

Literature/archive search for
information relating to pool frogs
Rana lessonae in East Anglia

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pool frogs *Rana lessonae* in East Anglia**

Geoffrey Kelly

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1. Introduction

This report is designed to complement the ongoing Species Action Plan for the pool frog *Rana lessonae*, regarding which the Herpetological Conservation Trust has as partners Anglian Water and English Nature. The last known example of an English Norfolk pool frog died in captivity in January 1999. Given the suggestion of re-introducing this species from Scandinavian stock, it has been desirable to determine whether, beyond all reasonable doubt, it was a true native as opposed to an introduction, and hence give a full account of its past history and range. While my brief has been essentially to search relevant literature and archive material relating to East Anglia, it has been necessary to extend the investigation to beyond the strict bounds of this region.

A problem which had to be dealt with during the compilation of this report has been the question of nomenclature. From the 18th century through to the 1970s (and in popular parlance even later), the name edible frog *Rana esculenta* was generally used to refer to both this species and the pool frog; indeed, prior to the 1880s, apparently no one had considered the possibility that two species were present, naturally or introduced, in England. For a discussion of initial attempts to divide *Rana esculenta* into subspecies, see Boulenger (1897). For further discussion of the taxonomy, see Buckley (1986). It having been outside my terms of reference to become involved with the niceties of taxonomy, which I am in any case not qualified to discuss, it will be my policy in this report to differentiate, if possible to do so, between records of edible frogs and pool frogs as follows:

- 1) Where edible frog *Rana esculenta* is stated, and clearly intended as such as understood nowadays, this name stands.
- 2) When edible frog *Rana esculenta* is stated, but pool frog is likely, taking all the evidence, to be intended, I refer to edible frog (? = pool frog).
- 3) When edible frog *Rana esculenta* is stated, but pool frog is known, taking all the evidence, I refer to edible frog (= pool frog).
- 4) When pool frog *Rana lessonae* is stated, this species is so named without further elaboration. That is saving references to *Rana cf. lessonae* re the Middle- Saxon record from Gosberton, Gleed-Owen (2000), and var *lessonae* in Boulenger (1884a).

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3. Sites

3.1 Certain sites

a) Fowlmere, Cambridgeshire

Fowlmere Moor and Mere, in the parish of Fowlmere (and with its western limit extending into the neighbouring parish of Melbourn), was the earliest proven site (TL4045) in the British Isles. The full story of this locality has been given by Yorke (1903-4a) and, more recently, by Price (1994); however, it should be mentioned here that it was historically an area of fen, swamp and open water, fed by springs issuing from the underlying chalk. The site was enclosed and drained between 1846 and 1848; however, the land as enclosed never really proved suitable for agricultural operations (unless one counts the growing of watercress), and from 1977 the site had been rehabilitated as Fowlmere RSPB Nature Reserve.

In September 1843, two specimens of the edible frog (= pool frog) were taken from what he knew as Fowlmere Fen by C. Thurnall of nearby Duxford, and were presented to the British Museum. The account of this event was given by Fred[erick] Bond of Kingsbury [Middlesex, now Greater London] in the *Zoologist* (Bond 1844a). A black-and-white illustration of one of the specimens taken subsequently appeared in the *Zoologist* (Newman 1844). In a note dated 13 June 1844, Bond noted that he had visited the site and found the edible frogs (= pool frogs) very abundant; indeed, he expressed surprise that they had not been seen before [1843], given the difference between their croaking and that of the common frog *Rana temporaria*. Bond noted the male's vocal sacs, and the timidity of the species, as well as it being more restricted to water than the common species, Bond (1844b).

Apparently during his visit to Fowlmere, as noted above, Bond took specimens of the edible frog (= pool frog) from the site, and presented some to the herpetologist Thomas Bell, as per a note of the latter dated 14 September 1844 in the *Zoologist*, Bell (1844). Bell went on to note that the loud and shrill croaking of *Rana esculenta* (= pool frog) had gained for it the names of 'Cambridgeshire Nightingales' and 'Whaddon Organs'. While he did not state this in 1844, Bell (1859) was to add that his father and [namesake], a native of Cambridgeshire, had told him that the peculiar sound of the frogs of Whaddon (site (B)(b), below) and Fowlmere had procured for them the name of 'Whaddon Organs'; moreover, Bell senior had formed the opinion 'nearly a century ago' [say the 1770s], that these frogs were of a different species to the common frog. Thurnall's discovery at Fowlmere thus confirmed the elder Bell's view.

J. Wolley failed to find edible frogs (= pool frogs) in visits he made to Fowlmere in March and April [1846], although he admitted that he may have been too early in the year. He expressed doubts as to this being other than an introduction here, and noted that it would instantly flourish upon being introduced elsewhere – as at Kingsbury (site (F) (a), below). He further noted, *Zoologist* 3rd May 1847, that he had heard from [Frederick] Bond that Fowlmere had been drained, but that he (Bond) expected the frogs to disperse and not become extinct (Wolley 1847). The latter expressed his opinion that the then former edible frogs (= pool frogs) of Fowlmere, which had not spread as Bond believed they would, not having been found elsewhere (save for known introductions), were themselves subjects of an introduction in a note in the *Zoologist* dated 18 June 1859, (Wolley 1859). The edible frog

(= pool frog) specimens taken from Fowlmere were confirmed as *lessonae* by Boulenger (1884b).

In his description of the Great Moor (as he called it) at Fowlmere, Yorke (1903-4a) described the reminiscences of a man he had buried about 1900 at the age of ninety-one. The old man had spoken of 'Muster Thurnall' from Royston frog fishing. 'Girt big fellers and more yellow on the back' [than common frogs]. Yorke inclined to agree with Kingsley (1867 and 1889) that the edible frogs (= pool frogs) were indigenous. He (Yorke) believed it was their presence which inspired the name Paddock End, later known as Frog's Norton, at the east corner of the Moor. With regard to his belief in the likelihood of the species being indigenous, he noted that there was no monastic site in the neighbourhood from which an introduction may have been owed. On the other hand, he recorded that Baron von Hugel had told him that the species was probably introduced by the Romans, with bones found in middens. There is indeed a Roman site in Melbourn near the Moor, *Victoria County History: Cambridgeshire*, VII (1978), 58; however, I have found no indication in this current search of the literature generally as to pool frog remains in Roman middens.

It may be recorded here that Yorke, doubtless inspired by his elderly informant (above), penned a poem called 'The Gaffer's Lament.' in his Collections on Fowlmere, Cambridge University Library, Add. 6567. A relevant stanza runs:

The Girt Moor wor a Moor – an' glory to boot
Nuff'n like it in England and Wales
Wi' its duck, swan, geese, widgeon, teal , tern and coot
Which sportsman came 'undreds o' miles for to shoot
And its frogs, wot were called Nightingales.

The above poem, from internal evidence, may well have been composed about 1910.

b) Stow Bedon/Thompson/Caston, Norfolk

Within the contiguous parishes of Stow Bedon, Thompson and Caston in Norfolk, lie clusters of pingos. While many of the records of pool frogs, or edible frogs (= pool frogs) from these parishes can be ascribed to specific ones, it seems reasonable to treat the relevant habitats therein under a single head. In any case, this overall site has close affinities with nearby Rockland All Saints, Merton and Breckles (sites (A) (c), (B) (e) and (B) (f), below), and to a lesser extent with slightly more distant Scoulton (site (B) (d)); however, I consider that these are best treated discretely. It should be noted that the pingos of Stow Bedon and Caston lie within TL9496, those of Thompson within TL9395 and 9396.

Boulenger (1884b) noted that edible frogs (= pool frogs), which were 'very abundant at Stow Bedon, in small pools and pits' on 29 July [1884], were indisputably the form of *lessonae*; they were thus of a kind with specimens taken at [Fowlmere], Cambridgeshire. Lord Walsingham assured him that the people of the neighbourhood knew of their existence here as far as sixty years back, thus about 1824. Boulenger was further informed by a Mr G.E. Mason that the species was restricted to the seldom-disturbed, north-west part of Stow Bedon Common.

Alfred Newton (1877) recorded that on 30 May then, he arrived at [Stow Bedon] station, and, upon recognizing the calls of edible frogs (= pool frogs), soon sighted some in a nearby pond.

He was informed by a man in a nearby house that he had been acquainted with these creatures for as long as he had lived there, over twelve years or so prior to 1877. He had, furthermore, sent examples to the naturalist [Thomas] Southwell at Norwich. This agrees with a note in Frank Norgate's Diary (Vol.I, f. 236) on 7 June 1876 that he had received a 'Letter from T. Southwell giving Stow Bedon as a newly discovered locality for *Rana esculenta*' (= *Rana lessonae*). I should further add the significant point in Newton's note that he had – since 30 May 1877 – learnt from Lord Walsingham 'that the species is pretty generally diffused in a southwesterly direction from the space where we found it' – that is into Thompson parish, particularly Thompson Common with its pingos – 'and therefore its naturalization in the county seems to be accomplished.'

Clarke (1922 and 1925) noted the presence of a colony of what he called 'the Italian variety of the edible frog' (= pool frog) at Stow Bedon Mere 'for a number of years.'

In a letter to the present writer dated 6 November 1999, the Norwich naturalist Ernest Daniels recorded that he found edible (= pool) frogs in ponds at Stow Bedon and Thompson Common 'many years ago'.

Buckley (1986) found pool frogs thriving at Stow Bedon and Thompson.

Lord Walsingham (1892) noted that in close proximity to the site of the old Thompson College was one of the last surviving British colonies of the edible frog. The writer continued by noting that these frogs were of the Italian variety (= pool frog). He further observed that the proximity of the frog colony to the college was suggestive that these creatures had been introduced by the clergy, many of whom travelled backwards and forwards between England and Rome in the Middle Ages. Kent (1910), 38-9, added that the aforementioned college (of chaplains) was founded in 1349; also that the edible frog (= pool frog) colony continued to survive near its site.

After 1910, we hear no more of the pool frogs of Thompson for a half-century. East Tuddenham naturalist Alec Bull, in a letter to the present writer dated 20 October 1999, said he heard one or more croaking here at some time between 1961 and 1964. In a letter from J.M. Schofield to Dr J.F.D. Frazer dated 27 July 1966 in the Norfolk Biological Databank, Thompson Water, Carr and Common File, he recorded that on the previous 25 June he had found four or five specimens of the edible frog (= pool frog) at Thompson Common, 'First for a considerable period of time at this locality...confirmed by P. Banham'. The latter, a naturalist of Wells-next-the-Sea, stated in a letter to the present writer dated 17 October 1999 that he saw several at Thompson in 1966, and that he kept two for a time before putting them back; moreover, he has a slide he took of them.

In July and August 1974, John Buckley and John Goldsmith (of Norwich Castle Museum) visited Thompson, and found edible frogs (= pool frogs) in the pingos on the common and also at the nearby Butter's Hall Barn Ponds (TL927955). Lord Walsingham referred to edible frogs (= pool frogs) on Thompson Common in a letter to P.A. Wright dated 18 November 1975. John Goldsmith and Nick Green saw one small edible frog (= pool frog) on Thompson Common during June 1976; while the former in the company of John Buckley saw between fifteen and twenty specimens here, of which two were adults, on 24th August 1982 (Norfolk Biological Databank, Thompson Water, Carr and Common File.)

I infer that the coloured plate of the Norfolk pool frog, Ellis (1979) [6] and illus. 4, was taken at Thompson Common.

According to the Norfolk Wildlife Trust, Thompson Common Nature Reserve Site File, a pool frog was seen here by a Norfolk and Norwich Naturalists Society member in May 1993. The last record at this site was of spawn seen here by Tom Langton in 1994.

The last captive specimen of a pool frog from Thompson Common died in January 1999 (Gleed-Owen 2000).

As for the pingos of Caston Common, three *Rana esculenta* (= pool frog) were found here by John Buckley and John Goldsmith on 30 July 1974. (Norfolk Biological Databank, Thompson Water, Carr and Common File). Buckley (1986), 203, observed that post-1853 specimens of *lessonae* were collected from Caston, as well as nearby Rockland [All Saints], Thompson and Stow Bedon parishes.

c) Rockland All Saints, Norfolk

Lubbock (1879) noted: ‘In 1853 Professor [Alfred] Newton and his brother [Edward] were driving from Thetford to Scoulton, when passing a pond in the parish of Rockland All Saints, they heard sounds which caused them to alight: swimming to-and-fro in the water, and sitting upon the aquatic plants, they found a lively colony of *Rana esculenta*. Specimens then obtained are now in the Norwich Museum.’ John Buckley of The Herpetological Conservation Trust holds a photograph of these specimens, clearly demonstrated to be pool frogs.

3.2 Probable sites

a) Gosberton, Lincolnshire

An ilium of *Rana cf. lessonae* was found during the course of an archaeological investigation within a sill-beam slot of a house, dating from c.600-950 – that is of the Middle Saxon period – at Chopdike Drove, Gosberton (TF19882900) Gleed-Owen (2000). It should be noted that this site lies within the silt-covered area of the Fens. Given the perhaps slight element of doubt which has to be ascribed to this record, I list the site as a probable rather than a certain one for the pool frog.

b) Whaddon, Cambridgeshire

Thomas Bell (1844) noted that the loud and shrill croaking of *Rana esculenta* (= pool frog) had gained for it the names of ‘Cambridgeshire Nightingales’ and Whaddon Organs’. Bell was to add (1859) that his father [and namesake], a native of Cambridgeshire, had told him that the peculiar sound of the frogs of Whaddon and Fowlmere (site (A) (a), above) had procured for them the name of ‘Whaddon Organs’; moreover, Bell senior had formed the opinion ‘nearly a century ago’ [say the 1770s], that these frogs were of a different species to the common frog.

It having been established that the frogs of Fowlmere were indeed a different species to the common frog, that they were pool frogs, one might consider that the Whaddon frogs were also *Rana lessonae*. Indeed, such a view would appear to be strengthened by the fact that

Whaddon, 8km west of Fowlmere, likewise lies on the Lower Chalk which overlies the Gault. On the other hand, there does not appear to have been a feature comparable to Fowlmere Moor and Mere in Whaddon parish (*Victoria County History: Cambridgeshire*, VIII (1982), 104 and 142-151). Given that no example of a pool frog has ever been taken from Whaddon, let alone distinctly recorded here, it seems appropriate to regard this as a probable site rather than a certain for this species. Wolley (1859) considered that if this species – which he considered to be the edible frog – had been found here, it was introduced. Yorke (1903-4b) also came to this conclusion; he felt that the phrase ‘Whaddon Organs’ indicated ‘the boast of Whaddon Churchmen in a recently acquired barrel-organ’. Yorke further observed that the frogs concerned had not been found in the district between Whaddon and Fowlmere.

c) Triplow, Cambridgeshire

The official name for this parish is Thriplow, but it is popularly known as Triplow and was found to be given as such in the relevant literature checked; hence I spell it thus in this report.

In his lecture on the Fens, as reported in the *Cambridge Chronicle*, 9 March 1867, Professor Charles Kingsley noted that, when he was a young man, Triplow Fen, [TL4447 and 4547] was the only place in England in which the edible frog (= pool frog) was found; he did not know if this species was still there. He further expressed the view that this species, along with others such as bleak, roach, chub, dace and so on, had their principle home on the Continent and would have colonized England while a land-bridge with inter-connecting rivers existed. Kingsley, born in 1819, first went to Cambridge in 1838 (Venn (1951), *part II, vol IV*); hence he arrived in time to have become acquainted with the edible frogs (= pool frogs) of Fowlmere. This suggests that, in 1867, his memory failed him and it was the latter site, rather than to Triplow, that he should have referred. However, not only does Triplow Fen lie but 5km north-east of Fowlmere Moor and Mere but it likewise lies on the Lower Chalk at a point where powerful springs break out. This site, known to her as Triplow Peat Holes, was fully described by Crompton (1959).

Curiously, Kingsley when covering much the same ground as he had done in 1867 in his *Prose Idylls* (1889, but first published in 1873), spoke again of the edible frog (= pool frog), but in this later instance places the creature as well-documented at Fowlmere. (It may be that since 1867 he had realised that he had slipped-up in stating Triplow, rather than Fowlmere/Fowlmere.) Be that as it may, he further mentioned that this species is not known to have been recorded as ‘an article of food by mediaeval monks’; this supporting his view that it had naturally colonized England when it was still physically linked to the Continent.

Having made the above points, given the nature of the Triplow site and its proximity to Fowlmere, I consider it justified to record it as a probable location for the pool frog.

c) Scoulton, Norfolk

Other than its famous Mere, believed to have been formed artificially by damming a stream in the early 19 century and which lies (TF9801) about 7km north-east of the Stow Bedon/Thompson/Caston complex (site (A) (b)), Scoulton is a parish with many ponds; however, judging from map evidence, these would appear to have been formed artificially, rather than naturally like pingos. Boulenger (1884b) recorded that Scoulton was ‘the only neighbourhood near Stow [Bedon] where [his informant, Mr G.E. Mason] could learn the

species [edible frog (= pool frog)] had been observed, and, according to the testimony of a large land proprietor, they were readily found two or three years back in nearly all the ponds &c. on his estate, but since that time they had quite disappeared'. The land proprietor mentioned was shown specimens taken from Stow Bedon, and confirmed that they were the same as those on his estate.

d) Merton, Norfolk

Aristophanes (1903-4), considering the edible frog (= pool frog) records from Foulmire Fen, Rockland [All Saints] and Stow Bedon, mentioned that the species had been found subsequently to exist at Diddington, Merton, Hockering and Foulden Fen. However, while three of these localities indeed relate to edible frogs *Rana esculenta*, there is no suspicion that Merton was either the site at which edible frogs had been introduced or to which they had subsequently made their way. Merton lies 3km north-west of Thompson common, and contains a few ponds which may just be pingos. For this reason, while Aristophanes did not give the source for his belief that the edible frog was found at Merton, its proximity to Merton may well justify its inclusion as a probable pool frog site in this report. Merton was the seat of Lord Walsingham, however, and it may be that Aristophanes considered that as that peer had been associated with edible frogs (= pool frogs) at nearby sites, Newton (1877) and Boulenger (1884b), as well as writing about them under his own name (1892), he may have 'hosted' some about the core of his estate. All the same, it is perhaps right to regard Merton as a probable site.

e) Breckles, Norfolk

R[obert] Gurney, in a letter to [E.A.] Ellis dated 7 July 1941, noted: 'some years ago I heard a croaking at Breckles which I thought must be it' – that is the edible frog. Breckles, lying within 2 to 3km south to south-east of Thompson Common contains groups of ponds suggestive of pingos, particularly from TL99394 east to 9594 (although some of these are known from map evidence to have had their surrounds afforested since 1941). Given the fact that there have been no records of the edible frog *Rana esculenta* released here, a record such as that of the distinguished naturalist, Gurney, ought to relate to this site as probable for the pool frog.

3.3 Possible sites

a) Fineshade, Northamptonshire

John Morton (1712), 440, was informed by Mr Kirkham of 'Finshed' that he had seen a 'water-toad' – one with the [brown] colour of the common toad 'in *coitu* with a fair green frog'. In his annotations to this, Charles Snell infers the possibility that members of the green frog complex were involved in this sighting, hence perhaps pool frogs. Fineshade is an emarked parish, situated on the Lower Oolite about a tributary of Welland, about 50m above sea level (SP9797 and 9798). It was the site of a Priory from about 1200 to 1534 (*Victoria County History: Northamptonshire*, II (1906), 135-6), which fact may feed the suspicions of those seeking a link between the edible frogs and religious communities who may have introduced them. All the same, this record is worthy of being registered as a possible one for the pool frog.

b) Thorpe Mandeville, Northamptonshire

John Morton (1712), 440-1, noted that he had observed ‘particularly in a Pit or well not very deep, by the Road-side below *Thrup-mandeville*, of Frogs a great Variety, as to colour.’ He continues by describing some as green, others livid, others yellow and some as toad-coloured [brown]; however, they behaved as frogs. In his annotations to this, Charles Snell observed that Morton appeared to be describing members of the water or green frog complex, hence possibly pool frogs. The locality described by Morton is still known as Lower Thorpe (SP5345), and contains a number of water features; it lies on the Upper Lias, about 150m above sea level.

c) Brumstead, Norfolk

Maurice Bird, a clergyman - naturalist of Brunstead (sic) Rectory noted (1900): ‘One specimen [edible frog (?= pool frog)] survived [apparently in the vicinity of Brumstead, say TG3626] on April 28 1899. The first I ever saw hereabouts was on June 2nd 1887... with my friend Theodore Wood... and he caught another in this neighbourhood on May 26th 1889. All three of these were left at liberty.’ It should be observed that Brumstead lies 5km north-west of Hickling Broad, site (E) (a); also that Bird (*loc. cit.*) indicated that he was familiar with the natterjack toad *Bufo calamita*.

d) Thetford, Norfolk

Ellis (1957) noted a small colony of edible frogs (?= pool frogs) in a garden pond at Thetford. He did not know if these were established in the wild. NB Thetford is 12km south south-west of Thompson Common, site (A) (b).

3.4 Vaguely expressed references

a) Fenny countries

Thomas Pennant (1776), *vol.III*, 11, noted under the head of common frog, but apparently referring to what he was later to describe as the edible frog (?= pool frog), that in ‘fenny countries’ their croaking has earned them ludicrous titles such as ‘*Dutch Nightingales*’ and ‘*Boston Waites*’; he further referred to a period when such frogs cease to croak, this in the hot season and more pertinently referring to members of the green frog complex (including pool frogs) than to the common frog. He further states that country people called this time by the name of ‘*Paddock Moon*’, *ibid.*, 11-12. He further stated that Morton (1712), 441, had mentioned the same thing. Under the specific head of edible frog (as a British animal), Pennant, *op. cit.*, 13-14, made no reference, even vaguely to where it was found.

b) England

George Shaw (1802), 103, gave the vernacular name of green frog to *Rana esculenta* (?= pool frog); he stated that it ‘is a rare animal in England’.

3.5 Doubtful sites

a) Hickling Broad, Norfolk

Gadow (1904) claimed to have heard edible frogs (?= pool frogs) ‘in the pairing season of 1883 on Hickling Broad’. Fitter (1959), 264, implied that these creatures were indeed edible frogs *Rana esculenta* which had managed to wander here the [28-29km] from the site of Berney’s introduction at Morton[-on-the-hill] of 1837. However, Gurney (1941) had declared that he did not think the edible frog ever got to the broads. Buckley (1986), 209, felt that Gadow had confused the calls he heard with that of the natterjack toad *Bufo calamita*. NB site (C) (c), Brumstead, is 5km north-west of Hickling Broad.

b) Wroxham Broad, Norfolk

Fitter (1959), 264. Stated that the edible frogs ‘were said to have existed at Wroxham Broad till about 1914’. He implied that these were indeed edible frogs *Rana esculenta* which had managed to wander here the [18-19km] from the site of Berney’s introduction at Morton[-on-the-Hill] of 1837. Gurney (1941) declared that he did not think that the edible frog ever got to the Broad. Smith (1951), 142, would appear to have been the origin of Fitter’s statement; this record, with the view that the creatures had wandered from Morton-on-the-Hill, was considered most unlikely by Buckley (1986), 209.

c) Pools in Suffolk

Yorke (1903-4a) stated that he understood that ‘there are pools in Suffolk where [the edible frog (?= pool frog)] is still flourishing’. Aristophanes (1903-4) inquired as to where these pool frogs were. Yorke (1903-4b) replied by saying that he had no positive knowledge of such localities.

d) (?) Hinterland of Bury St Edmunds, Suffolk

Henry Andrews, Curator of Moyses Hall Museum, Bury St Edmunds, and a noted naturalist, in describing signs of spring (1935), mentioned the ‘solos and choruses’ of the edible frog (?= pool frog), ‘where it is found’. He did not specify such a site or sites; however as he mostly concerned himself with local records, we may take his ‘edible frog’ observations as having been in the hinterland of Bury St Edmunds, perhaps the Lark Valley.

e) Coe Fen, Cambridgeshire

This site lies within the boundary of Cambridge, by the Cam upstream of the city in the suburb of Newnham (TL4457). Pool frogs were reported here, apparently *per* E.A. Ellis, to John Buckley, as noted in the Pool Frog Species Recovery Programme meeting, 24 October 1995. ‘Site not visited, but its proximity to Cambridge makes it unlikely.’ (Norfolk Wildlife Trust, Thompson Common Nature Reserve Site File.)

3.6 Sites of introductions

a) Kingsbury, Middlesex (now Greater London)

Wolley (1847) recorded that Fred[erick] Bond had ‘several very thriving colonies’ of edible frogs (= pool frogs), from these colonies apparently deriving from specimens Bond took from Fowlmire Fen.

b) Epping, Essex

Newman (1848) recorded that ‘Henry Doubleday, having received from Fowlmire Fen some [specimens of the edible frog (= pool frog)], turned them loose near a pond not far from his residence [at Epping]. They soon migrated to another pond, and there have made themselves perfectly at home.’ They later disappeared from sites in Epping Forest, according to *Victoria County History: Essex*, I (1903), 230.

c) Oxfordshire

Fitter (1959), 267, noted: ‘Some [*Rana lessonae*] frogs were introduced, evidently unsuccessfully, into Oxfordshire before 1897.’ He did not offer a source to support his statement; however it was apparently Boulenger (1897), 287, who indicated that these creatures came from Italy.

d) Between Chesterton and Milton, Cambridgeshire

Gadow (1904) recorded, re the edible frog but with an inference that pool frog was intended, that ‘in the summer of 1901 one fine male was found amongst a number of [common] frogs which had been caught between Chesterton and Milton for the Physiological Laboratory.’ (This description suggests that the site lay in TL4760.) He mentions that monks from Lombardy would have visited Chesterton – *sic, recte* Barnwell – Priory (TL4759), and consequently the frog concerned may have been a survivor of a population initially introduced by these monks before the Reformation. He was later to repeat this suggestion (1920), 266. Fitter (1959), 267-8, considered that the edible frog (= pool frog) caught in 1901 may have been one previously in captivity, and which had been released as superfluous to requirements on some previous occasion.

4. Chronology

c.600-950. *Rana cf lessonae* ilium found at Chopdike Drive, Gosberton, Lincolnshire. Glead-Owen (2000).

1712. Description of what were possibly pool frogs at Fineshade and Thorpe Mandeville, Northamptonshire. Morton (1712), 440-1.

c.1770s. Thomas Bell *pere*, a native of Cambridgeshire, considered the frogs of Whaddon and Fowlmire [Fowlmere], known as ‘Whaddon Organs’, to be of a different species to the common frog. Bell (1859).

1776. Pennant referred under the head of common frog to the sobriquets of ‘Dutch Nightingales’ and ‘Boston Waites’ in ‘Fenny Countries’; Boulenger (1884a) was to consider that in respect of the reference to these sobriquets and the frogs’ croaking, Pennant was actually referring to the edible frog (?= pool frog).

1802. Shaw noted that the green or edible frog (?= pool frog) was a rare animal in England.

c.1824. Miller (1874) was ‘recently’ informed that edible frogs from France had been turned loose in South Cambridgeshire, but did not give his source. Clearly, if *Rana esculenta* had been intended, this record cannot relate to the proven *lessonae* of Fowlmire [Fowlmere] there.

1837, 1841 and 1842. Edible frogs released at Morton[-on-the-Hill], Hockering and Foulden, Norfolk, by George Berney. Newton (1859).

1838. Charles Kingsley first at Cambridge, aged nineteen. He was to describe (1867) that he found the edible frog (= pool frog) at Triplow Fen Cambridgeshire, when he was a young man; however, he was later (1889 [ie1873], 94) to give the site of this observation at nearby Fowlmire.

1843. The edible frog (= pool frog) taken at Fowlmire Fen, Cambridgeshire. Bond (1844a).

1844. An illustration of a Fowlmire edible frog (= pool frog) first published [Newman], (1844). This species abundant at this site, Bond (1844b); and known as Cambridgeshire Nightingales and Whaddon Organs, Bell (1844).

1849-1848. Fowlmire Fen drained, and the edible frogs (= pool frogs) disappear. Yorke (1903-4a); Price (1994).

1847. Edible frogs (= pool frogs) from Fowlmire introduced at Kingsbury, Middlesex [now Greater London]. Wolley (1847).

1848. Edible frogs (= pool frogs) from Fowlmire introduced at Epping, Essex. Newman (1848).

1853. Edible frogs (= pool frogs) found at Rockland All Saints, Norfolk. Newton (1859); Southwell (1879). John Buckley holds a photograph of specimens taken from here then and preserved in Norwich Castle Museum.

1859. Doubts about the native status of edible frogs (= pool frogs) found to date expressed by Wolley.

1884-1882. Edible frogs (= pool frogs) widespread at Scoulton, Norfolk; they had gone by 1884. Boulenger (1884b).

1883. Gadow (1904) heard edible frogs (?= pool frogs) at Hickling Broad, Norfolk.

1887, 1889 and 1899. Single edible frogs (?= pool frogs) found in the vicinity of Brunstead [*sic, recte* Brumstead], Norfolk. Bird (1900).

1892. The site of the (pre-Reformation) Thompson College *vis a vis* the nearby edible frog (= pool frog) colony seen as supporting Wolley's suggestion (1859) of introduction by clergy travelling backwards and forwards between England and Rome Walsingham (1892). The proximity of the College to the Colony also noted by Kent (1910).

1901. A single male edible frog (?= pool frog) found between Chesterton and Milton, Cambridgeshire. Gadow (1904).

1922 and 1925. Clarke's mentions of the edible frog (= pool frog) colony at Stow Bedon Mere, Norfolk, the last definite records from the area until the 1960.

1941. Gurney recorded 'some years' previously having heard the edible frog (? = pool frog) at Breckles, Norfolk.

1941. Powell reported that the 'edible frog' still exists in colonies in Norfolk; apparently an unsupported statement, even if true for pool frogs in particular (Powell 1941), 83.

1951. Smith, incorrectly, considered the edible frog (= pool frog) to have disappeared from Norfolk. Smith (1951), 142.

1957. Ellis noted a small colony of the edible frog (?= pool frog) in a garden pond at Thetford, Norfolk.

c. 1960. Paul Banham received reports of edible frogs (= pool frogs) from the [Thompson] area of Norfolk, but felt the claims to be spurious. Buckley (1975).

Between 1961 and 1964. Alec Bull heard the edible frog (= pool frog) at Thompson Common.

1966. J.M. Schofield of the Nature Conservancy, Norwich, found edible frogs (= pool frogs) at Thompson Common. Norfolk Biological Databank, Thompson Water, Carr and Common File.

1974-1976, 1982, 1986 and 1992-1994. Edible frogs (= pool frogs), from 1986 referred to as pool frogs at Thompson Common – spawn alone seen in 1994. Buckley (1975 and 1986); Norfolk Biological Databank, Thompson Water, Carr and Common File; Norfolk Wildlife Trust, Thompson Common Nature Reserve Site File.

1974. Edible frogs (= pool frogs) found at another site at Thompson – Butter’s Hall Barn Ponds – and also at nearby Caston. Norfolk Biological Databank, Thompson Water, Carr and Common File.

1986. Buckley reported pool frogs thriving at Stow Bedon (as well as neighbouring Thompson).

1995. Record of pool frogs at Coe Fen, Cambridgeshire considered unlikely. Norfolk Wildlife Trust, Thompson Common Nature Reserve Site File.

1999. The last surviving pool frog, taken from a pingo on Thompson Common, died in captivity.

5. Selective ‘frog’ dialect and place-names

5.1 Introductory note

In my initial brief, it was suggested that an examination of place-name evidence might just provide pointers to the sometime presence of pool frogs. This has hardly been the case, beyond a few debatable examples close to relevant sites in Cambridgeshire. In any case, I soon came to regard a comprehensive programme of logging such names unjustifiably time-consuming, so abandoned the exercise. All the same, the names collected are given below.

During the course of my research, the relevance of dialect terms or sobriquets, some explicitly or implicitly relating to pool frogs, came to be viewed as having some significance, and these, too, are given below.

5.2 Frog dialect names

- 1) Boston Waites. Given by Pennant (1776) under the head of common frog; however, Boulenger (1884a) considered this sobriquet should apply to the edible (?= pool frog), although there could be some confusion with the natterjack toad. The Waytes, or municipal band, of Boston, Lincolnshire, was in existence from 1573 to 1734, Thompson (1856), 70. A thorough search of published and unpublished material in Lincolnshire repositories failed to establish any likely reason why the term should have been applied to any frog population.
- 2) Cambridgeshire Nightingales. An expression used in respect of edible frogs (= pool frogs) (Bell 1844). Among the Maynard manuscripts, he used this expression as the caption to a water-colour of a pool-frog, allegedly from the Fowlmire site, but taken, I suspect from a captive or preserved specimen – given this naturalist commenced his collection shortly after the extinction of the pool frog population there. John Buckley has photographed this illustration: Cambridgeshire Record Office, R/58/5/1, XII, f.18. With regard to this expression, and (3) and (4), below, compare Southport Nightingales used in 1913 for natterjack toads in the Wirral, Cheshire. Smith (1999), 4.
- 3) Dutch Nightingales. Given by Pennant (1776) under the head of common frog; however, Boulenger (1884a) considered this sobriquet should apply to the edible (?= pool frog), although there could be confusion with the natterjack toad.
- 4) Fen Nightingale. A frog: Healey (1997), 13.
- 5) Paddock. A frog or toad: Healey (1997), 27. ‘Paddock Moon’ was a term used by Morton (1712), 441, to describe the four weeks approximating to August when frogs were silent. In his annotations to this, Charles Snell has observed that this would equate to the period when, particularly, *Rana lessonae*, *esculenta* and *ridibunda* had fallen silent. In citing Morton, Pennant rendered the term Paddock Moon, albeit under the head of common frog.
- 6) Pode. A frog or toad: Healey (1997), 28.

- 7) Whaddon Organs. An expression for edible (= pool frogs), apparently dating back to the 1770s (Bell 1859); he had in any case noted the term earlier (1844). Compare Smith (1999), 2 and 4, for examples of the expressions Formby Organs and Bootle Organs used in 1888 and 1913 respectively for natterjack toads in the Wirral, Cheshire.

5.3 Frog place-names

- 1) Frog End, Great Wilbraham, Cambridgeshire, first noted on the OS, 1825. 'Used of a marshy spot. It is low-lying' (Reaney 1943), 139.
- 2) Frog End, Haslingfield, Cambridgeshire. First noted on the Tithe Map, c.1840. 'A nickname for a marshy spot' (Reaney 1943), 79.
- 3) Frog End, Shepreth – adjoining Fowlmere – Cambridgeshire. A locality settled before or during the 18th century (*Victoria County History: Cambridgeshire, V* (1973), 252).
- 4) Frog Hall and Frog Hall Mill. Near northern shore of Whittlesey Mere, Cambridgeshire, 1786 (*Fenland Notes and Queries* (1891), I. Frontis).
- 5) Frog Hall, Kneesworth – adjoining Whaddon – Cambridgeshire. OS, 1966. Not mentioned in the account of this parish (*Victoria County History: Cambridgeshire, VIII* (1982), 49-54).
- 6) Froghall, first noted 1824, and Froghall Carrs, first noted 1767, in the lost village of Beggarthorn, Lincolnshire (Cameron 1998), 78.
- 7) Frogmore Farm. Thornton Curtis, Lincolnshire (Cameron 1998), 282.
- 8) Froggnall, Deeping St James, Lincolnshire. Recorded, as Frokenhall, c.1139; derived from 'the nook of the land where frogs abound' (Cameron 1991), 47.
- 9) Frog's Abbey, Witchford, Cambridgeshire. First noted on the Tithe Map, c. 1840. 'An uncomplimentary name' (Reaney 1943), 246.
- 10) Frog's Abbey Farm, Coveney, Cambridgeshire. First recorded, as Frog's Abbey, on Wells' Map of the Bedford Level, 1829 (Reaney 1943), 230.
- 11) Frog's Hall, Balsham, Cambridgeshire. Perhaps associated with the family of Hugh Frogg (1356 extent); alternatively, it may be used of a farm on a marshy site, for it is on the site of an old swamp (Reaney 1943), 114.
- 12) Paddock End, later known as Frog's Norton, Fowlmere, Cambridgeshire. Took name from edible frogs (= pool frogs), they having been about in such quantity (Yorke 1903-4a).
- 13) Pode Hole, Spalding, Lincolnshire. From pode, a frog or toad (Healey 1997), 28.
- 14) Pode Hole Gate (otherwise Podellgate), an extinct road in Quadring, Lincolnshire (Healey 1997), 28.

6. Evaluation of material searched

As witness the List of Material Searched, many and varied relevant or potentially relevant published and archival sources have been examined. From initial discussions with John Buckley of the Herpetological Conservation Trust, it was understood that difficulties would be experienced during the overall search, partly in view of the appreciated paucity of the likely evidence of pool frogs in East Anglia – for which regional term it would be appropriate to substitute Eastern England – and partly because of the problem of differentiating true edible frog and pool frog records.

A further cautionary note, expressed in my initial brief from The Herpetological Conservation Trust, was to be aware of confusion with natterjack toad records. Boulenger (1884a), 265-6, considered that identification of the edible frog [hence also the pool frog] by voice alone was insufficient and that there could be confusion with the natterjack toad. Earlier, Miller and Skertchly (1878), 390, considered the distinctive croaking as remembered by Thomas Bell *pere* [about the 1770s], and taken as an early piece of potential evidence for the existence of pool frogs, is likely to have been indistinguishable from that of the frog-choruses of the [common] frogs of the Yare and Waveney Valleys. There are dangers, too, in accepting the sobriquets of Cambridgeshire, Dutch or Fen Nightingales, and Whaddon Organs, as ones which with varying degrees of inevitability relate to edible frogs (= pool frogs): as I noted in the previous section of this report, Smith (1999), 2 and 4, recorded the vernacular names Southport Nightingales, Formby Organs and Bootle Organs, all indisputably applied to the natterjack toads of the Wirral, Cheshire.

A disappointment felt as this research project progressed was the dearth of relevant material found in manuscript sources. This was even marked in the journals and related materials of naturalists based within, or who often visited, the Norfolk Breckland, in which most of the county's pool frog sites were to be found. Thus, I found nothing relevant in the journals of J.D. Salmon (Norwich Castle Museum), even though he lived at Thetford from 1833 to 1837, and visited localities such as Whittlesey Mere, Cambridgeshire, and Fowlmere and Scoulton Mere in Norfolk. Henry Stevenson travelled widely in Norfolk, yet there were no relevant references in his journals, 1850 to 1888 (Norwich Castle Museum). I had hopes that with regard to my thorough search of forty-three volumes of the Records of W.G. Clarke, 1890 to 1925, that this authority on Breckland would have made relevant observations – after all, he referred to the edible frog (= pool frog) colony at Stow Bedon Mere in published sources (1922 and 1925). In the event, all I could find was an illustration captioned 'Edible Frog (*Rana esculenta*)', apparently cut out of an unidentified periodical, stuck on an unfoliated sheet upon which were also affixed unrelated cuttings dating from 1905 and 1905 (Norfolk Record Office: Records of W.G. Clarke. MS127). Later, in 1926 and 1927 and from 1930 to 1933, Dr S.H. Long was to describe in his Journals (Norwich Castle Museum) visits to the gulleries at Scoulton and Breckles, but made no reference to amphibians.

The dearth of information in archival sources re the pool frog was paralleled by Smith's experiences in seeking out natterjack toad records (1999). He observed, admittedly with particular reference to Cheshire and Lancashire, that few naturalists recorded the natterjack toad prior to 1880, while little relevant work was undertaken in those counties from 1914 through to the late 1960s (*ibid*), 3 and 7.

Snell (1994), 3, pointed out that the lack of early written records for species such as the pool frog - or edible frog, as it would then have been documented - was entirely normal. The

earliest records are generally vague, imprecise or open to various interpretations; they relate to frogs which may have been edible, pool or maybe not 'green' frogs at all. Such records include those of Morton (1712), Pennant (1776), and Shaw (1802), likewise the memories of Thomas Bell *pere* from about the 1770s, as noted by his son and namesake (1859).

The definitive documentation of the pool frog was found almost exclusively in published material, or in unpublished printed material derived from or filed by organisations such as the Norfolk Museums Service – see *sub* Norfolk Biological Databank in the List of Materials Searched – and the Norfolk Wildlife Trust. This documentation particularly relates to three phases, even if some material was issued retrospectively:

- 1) 1843-1848: Foulmire (Fowlmere), Cambridgeshire.
- 2) 1853-1925: Rockland All Saints, Stow Bedon and district, Norfolk.
- 3) 1960 to date: Thompson, Stow Bedon and district, Norfolk.

A subjective view with regard to the hiatus in recording pool frogs, maybe even herpetofauna in general, over the period 1925 (and in detail from the late 19th century) through to 1960, is that this was a time when ornithological recording, beyond shooting rarities and egg-collecting, captured the interest of an increasing number of naturalists; this was the age, certainly in Norfolk (with which I am most familiar) of the establishment of reserves (or at least more or less protected areas) from Blakeney Point in 1912, and so on, offering a haven for rare or vulnerable birdlife, and having as a secondary attraction their flora.

The period of relative silence as to the pool frog also witnessed unsupported or erroneous statements from some authors. Thus, allowing for the usage of edible frog to include pool frog, we have Percival-Westall's remark that the edible frog 'is certainly most common in the Eastern Counties' (Percival-Westall 1923), 42. Powell (1941), 83, offered no support for his statement that the edible frog 'still exists in colonies in Norfolk', even if this were true re the pool frog. Smith made a number of errors (1951), 142: the specimens of [pool frogs] in the British Museum from Stow Bedon were not presented in 1844, nor was this species discovered at Thetford in 1853; furthermore, these frogs were not of the 'typical' form [*Rana esculenta*], descendants of those introduced to Norfolk by Berney [between 1837 and 1842].

Beyond the effectively three phases of records of pool frogs noted above, what did manifest itself both therein and otherwise in the overall material searched was the concern of naturalists as to whether or not this species was native or introduced. Indeed, Buckley (1986), 209, was to opine that this question was still as open for debate as when Boulenger (1884a) addressed it.

Proponents of the view over the last one and a half centuries that the pool frog was not a native outnumber those who either believe that it was, or at least that the matter cannot be proved one way or the other in the light of our present knowledge. Were it the subject of an introduction or introductions, the question of by whom still arises, and here the adherents of this belief proffer a variety of suggestions.

Those who consider the edible frog (= pool frog) to have been an introduction, but who did not suggest who might have been responsible, included Miller and Skertchly (1878), 389-90. Yorke (1903-4b) asked if the [pool] frog, sometime of Foulmire Fen, had been indigenous,

why had it not occurred in the Rhee valley separating its undoubted home there and the purported Whaddon site; and why was it not found at the eminently suited Wicken Fen, also Cambridgeshire? Gadow (1904), 106, contrasted the restricted distribution of *R. lessonae* in England with its somewhat sporadic, yet wide, European range. He further considered it to be local in England because it had been introduced; had it been a native, surely it would have occurred more widely (Gadow 1920), 266-7.

As far as a specific agency for the possible introduction of the pool frog was concerned, Lever (1977), 389, considered that it may have been at the hands of the Romans, although he admitted that he had encountered no archaeological evidence to back this claim. The proximity of a Roman settlement to the Fowlmere Fen site has already been noted; see the Sites section (A) (a), although it might be stated here that no causal link was manifest.

The most popular suggestion as to the vehicle for the possible introduction of the pool frog was agents of the medieval church: particularly clergy and monks. Wolley (1859) and Boulenger (1884a) respectively mentioned clergy and monks, the latter writer particularly stressing the Italian origins of *R. lessonae* – although he was later (1898), II, to admit that this form was not restricted to Italy. Walsingham (1892), and Kent (1910) felt justified in proposing introduction by medieval clergy, given the proximity of Thompson College (of Chaplains) to an edible frog (= pool frog) colony. Powell (1941), 83, suggested two possibilities for the introduction of Norfolk's colonies of edible frogs (= pool frogs): monks and Huguenots.

The main influx of Huguenots to Eastern England was a consequence of the revocation of the Edict of Nantes in 1685. This might have tied-in with Fitter's suggestion (1959), 263, of a late 17th century introduction, although he compared it to the introduction of the common frog to Ireland about this time (which was not initiated by Huguenots).

Buckley (1986), 210, felt that introductions of pool frogs during the 18th century most likely explains their presence; he did not suggest specific agents for such actions, although I would proffer the view that this was the heyday of the 'Grand Tour', which encompassed Italy.

An early and sturdy proponent of the view that the edible frog (= pool frog) was a native was Charles Kingsley. He developed the theme that the early Holocene land-bridge with the Continent, served by a proto-Rhine with its interconnecting tributaries watering both Eastern England and the later to be isolated European land mass, enabled colonisation by such species to take place. Kingsley noted that he had never found the edible frog noted as an item of monkish food (1867), a point with which Rackham (1999) concurred.

Snell (1994) made the important point that all 'green' frogs taken from or near known sites of edible frogs in the 19th and 20th centuries have been of that kind; those taken from other, older sites were, and remained at the time he wrote, pool frogs. The Cambridgeshire site – or sites, allowing for probabilities (the present writer's insertion) – were within ancient landscape; that the Norfolk sites were [pingos] implied earlier colonisation after the final retreat of the ice, while the land bridge was still intact. He noted its parallel penetration into areas with glacially formed ponds in Sweden. He concluded that the burden of proof had by the time he wrote shifted to demonstrate the pool frog's introduction as opposed to proving its native status.

Grossenbacher [1999] also observed that the pool frog was an early colonist of habitats as the ice retreated; unlike the edible frog, it reached East Anglia whilst the land bridge was still intact.

Gleed-Owen (2000) admitted that the zoogeographical evidence in favour of natural colonisation was largely circumstantial and anecdotal, but no contradictory evidence had been found to disprove the theory. The same author stated: ‘A single bone has been identified as pool frog with a reasonable degree of certainty, from a Lincolnshire site [Chopdike Grove, Gosberton] dating to the Middle Saxon period (c.900AD). Furthermore, the remains of moor frog (*Rana arvalis*) have been identified from three sites (Early Roman 0-100AD and Middle to Late Saxon c.600-1100AD), and the agile frog (*Rana dalmatina*) has been discovered at one site (Middle Saxon c.600-900AD). This evidence shows that at least three additional frog species were present in England around a thousand years ago. It is argued that this implies natural colonisation rather than human introduction was responsible for relict pool frog populations recorded over the last two centuries’ (Gleed-Owen 2000).

Given the story of the pool frog as an apparently native English species starts in Lincolnshire, it is perhaps ironic that no evidence for it in this county was encountered in my search through the Lincolnshire literature. Yet, while Boston town had not been planted in Middle Saxon times, the sobriquet of Boston Waites as may sometime have been applied to the pool frog has in the light of Gleed-Owen’s discovery a particular piquancy.

7. Conclusions

I have made a thorough investigation of the evidence, but find I cannot state *a priori* that the pool frog *Rana lessonae* was a native British species. On the other hand, the assembled evidence surely indicates beyond all reasonable doubt that it was a native. To summarize, three points stand out in particular.

- 1) I found no evidence of the pool frog having been introduced as a food source by Romans (1st to 4th centuries AD), religious communities (11th to 16th centuries AD), or Huguenots, (17th century AD): such evidence was, for instance, noticeably absent from *Victoria County Histories*, cited in the List of Material Searched, or as Rackham (1999) commented.
- 2) A *Rana cf lessonae* ilium dating from c.600-950 AD was found at Gosberton, Lincolnshire; while bones of two other species of the 'green frog' complex have also been found in the Fens, dating from this general period, Gleed-Owen (2000). Of the 'green frogs' *R. lessonae* was a pioneer, following in the wake of the retreating ice at the end of the Pleistocene; it had about three thousand years to colonize England before the land bridge with the Continent was breached. Norfolk *R. lessonae* sites relate to, or are closely associated with, peri-glacial or post-glacial features, pingos; the main Cambridgeshire site was within 'ancient landscape' (Snell 1994; Grossenbacher [1999]).
- 3) Pool frog populations at the main Cambridgeshire and Norfolk sites were not mixed with known introductions of the edible frog from 1837 (Snell 1994; Buckley 1986).



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