative to size, that's a bit like, say, a curate leaping 30 feet straight up.

As the name suggests, wood mice (despite sometimes being called field mice) are found mainly in woodland and hedgerows, where they eat seeds, grain, berries, some leaves and small insects. Bank voles, not surprisingly, are found more in grassy banks along hedgerows and field margins, where there is lots of greenery for them to eat. They can also be found in woodland and forests, but only as long as there's enough green ground cover – so traditional mixed woodland is good but not dark coniferous plantations.

Wood mice are largely nocturnal (hence the big eyes and ears), and on infrared night cameras their hyper-reflective eyes are bright discs that bounce across the ground and along branches, a bit like those bouncing balls that help you sing-along in old black and white movies [1]. Bank voles are more morning and evening animals, although they'll also venture out at other times, tunnelling at ground level through the grass. Both voles and mice build nests out of grass down small tunnels in the ground, and at this time of year they are beginning to produce their first litters of 5-6 pink, naked, baked-bean-like babies.

Where the grass is allowed to grow longer and over a larger area, we sometimes find field (or short tailed) voles, especially beyond the lime trees in the upper churchyard. They make tunnels through the long grass and have shared latrines – little bare patches

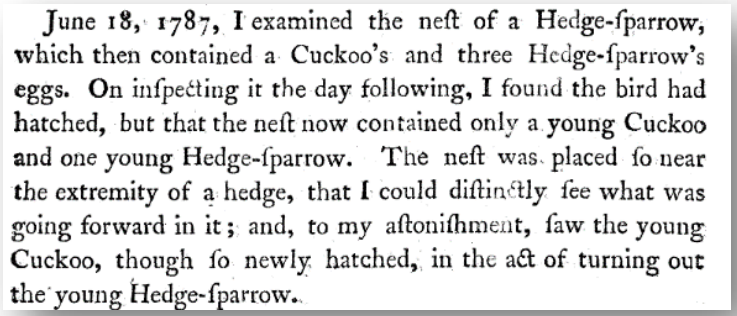
[1] Writing this sent me down a rabbit – or possibly vole – hole, reading up on bouncing sing-along balls. Apparently they originated in the 1920s, through a technique developed by the Fleischer brothers, famous for creating Betty Boo and later Popeye cartoons. There's an online talk on the evolution of bouncing ball sing-alongs by Ester Morgan-Ellis, and expert on community singing. A young(er) person told me there's a current craze for bouncing ball music games online – 'app'arently they're all the rage…

you'll sometimes find lined with clipped grass and covered in their small droppings. It's field voles that the barn owls quartering the meadows further down the valley are hunting. They are bigger and greyer than bank voles, and if you hold one in your hand, they are much more likely to give you a nip than is a more placid bank vole. Wood mice are similarly feisty. Although each has its preferred habitat, all three are found together where the habitats of woodland, bank and long grass abut, illustrating how 'edge habitats' often have a larger diversity of life than 'core' or 'interior' habitats.

Inside the church we occasionally see evidence of house mice, although the 'frugal tea', of cake and biscuit crumbs left after Sunday services and Saturday coffee mornings means there aren't many and, like John Betjemen's church mouse, they 'live lean and lone'.

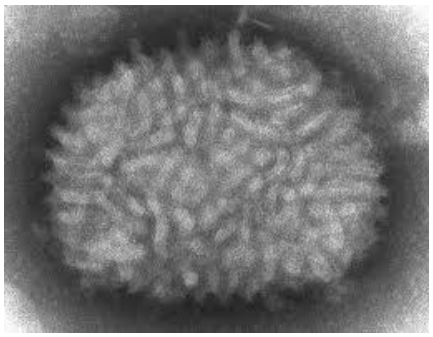
On the north side of the chancel, where the crumbs certainly never reach, is a memorial to Lady Frances Hatton, second wife to the first Viscount Christopher Hatton. Frances, Christopher and several of the children, are buried in the crypt below the chancel. Their nine years marriage was full of hope but sadness. As the memorial explains, their five children, Susan, Elizabeth, Francis, Elizabeth and Christopher Henry, died in infancy and then Frances herself died, in 1684, of '*variolis*' – smallpox. Smallpox was ever-present, but waxed and waned and there had been a wave of cases in London starting in the early 1680s, which had spread northwards causing notably huge mortality when it reached northwest England and finally the Isle of Man in 1684-5. Frances, based at rural Kirby Hall, was somewhat protected but would have had constant visitors from London – some of them doubtless rich people with the means of fleeing disease in London, although smallpox was so common, diaries of the time describe many people treating smallpox, unlike plague, with near nonchalance. Unfortunately, Frances was especially susceptible to severe disease as she was pregnant again.

At the time there was no way of preventing smallpox. It was another forty years before Lady Mary Wortley Montagu, not yet born when Frances died, and herself a smallpox survivor, campaigned for variolation in Britain. Mary had seen its use in Turkey as wife to the British ambassador to the Ottoman Empire. Although there was no knowledge of germs at the time, nor a concept of immunity, everyone knew that you didn't get smallpox twice. The idea of variolation, which seems to have originated in China and India, was to deliberately infect healthy people with smallpox by rubbing a small amount of scab material into the skin, followed by careful nursing. Smallpox was usually transmitted by respiratory aerosols, and natural spread led to pneumonia as well as generalised infection. The subsequent disease had a mortality rate of around 30% and often left survivors with scars, disfigurement or even blindness. Skin variolation, however, caused only a local skin infection and carried a 1-2% risk of death – higher than we would accept nowadays, but at a time when smallpox was rife, a risk worth taking.



June 18, 1787, I examined the neſt of a Hedge-ſparrow, which then contained a Cuckoo's and three Hedge-ſparrow's eggs. On inſpecting it the day following, I found the bird had hatched, but that the neſt now contained only a young Cuckoo and one young Hedge-ſparrow. The neſt was placed ſo near the extremity of a hedge, that I could diſtinctly ſee what was going forward in it; and, to my aſtoniſhment, ſaw the young Cuckoo, though ſo newly hatched, in the act of turning out the young Hedge-ſparrow.

Around sixty years after that, in 1798, Edward Jenner, a Gloucestershire GP who had already made a scientific name for himself through his work on cuckoos, published '*An inquiry into the causes and effects of the variolæ vaccinæ, …known by the name of the cow pox*.' Jenner had noticed that milkmaids rarely got smallpox and reasoned this might be owing to their exposure to cowpox - scabbed ulcers on cows' teats that looked a bit like smallpox. He therefore used material from cowpox, in Latin *variolae vaccinae (*from *vacca* = cow), to inoculate against smallpox. Further experiments showed cowpox was both effective and very much safer than variolation[2]. Some sixty years after that, when Louis Pasteur, the French pioneer of the germ theory of disease and after whom Pasteurisation is named, invented the next immunisations, against rabies, he suggested that all such treatments be called 'vaccines' in honour of Jenner's cowpox discovery. It was the use of vaccines, combined with the detection and isolation of new cases, that led to the global eradication of smallpox in the late 1970s. Smallpox is still the only human disease to have been completely eradicated, although we came close with polio.



What has any of this to do with bank voles and wood mice in the church yard? Well, cowpox is actually very rare in cattle. Even Jenner, some 230 years ago, remarked that it was difficult to find material for his new 'vaccine'. We now know that that's because the virus that causes cowpox isn't really a virus of cows. Rather, it circulates mainly in voles and wood mice – infection (but causing no obvious disease) is very common in them, and sometimes jumps into other hosts, occasionally cows. The amount of virus in these small rodents is too small for direct transmission to people, so there's no need to worry about our voles and mic. If you do see cowpox, the disease, nowadays it's most likely to be in a cat who has been hunting wild rodents.

So, although nobody knew it at the time, the means to prevent poor Frances's early death from smallpox was constantly around her in the wildlife of the gardens of her home at Kirby Hall and remains around her now, where she's buried in the Hatton vault under the church. Bank voles and wood mice are not only attractive animals and important for their role in the churchyard and surrounding ecosystem, but I think we owe them a big thank you for, albeit inadvertently, infecting some cows over two hundred years ago and, indirectly, making modern human life much safer and healthier around the world.

For more on wildlife in St James's churchyards see the website https://www.achurchnearyou.com/church/16602/page/96449/view/

[2] Others, such as Benjamin Jesty, had noticed the same, and done similar experiments. But Jesty, worried at being laughed at or worse, didn't tell anyone until after Jenner's vaccine had taken off. A government panel recognised his work, however, and gave him some rewards later.