

SHORT NOTE

Opportunistic feeding of mallards (*Anas platyrhynchos*) on blue-bottle blowflies (*Calliphora vicina*) at Queenstown, New Zealand

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An undescribed feeding relationship was observed in the New Zealand summer (12 December 1997) between the introduced mallard (*Anas platyrhynchos* L.) and the introduced blue-bottle blowfly (*Calliphora vicina* Robineau-Desvoidy) on the outskirts of Queenstown, New Zealand. The flies were swarming to feed on duck faeces deposited on mowed or grazed grass on the shore of a small stream. The mallards were capturing and eating the feeding blowflies. This terrestrial feeding behaviour may be described as lowering the head and extending the neck, running rapidly 1-3 m at a cluster of 1-8 blowflies, occasionally snapping at another fly along the way, and seizing 1 or possibly more at the cluster, then jerking the head upward, snapping the mandibles, and swallowing. Further observations were made that same month, in similar short-grass habitat along the Avon River, in Christchurch, where mallards were observed feeding extensively on grass shoots. Neither there nor at several comparable habitats in England, Ireland and Wisconsin was feeding on blowflies or terrestrial insects ever observed.

Bent (1925) found grasses and sedges to compose over 90% of the diet in mallards, and Martin *et al.* (1961) concluded mallards were vegetarian, occasionally ranging into uplands to feed on acorns (*Quercus* sp.) and corn (*Zea mays*). Duck foods may include more insects than supposed; careful analysis of gizzards of blue-winged teal (*Anas discors*) revealed some invertebrates among the vegetation and grass stems (Swanson & Bartonek 1979). Swanson *et al.* (1985) found that mallards occasionally fed on aquatic dipterans, but made no mention

of blowflies. Van der Zouen (1992) reported that many mallards from the University Bay area, Madison, Wisconsin, fed on waste corn, manure, grasses, and weeds. Figley & Van Druff (1982) observed mallards feeding on some "grass seeds, tipping along banks, or raiding vegetable gardens" at Beach Haven West, Ocean County, New Jersey. These urban mallards mostly ate handouts of bread, corn, and birdseed, as was also reported in London (Hohn 1948).

Observations, in rain, wind, and calm, were made when the days were warm (16-24°C). Faecal deposits ranged from a few to numbers probably >1000 at some areas only 10 m square. The insect numbers varied somewhat with the patch size of sunshine microclimates out of the wind. At Christchurch, insects found on or near the faecal deposits included 1 blue-bottle blowfly; 1 *Calliphora stygia*; numerous *Xenocalliphora* sp.; bumblebees (avoided or ignored by mallards); and 1 unidentified, small black fly. In Wisconsin, common insects feeding at the deposits were the American wasp *Vespula* sp. and the green bottle blowfly *Lucilia* sp. Other insects included honey bees, dragonflies, small moths, 1 lacewing, and ants. Many faecal deposits had huge clusters on them (especially the American *Lucilia*). Feeding on duck faeces by numerous small, active blowflies (*Xenocalliphora*), singly or in clusters, also was observed in Christchurch. At Queenstown, the grassy stream bank measured c. 10 × 40 m. Blue-bottles fed at more than 40 obvious and numerous less conspicuous faecal deposits of the mallards. The feeding ducks (adults of both sexes, including 2 females and their immature young) ate flies at several deposits. During my hour of observation, 7-8 ducks caught and ate at least 24 flies. The behaviour of the mallards

at Queenstown involved 2 animal species seldom seen together in their native North America, and is the first reported behaviour of terrestrial feeding on blowflies.

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