

Historical records of *Lactuca serriola* L. and *L. virosa* L. in Britain, with special reference to Cambridgeshire (v.c. 29)

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“Most of our botanical publications are taken one from the other; and thus if an eminent botanist has in the course of his researches fallen into a mistake, the error has been propagated.” (Jacson 1797, pp. 229–230).

ABSTRACT

Thomas Johnson (1633) was the first British botanist to realise that three sorts of large wild lettuces occur in England, though he apparently thought that what is now called forma *integrifolia* of *Lactuca serriola* L. was related to *L. virosa* L. Records of *L. virosa* and *L. serriola* in Cambridgeshire (v.c. 29) are reviewed here. The long-held belief that John Ray (1660) recorded both of them in the county is shown to be incorrect: he, in fact, saw two forms of *L. serriola*. This paper casts doubt on some of the eighteenth and nineteenth century records of *L. virosa* in Cambridgeshire. The present distribution of the *Lactuca* taxa considered in the paper is briefly discussed.

KEYWORDS: Asteraceae, wild lettuces, distribution, Thomas Johnson, John Ray, Kent, Middlesex.

INTRODUCTION

Descriptions of *Lactuca serriola* and *L. virosa* in most British Floras are unsatisfactory because the existence of two forms of each with differing leaf characters is ignored. The brief accounts in Stace (1991, 1995, 1999) are accurate but lack many of the useful characters. The differences between the four taxa are, however, satisfactorily described in *Plant crib 1998* (Rich & Jermy 1998, pp. 292–293), with improvements in the corrigenda and addenda in the reprint of 1999, and will be fully treated in Volume 4 of Peter Sell and Gina Murrell’s *Flora of Great Britain and Ireland* (Cambridge University Press, Cambridge).

Both species are biennials or overwintering annuals, initially with a basal rosette and later with leafy stems, branched, at least above, and usually with numerous capitula. Stunted plants occur, but well-grown plants of *L. virosa* can exceed 2.5 m and *L. serriola* can attain 2 m. However, because *L. serriola* often grows in recently disturbed sites, plants that have reached full size in the absence of competition are frequent, whereas *L. virosa* grows mainly in post-disturbance grassy vegetation, where it is reduced in size by competition (R. N. Carter, pers. comm.). The main panicle of *L. virosa* is characteristically rhomboid, with little obvious leafage within it; that of *L. serriola*, at least in taller plants, is less regular and usually less pointed or even flat-topped, with the lower branches leafy. *L. virosa* begins to flower about a fortnight earlier than *L. serriola*, normally in June, and the diameter of the open capitula is often double that of *L. serriola* (up to 20 mm: *pace* Clapham 1952 and later editions!); the capitula of both species close by late morning, so these are often missed. Fruit characters are much more reliable than leaf characters: the fresh achenes of *L. virosa* are strikingly purple or maroon and larger than the olive-grey achenes of *L. serriola*. Another useful diagnostic character, which is unfortunately ignored in most British Floras, is the smell when the plant is broken or bruised: *L. virosa* smells like Opium Poppy (*Papaver somniferum* L.), *L. serriola* like Garden Lettuce (*Lactuca sativa* L.).

Two foliage forms of *L. serriola* occur, sometimes intermixed but often in separate populations, the type with deeply runcinate-pinnatifid cauline leaves, the other with undivided or shallowly lobed cauline leaves. There are also two forms of *L. virosa*, but here it seems that populations are more often mixed and the difference between the two is less striking and has rarely been taken note of: the type has unlobed, sinuate-dentate cauline leaves throughout; a form with the higher stem leaves pinnatisect with wide lobes has been named var. *lactucarii* (Lamotte) Rouy, though P. D. Sell proposes to reduce the name to forma level in *Flora of Great Britain and Ireland*.

Prince & Carter (1977) reviewed the characters distinguishing *L. serriola*, *L. virosa* and the related but smaller *L. saligna* L. and revised the taxonomic treatment of *L. serriola*, giving to its unlobed-leaved form the name *forma integrifolia* (S. F. Gray) S. D. Prince & R. N. Carter. Later, Carter & Prince (1982) discussed the history of the taxonomic treatment of *L. serriola* and *L. virosa*. They showed that, although Ray (1690) provided a "treatment of the British taxa ... as good as any published since" and Linnaeus (1756) "laid the foundation for the taxonomy of *L. serriola* and *L. virosa* as we know it", by "the second half of the nineteenth century the existence of an unlobed-leaved form of *L. serriola* was almost completely overlooked in Britain", the general practice being "to call all unlobed-leaved plants *L. virosa* without even according varietal status to those that were really *L. serriola*". They concluded that, as a result, "most pre-1930 *L. virosa* records could as easily refer to *L. serriola* as to *L. virosa*".

In this paper I show that the existence of three of the four taxa of large wild lettuces was clearly understood by Thomas Johnson by 1633 but that John Ray (1627–1705) at first failed to recognise them. As a combined result of this fact and the later confusion described by Carter & Prince (1982), it has been wrongly believed since the time of John Martyn (1727), through that of C. C. Babington (1860), and right up to the present day that *L. virosa* was first recorded in Cambridgeshire by Ray (1660).

THE EARLY SEVENTEENTH CENTURY

In his first account of a botanical excursion into Kent, Thomas Johnson (1629) recorded "*Lactuca agrestis odore opii*" on the Isle of Sheppey on 14 July 1629. This is the first localised British record of *L. virosa* (Clarke 1900, p. 85), which is "still present here" (Gilmour 1972, p. 56). In a list of 1632 of "the plants growing on Hampstead Heath and in the places visited ... on the way there and back", he recorded "*Lactuca syl. odore viroso folijs dissectis*, *Lactuca sylv. prior*, *Trag. silv. Matth.*" and also "*Lactuca syl. alter odore magis viroso folijs non dissectis*, *Lactuca agrestis odore opij* Lob. Ad. *Endivia major* & I. *Trag. Thesion*, *Lugd.*". These names may be interpreted thus: "Wild Lettuce with a fetid smell and divided leaves; the first wild Lettuce of Jerome Bock (Tragus 1552, p. 259; Figure 1 in this paper); the wild Lettuce of P. A. Matthioli (Matthiolus 1558, pp. 295–296)" and "The second wild Lettuce, with a more fetid smell and undivided leaves; the field Lettuce with the smell of opium of *Stirpium adversaria nova* of Pierre Pena and Matthias de l' Obel (Pena & de Lobel 1571, p. 89); the greater, first Endive of Jerome Bock (Tragus 1552, p. 267); Thesion of *Historia generalis plantarum* by J. D'Aléchamps, published at Lyons (Lugdunum) (Dalechampius 1587, pp. 564–565; Figure 2 in this paper)". Clarke (1900, p. 85) listed the former as the first British record of *L. serriola*, and Gilmour (1972, p. 128) identified the two plants as *L. serriola* and *L. virosa*, while Kent (1975, p. 491) accepted the latter identification but seems to have had doubts about the former. Both Clarke and Kent give "Hampstead Heath" as the locality, but, for reasons that will soon become apparent, I believe that the two plants were found on the way there or back, "betweene London and Pancridge [?Old St Pancras] Church", and were *L. serriola* *forma serriola* and *forma integrifolia* respectively, though Johnson had not yet worked this out. If my theory is correct, these are the first British records for both forms of *L. serriola*.

In the chapter of his *Herball* entitled "*Of Lettuce*", John Gerarde (1597, p. 238) had stated that there were sorts "both wilde and tame", which he purposed "to laie down"; but in fact he dealt only with the cultivated kinds. In his revision of Gerarde's work, Johnson (1633) rectified this omission, in Chapter 38 of Book 2 (p. 309), thus:

There are three sorts of wilde Lettuce growing wilde here with vs in England, yet I know not any that haue mentioned more than two; yet I thinke all three of them haue beene written of, though two of them be confounded together and made but one (a thing often happening in the history of Plants) and vnlesse I had seene three distinct ones, I should my selfe haue beene of the same opinion.

1 The first and rarest of these hath long and broad leaues, not cut in, but only snipt about the edges, and those leaues are they that are on the lower part of the stalke almost to the midle thereof: then come leaues from thence to the top, which are deeply diuided with large gashes: the stalke if it grow in good grounds exceeds the height of a man, (for I haue seene it grow in a garden to the height of eight or nine foot) The whole plant is full of a clammy milky iuice, which hath a very strong and grieuous smell of *Opium* [i.e. the latex of *Papaver somniferum*].

2 This hath broad leaues only cut about the edges, but not altogether so large as those of the last described: the stalke, which commonly is two cubits or better high, is also smooth, and diuided into many branches, bearing such floures as the last described; and this also hath a milky iuice of the same smell as the last described, from which it differs only in magnitude, and that this hath all the leaues whole, and not some whole and some diuided, as the former.

3 This in stalkes, floures and seedes is like to the last described, but the leaues are much different, for they are all deeply gashed or cut in like as the leaues of Succory, or Dandelion. This also is full of a milky iuice, but hath not altogether so strong a sent of *Opium* as the two former, though it partake much thereof. The stalke of this is sometimes a little prickly, and so also is the middle rib vpon the backside of the leafe.

Johnson illustrated only the first and last of these plants (p. 309), labelling them respectively “1 *Lactuca syl. maior odore Opij*. The greater wilde Lettuce smelling of *Opium*.” and “3 *Lactuca sylvestris folijs dissectis*. The wilde Lettuce with the diuided Leafe.” The illustrations are poor representations of the taxa; that of the last is a reduced and reversed version of Fuchsius’ (1542, p. 301) full-page woodcut of “*Lactuca syluestris*”, similar to that of Tragus (1552) (Figure 1 in this paper) but single-stemmed.

In the section of Chapter 38 headed “*The Names*” (p. 310), Johnson wrote:

1 I take the first of these to be the *Lactuca Sylvestris* of *Dioscorides* and the Ancients, and that which the Authours of the *Adversaria* [Pena & de Lobel 1571, p. 89] gaue vs vnder the title of *Lactuca agrestis scariolæ hortensis folio*, *Lactuca flore*, *Opij odore vehementi*, *soporifero & viroso* [field Lettuce with the leaf of garden chicory, the flower of Lettuce and a strong, soporific and stinking / poisonous smell of *Opium*].

2 This is the *Endiua* of Tragus [1552], pag. 268. and the *Thesion* of *Daleschamps* [1587], pag. 564. *Bauhine* [Bauhinus 1623, p. 123] confounds this with the former.

3 This is the *Lactuca Sylvestris* prior, of Tragus [1552, p. 259]: the *Lactuca Sylvestris* of *Matthiolus* [1558, pp. 295–296], *Fuchsius* [1542, pp. 298–303], *Dodonæus*, and others: it is the *Seris Domestica* of *Lobell* [Pena & de Lobel 1571, p. 86].

There is no doubt that the first of these plants is *Lactuca virosa* (var. *lactucarii* from the description of the upper leaves) and the last *L. serriola* forma *serriola*, to which Johnson allots the two synonyms he gave to his first lettuce of 1632. The synonyms Johnson provides for his second sort here are the last two names he gave to the “second wild Lettuce” of 1632, when it seems that he too was still confounding two of them together and making but one, since he applied to one taxon names that he later divided between two.¹ Both Tragus (1552) and Dalechamps (1587) (Figure 2 in this paper) show a plant with the undivided leaves of *L. serriola* forma *integrifolia*, but it is odd that Johnson suggests that it too has a “smell of *Opium*”, which is true only of *L. virosa*. However, it seems that he found it growing with *L. serriola* forma *serriola*, as he gives a joint locality, “plentifully betweene London and Pancridge Church, about the ditches and highway side”, whereas he records *L. virosa* only from John Parkinson’s garden, grown from seeds sent by John Goodyer, who had found it growing in Hampshire (pp. 309–310). It is surprising that he does not mention his locality of 1629 here, but perhaps, having realised that neither of the plants he had found in 1632 was *L. virosa*, he was uncertain that he had really seen it in Kent either.

JOHN RAY’S ACCOUNTS

In his *Catalogus plantarum circa Cantabrigiam nascentium*, Ray (1660, pp. 82–83) included two kinds of large wild lettuces and a smaller one that he then thought was “not yet described”, i.e. *Lactuca saligna*, to which he gave the name “*The least cut-leaved wild Lettuce*”.² To the first large lettuce, “*Lactuca sylvestris costâ spinosâ C.B.*”, he gave the name “*Cut-leaved wild Lettuce*” and to the second “*Endive-leaved wild Lettuce*”. He described the former as growing “Ad agrorum margines [By the margins of arable fields]. As by the way side from Ely to Cambridge, within a mile or two of Ely.” The Latin synonyms given for it, which include “*sylv. folijs dissectis Ger. emac* [i.e. in Johnson’s emaculated (or emended) edition of Gerarde of 1633]” and “*Seris domestica Lob.*” [Pena & de Lobel 1571, p. 86], make it clear that this was *L. serriola* forma *serriola*.³ No locality or habitat is given for the second kind, but the first Latin name given is

"*Lactuca sylvestris* 2. *Ger. emac.* [i.e. Johnson's second kind of wild Lettuce]". After this there follow five synonyms, the first three including "viroso" and clearly relating to *L. virosa*; the last two, however, are "*Endivia Trag. p. 268.*" and "*Thesion Dalechampii Lugd. p. 564.*", which Johnson (1633) gave as names for his second kind.

At the end of his account of his own second kind, Ray included a rather contorted note in Latin⁴, which is poorly translated by Ewen & Prime⁵ (1975, p. 77). This note is better rendered thus:

Johnson, in his edition of Gerarde, creates two kinds of wild lettuce with the smell of opium, which he thinks are confused in the works of other writers; and he attributes to the first sort earlier authors' names which we think are more appropriate to his second sort, since we believe that our plant, which is one with undivided leaves and is Gerarde's second one, is the only one described by botanical writers, rather than, as he suggests, Gerarde's first.

This shows that, at this time, Ray believed there were only two kinds of wild lettuce other than *L. saligna*. Moreover, he clearly thought that his own second kind fitted Johnson's (1633) second description rather than his first.

On this evidence alone, Martyn (1727), Babington (1860) and others might perhaps be excused for having reached the conclusion that Ray's second large *Lactuca* was *L. virosa*; but Ray's subsequent works make it certain that it was in fact *L. serriola* forma *integrifolia*.⁶ Later writers, including Ewen & Prime (1975), seem not to have found the entry in the appendix of 1685 to Ray's *Cambridge catalogue* about his second lettuce, "*Lactuca sylvestris* 2. *Ger. emac.*". This may be translated thus:

Delete all the synonyms. In their place add '*Lactucæ sylvestris sive Endiviæ multis dictæ folio laciniato dorso spinoso varietas* [A variety of the wild Lettuce, or Endive as it is known to many people, with a lacinate leaf with a spiny underside] *J.B.*'⁷ This does not differ from Gaspard Bauhin's wild Lettuce with a spiny midrib [Bauhinus 1623, p. 123] in any respect other than in the leaves, which in it are not lacinate even on the stem. We now retract what we propounded about this plant in the Catalogue and we assent to Johnson's opinion.⁸

The last sentence had appeared already in Ray's *Catalogus plantarum Angliæ* (1670, 1677), in which he included three taxa of large wild lettuces. In this work Ray indicated the plants that grew wild around Cambridge ("*Agri Catabrigiensis alumnas*") by placing "C." before their names, and by this means he showed that he had recorded only two of the lettuces in Cambridgeshire and not "*The greater strong-scented wild Lettuce*". Even earlier, William How (1650) and Christopher Merrett (1666) had listed four wild lettuces including "*Lactuca sylvestris altera folio non laciniato, odore minus vehementi / vehemente* [The second wild Lettuce with the leaf not lacinate, with a less powerful smell]".

Presumably, by the time he wrote his retractions, Ray had seen *Lactuca virosa* for the first time, somewhere outside Cambridgeshire, and had realised that his second taxon in the *Cambridge catalogue* was not it. At any rate, in his later botanical works he distinguished three taxa of large annual wild lettuces⁹. Thus, in Ray's (1686) *Historia plantarum*, he listed "The greater strong-scented wild-Lettuce", "Cut-leaved wild Lettuce" and "Endive-leaved wild Lettuce"; each is equated with one of Johnson's three kinds, but they are reordered to put Johnson's second kind last. About this kind Ray commented:

Johnson, the emender of Gerarde, makes this species a variety of the first species [*L. virosa*]¹⁰, but J. Bauhin of the second [*L. serriola* forma *serriola*: see note 7], whom we also support, since it is less tall than the former and has smaller leaves and also a less fetid smell, at least to our nostrils. On the contrary, it does not differ in any character from the second species except in the shape of the leaves, which in this species are not lacinate even on the stalk. It grows in the same places as the preceding [i.e. second] species.¹¹

The three kinds are listed in the same order in the *Synopsis* (Ray 1690, p. 41), where the second (i.e. *L. serriola* forma *serriola*) is called "*Milder-scented, cut-leaved wild Lettuce*"; the third, which Ray here calls "*Lactuca sylv. folio non laciniato. Sylv. 2. Ger. emac.* [Wild Lettuce with the leaf not lacinate; the second wild one in the emended Gerarde.] *Endive-leaved wild Lettuce*", is described as growing "with the preceding one, of which it is a variety, but found more rarely".¹²



FIGURE 1. Woodcut of "Lactuca silvestris" from Book 1 of Jerome Bock's *Commentaries* (Tragus 1552), interpreted by Thomas Johnson (1633) in his edition of Gerarde's *Herball* as representing *Lactuca serriola* forma *serriola*.



FIGURE 2. Woodcut of "Thesion" from J. D'Aléchamps' *General History of Plants* (Dalechampi 1587), with uncut leaves which led Thomas Johnson (1633) to regard it as a representation of *Lactuca serriola* forma *integrifolia*. It is a redrawn and reversed image of Tragus' (1552) illustration of "Endiuia".

EIGHTEENTH AND EARLY NINETEENTH CENTURY CAMBRIDGESHIRE RECORDS

John Martyn (1727, p. 21) listed "*Lactuca sylvestris costa spinosa*" and "*Lactuca sylvestris major odore Opii*" in his account of the Cambridgeshire flora, equating the latter with "*Lactuca sylvestris* 2. *Ger. emac. Cat. Cant.* [i.e. Ray 1660]". He was thus the first of a long line of Cambridgeshire botanists to attribute a record of *L. virosa* to John Ray. In a working volume containing Ray's *Catalogus* and his own *Methodus* bound together, preserved in the Library of the Department of Plant Sciences of the University of Cambridge, he wrote out a list headed "1727 Desiderata", among them the three *Lactuca* taxa of Ray's *Catalogus* (including *L. saligna*); he later deleted many of the taxa listed here, but none of the three *Lactuca* taxa, which suggests that he himself never saw any of them in Cambridgeshire.

In his *Plantae Cantabrigienses* (essentially a table providing the Linnaean names for the plants recorded in Ray's *Catalogus* and its appendices and in John Martyn's *Methodus*), John's son, Thomas Martyn (1763a, p. 18), listed *Lactuca virosa*, its var. β and *L. saligna*. The table shows that he too regarded Ray's "*Lactuca sylvestris* 2." as *L. virosa*, while equating Ray's "*Lactuca sylvestris costâ spinosâ*" (the cut-leaved form of *L. serriola*) with its var. β .¹³ Thomas Martyn also annotated an interleaved copy of his father's *Methodus*, which is also in the Library of the

Department of Plant Sciences at Cambridge. On a blank page opposite "Lactuca sylvestris major odore Opii" he wrote "Near Clare hithe July 27 1759", but later he added a line linking this to "Lactuca sylvestris costa spinosa" instead. In a handwritten index of localities inserted at the end of the volume, he entered "Lactuca sylvestris costa spinosa" under "Ely" and "Lactuca sylv. maj. odore Opii" under "Clare hithe"; the latter has not been amended, but nevertheless it seems likely that Thomas Martyn never saw *L. virosa*. It may be significant that neither species is listed in his *Herbataiones Cantabrigienses* (Martyn 1763b), which consists of lists of plants under localities "comprehended in thirteen Botanical Excursions".

Richard Relhan included only two large lettuces in his *Flora Cantabrigiensis* (1785, 1802, 1820) – *L. virosa*, "Strong-scented wild Lettuce", and "*L. Scariola*" (a synonym for *L. serriola*), "Prickly Lettuce", the latter evidently forma *serriola* as it is equated with the second kind in Ray's *Synopsis* and with Johnson's "*L. sylvestris, foliis dissectis*". In 1785 the only locality given for the former was "*Burwell-pit*" and for the latter "*In the Isle of Ely*". In the later editions "*In the Road to Cottenham, by the second Bridge from Histon*" and "*Ditch near Denny Abbey*" were added for *L. virosa* and "*Hazenfield [Haslingfield], in the Lane leading into the Village from Cambridge*", "*Between Histon, and Rampton*", "*In a Lane leading from Long Stanton towards Swavesey*" and "*Burwell Pit*" were added for *L. serriola*. There seems little reason to doubt the localities for *L. serriola*, but what about those for *L. virosa*? The fact that Burwell Pit was later given as a locality for *L. serriola* suggests that the plant recorded there in 1785 may have been its forma *integrifolia*. The specimen of "*Lactuca Scariola*" figured in *English Botany* (Smith & Sowerby 1795, no. 268) was sent to Sowerby from "near Denny Abbey" by the Rev. John Hemsted, so the record from a ditch nearby may well have related to its unlobed-leaved form.¹⁴ Similarly, the locality by the road to Cottenham is suspiciously close to that between Histon and Rampton. As implied by Johnson (1633) and specifically noted by Ray (1690), the two forms of *L. serriola* often grow together, whereas, at least until the last few decades, *L. virosa* seems rarely to have occurred with *L. serriola*.¹⁵

C. C. BABINGTON AND HIS CONTEMPORARIES

Despite Babington's (1860) mistake in identifying Ray's (1660) "*Lactuca sylvestris* 2." as *L. virosa*, there is no doubt that he himself knew the latter, at least at Cherry Hinton: the only new locality for this species given in his *Flora of Cambridgeshire* is "Chalk-pit-close, Hinton", on his own authority, though the entry "*Burwell Pit!*; Relh." signifies that he claimed to have seen a specimen of Relhan's from Burwell Pit. The Cherry Hinton locality is supported by three specimens in *CGE*, the earliest collected by J. S. Henslow on 21 July 1825¹⁶ and the two others by Babington himself on 10 June 1846 and 3 August 1855. Amendments (from "*Scariola*" to "*virosa*") to the label of the earlier of the two specimens and to the record from "Chalk-pit close Hinton" in the manuscript from which Babington prepared his 1860 *Flora* (bound in three large volumes kept in the Library of the Cambridge Department of Plant Sciences) suggest that Babington had some difficulty in distinguishing the larger *Lactuca* species. The only other nineteenth century specimen from Cambridgeshire in *CGE* was collected by James Backhouse (1825–1890) at "Elms n^r. Wisbeach" (i.e. Elm, near Wisbech) in 1844.¹⁷

Babington (1860) gave three new localities for *L. serriola*.¹⁸ He also included a further entry of "*Burwell Pit!*; Relh." and a record from "*Denny Abbey*" based on Hemsted's "specimen figured in Eng. Bot. [Smith & Sowerby 1795, no. 268]" (as well as repeating Relhan's record of *L. virosa* there). Perring *et al.* (1964) suggested that in Babington's time *L. serriola* was "as rare as *L. virosa*".¹⁹ The four nineteenth century specimens from Cambridgeshire in *CGE* are all of forma *serriola*.²⁰

TWENTIETH CENTURY AUTHORS

Evans (1939) recorded *L. virosa* as "Very rare; probably extinct" in Cambridgeshire. After quoting a supposed record of Ray's "from Ely"²¹, Relhan's records and Babington's (1860) record from "Hinton", he added: "We have no later record." He gave a number of localities for *L. serriola*, "generally close to towns and villages".

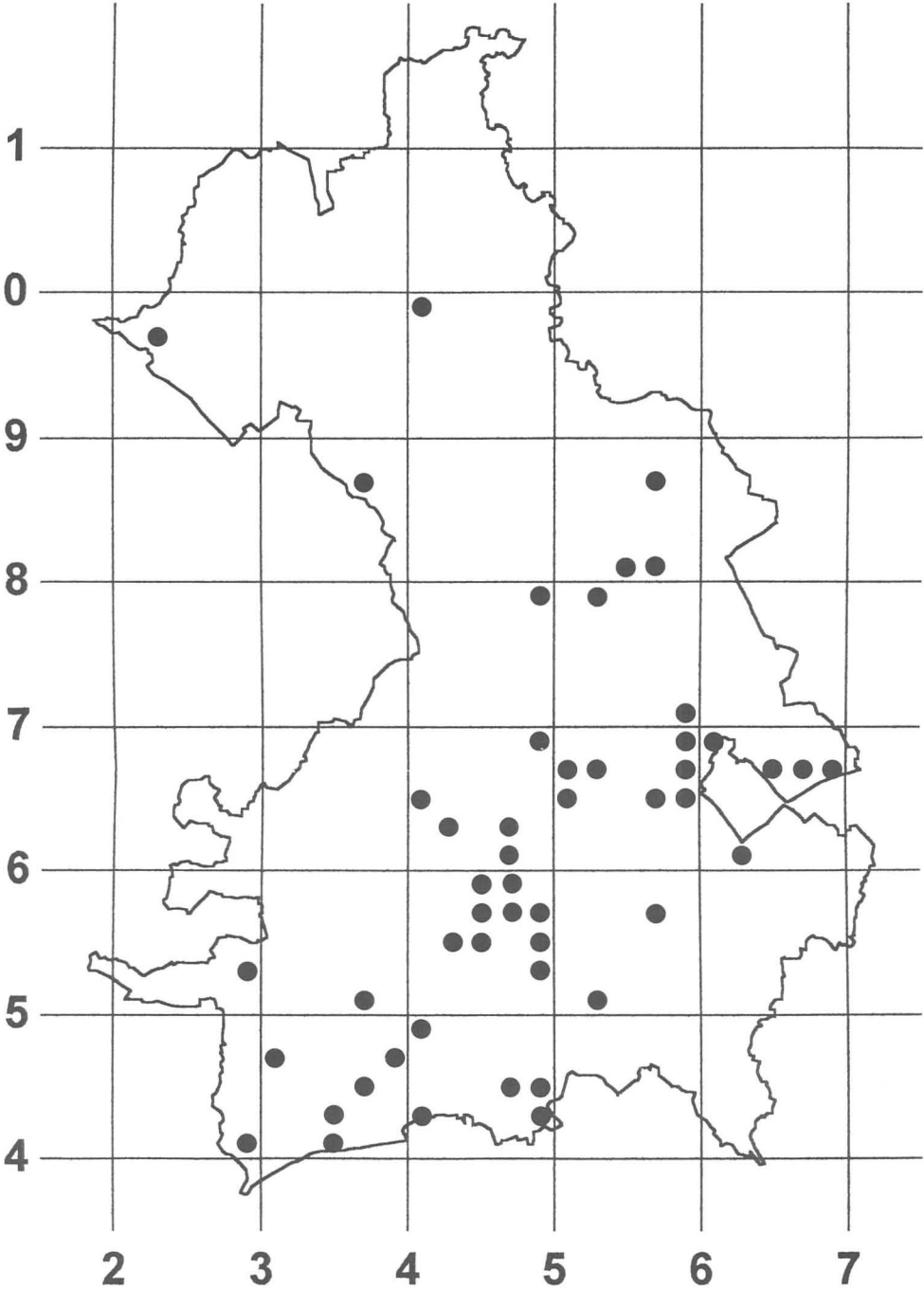


FIGURE 3. Map of Cambridgeshire (v.c. 29) showing post-1986 tetrad records for *Lactuca virosa*. Most of the county is in TL (=52) but the northern part is in TF (=53).

Perring, Sell & Walters (1964) repeated the error that John Ray recorded *L. virosa* in Cambridgeshire²² but they treated the species as extinct in the county, giving 1855 as the last certain date for it.²³ However, Crompton & Whitehouse (1983) recorded that "it was certainly near the gas works during the 1940–1950s, and it is still to be found on wasteland in the Newmarket Road area and along nearby railway lines". Perring *et al.* regarded *L. serriola* as "now a frequent weed of roadsides and disturbed ground throughout the county" and suggested that a "rapid spread" had taken place "between 1930 and 1945", adding: "In recent years it may have declined again."²⁴ They did not mention forma *integrifolia*, but one at least of the authors was well aware of its existence (P. D. Sell, pers. comm.), despite their misleading comment that "the more nearly simple leaves of *L. virosa* are usually sufficient to distinguish it".²⁵

DISCUSSION

The confusion occasioned by the failure of most British Floras of the nineteenth century to recognise that *L. serriola* can have simple leaves, so well described by Carter & Prince (1982), has led to some uncertainties about the past status of this species and *L. virosa* in Cambridgeshire, as elsewhere in Britain; but, in its case, the belief that *L. virosa* was known to Ray has until now further clouded the picture. It is impossible to say with certainty when this species was in fact first seen in the county, but it is not improbable that in the nineteenth century it occurred only at Cherry Hinton (TL/48.56) and Elm (probably TF/46.06 or 47.06) and that it then disappeared until the 1940s. At any rate the first certain record for Cambridgeshire was made by the Rev. Leonard Jenyns at Chalkpit Close, Cherry Hinton, on 12 August 1824 (see note 16). Previously more characteristic of "naturally unstable habitats, such as sand-dunes and cliff-ledges" and "frequently found on chalk and oolitic limestone" (Prince & Carter 1977, p. 336), *L. virosa* is becoming more widespread in Britain in ruderal habitats like those long colonised by *L. serriola*.¹⁵ Since about the 1970s it has increased substantially in Cambridgeshire, especially on the margins of dual carriageways (e.g. TL/3.4, 4.4 and 6.6) and on waste ground in Cambridge (TL/4.5). Figure 3 shows post-1986 records for 16 out of the 30 hectads that include a substantial area in Cambridgeshire and 50 out of some 575 tetrads in the county.

L. serriola has increased even more markedly both in southern Britain and in Cambridgeshire, though with an earlier start. Recording for *Atlas 2000* shows its presence now in every hectad in and around Cambridgeshire. Since 1986 records have been made in 201 tetrads in Cambridgeshire, but these probably do not represent its complete distribution. What is particularly puzzling is why its forma *integrifolia*, although already present at the time of Johnson and Ray, was formerly apparently rarer than the nominate cut-leaved form, when now it is by far the commoner form. By the 1950s Kent & Lousley (1954, p. 176) wrote of it (as *L. serriola* L. var. *dubia* (Jord.) Rouy): "This is the aggressive entire-leaved form, possibly of adventive origin, which has spread so rapidly in the London Area in recent years. Plants with runcinate leaves occur occasionally." In Cambridgeshire, P. D. Sell (pers. comm.) has suggested that forma *serriola* is native in the Fens and forma *integrifolia* is a relatively recent immigrant, and Beckett & Bull (1999, p. 201) apparently regard this as proven; though it is true that many localities for the former are in the Fens (including those for all four nineteenth century specimens in CGE²⁰), this theory seems too simplistic, particularly since mixed populations often occur.

Prince & Carter (1977, p. 334) suggested that, "although there are no absolute barriers to natural cross-pollination" between the two forms, "it is nevertheless an extremely rare occurrence". Perhaps there are environmental factors that favour the predominance of one form or the other in particular circumstances. Prince & Carter also wrote (p. 337): "Whereas the pinnatifid-leaved plant is the less common variant in Britain (having a particularly restricted south-eastern distribution), on the Continent it is the more abundant of the two." My own observations suggest that this generalisation is too sweeping: in much of western France the position is similar to that in south-east England, and forma *serriola* certainly occurs in Wales. Could a more continental climate favour the predominance of forma *serriola* and a more oceanic one that of forma *integrifolia*? This might help to explain the former predominance of forma *serriola* in the Fens (with a more continental climate than most of Britain), but the present predominance of forma *integrifolia* in urban and roadside habitats is harder to account for: although the extremes of winter climate are buffered by the warming effect of housing and traffic, these habitats are hotter and drier in summer.

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My interest in *Lactuca* taxa was kindled by reading Prince & Carter (1977), when it suddenly became clear why I had experienced such difficulty in identifying these plants as a schoolboy in the Thames Valley. In a nice piece of symmetry, their paper appeared in the issue of *Watsonia* dedicated to the memory of J. Edward Lousley, in which Duggie Kent described *Rumex* \times *lousleyi* and provided a bibliography of Lousley's published works. I am very grateful to the late Dr D. E. Coombe for encouraging my interest in *Lactuca*, to Dr S. M. Walters for supplying the quotation at the head of this paper, to Mrs G. Crompton for help in tracing Cambridgeshire records, to the staff of Cambridge University Library's Rare Books and Manuscripts Rooms for their courteous service, to Dr D. Briggs, Mr P. D. Sell and Mrs G. Murrell for their kind assistance in Cambridge University Herbarium (CGE), to Mr R. Savage for similar help in the Library of the Department of Plant Sciences, to Dr C. D. Preston for reading a draft of this paper and making helpful comments, and to Mr G. M. S. Easy and Mr D. A. Wells for supplying many of the records for Figure 3. I also thank the Syndics of Cambridge University Library for the use of illustrations from their books for Figures 1 and 2 and Mrs J. Gaunt for scanning them and cleaning them up for printing.

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FOOTNOTES

- 1 The second of the names that Johnson gave to the “second wild Lettuce” of 1632 was the name he had given to the plant he found on the Isle of Sheppey in 1629 and a shortened version of the long “title” from the *Adversaria* given here to the first sort (i.e. *L. virosa*).
- 2 “*Lactuca sylvestris laciniata minima nondum descripta. The least cut-leaved wild Lettuce. This was found on a bank and in a ditch by the side of a kind of drove or lane leading from London road to the river, just at the water near a quarter of a mile beyond the spittle-house end* [“near the southern end of the present Coe fen” according to Ewen & Prime (1975, p. 78)].” Ray later (1670, p. 37) realised that this plant had already been described by Gaspard Bauhin (Bauhinus 1620, p. 68) as “*Chondrilla viscosa humilis*”.
- 3 *L. serriola* forma *serriola* now occurs with forma *integrifolia* by the roundabout where A142 (Witchford Road) leaves A10 (the Ely bypass) (TL/527.794).
- 4 “Johnsonus apud Ger. duo facit genera lactucae sylvestris odore opii, quae apud alios scriptores existimat confundi; & nomina autorum quae nos secundae ejus speciei magis propria putamus attribuit primae; siquidem nostram quae foliis est indivisis & 2 Ger. solam à botanographis descriptam arbitramur, non prout ille vult, primam Gerardi.”
- 5 “Johnson after Gerard makes two kinds of lactuca sylvestris by the odour of the opium (= milky juice) which he considers are confused by other writers; and he attributes the name given in his authors to the first which we consider more appropriate to the second species. We think that our kind, which has undivided leaves (i.e. the second of Gerard) is the only one described by botanical writers and not the first as he wishes. [*This separation is not accepted today.]”
- 6 Babington (1860, p. 141) further confused matters by attributing Ray’s locality for his first plant (i.e. *L. serriola* forma *serriola*) to this, his second plant, which Babington thought was *L. virosa*.
- 7 This is based on a sentence in Jean Bauhin’s account of *L. serriola* (Bauhinus *et al.* 1651, p. 1003): “Huius Lactucae quaedam mihi species obseruata folio non laciniato etiam per caules. [I have observed a certain kind of this Lettuce with the leaf not lacinate even along the stems.]” On the next page Bauhin states that at Lyons he had observed this species “with its earlier, fairly long leaves [in February and March] not lacinate” (“Ibidem obseruauit foliis non laciniatis prioribus longiusculis.”).
- 8 “*Lactuca sylvestris* 2. Ger. *emac*] *Dele synonyma omnia. Horum loco adde* *Lactucae sylvestris* sive *Endiviae* multis dictae folio laciniato dorso spinoso varietas *J.B.* Hæc non alia in re differt à *Lactuca sylv.* costa spinosa *C.B.* quam foliis quæ ei ne in caule quidem laciniata sunt. Quæ de hac planta in Catalogo tradidimus jam retractamus & in Johnsoni sententiam concedimus.” (Ray & Dent 1685, pp. 22–23). Unlike Johnson (1633), Ray evidently did not regard “*Endivia*” and “*Thesion Dalechampii*” as reliable synonyms for “*Lactuca sylvestris* 2.”
- 9 In fact they are often biennial (see INTRODUCTION).

- 10 This is not actually stated by Johnson (1633) but is implied by the order in which he presented the taxa and by his statement that his last taxon "hath not altogether so strong a sent of *Opium* as the two former".
- 11 "Hanc speciem Johnsonus Gerardi emaculator primæ speciei varietatem facit; J. Bauhinus secundæ, cui & nos suffragamur; siquidem illâ humilior est, & foliis minoribus, odore etiam minùs gravi, nostris saltem naribus: Non alia autem in re à secunda differt quàm foliorum figurâ, quæ huic ne in caule quidem laciniata sunt. Iisdem cum priore locis provenit." (Tomus I, Lib. V, Cap. I: p. 222).
- 12 "Cum priore, cujus varietas est, sed rariùs." Nowadays it is by far the commoner form in Britain (see DISCUSSION). Prince & Carter (1977, p. 337) are wrong in saying that Ray (1690) "described them as altogether different plants".
- 13 This *should* be *L. serriola* forma *integrifolia*, since Linnaeus classified this taxon as var. β of *L. virosa* in 1753; however, in 1756, when Linnaeus first described *L. serriola*, he made forma *integrifolia* its var. γ (Carter & Prince 1982).
- 14 Sowerby's engraving shows a plant with incised lower leaves but dentate upper cauline leaves and so may have been drawn from specimens of both forma *serriola* and forma *integrifolia*.
- 15 Clapham (1952) described *L. virosa* as a "sub-Mediterranean species, associated in C. Europe with . . . thermophilous plants", but *L. serriola* as "associated with steppe species". Preston & Hill (1997, pp. 38–39, 102, 104) classified *L. virosa* as "Suboceanic Southern-temperate" and *L. serriola* as "Eurosiberian Southern-temperate" but widely naturalised.
- 16 The earliest record from this locality appears to be that of the Rev. Leonard Jenyns in his journal for 12 August 1824 (Crompton 1997): "Walked this morning with Profess. Henslow to Hinton nr Cambridge. In Chalkpit Close – ... The great lettuce – *Lactuca virosa*, Of the Lettuce we could not find more than one specimen though we made the most diligent search."
- 17 The sheet bears a printed label "EX HERB. JAMES BACKHOUSE, JUN." and a later stamp "Ex Herb. S. H. Bickham" (1841–1933), and the specimen was identified as "*Lactuca scariola*" and "*Lactuca Scariola*" (amended in pencil in the hand of S. M. Walters to "*L. virosa*"). Despite mentioning this specimen, Perring *et al.* (1964) did not include TF/4.0 among the grid squares for *L. virosa*; nor was this square listed by Crompton & Whitehouse (1983). Recently Peter Sell has determined this specimen as "forma *lactucarii* (Lamotte) P. D. Sell" (see INTRODUCTION). He has determined Henslow's specimen from Cherry Hinton as forma *virosa*, but both of Babington's as forma *lactucarii*.
- 18 "Shuckburgh Castle, Newmarket Heath", on his own authority, "Grunty Fen", attributed to William Marshall, and "Ely", attributed to Henslow. An additional record, "*Burrell's Walk, Cambridge*", is attributed to Relhan.
- 19 After giving Hemsted's locality, J. E. Smith wrote: "It grows among rubbish and on waste ground in other parts of that country, but rarely elsewhere," (Smith & Sowerby 1795, p. 268). Leonard Jenyns clearly regarded *L. serriola* as a rarity; in his journal for 1 August 1827 he wrote: "... today made an expedition to Grunty Fen. In my return – observed, & gathered with much satisfaction for the first time in my life, the prickly Lettuce (*Lactuca scariola*) which grew somewhat sparingly on a high ditch-bank edging the fen very near its entrance from Ely thro' the lanes." Jenyns' 'Journal of Natural History', covering the years 1823–1846, is now among the Alfred Newton papers in Cambridge University Library. This entry was not included by Crompton (1997).
- 20 They are labelled "Streatham Cambridgeshire" (C. M. Lemann, 22.07.1831), "edge of Grunty-fen Cambridgeshire" (J. S. Henslow, 27.08.1833), "Ely, Cambs" (J. S. Henslow, 27.08.1833), perhaps from the same site, and "Roswell Pits, Ely" (J. E. Little, August 1878). The date of "the oldest specimen in CGE" given by Perring *et al.* (1964) – "from Ely in 1853" – must be a mistake for 1833; but the Stretham specimen is older. The earliest Cambridgeshire specimen of forma *integrifolia* in CGE was collected at Barnwell in September 1937 by H. Gilbert Carter and identified by him as "*Lactuca Scariola*".
- 21 Evans was here maintaining an error of Babington's; see note 6 above.
- 22 The "pre-1930" and "not since 1949" records for grid square TL/5.7, in Perring *et al.* (1964) and in Crompton & Whitehouse (1983) respectively, suggest that these authors were also perpetuating Babington's incorrect application of Ray's (1660) locality near Ely to this species.
- 23 This date was presumably based on Babington's specimen in CGE labelled "Chalk-pit, Cherry Hinton, Cambridgeshire."
- 24 Even if this was ever true, today it is frequent in Cambridgeshire. Crompton & Whitehouse (1983) wrote: "Many new records yet it is reported to be declining."
- 25 Not only does forma *integrifolia* of *L. serriola* have nearly simple leaves, but var. *lactucarii* of *L. virosa* has pinnatisect cauline leaves (see INTRODUCTION).

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