The arrival of the Romans, tentatively in 55-54 BC and more permanently from 43 AD, saw an established economy in southern Britain based on farming. With villas, forts, and farms, there is a wealth of archaeological sites and records of birds. The Romans seem to have eaten a wide range of wild birds, including woodcock, plovers, grey partridge, crane, ducks, and geese, but the raven is a prominent symbolic presence and they also exploited domestic species. Farmyard fowl, originally domesticated in China, reached Britain in the late Iron Age but became common from Roman times onwards, as did geese. Perhaps ducks and doves were also domesticated by them, and they had both pheasant and peafowl. Outwith the Roman province (in northern Scotland and Ireland), seabirds, rare at Roman sites, remained common prey of humans.

Keywords: Roman, raven, domestic fowl, domestic goose, pheasant, peacock
Iron Age Britain

Julius Caesar is reputed to have remarked that he came, saw, and conquered. Although he came to and saw Britain, twice, in 54 and 53 BC, his short-lived expeditions hardly amounted to conquering even the south of England, and it was left to Claudius, in AD 43, to attempt a proper invasion and complete a conquest of England. However, Caesar's account, of sending his troops out to collect corn from the native's fields, their retreat, too, with their cattle, and his description of the farmed landscape through which he marched, emphasizes how extensively agriculture had spread. The Iron Age, Celtic, culture of southern Britain that he invaded had a well-developed agricultural economy, with a network of hill forts established at regular intervals. Thus the former landscape, of extensive woodland with clearings (such as we inferred for the Mesolithic in Chapter 3), had been transformed into a farmed landscape with occasional woods. Claudius' invasion of England in AD 43, followed by Agricola's conquest of North Wales in AD 78, saw nearly 400 years of settled Roman rule in southern Britain, producing an abundance of archaeological sites that have yielded between them an extensive avifauna (Parker, 1988). Scotland was never conquered, though it was invaded at least as far north as the Antonine Wall, and Ireland seems barely to have been visited. It is convenient for us to refer to contemporary sites in Scotland and Ireland as of Roman date, even though this is clearly inaccurate historically.

The largest Iron Age faunas are those from Fenland sites, such as Glastonbury, discussed in Chapter 3. However, there are also good faunas from dryland sites in southern England, which confirm the impression of an agricultural landscape. The hill fort of Danebury, on the Downs south of Andover in Hampshire, yields one of the largest (Coy, 1984a; Serjeantson, 1991). Among farmland birds, represented by only a few bones each, there are Golden Plover, Lapwing, Quail, Skylark, Corncrake, Starling, and Wood Pigeon, though the last two imply nesting trees somewhere nearby. The presence of woodland is certainly indicated by Jay, perhaps also by Buzzard, Kestrel, Red Kite, Jackdaw, Rook, and Crow, which would have nested in trees somewhere near but foraged out into farmland. Blackbird, Song Thrush, Redwing, and shrike sp. imply scrubby woodland edges. More remarkable for southern England are the moorland and wetland birds reported – Red Grouse, Black Grouse, perhaps Long-eared...
Owl, among the former, Grey Heron, Bewick's Swan, Greylag and Barnacle Goose, Mallard, Teal, Wigeon, Gadwall, Goosander, Tufted Duck, and Kittiwake among the latter. The heathlands of the New Forest are only 20 km south-west, and could have been more extensive then, while the valley of the River Test is only 5 km east, and the Solent only 25 km south. All these species are thinly represented, one or two bones, as is a Peregrine, by a very distinctive skull. However, most remarkable is the abundance of Raven bones, contributing 67% (533 of 798) bird bones (Coy, 1984a). Ravens are regularly reported from Iron Age sites in southern England – Wylye (Harrison, 1980a), Gussage All Saints (Harcourt, 1979a), Blunsdon St Andrews (Coy, 1982), Budbury (Bramwell, 1970), Maiden Castle (Armour-Chelu, 1991), Poundbury and Pennyland (Ashdown, 1993) are other examples. Given their size, Raven bones are unlikely to be overlooked, and their distinctive size, for a passerine, also makes them easily identified. Neither of these biases can explain their abundance at Danebury or their ubiquity at Iron Age sites, and a cultural explanation is implied. At Danebury and Winklebury they included complete skeletons, apparently buried deliberately in the bottom of pits. It is presumed that they represented some symbolic token, perhaps of the underworld. From an ornithological perspective, they are a reminder of how abundant and widespread Ravens were in England before nineteenth century persecution restricted them to the west.

The birds from other Iron Age sites in southern England also suggest a farmed landscape, albeit with some woodland, but the faunas are all small and not as informative as the wetland sites. Lark and thrush sp. at Winnall Down (Maltby, 1985), like Fieldfare at Maiden Castle (Armour-Chelu, 1991) suggest farmland. At Budbury (Bramwell, 1970), Stock Dove and Rook suggest wooded farmland, Jay suggests woodland, and Raven could belong anywhere – but Common Scoter seems very improbable at a site further inland from Bath. The presence of House Sparrow at Danebury, Abingdon (Ashville Trading Estate), Harston Mill, Slaughterford (Guy's Drift) and Old Scatness Broch certainly fit notions of cereal farming, and two earlier Bronze Age records of Passer sp., probably this species (Potterne, Poundbury) fit the suggestion by Ericson et al. (1997) that the species arrived in northern Europe with domestic horses, and somewhat earlier than Domestic Fowl. The presence of Common Gull, Wigeon, and Curlew at
Poundbury, outside Dorchester, reflects the wet floodplain of the River Frome nearby (Buckland-Wright, 1987). The roughly contemporary site of Newgrange, in County Meath, also yields a small fauna of woodland (Woodcock, Goshawk, Blackbird, Dunnock, Greenfinch), wetland (Water Rail, Pied Wagtail), and farmland (Grey Partridge, Mistle Thrush, Song Thrush) birds (Van Wijngaarden-Bakker, 1974, 1986).

In the north of Britain, seabirds are inevitably better represented on the, mainly coastal, archaeological sites than land birds. The most important Iron Age sites are three in Orkney, at Bu (Bramwell, 1987), Skaill (Allison, 1997b), and Howe (Bramwell, 1994), with 44, 30, and an impressive 113 species recorded, respectively. The numbers of species testify to the excellent preservation produced by the shell sand that buried these sites. Across on the north coast of Caithness, Crosskirk Broch provides records of 26 species (MacCartney, 1984). Naturally seabirds dominate. Gannet, Cormorant, Shag, Guillemot, Black Guillemot, Little Auk, Razorbill, and Puffin are present at all three Orkney sites, and five of them (not Black Guillemot, Little Auk, Puffin) also at Crosskirk. Both Fulmar and Great Auk, the latter in some abundance, are present at Crosskirk, Howe and Skaill, while the Great Northern Diver is present at Crosskirk, Bu, and Howe, and Manx Shearwater is present at Crosskirk. A range of waders (Lapwing, Grey and Golden Plover, Curlew, Whimbrel, Oystercatcher, Greenshank, Redshank, Dunlin, Green Sandpiper, Snipe, Woodcock), ducks (including Eider, Common and Velvet Scoter, Teal, Wigeon, Smew, Goosander, and Merganser), and other seabirds (various gulls, Great Skua, Sandwich Tern) is also present. Raptors are fewer, but include White-tailed Eagle at both Skaill and Howe, Golden Eagle, Rough-legged Buzzard, Red Kite, Kestrel and Peregrine at Howe, Merlin at Bu and Howe, and (p.97) somewhat surprisingly, given the tree-less nature of Orkney, Goshawks at both Howe and Skaill. Common Buzzard is the only raptor listed for Crosskirk. Cranes are represented at Howe by juvenile bones, undoubted evidence of breeding there. Despite the dominance of seabirds, some terrestrial species are also recorded, notably Red Grouse at all four sites, Black Grouse only at Crosskirk. The Howe list includes such unusual (for archaeological sites) identifications as Corn, Reed and Snow Bunting, Waxwing, Great Grey Shrike, and Wren. The Swallow, Skylark, Starling, various thrushes (Blackbird, Ring Ouzel,
Song Thrush, Redwing, Mistle Thrush), and Raven are more regular members of such assemblages. A Tawny Owl, perhaps a wind-blown stray, seems as unlikely on Orkney as the Goshawk; the Short-eared Owl, still a regular breeder there and reliant on the Orkney Vole (which had been introduced in Neolithic times), is a more expected record. Bu, too, has the fairly predictable Skylark, Redwing, and Raven, but the Chough identified there is one of only 15 archaeological records of the species in the British Isles, and the Quail is a reminder of how widespread that little migrant gamebird can be.

Early domestication
Caesar mentions one other important detail for a faunal history, when he says of the British Celts that they had hens, geese, and hares, though they did not eat them. This introduces an important aspect of our bird population, the extent to which the avifauna of Britain has been transformed by introduced alien species. Ask any ornithologist what is the commonest bird in Britain, and he (or she, but usually he) will probably answer Wren, estimated by Gibbons et al. (1993) at 7.1 million pairs. He might, alternatively (and particularly after a hard winter, to which Wrens are susceptible), suggest Chaffinch (5.4 million) or Blackbird (4.4 million). The correct answer of course is Domestic Fowl with some 155 million adults in June – though far fewer pairs! About 117 million are table birds, 29 million are egg-laying hens, and 11 million are the breeding stock (http://statistics.defra.gov.uk/esg/publications). As a measure of their rate of production, about 877 million are killed each year for meat. Geese, ducks, and doves were also very common in the past, less so now (about 10 million turkeys, ducks, and geese combined), and it is interesting to speculate also on their domestication, about which far less has been written.
Domestic Fowl
It is odd that we have no satisfactory specific name for our most common bird. Frequently called Chickens, but that strictly refers to young females in their first year, or Hens and Cocks, but they could be female and male of any bird, the Domestic Fowl (and Fowl strictly is Anglo-Saxon for any bird, as in Fowlmere - bird lake), formally Gallus domesticus, is a native of South-east Asia. There are four wild species of Gallus, the Grey Jungle Fowl G. sonnerati of south-west India, Green Jungle Fowl G. lafayettei of Sri Lanka, Black Jungle Fowl G. varius of Java, and the Red Jungle Fowl Gallus gallus of India, Burma, and South-east Asia (Figure 5.1). The latter is certainly the main ancestor of the Domestic Fowl, and it is usual to apply the name Gallus gallus to the domestic form as well. However, it has now been (p.98)
ruled by the International Commission on Zoological Nomenclature (ICZN, 2003, Opinion 2027) that wild mammal and insect species should, for clarity and lack of confusion, retain separate specific names from their domestic descendants where available (so correctly Canis familiaris for the Dog, and Canis lupus for the Wolf, even though we know that biologically and historically they are the same species). Particular confusion has been caused when the (p.99) domestic form has a name which takes taxonomic priority over that of the wild form (Gentry et al., 2003) – it is not helpful to refer to the Grey Wolf as Canis familiaris. Though not formally covered by that Opinion, the same reasons make it sensible to use G. domesticus for the domestic bird. This adds particular clarity to the discussion of whether G. gallus is the only ancestor for G. domesticus, or if the other species have been involved, and whether different populations have been involved – whether, that is, the Domestic Fowl was domesticated only once, or several times, perhaps in different places and from different races or species. Good archaeological and genetic evidence is now available to settle this matter.

Zeuner (1963) considered that the earliest record of Domestic Fowl was from the site of Mohenjo-Daro, in the Indus Valley (now Pakistan, but India when excavated by Sir Mortimer Wheeler), dated to about 2,000 BC. At the time, this was certainly the earliest record of the species in an archaeological site, and as it is outside the natural range of G. gallus, it is reasonable to regard it as domesticated. Indeed, the occurrence of any species in an archaeological context outside its natural range is generally regarded as a sure indication of domestication. (Compare, for example, the appearance of

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**Fig. 5.1** Distribution and phylogeny of wild Gallus species. The serrated comb and golden neck cape strongly suggest that the Red Jungle Fowl Gallus gallus (G) of SE Asia (stipple) is the ancestor of the Domestic Fowl (D). The Javan (Green) Jungle Fowl Gallus varius (V), Grey Jungle Fowl G. sonnerati (S) and Ceylon Jungle Fowl G. lafayetti (L) have simpler combs and scalloped, marbled or streaked capes. The molecular phylogeny (top) confirms, relative to Quail (Q), that the three southern species are well distinct from Red Jungle Fowl, puts Domestic Fowl clearly within the Red Jungle Fowl lineage, but suggests that the southern form on Sumatra, usually regarded as a subspecies G. g. bankiva, is a full species (B) (after West & Zhou 1988 (map) and Fumihito et al. 1994, 1996 (phylogeny)).
domestic goats at Beidda, in the Jordan Valley, or indeed of sheep and goats in Europe.) The realization that Chinese archaeologists had already discovered much earlier evidence was not really appreciated until West & Zhou (1988) reviewed the subject. They report the earliest sites as Peiligan, dated to 5,935 BC, and Cishan, dated to 5,405 BC, both in the Hwang-Ho valley in northern China. Moreover, 16 of 18 Chinese archaeological records that they list are earlier than Mohenjo-Daro, and all are well north of the natural range of *G. gallus* (Figure 5.2). This implies that domestication took place somewhere in southern China, Thailand or perhaps Viet Nam (where, however, there are as yet no archaeological sites), and that hens were then taken northwards into China. Genetic evidence fortunately confirms the impression that Domestic Fowl were first domesticated in South-east Asia. Fumihito *et al.* (1994, 1996) examined both the relationships of the different species of *Gallus* to each other and to the Domestic Fowl, and then the relationships of Domestic Fowl with three of the five supposed subspecies of *Gallus gallus*. They fully confirmed that *Gallus domesticus* is derived from *Gallus gallus*, and moreover that the form found in Thailand, *Gallus gallus gallus*, is apparently its sole ancestor. Even domestic birds on Sumatra, where two subspecies, *G. g. gallus* and *G. g. bankiva*, occur in the wild,

*Fig. 5.2* Archaeological sites for *Gallus*. Mohenjo-daro (M) was long thought to be the earliest site for Domestic Fowl, but the more extensive archaeological record now shows many much earlier sites in China, well north of the natural range of *Gallus gallus* (stipple), as well as broadly contemporaneous sites further west. It spread into W Europe by Iron Age times (after West & Zhou 1988).
are more closely related to Thai *G. g. gallus* than to Sumatran *G. g. gallus*.

The spread of Domestic Fowl out of South-east Asia and into Europe remains to be discussed. Evidently, they spread quite rapidly northwards into China. How did they spread westwards? When Mohenjo-Daro was supposed to be the earliest site for them, it was natural to suppose that they spread first into the Middle East, already by then with a long history of farming, and then around the Mediterranean lands. However, West & Zhou (1988) also point out that we now know numerous sites much further west that have chicken bones earlier than Mohenjo-Daro, including sites in Iran, Turkey, Ukraine, and Romania, but no early records from Iraq, Israel, or Jordan, the classic area for early domesticates. It looks as though Domestic Fowl may have spread from northern China along the route of what later became the silk road, through southern Russia, to enter south-east Europe and the Middle East from the north-east, though at present there are virtually no archaeological data from along that route to confirm this particular piece of the thesis. MacDonald (1992) remarks that the earliest archaeological record close to Egypt was from Sweyhat, Syria in about 2,400 BC, and from Egypt itself not until the XVIIIth dynasty, about 1567–1320 BC. Although wild and domestic waterfowl were beautifully illustrated in ancient Egypt, the Domestic Fowl was not depicted until the time of Rameses, about 1,200 BC, and then as an exotic import. It only became common in the Nile Valley about 300 BC (Houlihan, 1996), so it arrived late, and perhaps from the north, not the east. For it is clear that Domestic Fowl were well established in south-east Europe (Greece, Crete) by Bronze Age times, and spread through most of Europe in Iron Age times, reaching Italy by 500 BC, Holland and Poland by 700 BC, and France by 100 BC (West & Zhou, 1988). The earliest records from England are Late Iron Age sites including Uley (Cowles, 1993), Colchester (Bate, 1934), Gussage All Saints (Harcourt, 1979a), Aylesbury, Asheville Estate (Bramwell, 1978a), Brean Down (Levitan, 1990), Nornour (Turk, 1971), and Thorpe Thewles, Cleveland (Rackham, 1987). All of these are likely to date to the period 200 BC to A.D 50, matching the assumption, interpreting Julius Caesar's remark, that it had probably not been present long, and was too highly regarded to be eaten as a common item of diet. In all of these sites, there are just a few bones, again matching this status as a recent immigrant.
Collectively, just under 6% of the Iron Age bird records are of this species (table 5.1). Notable is the presence of Domestic Fowl at both Howe and Skaill, the Orkney sites discussed above, and at Crosskirk, an indication that domestic species spread very rapidly even to the far north of Britain.

It has already been noted in previous chapters, and is made explicit by table 5.1, that there is a scattering of even earlier archaeological records. There are two explanations for these. One is the notion, elaborated by Harrison (1978), that there was a species (p.101)
Table 5.1 The reported occurrence of domestic birds (and Pheasant) in the archaeological record in the British Isles, showing the number of records of each species, and their % of the total bird records for that time interval. Totals (right hand column) include a few extra records of uncertain age. Wild relatives are included for comparison: all wild geese (Greylag, White-fronted, Bean, Barnacle, Brent); all wild Anas (Mallard, Gadwall, Garganey, Teal, Wigeon, Pintail, Shoveler); all wild Columba (Stock Dove, Rock Dove, Wood Pigeon).

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<td>Domestic Fowl</td>
<td>2 (0.4)</td>
<td>1 (0.3)</td>
<td>3 (1.5)</td>
<td>2 (0.6)</td>
<td>3 (0.2)</td>
<td>39 (5.9)</td>
<td>259 (14.8)</td>
<td>128 (7.3)</td>
<td>305 (13.3)</td>
<td>143 (13.3)</td>
<td>900 (10.1)</td>
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<td>1 (0.5)</td>
<td>1 (0.3)</td>
<td>1 (0.6)</td>
<td>7 (1.0)</td>
<td>75 (4.3)</td>
<td>82 (7.4)</td>
<td>137 (6.3)</td>
<td>62 (5.8)</td>
<td>369 (4.1)</td>
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<tr>
<td>Wild Geese</td>
<td>25 (4.6)</td>
<td>11 (2.8)</td>
<td>7 (3.4)</td>
<td>5 (1.5)</td>
<td>9 (5.0)</td>
<td>15 (2.3)</td>
<td>27 (1.5)</td>
<td>38 (3.4)</td>
<td>26 (1.1)</td>
<td>7 (0.7)</td>
<td>179 (2.0)</td>
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<td>8 (1.2)</td>
<td>44 (2.5)</td>
<td>31 (2.8)</td>
<td>65 (2.8)</td>
<td>34 (3.2)</td>
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<td>187 (2.1)</td>
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<tr>
<td>Wild Ducks</td>
<td>31 (5.6)</td>
<td>20 (5.0)</td>
<td>21 (10.3)</td>
<td>7 (2.0)</td>
<td>13 (7.2)</td>
<td>48 (7.2)</td>
<td>142 (8.1)</td>
<td>63 (5.7)</td>
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<td>35 (2.0)</td>
<td>29 (2.6)</td>
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<td>Wild Pigeons</td>
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<td>1 (0.6)</td>
<td>10 (1.5)</td>
<td>49 (2.8)</td>
<td>30 (2.7)</td>
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<td>0.7</td>
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<td>8 (0.5)</td>
<td>7</td>
<td>0.6</td>
<td>27</td>
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<td>58 (0.6)</td>
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<td>Total Birds</td>
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<td>203</td>
<td>344</td>
<td>181</td>
<td>664</td>
<td>1755</td>
<td>1108</td>
<td>2295</td>
<td>1075</td>
<td>8953</td>
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of wild Gallus present in Europe at least during the Ipswichian Interglacial, which he named G. europaeus (see p. 34), and that it might have recurred in Postglacial times. Tyrberg (1998) is sceptical about all early Gallus reported from western Europe, though the undoubted presence of Gallus in Late Pleistocene Levant and Transcaucasia allows the possibility that a species of Gallus might have occurred in southern Europe in earlier interglacials. Given the poor dating assigned to most of these records, and the absence of any comparable species elsewhere in Europe, a far more likely explanation is that these are bones of much later domestic birds that have got into archaeological layers, either through the agency of burrowing mammals, such as Wolf or Fox (which routinely take large prey back to their dens) or Badger (which, however, does not), or by bones simply infiltrating loose cave floor deposits. In most cases, the excavators have dismissed the bones as intrusive, and they are surely right to have done so. Of the sites listed above, Brean Down is assigned to Bronze Age, but the dating of the site, and individual records within it, is uncertain – it also contains House Mouse, which is surely an Iron Age import (Levitan, 1990; Yalden, 1999). James Fisher (1966) waxes eloquently on the problems of Dissimulatrix spuria in regard to such occurrences. It is pertinent here to remember that early Domestic Fowl were about the same size as Pheasant, and later, larger, breeds overlap Black Grouse as well, with large cocks of some modern breeds even rivalling Capercaillie in size. Although there are morphological features that allow most bones to be differentiated (Erbersdobler, 1968, and see Chapter 1), the possibility of genuine error in identification (particularly by earlier excavators, who lacked the full range of comparative material) must also be born in mind.

The subsequent history of Domestic Fowl here, as everywhere else in the world, is of an increasingly common animal, exploited for eggs and meat as well as for sport (cock-fighting) and for religious purposes. Parker (1988), reviewing the occurrences of bird remains on 86 Roman sites, concentrated on wild species, but observed that Domestic Fowl are reported on virtually all of those sites. From the now larger number of about 253 Roman sites in our data base, Domestic Fowl contribute 259 records (some sites have several layers), so they are essentially ubiquitous. They contribute 14.8% of the 1755 bird species records for this period, a sharp increase over their prevalence in Iron Age times, becoming and remaining, as today, the most abundant and ubiquitous British bird species (table 5.1).

Domestic geese
Two wild species have contributed to the stock of domestic geese: the Greylag *Anser anser*, a common wild species in much of the temperate Palaearctic (from Iceland and the British Isles to Manchuria), and the Swan Goose *Anser cygnoides*, an eastern Palaearctic species common in China. Their relative contributions to domestic stock, the timing and place of domestication, and the genetic make-up of modern domestic geese, have received much less attention than have Domestic Fowl. Kear reviewed what is known. Most waterfowl, including all the geese, can interbreed with their nearest relatives, even in the wild; in captivity hybrids between species of geese are frequent. Obviously, modern genetic techniques would do much to assist in the interpretation of their history, but have barely been applied yet to this problem. However, archaeological data are some help.

The domestic goose in Europe is considered to be descended from the Eastern Greylag *Anser anser rubirostris*, if only because all European domestic geese share pink beaks with this race – western race Greylags, *Anser anser anser*, have an orange beak (Kear 1990). This is also in accord with an early depiction of what Kear (1990) considers to be a domestic goose in ancient Egypt: this has the features of an Eastern Greylag, and, because it is evidently in lay (further south than its natural range), is presumed to be domestic. However, there are also superb tomb paintings of Red-breasted, Bean and White-fronted Geese, which are likely to have been wild geese wintering in the Nile Delta (Houlihan 1996). Also depicted are Egyptian Geese *Alopochen aegyptiacus*, which had already been domesticated in ancient Egypt but were displaced by domestic Greylag Geese. Geese are depicted in cages, penned and in a variety of colours, indicating domestication, and by the eighteenth Dynasty, 1450–1341 BC, such evidence is so common as to leave no doubt (Albarella, 2005). It seems likely that either Domestic Geese, or the idea of domesticating them, passed from ancient Egypt into Europe via Greece and Rome. Geese were known as domestic animals by the Ancient Greeks, because Penelope, Odysseus’ wife, is described as having a small flock (p.103) in Homer's *Odyssey*. They passed from them to Roman culture (Toynbee, 1973), to whom they were both food, and sacred to some gods. The geese in Juno's temple in Rome cackled to warn the Romans of an attack by the Gauls in 390 BC, when the dogs failed to bark. The concept of fattening geese for pate de foie gras was known to Pliny, as
was the value of white geese, for food and down. That white geese could be preferred indicates clearly that they were indeed domesticated.

The Greylag is the largest of the European geese, though the Bean Goose rivals it. One obvious consequence of domestication is selection for larger, heavier birds that are less able to fly. Their leg bones therefore get somewhat longer and especially stouter, to carry the greater weight, but wing bones are less affected. Because domestic geese are protected, they have less need of flight, or may be prevented from flying, for instance by clipping the wing feathers (as a temporary measure, until the next moult) or, more permanently, by pinioning them (surgically removing the distal wing bones and their feathers). Thus there is no pressure for wing bones to lengthen as the other bones of the skeleton get larger, and they may stay the same (absolute) size, so becoming relatively smaller. Occurrence of robust goose leg bones in an archaeological site is therefore a good indicator that domestication has occurred, but it requires an adequate (statistically) large sample to prove this point. At Viking-age Haithabu, in Denmark, goose metatarsal bones average about 3 mm wider, at any given length, than wild Greylag bones, though the wing bones were thinner; clearly, these were Domestic Geese (Reichstein & Pieper, 1986). Obviously, though, bones of the earliest Domestic Geese would be indistinguishable from Greylag. Wild Greylag, as well as other species, would also have been hunted, both by Mesolithic and Neolithic people prior to domestication, and in subsequent times. The various species of wild geese overlap in size, so are aggregated in table 5.1 to provide a comparison with occurrences of Domestic Geese. These do indeed suggest a modest presence of Iron Age Domestic Geese, and a more pronounced increase in Roman times that persists to modern times. Indeed, the overall pattern matches quite well that of Domestic Fowl, adding archaeological strength to the interpretation of Julius Caesar's remark. Iron Age records of Domestic Geese in Britain are claimed from Gussage All Saints (Harcourt, 1979a), Budbury (Bramwell, 1970), West Stow (Crabtree, 1989b), and Harston Mill (Jones pers. comm.) in England, Howe, Orkney (Bramwell, 1994), Skail (Allison, 1997b), and Crosskirk Broch (MacCartney, 1984) in Scotland. Earlier records from Mesolithic Gough's Cave (Harrison, 1980a, 1986), Neolithic Point of Cott, Westray (Harman, 1997),
and Bronze Age Dowell Cave (Bramwell, 1960b) are perhaps correctly identified but time-transgressive, like the spurious Domestic Fowl records discussed above, but they might instead be large wild Greylag Geese. In later times, Domestic Geese are abundantly recorded in Anglo-Saxon sites, and even more abundant in Medieval times (Albarella, 2005), only being displaced as the choice of Christmas dinner when Turkeys became more common, from the seventeenth century.

We are not aware of any archaeological records from Britain of Swan Geese/Chinese Geese, but suspect they would get hidden among the other species anyway. The historical record suggests that they were not imported to western Europe until the end of the eighteenth century – Bewick illustrated one in 1797 (Kear 1990). Given their knowledge of Domestic Fowl, it is likely that the Chinese also domesticated geese, and ducks, at least as early as they were domesticated in the Mediterranean area, but the Chinese archaeological literature is obscure, to us, and we have no detailed record of this.
Domestic Duck

There is general agreement that the Mallard *Anas platyrhynchos* is the ancestor of all domestic ducks (with the obvious proviso that the entirely different South American Muscovy Duck *Cairina moschata* has also been domesticated). The drake has the curled tail feathers that also characterize all breeds of domestic drake. However, the Mallard is a very widespread species across the Palaearctic, breeding from Iceland, Ireland, and Spain in the west to northern Japan and Kamchatka in the east. It also breeds right across the Nearctic from Alaska to Labrador. Although it does not breed in Egypt, Iraq, or China, it does winter in all three. Thus, potentially, it could have been domesticated in any of the classical centres of early agriculture in the Old World, or in none of them. There is a little more genetic evidence to help unravel its history than for the domestic goose, but documentary and archaeological evidence has to support most of the debate.

Kear (1990) reports that the duck has been domesticated for only half as long as the goose, and that it was not known to Egyptian, Assyrian, or Babylonian civilizations, nor to the Jews or Ancient Greeks. She suggests that the Romans in the west and Malays in the east were responsible for starting to domesticate it. She further comments that domestic ducks are not listed in the poultry trade in London until 1363 (when listed as ‘tame Mallard’), though Teal were listed as early as 1274, implying that domestic ducks might have been a late addition to the English farmyard. Perhaps contradicting this, Houlihan (1996) says that Egyptians in the eighteenth Dynasty (about 1550–1307 BC) were rearing domestic ducks and geese on agricultural estates to supplement those taken from the wild. Toynbee (1973) reports on the recommendations of Varro and Columella for keeping ducks, but it is not clear that these were being farmed commercially. Their descriptions sound more like those for the husbandry of pets or cage birds than for food animals.

The interpretation of the archaeological record of ducks, especially Domestic Ducks, is even more bedevilled by problems of identification than that of geese. Mallard are larger than most other ducks, certainly larger than all the other dabbling ducks *Anas* sp., and approaching Eider and Shelduck (which can, however, be distinguished anatomically on most bones; Woelfle, 1967). Further increase in size makes domestic ducks more distinctive, albeit still problematic on
Veni, Vidi, Vici

partial remains, and many of the records grouped in table 5.1 as Domestic Duck are in fact given by the archaeologist concerned as ‘Domestic Duck/Mallard’. Examples confidently identified as Domestic Duck come from Iron Age Glastonbury Lake Village (Andrews, 1917; Harrison, 1980a, 1987b), Gussage All Saints (Harcourt, 1979a), Howe, Orkney (Bramwell, 1994), and Ashville Trading Estate, Abingdon (Bramwell, 1978a). Less confident Iron Age records come from Dragonby (Harman, 1996a) and Micheldever Wood (Coy, 1987a). For the Roman period, there are abundant records of Domestic Duck (at least 17) as well as Domestic Duck/Mallard (another 19). So many archaeologists are involved, with so many records, that it seems certain that Domestic Ducks were common in Britain by Roman times, and Albarella (2005) notes that duck bones (wild or domestic uncertain) were more common than goose bones in Roman sites. The statistical evidence of table 5.1 also suggests a genuine increase in representation of ducks during the Iron Age–Roman transition, just as with Fowl and Goose. Moreover, the identifications of Iron Age Domestic Ducks strongly support the notion that, like Domestic Fowl and Domestic Geese, Domestic Ducks were already part, albeit a much smaller part, of the farmyard stock before the Romans arrived. It seems as though the notion of having a range of domestic poultry had spread through the Celtic world to Britain. Notice, in table 5.1, that Domestic Fowl, Goose and Duck all increase markedly in representation from Iron Age to Roman times, but none shows any sharp increase in Norman or Medieval times. Obviously, this contradicts Kear’s (1990) opinion that Mallard were not domesticated until medieval times, but Albarella (2005) finds duck bones much less abundant than goose bones in Anglo-Saxon sites, and still less abundant than goose bones in Medieval sites. Perhaps the notion of keeping Domestic Ducks died out between Roman and Anglo-Saxon times, and ducks were, as it were, re-domesticated later on. There is an alternative view, that these are in fact wild ducks of one species or another (mostly Mallard, undoubtedly), and that what we are describing is in fact an increasing interest in the harvesting of wild birds (Albarella & Thomas, 2002), perhaps associated with the expansion of hawking, and with high-status sites. This would apply equally to the record of geese. There are now sufficient records from sufficient different sites for a review of the evidence to be undertaken, considering
both reliability of the identifications as indeed Domestic Ducks, and their abundance relative to other species.

So what help do we get from genetic evidence on the ancestry of Domestic Ducks? So far, it is not conclusive, but Hitosugi *et al.* (2007) indicate a major split between Domestic Ducks from south-east Asia and north-east Asia. They argue that ducks were domesticated in China about 3000 bp, and certainly demonstrate that breeds such as Indian Runners and Khaki Campbells are related to ducks in south-east Asia. Breeds from Taiwan and Japan belong to the different lineage. Data on old European breeds, such as Aylesburies and Call Ducks, are urgently needed.

**Domestic Dove**

The term ‘dove’, as used by both archaeologists and ornithologists, is a deceptive one. Domestic Dove or Domestic Pigeon usually implies Domestic Rock Dove *Columba livia*. The Romans certainly had domesticated *Columba livia*, using them as food, as pets and as carrier pigeons (Toynbee, 1973). Varro and Columella apparently give instructions for feeding, housing, and fattening pigeons, and report that one house could contain as many as 5,000 pigeons. That certainly sounds like commercial production. However, Barbary Doves *Streptopelia risoria*, looking remarkably like our now familiar Collared Dove *S. decaocto*, have also been domesticated for many centuries, and also appear in Roman mosaics. Archaeologists do not always specify exactly what they mean by ‘Domestic Dove’. Some records are actually more helpful for being uncertain – ‘Domestic/Rock Dove’ and ‘Domestic/Stock Dove’ are certainly *Columba* of the size of *C. livia* (or *C. oenas*), not *Streptopelia*. Some 38 records in the literature are identified only as ‘Dove sp.’ and another 29 are designated ‘Dove/Pigeon’. However, our records include only three specifically attributed to *Streptopelia*, two of them the long-standing native Turtle Dove *S. turtur*, though Don Bramwell (Bramwell, 1985b) identified a possible Barbary Dove *S. risoria* bone from Roman Barnsley Park, Gloucester. In the absence of contrary evidence, we have assumed for the purposes of compiling table 5.1 that all the uncertain Doves and Pigeons reported by archaeologists are of *Columba livia*-sized animals. (Even considerably enlarged (p.106) Domestic Pigeons are significantly smaller than Wood Pigeon *C. palumbus*, but the
overlap with Stock Doves is complete, nor can Stock and Rock Doves be easily separated on archaeological specimens; they are the same size, and the morphological differences are small (Fick, 1974).

Assuming that these doubts are not overwhelming the evidence available, what can we learn from the archaeological record presented in table 5.1? For all periods with a reasonable sample, wild pigeons contribute 2–3% of the bird records; of these 184 records, 86 are Wood Pigeon and 98 are Rock or Stock Doves. However, from Roman times onwards, there is an additional component of another 2–3% that appear to be Domestic Doves. There are only four earlier records included among these; a Devensian (Pleistocene) identification of Domestic Dove (Langwith Cave, Derbyshire; Mullins, 1913) may well be correctly identified but a time-transgressive ‘Hoodwink’, but the Ipswichian (Pleistocene) record from Kirkdale Cave and the Late Glacial record from Merlin's Cave (Harrison, 1980a) are actually cautious ‘Pigeon sp.’ and the Iron Age record is similarly a cautious ‘Dove sp.’ from Skaill, Orkney (Allison, 1997b). In other words, these get incorporated in table 5.1 as ‘Domestic Doves’ only by our cautious (or incautious) collation of the records. As with the other domestic birds, these data suggest that the Domestic Dove was indeed an early introduction to Britain, albeit slightly later, Roman rather than Iron Age.
Other Roman introductions
Three other gamebirds are represented in Roman mosaics, and were certainly familiar birds in Roman times: Pheasant, Peacock, and (Helmeted) Guinea-fowl.

The status of the Pheasant as a wild bird in Britain, and in western Europe generally, has been and remains controversial. It has never been a farmyard bird, but it is now well established as a wild bird, and moreover is bred on a commercial scale for sporting estates. Toynbee (1973) remarks that Pheasants were known to the Greeks of fifth to fourth century BC, that Ptolemy VIII (145–116 BC) apparently had them in captivity in Egypt, and that various Roman authors repeat the point that the species originated in Colchis, near the River Phasis, which provide both its vernacular and scientific names. Now in Georgia, the River Phasis (now Rioni) runs into the eastern end of the Black Sea, while Colchis was the coastal region, now extending from Turkey into Georgia, around it. Toynbee (1973) reproduces a superb Roman mosaic from the Justinian’s church, Sabratha, in Libya, showing an obvious cock Pheasant and what is surely a hen, though, perhaps misled by the long tail, Toynbee identifies it as a parrot (long-tailed parakeets often also appear in Roman mosaics). It seems likely that the native range of the Pheasant stretched eastwards from Transcaucasia across the southern USSR to China, Korea, and northern Japan (Cramp et al., 1977–1994; Tyrberg, 1998). Though Cramp et al. (1980) add Turkey, Thrace, and south-east Bulgaria to the native range, it seems unlikely that Greeks and Romans would have regarded it as native to Colchis had it occurred so much nearer. Certainly, it was not native to western Europe, let alone the British Isles, so when did it arrive here? Conventional opinion recently has been that the Normans imported it (Fitter, 1959; Lever, 1977; Cramp et al., 1980). This opinion follows Lowe (1933), who refuted the earlier consensus of Roman introduction. He demonstrated that the supposed Romano-British Pheasant bones from Silchester were in fact Domestic (p.107) Fowl, checked also supposed Roman Pheasants from York, Verulamium and the neighbourhood of Shrewsbury, which were also Domestic Fowl, and asserted confidently that he knew of no certain Roman remains. How does the evidence look 70 years later?
A quick resumé of the apparent record for Pheasant shows only eight that might be Roman in age, but these include the refuted Silchester bones, while the bones from Studland (King, 1965) were among a group that included Turkey, and were attributed to the efforts of a modern, not Roman, Fox. Possibly valid records include Barnsley Park (Bramwell, 1985b), Quinton (Field, 1999), Hardingstone (Gilmore, 1969), Latimer (Hamilton, 1971), Colchester (Luff, 1982, 1993) and perhaps Barrow Hills, Radley (Roman/Saxon: Barclay & Halpin, 1998). Even these are very few records, given the abundance of Roman sites. Barnsley Park is interesting, in that both Pheasant and Domestic Fowl were numerous, with respectively eight and 12 individuals represented. The Pheasants were thought to have been reared there for the table. Given that the Romans did know, and eat, Pheasant, a few records from this time seem likely, but do not establish that the bird itself became established in the Roman countryside. In the succeeding Saxon period, the Pheasant is equally scarce or absent, and only claimed from York–Fishergate (O’Connor, 1991), Lincoln (Cowles, 1973; Dobney et al., 1996), Lewes (Bedwin, 1975), and the uncertainly dated Barrow Hills, Radley specimens already mentioned. The contrast with later periods is striking; there are at least 27 records of Norman or later Medieval date. Particularly interesting is a small series of records that seem to be very late Anglo-Saxon/Anglo-Scandinavian or early Norman–Hen Domen (Browne, 1988, 2000), York–Coppergate (O’Connor, 1989), Jarlshof (Platt, 1956), and Flixborough (Dobney & Jaques, 2002). Taken together, the increase in records in Norman–Medieval times, and these late Saxo-Norman records, certainly support the idea that the species was not established as a British bird by the Romans, but by later introductions around the ninth to tenth century, possibly just pre-Norman.

The Peacock, a native of India and South-east Asia, was also certainly well known to the Romans, and illustrated on mosaics, coins, and cooking vessels (Toynbee, 1973). Originally, it was kept for pleasure, but later became also a prized food. It was not known to the ancient Egyptians, but seems to have been introduced there, too, in the Graeco-Roman period, under Ptolemy II (285–246 BC) (Houlihan, 1996). The only Roman records for Britain are from Portchester (Eastham, 1975) and Great Staughton (Bramwell, 1967). As table 5.1 shows, it is another introduction that
became more frequent in Medieval times. The Guineafowl is a native of Africa, though very rare now in North Africa and extinct in Egypt; it is also illustrated, along with the Pheasant, in the mosaics at Justinian's church in Sabratha, Libya. Roman accounts of its husbandry make clear its familiarity to them (Toynbee, 1973), but there is no archaeological record of its presence in Britain, then or later. MacDonald (1992) does not include any early records of archaeological Guineafowl in Africa or Europe, and notes that in West Africa introduced Domestic Fowl seem to have preceded the use of the native Guineafowl as a domestic bird. Luff (1982) does mention an archaeological specimen from the Roman camp at Saalburg in West Germany. It was reputedly brought to Europe from West Africa by the Portuguese in the Middle Ages, but the date of its first introduction to Britain seems uncertain, perhaps not until the seventeenth century.

The Turkey was domesticated in Mexico, perhaps as early as 4,000 b.p., and was imported into Europe during the sixteenth century. Its importation to England is closely dated to between 1525 and 1532, and Shakespeare mentions it twice (though not the Guineafowl). (p.108) Remarkably, Turkeys were taken back already domesticated to New England, where wild Turkeys of a different subspecies occur. Of 46 records in our data base, nearly all are dated, as expected, to late Mediaeval or Post-mediaeval times. The exceptions are four cave records with no precise date (‘Unknown’ or ‘Late-Pleistocene-Holocene’) from Keshcorran Cave, County Sligo, Castlepook Cave, County Cork, Aveline's Hole, Somerset and Catacomb Cave, County Clare, and two more troublesome records, a ‘Romano-British’ record from Ossom's Cave, Staffordshire (Bramwell, 1954) and ‘Roman’ Keston, Kent (Locker, 1991). Clearly, these are likely to be either misidentified or time-transgressive ‘hoodwinks’, bones that have inserted themselves in inappropriate archaeological layers somehow, perhaps with help from Foxes, or excavators, or porous rubble deposits.
Wild birds in Roman Britain
Of the 1755 records of bird species from Roman sites in our
data base, 413 (23%) are of the four domestic species, fowl,
duck, goose, and dove, just discussed. That leaves a wide
range of records of wild species. Dissecting these to establish
their utility to the Romans, and to derive some indication of
the avifauna of Roman Britain, was initiated by Parker (1988).
He accumulated records of 94 species from 86 sites, plus a
few extra records of species aggregates (plover, small wader,
thrush, tit, small passerines, finch/bunting), which may well be
the same as species identified more precisely at other sites.
Our more substantial list records 136 species (not counting
aggregates such as ‘Crow/Rook’) from about 244 sites (Figure
5.3), though this total includes as ‘Roman’ some Pictish and
Irish sites, notably Balinderry, which we presume to be
contemporaneous. The largest fauna comes from Ossom’s
Eyrie Cave, a rural site in which a mixture of Barn Owls
feeding on small prey, a breeding Golden Eagle taking much
larger prey, and a brief Romano-British occupation contributed
a diversity amounting to 63 species, though this site probably
extends from Romano-British into Anglo-Saxon times; we have
discussed the whole fauna as though it were Roman in age. Of
more conventional Roman sites, a range of villas, forts and
towns has been investigated. Many contain just a few bird
bones, often imprecisely identified (‘thrush’, ‘finch’, ‘duck’).
Those with the largest faunas include the following (table 5.2).

Parker (1988) found Raven the most frequent species, and this
is certainly still true. With 95 records, it is approached only by
Mallard (75 occurrences) in frequency. It is tempting to
assume that these were scavengers around the outskirts of
towns and villages. The numerous records of other obvious
scavengers, notably White-tailed Eagles (19), Red Kites (14),
and Common Buzzards (19), support this interpretation. The
numerous records of other crows, including nine Carrion
Crow, 18 Rook and 71 ‘Crow/Rook’ or ‘crow sp.’ (the two are
very difficult to distinguish, though Rooks average smaller,
and have, of course, longer thinner bills), might also support
this notion. On the other hand, Ravens had a symbolic status
(cf. the Iron Age sites discussed previously), and may well
have been kept as pets, while Rooks were possibly eaten –
Rook pie was after all a frequent dish in recent times, perhaps
still is.
Some of the other species were certainly taken as food. The frequency of Woodcock, identified at 68 sites, is particularly striking. Collectively, plovers, with 63 records (including 10 Lapwing, 30 Golden Plover and 7 Grey Plover, as well as 15 uncertain ‘plover sp.’) also were (p.109)

Table 5.2 Some Roman and Roman-age sites with diverse wild bird faunas
see also Parker (1988).

<table>
<thead>
<tr>
<th>Site</th>
<th>Type</th>
<th>Number of Species, and examples</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stonea</td>
<td>Rural camp</td>
<td>19, inc. W-t Eagle, Kite, Raven</td>
<td>Stallibrass (1996)</td>
</tr>
<tr>
<td>Silchester</td>
<td>Town</td>
<td>22, inc. Wh Swan, Crane, Stork, Raven</td>
<td>Parker (1988)</td>
</tr>
<tr>
<td>Ossom's Eyrie</td>
<td>Rural</td>
<td>63, inc. G Eagle, Bl Grouse, Raven</td>
<td>Bramwell et al. (1990)</td>
</tr>
<tr>
<td>Portchester</td>
<td>Fort</td>
<td>16, inc. Gt N Diver, Raven</td>
<td>Eastham (1975)</td>
</tr>
<tr>
<td>London Wall</td>
<td>Town</td>
<td>18, inc. Crane, Little Egret, Night Heron</td>
<td>Harrison (1980a)</td>
</tr>
<tr>
<td>Ilchester</td>
<td>Town</td>
<td>17, inc. Kite, Peregrine, Goshawk</td>
<td>Levitan (1994a)</td>
</tr>
<tr>
<td>Frocester</td>
<td>Villa</td>
<td>26, inc. Kite, Buzzard, Quail</td>
<td>Bramwell (1979b)</td>
</tr>
</tbody>
</table>
## Site, Type, Number of Species, and Examples

<table>
<thead>
<tr>
<th>Site</th>
<th>Type</th>
<th>Number of Species, and examples</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exeter</td>
<td>Town</td>
<td>19, inc. Crane, Cuckoo, Raven</td>
<td>Maltby (1979a)</td>
</tr>
<tr>
<td>Castle Copse, Bedwyn</td>
<td>Villa</td>
<td>19, inc. Goshawk, Golden Plover</td>
<td>Allison (1997a)</td>
</tr>
<tr>
<td>Annetwell St., Carlisle</td>
<td>Town</td>
<td>26, inc. Kite, Crane, Bl Grouse</td>
<td>Allison (1991)</td>
</tr>
<tr>
<td>Caister-on-Sea</td>
<td>Fort</td>
<td>17, inc. Mute Swan, Crane, Raven</td>
<td>Harman (1993b)</td>
</tr>
<tr>
<td>Caerwent</td>
<td>Fortress</td>
<td>18, inc. Kite, Raven</td>
<td>Bramwell (1983d)</td>
</tr>
<tr>
<td>Caerleon</td>
<td>Fort</td>
<td>15, inc. W-t Eagle, Avocet, Crane, Raven</td>
<td>O'Connor (1986)</td>
</tr>
<tr>
<td>Buckquoy</td>
<td>Pictish</td>
<td>19, inc. G N Diver, Osprey, L Auk</td>
<td>Bramwell (1977b)</td>
</tr>
<tr>
<td>Barnsley Park, Gloucs.</td>
<td>Villa</td>
<td>27, inc. Crane, Bl-t Godwit</td>
<td>Bramwell (1985b)</td>
</tr>
</tbody>
</table>
a regular item of diet. Wild ducks and geese (as summarized in table 5.1) were also important, particularly Mallard, as mentioned, and Teal (49 records), but most species that might be expected have been reported from at least a few Roman sites, including not only the more numerous Wigeon (16 sites), Gadwall (five), Garganey (five), Pintail (four), Pochard (four), and Shoveler (four), but rarer species such as Goosander and Red-breasted Merganser. One notable absentee is the Eider, which perhaps only bred north of Roman Britannia, but might have been expected at Pictish sites of this age. Barnacle Goose is quite frequent, not only at the northern sites of Carlisle and Papcastle, close to its modern wintering grounds, but also at York and Gloucester. Did they then winter on the Severn Marshes and the Humber floodlands, or did the Romans trade wildfowl extensively? Whooper Swans occurred at Carlisle, Lincoln, Doncaster, and Piercebridge, perhaps reflecting their wintering on the marshes and floodplains of the Solway, Humber, and Tees, but also at Silchester and Over Purbeck, southern sites that would be more usually the haunts of Mute Swans. Mute Swans were indeed recorded at 8 sites, all in the southern half of Britain – York (O’Connor, 1985) is the northernmost, with Wroxeter, Heybridge, Caister-on-Sea, Longthorpe, and three in London the others. At Annetwell Street, Carlisle, small wild geese, probably mostly Barnacle Geese, which of course still winter on Solway, were more numerous as food remains than Domestic Fowl, unusually for a Roman site (Allison, 1991).

Some of the other wetland birds, probably also food items, are notable. There are 35 records of Crane, of which 31 are specifically identified as Common Crane and three as (p.110)
'Crane sp.' – but it is hard to imagine what other species they would be. They are widely spread across England, from Carlisle, Newstead, Housesteads, Papcastle, and Piercebridge in the north to Exeter in the south-west and London and Silchester in the south-east. There are a couple of Welsh records (Caerleon; Pentre Farm, Flint) and one from Ireland – Balinderry crannog – but no apparently contemporaneous sites from Scotland. Cranes were certainly eaten – a tibiotarsus from Carlisle bore cut-marks (Allison, 1991), and the skull from Caerleon had the back of the braincase removed as recommended by Roman writers on cookery (Hamilton-Dyer, 1993). By contrast, there is only one record of White Stork from Roman Britain, at Silchester (Newton, 1905; Maltby, 1984).

Perhaps as a more southern species, it has never been common here. Interestingly, there is also one record of another southern wetland species, Night Heron, at London Wall (Harrison 1980a), to accompany three records of Bittern (twice from Grandford, in the fens, and Winnall Down, near both Winchester and the Itchen valley) and eight of Grey Heron, seven from the southern half of England, and one from Balinderry, again. Smaller waders, presumably taken from mudflats, estuaries, and other wetlands, also turn up frequently, though identifications are sometimes uncertain. As well as seven records of 'Wader sp.', 15 Curlew and 10 Snipe, identifications of rarer waders include three each of Bar-tailed Godwit (Colchester, Ilchester, and London Wall) and Black-tailed Godwit (Colchester twice, Barnsley Park), two of Dunlin.
Veni, Vidi, Vici

(Caerwent, Colchester) and Greenshank (Over Purbeck, Ower), and one each of Avocet (Caerleon), Redshank (Caister-on-Sea), Green Sandpiper (Thetford), Knot (Camulodunum), and Turnstone (Buckquoy). As another bird characteristic of wet grasslands, the five occurrences of Corncrake, at Camulodunum and Colchester, Dorchester, Farmoor, and Rudston, reflect both habitat and Roman food interests.

Clearly, wetlands were still extensive in southern Britain. However, farmland was surely the main habitat, and reflected in the avifauna. Grey Partridges, reported from 13 sites, were presumably another of the food species, and two other quintessential farmland birds, the House Sparrow and Starling, were reported from 10 and 24 sites respectively, despite that most small passerines are severely under-recorded. However, there are only five records of Skylark, which we associate with rough grassland and cereal fields. By contrast, another striking indication of the open nature of the countryside is the frequency of Barn Owls, reported from 14 sites, mostly in southern England but including Catterick and Piercebridge. Conversely, there are no records of Tawny Owl, despite good records from both earlier (Neolithic Runnymede Bridge, Iron Age Howe and Slaughterford) and many later sites. Was Roman Britain so bereft of woodland, or were Tawny Owls just too secretive? It seems unlikely that they were rarer then than now, and interesting that the other two native owls, which are now much rarer, do at least have a Roman record. Short-eared Owl is recorded from Ossom's Eyrie Cave, not far from the North Staffordshire moorlands (Bramwell et al., 1990), and Long-eared Owl from Wroxeter (Meddens, 1987).

Another indication of extensive open farmland might be the single record of Roman Great Bustard, from Fishbourne (Eastham, 1971), though such an important table bird might just have been imported, like the Red-legged Partridge reported from the same site (and a recent rumour, not yet published, suggests that the relevant bone is in fact from Crane).

If Grey Partridge are a good indicator of the extent of farmland, the equivalent indicators of moorland and scrubby moorland-edge woodland are Black Grouse. These, too, have quite a strong Roman record, from 12 sites. Black Grouse is numerous at Ossom's Eyrie Cave, where it was the main prey of the contemporary Golden Eagle, but this is its southernmost site. Elsewhere there are four records from Roman Carlisle (Allison, 1991, 2000; Stallibrass, 1993), two from York.
(O'Connor, 1985; Parker, 1988), and records from Doncaster (Carrott et al., 1997), Ribchester (Stallibrass & Nicholson, 2000), Birdoswald (Izard, 1997), Piercebridge (Parker, 1988), and Corbridge (Bell, 1922). The association with (p.112) Roman military sites in the north, particularly along Hadrian's Wall, is noteworthy, as is the fact that most of these are from recent excavations, when the possibility of errors in identification have been well appreciated. At Carlisle, Black Grouse were numerous, as well. Less certain, in dating at least, is the single record of Capercaillie, from Wookey Hole, Somerset (Balch & Troup, 1910), which might have been Iron Age (Parker, 1988, therefore omits this record), but at least the identification, based in part on an unmistakable beak, is certain. By contrast with the good record of Black Grouse, there are only three records of Red Grouse (Corbridge: Bell, 1922; Great Staughton: Parker, 1988; Ossom's Eyrie Cave: Bramwell et al., 1990) - and two of 'Grouse sp.' (Thornborough Farm near Catterick: Stallibrass, 2002; Victoria Cave near Settle: Geikie, 1881), which must surely also be this species. At Ossom's Eyrie, the 39 Black Grouse greatly outnumbered the three Red Grouse, matching this disparity in representation by sites, and it seems that heather moorlands, prime Red Grouse habitat, were indeed much more limited in extent then than now.

The culinary interests of the Romans in small birds are well documented. As small birds are usually under-recorded, the identification of Blackbirds at 14 sites is strong confirmation of this interest. To these must be added eight records of Song Thrush, seven Redwing, six Mistle Thrush, three Fieldfare, and 25 'thrush sp.' Most of these are from villas (e.g. Frocester, Bedwyn) and military camps (Housesteads, Birdoswald), and surely indicate food remains, although a few, including an additional species, Ring Ouzel, from Ossum's Eyrie, come from other sites. The abundance of House Sparrows and Starlings may be another dietary reflection.

Less certain is the use by Romans of seabirds. Parker (1988) contrasted their slight representation on Romano-British sites with their much better representation in Medieval excavations. In particular, he noted the absence of two now numerous species, Black-headed Gull and Puffin, from his lists of Roman birds. There are now two records of this gull in our list, one from the Pictish site of Buckquoy (Bramwell, 1977b), well outside the Roman province, but the other from Filey
Veni, Vidi, Vici

Signalling Station, where Dobney et al. (2000) thought that the locals were indeed exploiting seabirds as food. The same two sites also yielded Puffin remains, as did the apparently contemporary site of Perwick Cave on the Isle of Man (Garrad, 1972). Razorbills and Guillemots were also recorded at both Filey and Perwick Cave. Additional records of Guillemot came from Over Purbeck, Ower, Perwick Bay, and Rope Hole Lake. The one Roman-dated example of Great Auk also came from Perwick Cave, while the one contemporary Little Auk came from Buckquoy. The final auk species that might be expected, Black Guillemot, was also recorded from Buckquoy and Filey. Other seabirds recorded include Shag (Birsay – Saevar, Dorchester, Filey, Iona, Perwick Bay, Stonea), Cormorant (Birsay – Saevar, Buckquoy, Chester (Northgate Brewery), Filey, Iona, Perwick Bay, Stonea), Gannet (Howe, Buckquoy), Fulmar (Buckquoy, Niarbyl on the Isle of Man), Glaucous/Great Black-backed Gull (Buckquoy), Herring/Lesser Black-backed Gull (Birsay – Saevar, Howe, Caerleon, Kenchester, Dragonby, Rope Lake Hole, Segontium) and Common Gull (Ballinderry, Chelmsford, Pevensey, Poundbury). Clearly, several of these are also well outside the Roman Province, and tell nothing about the dietary or other interests of the Romans themselves. However, Dobney et al. (2000) remark that the assemblage from Filey is unusual for a Roman site, and moreover a Guillemot humerus has definite cut marks while one of the Cormorant tibiotarsi seems to bear chop marks. The locals at Filey were clearly eating seabirds, though this was evidently not a frequent Roman habit.

Conclusions
An abundance of Roman archaeological sites, many with well-preserved bird bones, give a good record of the bird life of those times. It is a very familiar avifauna, with few surprises. It seems as though the Romans ate a very wide range of wild birds, from a range of habitats, albeit in small absolute numbers. Birds of farmland were certainly present, and the symbolic importance of Raven, a feature of Iron Age Britain, persisted into Roman times. The Roman sites document the increasing importance of domestic birds, which begins a little before the Romans arrived, with at least Domestic Fowl and Domestic Goose present in the late Iron Age. These two were the most abundant and ubiquitous bird species through Roman times, and subsequently, with Domestic Duck and probably
Pigeon added to the farmyard. There is a little evidence that the Romans had, at least ate, Pheasants, in Britain, and knew Peacocks too. (p.114)