

[Secrets of what the tree-cat eats: the art of molecular
scatology]

My recent approval of culling feral American mink may sit oddly with my dismay at farmers in north Longford calling for an urgent cull of pine martens. As the next largest predator in Ireland's family of mustelids, martens stands accused, if only locally, of attacking sheep and killing lambs, with fears of babies at risk in their prams.

Old suspicions and beliefs can die hard, even - sometimes especially - about scarce and protected species. But *Martes martes*, cat crainn or the tree cat, is one of our own, even if brought from Spain in a Bronze Age currach, whereas the mink is a rapacious modern alien that our wildlife could have done without.

The spread of conifer forests has brought a widespread revival of the marten, reduced to near extinction in the mid-20th century by farmers' use of strychnine baits at lambing time, meant mainly to poison foxes. The most recent estimate, helped by genetic analysis, puts the martens' island-wide number at something over 3,000.

This comes from work led by Dr Declan O'Mahony of the Agri-Food and Biosciences Institute of Northern Ireland, who walked many miles of woodland tracks to collect the scats (droppings) of *Martes martes*, distinctively curled and often sweetly and muskily scented, (rather like the spraints of the otter, the next size of mustelid). Dr O'Mahony's team collected 243 scats but actually saw

the animal just once. (pdf at National Pine Marten Survey of Ireland 2005 - Coford).

With DNA analysis of the scats at the Waterford Institute of Technology, the new science of "molecular scatology" tells much about mammal biology and population, but also, of course, about the marten's food.

Like many carnivores, it will eat what it can catch or come across, including fresh carrion of lambs killed by dogs or foxes. Its adaptable diet has kept it surviving, virtually unchanged, for 40 million years. Fruit, small birds, lizards and grubs form a substantial part of its food, along with small mammals.

Much recent attention has been focused on the marten's appetite for squirrels. It will prey on both red and grey, but the red is lighter, more agile and can retreat to the ends of branches, while the grey is heavier, spends more time on the ground, and is thus more catchable. A widely-quoted Irish study by Dr Emma Sheehy has linked the spread of martens to decline in greys and resurgence of reds. She found the first evidence of consumption of grey squirrels in pine marten scats collected in Tomnafinnoge Wood, Co Wicklow, with the help of a specially-trained scent detection dog (see her account at irelandswildlife.com).

Quite as important ecologically has been DNA analysis, also from marten scats, of the animal's appetite for alien invaders among Ireland's even smaller mammals. Declan O'Mahony and Emma Sheehy were in the team that analysed scats from the national survey along with later ones from Co Waterford and the midlands (for pdf, Google "O'Meara et al 2013 small mammals").

They found that native wood mice and pygmy shrews, standard prey for the marten are being displaced by the bank vole and the greater white-toothed shrew. DNA of both was found in the scats, offering a new tool for detecting the spread of these aliens across Ireland and the changing balance with native species.

After all this science, I returned to a fascinating portrait of the pine marten in 18th century Ireland. *The Experienced Huntsman*, first published in 1714, was the first reliable text on wild mammals in these islands. The author was Arthur Stringer, hunting foxes, badgers, hares, pine martens, otters and red and fallow deer on the estates of Lord Conway on the shores of Lough Neagh in Co Antrim.

In a reprint, by Blackstaff in 1977, Professor James Fairley judged Stringer "an outstanding naturalist". But he hunted the marten for its fur, and might corner and kill three in a night, whispering to his hounds in the moonlight.

As Stringer knew, "the greatest part of their food is birds, rats, mice, snails and berries, though they will not [hesitate] to kill hens and ducks or any sort of wild fowl they can catch and overcome." As for marten scats, "they never fail to empty themselves near the tree wherein they lye before they go up in the morning."

But the marten's woodland habits were already changing, in retreat to bogs and scrub "and unfrequented grounds where woods formerly have been very rank and being now destroyed." With the animal cornered in a tree, advised Stringer, "stand so as to try all the tree between you and the moon, and if you find him so, the fur glistereth all like silver. Then shoot him . . ."

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