

The introduction and persistence of *Salix* × *laurina* Sm. in Ireland

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ABSTRACT: New records indicate that *Salix* × *laurina* is more widespread in Ireland than previously thought. The weight of historical evidence suggests that the surviving shrubs are the result of nineteenth century introductions.

INTRODUCTION

Salix × *laurina* Sm. has been recorded reliably in Ireland only as an introduced female clone, believed to be the hybrid *Salix cinerea* ssp. *oleifolia* × *Salix phylicifolia* (Stace, 1975). It forms an attractively leafy hedgerow shrub and according to Wade (1811) ‘grows in an upright wand-like form when young and is known for its dark mahogany-coloured stems, and the upright position of its leaves’. The leaves have an almost entire, often elliptic outline, and are lustrous deep green above and glaucous below. They are glabrous or subglabrous, except for short hairs along the midrib and veins on the lower surface. Where they form a sparse cover, the hairs are predominantly white but they may include a number which are rust-coloured.

As a relatively striking and vigorous clone, *S.* × *laurina* became widely dispersed in nineteenth century botanical collections in western Europe, probably from an original source in northern Britain (Linton, 1913). It was first recorded in Ireland by Wade (1811) in the Royal Botanic Gardens at Glasnevin. It was last catalogued in the Royal Botanic Gardens Arboretum Book (unpublished) at Glasnevin, in which entries were made between 1897 and 1907 (E. C. Nelson pers. comm., 1994), before it was lost in cultivation.

This paper presents a number of newly discovered records of *S.* × *laurina* and examines the historical evidence of their dates of introduction. Nomenclature follows Stace (1991).

IRISH RECORDS

There are nineteenth century records of *S.* × *laurina*, notably by David Moore from County Londonderry and County Antrim, and less certainly by J. Drummond from County Cork (Mackay, 1836; Moore and More, 1866; Hackney, 1992). The continued presence of *S.* × *laurina* in Ireland was unconfirmed until the discovery of what was apparently the same clone by Donal Synnott at Tinure, Co. Louth (Synnott, 1979, 1983). Later it was also recorded by Paddy Reilly in The Phoenix Park, Co. Dublin (Reilly, 1993). Artificial hybrids of *Salix cinerea* ssp. *oleifolia* × *Salix phylicifolia* were raised by Donal Synnott and lent support to the view that the original clone was derived from these species (Synnott, 1983).

Additional living material from County Londonderry was given to the author by John Harron (pers. comm., 1991). Subsequently other sites came to light in a survey of hedgerow willows by the author. These additional sites extend the recorded range of *S.* × *laurina* to a further four Irish vice-counties :-

County Londonderry: Macosquin River near Ballystrone Road (collected John Harron 1986, det. D.H.R.): approx. 30 shrubs scattered along the Macosquin River for 2.5 km above Macosquin (from C 824286 to C 798286: D.H.R. 1991).

County Tyrone: approx. 10 shrubs close to former artificial river channels at the Southwest corner of Envagh Lough (H 340780: D.H.R. 1992).

Fig. 1. A specimen of *Salix* × *laurina* collected by David Moore near Coleraine, Co. Derry (DBN).

County Sligo: approx. 10 shrubs in a boggy hollow at Ballinphull, scattered in roadside hedges and by drains in several fields (G 615461 and G 615456: D.H.R. 1993).

County Meath: approx. 10 shrubs on the banks of the River Boyne at Oldbridge, where the lowest canal section of the Boyne Navigation enters the River through Tiernan's Lock (O 052755: D.H.R. 1994).

Salix × *laurina* grew for the most part where no trees or shrubs had been planted within living memory. At Macosquin the annual rings of a fallen stem revealed an age when living of at least 50 years with a stem diameter of approx. 17 cm. The stem had apparently died ca. 1980. The age of individual stems gave only the most conservative estimate of the time that *S.* × *laurina* may have been present, however, because of the facility with which it regenerates vegetatively.

At all of the sites the oldest stems were fallen. The fallen stems often continued to grow from the original branches or else produced several discrete upright stems, the old stem eventually decaying. Elsewhere stems were collapsed outwards, allowing new growth from the base and building into shrubs with up to 30 stems spreading over 20 m. Shrubs in hedges were coppiced or had been increased by cuttings.

In such circumstances, dates of introduction could only be estimated from what is known of the landscape history of the sites.

LANDSCAPE HISTORY.

County Londonderry.

At Macosquin the distribution of *S.* × *laurina* coincided with a stretch of the Macosquin River formerly occupied by a series of water driven mills (O.S. County Londonderry Sheet 7, 1830). These were mainly scutch mills housed in simple thatched buildings, set in isolated rural locations and reached by farm tracks across the fields. In addition, there was a small settlement cluster at Macosquin with bleach mills, a corn mill, a scutch mill and also a 'thrashing mill' (O.S.Memoir, 1835). *S.* × *laurina* was recorded in the townlands of Lower Balteagh, Larden and Ardvarness near to former scutch mills: in the townland of Camus Macosquin Glebe near to the former thrashing mill; and in the intervening townlands of Ballystrone and Lower Kiltinny. It grew either by the river, in adjacent field boundaries or on the banks of former mill dams and races.

During the later nineteenth century all of the elements of the flax industry ultimately disappeared from their rural locations. The thrashing mill and bleach mill in Macosquin were unoccupied as early as 1835 (O.S. Memoir 1835). Water driven scutch mills were successful for longer (Griffith, 1859) but their numbers in Northern Ireland declined steadily after ca. 1867 (Gribbon, 1969). Along the Macosquin River they had ceased to operate by the beginning of the twentieth century, except for that in Macosquin which was worked as late as 1945 (pers. comm., Robert Calvin former flax grower, Ballystrone 1995 and H. D. Gribbon 1995). Little now remains apart from the foundations of walls, grassed over or invaded by riverside scrub.

The greatest number of exotic trees and shrubs around Macosquin was introduced during the peak of prosperity in the rural linen industry (PRONI, 1984), especially in the 20 years preceding the Statistical Survey of County Londonderry (Sampson, 1814). The resulting shelter belts and plantations once extended more or less continuously over the 5 km from Macosquin to Coleraine. The distribution of *S.* × *laurina* lay adjacent to but scarcely overlapping the area of plantations, suggesting that it was introduced as a hedge plant rather than in block plantings of taller trees. It was planted by many different landowners, and it is not known how it came to be dispersed in this way. A herbarium specimen (Figure 1)

collected by David Moore nevertheless confirms that *S. × laurina* was indeed present by 1837 at a location 'near Coleraine'.

County Tyrone

At Envagh Lough *S. × laurina* was recorded in a remote part of the Abercorn estate at Baronscourt. The surroundings of the Lough included a peat bog, sloping down to the flood plain of the Fairy Water and interrupted by isolated drumlins. When the area was actively managed, Envagh was devoted to the serious estate pursuits of hunting, fishing and shooting. By 1833 a road led to a gamekeeper's house near to the Lough. Two artificial channels were cut to provide an inlet and outlet through which the Fairy Water was diverted to flow through the Lough (O.S. County Tyrone Sheets 24 and 25, 1833). At some date a mixture of shrubs was planted along the latter channels, providing cover where wildfowl could be encouraged by feeding. The planting included a selection of species suited to poorly drained soils with *Cornus sericea*, *Prunus padus*, occasional *Rhamnus catharticus*, several *Salix* species and *Viburnum opulus*. Amongst these shrubs *S. × laurina* survived close to where the channels join the Lough.

Estate correspondence from ca. 1790 - 1810 refers to the planting of willows around the lakes at Baronscourt, though without reference to Envagh Lough (Gebbie, 1972). Later in the nineteenth century the planting of *S. × laurina* appears less probable: estate policies were revised in the aftermath of the famine, and ornamental planting and agricultural improvement were superseded by afforestation for timber production (Abercorn Papers, 1866). At Envagh, the Waterhill Plantation was established during the 1850's on the drier sites around the Lough (O.S. County Tyrone Sheet 24, 1855; Sheet 25, 1854 and Griffith 1858). Subsequently management here fell into general neglect. The last large timber was extracted over 40 years ago (Fred Walker, retired forester, Baronscourt, pers. comm., 1997). Soon afterwards the Fairy Water was diverted back along a natural course and the gamekeeper's house was demolished. Natural regeneration was left to develop the low woodland which now obscures the Lough.

County Sligo

At Ballinphull the sites with *S. × laurina* lay in an area of small poor fields in the townlands of Doonfore and Ballinphull, formerly part of the Gore-Booth estate at Lissadell. Throughout the nineteenth century the estate tried with only limited success to resolve the intractable problems of small uneconomic holdings. Much of the present day pattern of fields is a legacy of these attempted improvements.

In Doonfore, the field pattern derives from the 'squaring' of the townland ca. 1880, in which the estate embarked on the systematic reordering of leases, settlements and field systems (O.S. County Sligo Sheets 4, 5, 7 and 8, 1837 and 1885-87). Two earlier farm clusters were partly rebuilt as a dispersed linear settlement, creating compact farm holdings of between 4 and 6 acres (Sligo Chronicle, 1881). The field boundaries were almost completely redrawn within a striped pattern. A nursery on the estate was able to supply shrubs and trees for hedging. Roads were extended, serving the dispersed farms and also cutting across a small boggy hollow on the boundary of Doonfore and Ballinphull. In this hollow isolated shrubs of *S. × laurina* were recorded in hedges on both sides of the new road and by an earlier drain where it met the road.

Ballinphull lies closer to the former estate demesne. It was divided into larger fields, marked out in a more piecemeal pattern which was established before 1837 (O.S. County Sligo Sheets 4,5, 7 and 8, 1837). Here *S. × laurina* was recorded by a roadside drain, possibly

representing an earlier introduction than at Doonfore.

In both townlands the nineteenth century field pattern was subsequently modified mainly by neglect, marked in places by the gradual decay of some abandoned boundaries, and elsewhere by the sprawl of untrimmed hedgerows or the invasion of the wetter fields by native *Salix* scrub.

County Meath

At Oldbridge *S. × laurina* was recorded adjacent to lock gates, on the slip island separating the higher level of the canal from the parallel course of the River Boyne. The lock gates were first built by the Boyne Navigation Company in 1750, and later completely rebuilt between 1834 and 1837. At some date, after the rebuilding of the lock and before 1909, a small enclosure on the island opposite the lock was planted with trees or shrubs (O.S. County Meath Sheet 20, 1836 and 1909). The canal was never very successful and the Company went into liquidation in 1913. It finally closed to all traffic by 1923, although the former lock-keeper's house was maintained and changed hands repeatedly (Trench, 1987, and pers. comm., 1995).

Within the enclosure a narrow strip on the higher, canal side of the island was dry enough to serve as an annexe to the garden. The lower, river side of the enclosure was subject to inundation by the tidal River Boyne, and here *S. × laurina* and other willows grew in a wild tangle of fallen trees and shrubs.

County Louth

At Tinure *S. × laurina* was recorded by Synnott (1983) in fields on both sides of a bog road. Fields with substantially their present day boundaries were recorded in 1835 (O.S. County Louth Sheet 21, 1835). Griffith (1854) records the fields as part of a moderately sized farm holding of 27 acres leased by Peter Curran from J. H. Smith Barry of Fota, Co. Cork. Paddy Byrne of Tinure (pers. comm., 1994) recalls his friendship with the son of the same Peter Curran. He believes that Peter Curran (died 1930, Monasterboice graveyard) planted willows around the farmhouse before 1880 and that these were spread by cuttings taken by neighbouring farmers, whilst the original trees were cleared.

This account was consistent with the distribution of *S. × laurina*. It was present as isolated shrubs immediately in front of the farmhouse where the ground sloped down into the bog, surviving at sites with a permanently high water table on the edge of invading alder. On the south side of the road *S. × laurina* was recorded in hedges near to a small pond, intended at one time to attract wildfowl and largely overgrown by other willows.

County Dublin

In The Phoenix Park *S. × laurina* was recorded in the Furry Glen, planted where the small stream enters the Glen Pond. No record of the planting date is known (P. A. Reilly pers. comm., 1998), but The Phoenix Park has a long history of planting through the nineteenth century to the early years of the twentieth century (J. McCullen, 1993).

CONCLUSIONS

Salix × laurina was recorded at sites which were once associated with a disparate collection of late eighteenth and nineteenth century rural activities. A common element in the history of all of the sites was an interest in controlling the role of water in the landscape, whether through the construction of lakeshore channels, mill dams and aces, a canal lock, an

ornamental pond or the embanked roads and drains of bog margins. If *S. × laurina* was introduced when these schemes were active, then circumstantial evidence suggests that, at the latest, it was introduced at Macosquin before 1837, at Envagh Lough before 1854, at Oldbridge soon after 1837, at Ballinphull and Tinure by 1880 and in The Phoenix Park by the beginning of the twentieth century.

The latter activities were marginalised by economic change, and nineteenth century innovation gave way to twentieth century neglect. This provided protection from disturbance, during which many of the sites were overgrown by native or introduced willows. *Salix × laurina* persisted amongst the other shrubs or trees, often regenerating from fallen stems.

DISCUSSION

The late eighteenth and early nineteenth century saw the introduction of a wide range of non-native trees and shrubs into Ireland (Lamb and Bowe, 1995; McCracken, 1971; Neeson, 1991). Willows attracted attention as a special case (Wade, 1811), recognised as well adapted to wet sites but not generally included in mixed plantations. The planting of willows was encouraged in the late eighteenth century by the Royal Dublin Society through annual premiums awarded for the largest areas of 'Bog planted with Sallows' and the 'Planting and Cutting of Sallows' (Berry, 1915) and later by the Royal Botanic Gardens at Glasnevin where the Mill Field was developed in the 1830's to supply willow sets free of charge (Nelson and McCracken, 1987). Throughout this period there was an enthusiastic search for new species and cultivars, and *S. × laurina* made an appearance as an item of the innovating horticultural fashion of the times.

There is no evidence that *S. × laurina* was widely planted in Ireland, and Wade (1811) dismissed it as unsuitable for basket work. It may have been introduced principally through the agency of a few of the larger estates. Of the five known sites with *S. × laurina*, two were once a part of estates large enough to establish extensive plantations between 1790 and 1830, at Baronscourt and Lissadell, that at Macosquin was adjacent to estate planting of the same period at Ardvarness, and Tinure and Oldbridge may have been influenced indirectly by the former Foster estate of Oriel Temple at Collon, County Louth.

Collon at the end of the eighteenth century supported the largest collection of hardy trees and shrubs in Ireland: the collection was the work of John Foster, who at the same time played a key role in the establishment of the Royal Botanic Gardens at Glasnevin (Nelson and McCracken, 1987). He also encouraged his employee, John McEvoy, to establish his own nursery on the Collon estate. The nursery traded until ca. 1920 (King, 1994). Foster made his collection freely available both to Glasnevin and to McEvoy (McCracken, 1967). Tinure and Oldbridge were within a 5 km radius of McEvoy's nursery, an area distinguished by other hedgerow introductions including *Acer campestre*, *Quercus cerris* and *Viburnum lantana* (Synnott, 1979).

Overall *S. × laurina* grew with a wide variety of other introduced *Salix* (Table 1). Amongst these *Salix × calodendron* and *Salix myrsinifolia* were unexpected enough to suggest that they were planted at the same time, although both are more widely planted than *S. × laurina* itself. *S. × calodendron*, like *S. × laurina*, is believed to have spread from nurseries in Britain, becoming dispersed in botanical collections in western Europe as a vigorous female hybrid clone (Meikle, 1952). *Salix myrsinifolia* is an exceptionally variable species, with numerous forms distinguished by nineteenth century taxonomists and adopted by botanical collections (Linton, 1913). As a native plant *S. myrsinifolia* is widespread in the

north of Britain (Stewart et al., 1994) but rare in Ireland where it is restricted to a few sites in the Northeast (Harron, 1992). The occurrence of these two willows together with *S. × laurina* suggests material sourced from nurseries in Britain. There are comparable and broadly contemporaneous records from Warwickshire of *S. × calodendron*, *S. × laurina*, and *S. myrsinifolia* at Shrewly Pool in 1873, *S. × laurina* persisting at least until 1938 (Cadbury et al., 1971).

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	Macosquin	Envagh	Ballinphull	Oldbridge	Tinure	The Phoenix Park
<i>Salix × laurina</i>	X	X	X	X	X	X
<i>Salix × calodendron</i>		X	X	X	X	
<i>Salix alba</i>		X	X		X	X
<i>Salix purpurea</i>	X		X		X	
<i>Salix fragilis</i> var. <i>russelliana</i>			X	X		
<i>Salix myrsinifolia</i>			X	X		
<i>Salix viminalis</i>		X		X		
<i>Salix pentandra</i>	X				X	
<i>Salix × mollissima</i> nothovar. <i>undulata</i>	X					
<i>Salix × tsugaluensis</i>	X					
<i>Salix udensis</i>	X					
<i>Salix × stipularis</i>		X				
<i>Salix × sericans</i>			X			
<i>Salix × forbyana</i>			X			
<i>Salix daphnoides</i>			X			
<i>Salix triandra</i>				X		
<i>Salix × sepulcralis</i> nothovar. <i>chrysocoma</i>						X

Table 1. Salices found growing at sites with *Salix × laurina*