

South Lancashire Botanists and Books

Sometimes *Floras* are written, almost incredibly, by a single botanist, often technically "an amateur", who will be responsible for most of the work. Others are produced by small groups, yet others by committees of enthusiasts. In north-west England the mix of authors is possibly more remarkable than anywhere else, and this is reflected in the history of the books covering South Lancashire, v.c.59.

The first published records of plants from v.c.59 are believed to be those in Gerard's Herball, dating from 1597. Cheshire-born John Gerard (1545-1612) became Lord Burghley's superintendent of gardens in the Strand, London and at his country estate Theobalds, Hertfordshire. He was later appointed as curator of a physic garden belonging to the Royal College of Physicians. More records were added to the second edition of the Herball by its editor, Thomas Johnson (c.1600-1644) who died in the Civil War.

The earliest known botanical expedition to Lancashire was made by the Essex curate John Ray (1627-1705), recognised by Oliver (1913) as one of the 'makers of English botany' who incorporated several records from Lancashire – such as the Cloudberry, *Rubus chamaemorus* - into his *Catalogus Plantarum Angliae* (1670, second edition 1677). Some of his manuscript notes of Lancashire records have been preserved in a copy of his Synopsis kept at Oxford University. A little-known fact is that one of Ray's major collectors in northern England, Thomas Willisel (c.1620-c.1675) was almost certainly born at Briercliffe near Burnley. His activities as a collector for the Royal Society; Robert Morison (1620-1683) of Oxford; Christopher Merrett (1614-1695) of the London College of Physicians' Museum and Library and William Sherard (c.1658-1728) made him undoubtedly Lancashire's most successful plant collector of the 17th century. His botanical activities were however curtailed by the Civil War, in which he served under Cromwell as a soldier. Some of his records were published in 1666 in Christopher Merrett's *Pinax Rerum Naturalium Britannicarum* and thus antedate Ray's publications.

The Pennines and coastal sand dunes were soon recognised as harbouring rare and unusual plants, and other explorers who passed through Lancashire on their travels included William Curtis (1746-1799), author of *Flora Londinensis* (1775-1798) and founder of the long-running periodical the *Botanical Magazine* (1787-). His destination was the Ingleborough area but he almost certainly travelled through Ribblesdale en route. A list of the plants growing around Ingleborough was published as a supplement to *Flora Londinensis*, but it contains no records which can be placed with certainty in v.c.59.

Another mid-18th century traveller was the Yorkshire naturalist Thomas Bolton (1722-1778) who visited Pendle Hill and the Burnley area while collecting plants for the Leicestershire botanist Richard Pulteney (1730-1801). Letters from Bolton to Pulteney containing an account of his travels have been preserved in the Linnean Society of London. His younger brother James Bolton (1735-1799), better known as the Halifax mycologist, also visited Lancashire on several occasions and botanised around Winwick near Warrington: near Dunkenhalgh and Padiham, and on the wet heaths and dunes north of Liverpool in 1783. The banker and solicitor William Roscoe (1753-1831), founder of the Liverpool Botanic Garden, who helped organise the first open art show in Liverpool at which Bolton exhibited two of his botanical paintings, was thus indirectly responsible for his attendance and consequent discoveries. The second Lancashire record of Marsh Gentian *Gentiana pneumonanthe* was made at that time; it had previously been recorded from near Burnley by Merrett in his "bungling Pinax" (Ray's phrase), almost certainly from information provided by Thomas Willisel (see above).

The first botanical author resident in the County of Lancaster was Charles Leigh (1662-c. 1701) of Singleton in the Fylde (v.c.60). His only major work was 'The Natural History of Lancashire, Cheshire, and the Peak in Derbyshire; with an account of the British, Phenic, Armenian, Greek and Roman Antiquities found in those parts,' published in 1700, and his account mainly focuses on the medicinal qualities of the flora, with few localized records, though he does mention the occurrence of *Rubus chamaemorus* from Pendle Hill. William Harrison (fl.1720-1750) of Manchester was a tradesman who possessed a large herbarium and corresponded with Jacob Dillenius of Oxford Botanic Garden. Thomas Bolton makes some interesting observations on this collection, which he observed during a visit to Manchester, in a letter to Richard Pulteney. The herbarium was once preserved in Manchester City Library but is sadly no longer extant at that location.

The Warrington horticulturist John Blackburne (1694-1786) had a rich collection of plants in his garden, including some native species, but it is not apparent from the published catalogue (Neal 1779) where they came

from. The so-called Irish Ivy was brought into cultivation at Orford Hall, Blackburne's residence; it derives its name from the Ireland family of Hale, Lancashire, and not from the island of Ireland.

The Nineteenth Century:

Many resident botanists were artisans, and in the early 19th century they helped found a growing number of local botanical societies which facilitated the exchange of floristic information. Even some tiny settlements had societies like the villages around Oldham, for example the Royton Botanical Society and the Waterhead Botanical Society. John Dewhurst (fl. 1750s-c. 1835), a fustian-cutter of Salford near Manchester became President of the Manchester Society of Botanists. He was friendly with James Crowther (1768-1847), a weaver and porter of Manchester who also corresponded with William Roscoe of Liverpool. Crowther supplied plant records not only to John Hull (1761-1843), a Manchester gynaecologist and author of a British Flora published in 1799, but also to John Bland Wood (813-1890) for *Flora Mancuniensis* (1840), described below. Born in Kendal George Crosfield (1754-1820), a sugar merchant, collected plants in Lancashire and Cheshire. His herbarium passed to his son, also named George Crosfield (see below), who was born in Warrington but moved to Liverpool in 1819.

Although records from South Lancashire had been published in several national or regional treatments, as already mentioned, the first Flora devoted to part of the vice-county was published in 1810. A Calendar of Flora, composed during the year 1809 at Warrington, Lat. 53° 30' was written by a Quaker botanist, George Crosfield (1785-1847). Crosfield was also Secretary to Warrington Botanical Society, and his Calendar followed the systematic arrangement of Sir James Edward Smith's (1759-1828) *Flora Britannica* (1800-1804).

The Liverpool district experienced a surge in population in the later part of the 18th century and this was reflected in the growth of interest in botany and horticulture. Prior to the foundation of the Liverpool Botanic Garden by William Roscoe in 1802, some of his friends and colleagues had already started to explore the coastal flora in the hinterland of Liverpool. Dr John Bostock (1774-1846), one of the founders of the Liverpool Literary and Philosophical Society, discovered some novelties in the area which he communicated to Sir J.E. Smith. These were published in Smith's *Flora Britannica* and in Sowerby and Smith's *English Botany*. The best known of Bostock's discoveries was *Erythraea latifolia* Sm. (now treated as *Centaurium latifolium*), the Broad-leaved Centaury, which became extinct in the later part of the 19th century. Later the first curator of the Botanic Garden, John Shepherd (c. 1764-1835), also communicated records to Smith.

There was also a growth in interest in bryology at the start of the 19th century. Edward Hobson (1782-1830) of Manchester, a tea merchant, issued a set of exsiccatae under the title *Musci Britannici* between 1818 and 1822; many of the specimens came from the region. One of the century's leading amateur bryologists, William Wilson (1799-1871) was a native of Warrington where he practised as a solicitor. His *Bryologia Britannica* (1855) gives numerous records from the vice-county, and his extensive correspondence, preserved in Warrington Museum, is a rich source of historical information on the Lancashire botanists of the 19th century.

One of the earliest Floras, which covers one small part of the vice-county. Thomas Batt Hall (1814-1866), was born into a moderately prosperous family in Essex, involved in the silk trade. He received a good education. Moving to Liverpool, his father having secured for him a post in a silk goods firm operating there, he appears to have busied himself with botany as much as with business. He explored the area around Liverpool for plants, collecting records, and, in 1839 publishing his *A Flora of Liverpool*. In this undertaking he was assisted by a friend, Wilson Armitage, who contributed *Meteorological Tables & Observations* for the year 1838 (and who must be responsible for this being, as far as is known, the only published Flora to contain an engraving of a meteorological thermometer, which is the book's only illustration). A splendidly engraved and coloured map of The Country Round Liverpool makes this scarce book one of the most attractive of regional floras. Sadly, the silk firm employing Hall folded and he returned south. Throughout the country the silk industry was in deep trouble, and eventually Hall migrated to Australia, where he died in straitened circumstances, leaving a widow and five children. His *Flora of Liverpool* remains almost our sole memorial of his life.

The Manchester area was the subject of numerous local Floras and the first in the following year, 1840, *Flora Mancuniensis*, or a catalogue of the flowering plants, the ferns and their allies, found indigenous within fifteen miles of Manchester was published in Halifax by the Yorkshire-born physician J.B. Wood. The book is simply a plant catalogue copying listings provided by other local botanists including the remarkable Richard Buxton (1786-1865) and incorporates records made by Leo Grindon (1818-1904) and George Crozier (1792-1847).

Richard Buxton a children's shoemaker from Prestwich, whose *Botanical Guide to the Flowering plants, Ferns, Mosses and Algae found within sixteen miles of Manchester* was published in 1849. Buxton was one of the many "working-class naturalists" who between them made a major contribution to our knowledge of the north-west's flora and fauna. These were not professional men such as Dickinson or Wood; nor did they aspire to high positions in commerce. They were, in fact, skilled artisans, often making a reasonable living, inspired by a devotion to the countryside near where they lived. Richard Buxton's father was a farmer who fell on hard times and became a labourer. Richard himself was the second of seven children, living from the age of two in the Ancoats district of Manchester. Other amateur but expert botanists of the "working class" were, for instance, self-employed hand-loom weavers; who could so arrange their working hours as to make time for foraging expeditions in search of plants. Buxton was tied to stricter hours and used his week-end rest day to study botany in the field.

The first substantial Flora of Liverpool was published in 1851 (with a supplement in 1855) and was written by a man with a professional career. Joseph Dickinson (c.1805-1865), born at Lamplugh in Cumbria became as a lecturer in Botany to the Liverpool School of Medicine in 1839 and a Physician to the Royal Liverpool Infirmary. Doctors and clergymen account for a significant proportion of the British floras of the eighteenth and nineteenth centuries. They must have been able to find time to spare for the arduous task of compiling such works. Dickinson most generously credits T.B. Hall with having laid down a good foundation for his own work, as well as thanking several other Liverpool men - probably most of them from the professional classes like himself - for the willing assistance which they had given him. J.B. Wood also contributed to Joseph Dickinson's Flora. This is the only Liverpool flora to include bryophytes.

While many members of the professional classes clearly had a great respect for "the artisans", and happily accepted the results of their work and many of them enjoyed friendly relationships which could lead to co-authorship. There was tension when a botanist very different from Richard Buxton came to publish his Manchester and district flora He was Leo Hartley Grindon, whose name became famous amongst north-western naturalists in the second half of the nineteenth century. A solicitor's son born in Bristol Grindon helped to found the delightfully named Philo-botanical Society of Bristol. He came to Manchester as cashier in a cotton firm, in 1838. Later, he became a botany lecturer at the Manchester Royal School of Medicine in the city, taught botany privately and founded the Manchester Field Naturalists' Society becoming president. Described by one writer as "a man of much better education and wider understanding than Buxton", he became a figure of great consequence in the region. He wrote many books with a natural history and particularly botanical content, of which one of the most important was his *The Manchester Flora* of 1859. He is said to have been greatly piqued that Buxton's second edition came out at the same time; he regarded himself as the expert-in-residence and saw Buxton, not as a colleague, but rather as less-informed interloper. In his preface he mentions several of the "working-class" botanists, but *not* Richard Buxton. And he is somewhat condescending to those whom he does mention: he points out that some of them "were not yet scientific botanists in the full significance of the term", but he does add that they "were animated, every one of them, by a deep and clear-seeing love of the charms of nature...".

Grindon's Flora was a particularly thorough treatment for the period than was Buxton's, and includes liverworts, fungi and some algae. He provides a long introduction to plant science, with an "Artificial Key to the Families of Plants". He abandons the Linnaean sexual system of classification in favour of a natural one while Buxton used the Linnaean scheme, although he also gives the names of the natural orders as well. There are keys within the Flora, which provide help in identifying material, as well as distribution particulars. His Manchester Flora is a considerable achievement. And, once again, even casual scanning of its pages will bring home the changes which have occurred in plant distribution over the nearly 150 years since the book appeared. It is impossible to resist his comment on *Chamerion angustifolium* (then *Epilobium angustifolium*), Rosebay Willowherb: "Not very rare...An admirable and very ornamental plant for suburban gardens, in which it is not infrequent, flourishing under the drip of trees, and in the smokiest of street purlieus"! Grindon's herbarium, which is far more than merely a collection of pressed plants as it contains botanical drawings, press cuttings and other ephemera, is preserved in the Manchester Museum.

The second edition of Buxton with a slightly different title 'Botanical Guide', which extended the range to eighteen miles, and included new material, in particular, A Brief Memoir of the Author, which gives us a vivid picture of how he developed into such a highly skilled botanist. He tells us that at the age of sixteen, he could not read, but regretted his lack of knowledge. So he taught himself; he started with a simple spelling book, progressed to the Bible, bought a pronouncing dictionary and soon was reading histories and other works. At this stage in his life he says that he was earning rather well, although demand for the leather children's shoes which he made fell off in favour of cheaper footwear with cloth uppers, and he did less well as he grew older.

He developed an interest in wild plants. He built up his own small library, including herbals which he "didn't find very useful". Most importantly, he met the hand-loom weaver John Horsefield (1792-1854), who was "an excellent scientific botanist". Soon he was mixing with a number of working men with similar inclinations: James Crowther (1768-1874), John Mellor (1767-1848) and Jethro Tinker (1788-1871). They went on regular botanising expeditions in the region. Buxton tells us that he frequently covered over twenty miles in one day, looking for plants. They met regularly to compare and discuss their finds. Public houses were favourite meeting places, and at least one, 'The Railway and Naturalist' in Prestwich, commemorates in its name the people who attended such gatherings. Using pub premises could cause stress since some of the botanical enthusiasts were nonconformists, often with strict rules such as avoiding alcoholic drink and respecting the Sabbath, which must have been difficult since Sunday was often the only day on which they did not need to work for their living. While there is no suggestion that their pub meetings were excuses for knocking back the beer, at least one of them, James Crowther, put it on record that his specimens "always look best through a glass." Like any early Flora, Buxton's book brings alive how very different the world was then. To pick one example at random: he tells us that *Scandix pecten-veneris*, Shepherd's-needle, was to be found in "corn and clover fields about Chorlton and Withington, occasionally and in similar situations elsewhere".

Sometimes a Flora might manifest itself as a single chapter in a general area publication like Abraham Stansfield's (1802-1880) 'A list of the Plants Indigenous to the Forest of Rossendale' published in 1868 in *History of the Forest of Rossendale* written by Thomas Newbigging. This account is merely a listing of six pages but includes mosses and liverworts and even some lichens. Stansfield was a nurseryman. He became President of Todmorden Botanical Society in 1852 and was an avid fern collector. Abraham was considered an excellent general botanist who began very early to cultivate ferns and published a catalogue in 1852. He did much to popularize and extend the cult, finding many good varieties, though perhaps nothing absolutely unique. He was one of the first to deliberately cross varieties and raised a Crested Cruciate *Athyrium* (*Pritchardii cristatum*) in about 1865 in this way. The following words from Abraham Stansfield were once the motto of the British Pteridological Society and for a while appeared with his portrait on the front page of their website. "The bright colours of flowers are admired by the least intellectual but the beauty of form and texture of ferns requires a higher degree of mental perception and a more cultivated intellect for its proper appreciation. Hence we regard the growing taste for the cultivation of ferns as proof of mental advancement."

The production of "one-author" floras was sometimes at the expense of the writers themselves. Hall's book cost six shillings (probably over £25 in today's money), or five shillings to members of the Liverpool Natural History Society. There cannot have been a very large readership although probably friends purchased copies and some of *their* friends might also wish to have copies in their libraries. Many copies were given away by the author to like-minded friends and acquaintances my own copy [Jack Smith] of Dickinson's book bears the autograph inscription: "With the Authors Compliments", in a fine firm hand (but with the missing apostrophe!).

The Liverpool floras which followed were all "written by committee". It says much for the people concerned or, perhaps, for their chairpersons, that they got their books out in a relatively short time; there is always the danger that a decision to publish might be delayed because someone does not consider that, for instance, "all the records" have yet been collected. It needs a firm hand to insist that, complete or not, a flora must sometime go to press. Every such book can only be a "snapshot in time", giving known plant records at a particular moment, and it is inevitable that it will be incomplete.

In 1872 the Liverpool Naturalists' Field Club published *The Flora of Liverpool: A List of the Indigenous Flowering Plants and Ferns Growing Within Fifteen Miles of Liverpool Exchange and Two Miles of Southport*. It was compiled as a result of the collective efforts of several of its botanically inclined members and was edited by Henry Smith Fisher (d. 1881) and Frederick Morgan Webb (1841-1880). Fisher's occupation is unknown; Webb became Curator of the Royal Botanic Garden in Edinburgh. The book had at least two printings and was followed-up by three supplements, in 1873, 1875 and 1887 published by Robert Brown (1839-1901); - little indication here that those concerned dragged their feet!

As well as the meetings when botanists who knew each other could meet to discuss discoveries and sort out problems, there were annual get-togethers at which learned men from the professional classes were often present to deal with any identification or other problems which the "artisan amateurs" brought to them. For instance, a handbill for 1882 advertises an "Annual Meeting of Lancashire, Yorkshire, Cheshire and Derbyshire Linnean Botanists" in the grounds of Strawberry Gardens, Oldham; The admission fee was

"threepence each, out of which one third goes to the Botanical District Fund". "All kinds of temperance drinks" would be available and the meeting, at two o'clock in the afternoon, would be held "in the large covered tent capable of holding 2000 persons". A band would also be in attendance, but while there is no mention of whom these might be, it is promised that "Specimens will be names by various and well-qualified botanists". It is difficult to imagine any such vast local undertaking today!

A slender flora appeared in 1888. This was *The Flora of Ashton-Under-Lyne and District*", compiled by the Ashton-under-Lyne Linnaean Botanical Society. A mix of botanists, including a druggist and a cotton operative, masterminded the project. The "Mosses of the District" were included, listed by John Whitehead (1896-1933), together with a section on the liverworts contributed by George Alfred Holt (1852-1921), the druggist in the group. This excellent small volume depended heavily on members of the so-called "working-class" botanist movement already mentioned. The local printers who produced the book went to town with the title page, which features at least seven different type faces, with some neat decorative underlining in two distinct styles. (This is a feature of some other small local floras and faunas published by local firms. Perhaps the elaborate type-setting reflected the printers' feelings of importance in producing such learned works). It is notable, too, that several natural history societies used the adjective "Linnaean" in the titles of their organisations. One wonders whether the great Swedish botanists would have been pleased at such use of his name - since he was a vain man, perhaps he would have been piqued by association with people whom he would have regarded as members of a lowly social class?

A Flora of the Stonyhurst District by John Gerard & C.A. Newdigate (2nd edition 1891) covered both sides of the vice-county boundary in the vicinity of this famous Roman Catholic boarding school and incorporated earlier lists (cited in Simpson's Bibliographical Index). In a preliminary form it was published in the Stonyhurst Magazine (1886).

The last (to date) Liverpool Flora appeared in 1902. Strictly speaking it belongs in the next section but is more appropriately dealt with here as much of the work on it was carried out in the nineteenth century: The Flora of the Liverpool District, edited by Dr Conrad Theodore Green (1863-1940). Again, the Liverpool Naturalists' Field Club provided the impetus and the Committee. This is a handsome volume, with an attractive gilt-embossed representation of *Pyrola rotundifolia*, the Round-leaved Wintergreen, on the brown cloth front and back boards, and, as the title-page tells us, it is "illustrated by Drawings and Photographs". The latter include photographs of local places and habitats, and, charmingly, a group photograph captioned: "Some Workers of the Field Club, 1901". Six gentlemen who can only be described as looking worried stand or sit with an attractive young lady who is looking suitably demure. She is Miss Emily Margaret Wood 1865-1907), Botanical Referee to the Field Club, born in Calcutta and became a botany lecturer in Liverpool. The Introduction tells us that a Mr. Gatehouse, "a very old member" of the Club, made it possible for many of the plants appearing in the flora to be illustrated, "drawn from nature by the able hand" of Miss Wood. This raises the question: need county floras be illustrated? After all, at least nowadays, there are very good illustrated field guides to plants. But this was not the case a hundred or so years ago, and many must have found the line drawings in the Green flora useful; and perhaps they also helped sell the book?

The north west of England continued to attract the attentions of cryptogamists, and despite the growing impact of air pollution some significant collections were amassed. Benjamin Carrington (1827-1893), born in Lincolnshire and a general practitioner, became medical officer of health in Eccles and was a noted liverwort specialist. He joined with James Alfred Wheldon (1862-1924), later a pharmacist in the prison service at Liverpool, and co-author of the Flora of West Lancashire (1907), in issuing sets of bound liverwort exsiccatae containing many specimens from the southern half of the county.

The names of the "workingmen botanists" are legion, all born in the eighteenth century - John Horsefield (1792-1854 a Prestwich weaver), Edward Hobson (1782-1830 a grocer's assistant becoming a "celebrated muscologist"), John Mellor (1767-1848 a Royton hand-loom weaver), Jethro Tinker (1788-1871 of Stalybridge), Richard Buxton (1786-1865 a Prestwich shoemaker), James Crowther (1768-1847 a millworker) and many others. This north-west England phenomenon has no equal anywhere else in the United Kingdom, although there were small groups of wild plant enthusiasts amongst East Anglian weavers active for a time from around the end of the eighteenth century. But by the start of the twentieth century, to quote John Percy, in his excellent account of the movement published in Volume V, number 1 of the

Manchester Region History Review (1991), "it was becoming commonplace to comment that the urban working class was totally apart from nature and ignorant of it."

The "artisan botanists" were sometimes commemorated, on their deaths, by inscribed gravestones paid for in part at least by subscriptions from their peers. Leo Grindon's achievements were commemorated, and he was amply rewarded, before he died. A printed leaflet of 1897, circulated by a prominent Manchester commercial house, anticipates his 80th birthday, due the following March, and asks for contributions towards "a purse of money, or a life annuity" to be presented to him on the occasion. This lists prominent men who have already promised ("unsolicited") significant amounts - and these amounts are specified, no doubt to set an example to others who have still to come forward. The signatories present a conspectus of worthy gentlemen who point out that "his [Grindon's] ripe and vigorous intellectual powers have been unstintingly and unselfishly given to the Community".

In the second half of the nineteenth century, the vast development of the railway system, with tracks penetrating almost every nook and cranny of the land, meant that middle class enthusiastic botanists no longer need tramp for quite so many miles in pursuit of their interests. Day trips became popular. At the end of the century, the Manchester Field Club pointed out to its many members that a special coloured sticker had been produced, which would be applied to the windows of railway carriage compartments reserved for their use on excursions into the countryside. And a rapidly increasing number of "working people" took advantage of such excursions to visit scenic places away from the smokiness of the city. This does not imply that, as a result, more and more people were attracted to natural history. Most excursionists got out of the train, trampled the countryside for a short time, enjoyed a picnic, then went home again. But for those who were keen naturalists, the railways were certainly a boon.

In one of his books, *Summer Rambles in Cheshire, Derbyshire, Lancashire and Yorkshire*, published in 1866, Leo Grindon makes very explicit references to the use of railway trains in countryside exploration, pointing out in his preface that "At the end will be found an extended summary of the chief railway-stations of the district, and of the distances thereto..." And the Manchester geologist John Taylor, in his *Geological Essays and Sketch of the Geology of Manchester and its Neighbourhood* published in 1864, also makes great mention of the new railways, which not only made travel easier for the amateur geologist, but also, through the massive earthworks which their construction entailed, laid bare geological details hitherto hidden from view. The Rev. Henry Hugh Higgins (1814-1893) who became President of the Liverpool Literary and Philosophical Society and was an early Trustee of the Liverpool Museum. One of his publications in the Society's journal was "A list of some of the principal stations for botanising in the neighbourhood of Liverpool" (1858). Best known as a palaeobotanist, he claimed to have delivered more than 20,000 sermons to the insane (as chaplain of the Rainhill Asylum near Liverpool). Higgins' friend and contemporary, Frederick Price Marrat (1820-1904) was primarily a conchologist but also studied the mosses and liverworts of the area around Liverpool. He made several noteworthy discoveries of mosses new to Britain and to science, including *Bryum calophyllum* R.Br. and *Bryum marratii* which was named for him by William Wilson. Times indeed had changed - and not least for naturalists!

The Twentieth Century:

In the twentieth century, botanical studies became increasingly a "middle-class" activity. There are fewer floras to discuss, although, of course, many journals and more general natural history books carried important plant records and listings. The early part of the 20th century was an active period for field study of the flora and the results were expressed in the growth in herbarium collections. Two of the most active collectors were Charles Bailey (1838-1924) and William Gladstone Travis (1877-1958). Bailey was primarily a businessman, being a director of Ralli Bros. (East India merchants) of Manchester; his herbarium forms the nucleus of the University of Manchester's very large British holdings in the Manchester Museum. Travis collected across all plant groups and his collections can be found in World Museum, Liverpool.

Floras centred on towns continued to appear. The first Flora of Preston had appeared between 1858 and 1865, with a second edition in 1903. It was produced by the Botanical Section of the Preston Scientific Society and published as *Publication No. 1: Flora of Preston and Neighbourhood*. This 62-page paperback booklet was based on records collected by members over a number of years and includes the records from 1858. It lists plants by family and gives brief details of where they had been found. William Clitheroe FLS, a schoolteacher, was Chairman of the Society's Botanical Section, and the names of seven members are singled out as deserving "special mention" for their contributions. Of these, one was a schoolteacher, another a botany lecturer, another a draper and another a railway agent. The latter was Henry Beesley of Ashton-on-Ribble, who contributed a

substantial mosses section (liverworts are also listed). This small booklet made a useful checklist for anyone wishing to record plants in the area.

James Cosmo Melville's (1845–1929) *Flora of Prestwich* dates from 1905 when it appeared as part of *History and traditions of Prestwich ... With the Geology of the district. and the Flora of Prestwich* which was edited by J.R. Ragdale.

John Nowell (1802-1867) & co-author Abraham Stansfield's (1802-1880) *Flora of Todmorden* appeared in parts in the *Lancashire Naturalist* in 1907 and 1908. They were both deceased by the time of publication. These two noted "artisan botanists" had their work posthumously produced as a *Flora of Todmorden* (1911). Nowell was a handloom weaver and self-taught naturalist who became one of the country's leading bryologists and Stansfield was a nurseryman. Many of their records came from vc59 and bryophytes were well covered. Nowell was commemorated by Mitten in the genus *Nowellia*.

In 1908 another interesting booklet appeared. This was published as *Manchester Memoirs* Vol. iii No.15, a reprint from Vol.52 Part 3 of *Memoirs and Proceedings of the Manchester Literary and Philosophical Society, Session 1907-1908*. It is *An Annotated List of the Alien Plants of the Warrington District*, by Gavin Alfred Dunlop (1869-1933), who was Curator of Warrington Museum. Widnes had to wait until 1912 for its first *Flora of Widnes*, published by the Widnes and District Field Club. Frederick Williamson (dates unknown) published a *Flora of the Rochdale district* in 1913.

Then, in 1920, came a more substantial local flora, published by the Manchester University Press, reprinted from *The Lancashire and Cheshire Naturalist, Vol. XII*. This is *The Flora of Bolton*, by Thomas Greenlees (1865-1949) and Thomas Kay Holden (fl.1880s-1934) who had studied botany at University College, London under Thomas Henry Huxley (1825-1895). Holden was manager of a vinegar works while Greenlees might be considered as one of the last "artisan botanists". He was a shoemaker and described himself as "herbalist". Usefully, the text is interleaved with blank pages for adding notes.

Dr C.T. Green (1863-1940) published his second edition of his copiously illustrated *Flora of the Liverpool District* in 1933. Green was well known in the area as a botanical photographer and lecturer.

Moving forward to 1955 the redoubtable firm of T. Buncle and Co., Ltd., Arbroath, who very valuably reprinted a number of older, out-of-print natural history works, as well as publishing contemporary material, reprinted *Some Flowering Plants of the Leigh Area of Lancashire*, from *The North Western Naturalist* of September 1954. Its author was a T. Edmondson. Then there is a remarkable *Flowers of the Rochdale Area*, by Charles Edward Shaw and W. Pentelow. This is undated but was privately produced probably around 1970. It comprises a comprehensive ninety-page listing, with details of localities and many references to early records. It is not an attractively produced volume. It appears to have been produced by Xerox from the original typescript, with its pages rather crudely stapled together. Probably very few copies were actually produced, and at least one has manuscript corrections and additions in Shaw's own handwriting. The Reverend Shaw, Vicar of Waterhead, was a noted local character, and botanised diligently in the Bolton, Oldham and Rochdale areas. He gives us one warning of things to come: he tells us that Japanese Knotweed, *Fallopia japonica* (he calls it *Polygonum cuspidatum*) is "a common pestilential weed - thought to be handsome by the Victorians". Pentelow, his helper on the project, was "one time Vice President of the Rochdale Field Naturalists' Society". Another very useful work on the same area appeared late in the century, in 1998. This is Peter Hill's excellent *Some Larger Fungi of Rochdale Metropolitan Borough*. This gives grid references for all its sites and interesting commentaries on species and their distribution in the region. Taken together, these and other local Floras written largely by non-professionals represent a remarkable memorial to the work of amateur botanists.

The major work on South Lancashire botany in the twentieth century must be Travis's *Flora of South Lancashire* which appeared in 1963 under the imprint of the Liverpool Botanical Society. This book might have been expected to appear as an elephant folio, considering its very long period of gestation, rather than as a neat octavo whose slim appearance belies its four hundred pages crammed with information. Its editors, John P. Savidge, Vernon Hilton Heywood (1927-) and Vera Gordon (1918-2006), all three

distinguished botanists, describe its history in their forward.

The Liverpool Botanical Society had formed in 1906, one of its main purposes being to collect data for a Flora of South Lancashire intended as a companion to Wheldon and Wilson's fine *The Flora of West Lancashire*, which appeared a year later in 1907. Many prominent botanists, together with an expert on plant galls and two experienced mycologists, got to work on the project. It was the early nineteen twenties before it was almost ready, when, unfortunately "financial reasons prevented its publication". The working party then to a large extent dispersed, although the Secretary, William Gladstone Travis (1877-1958) a Liverpool-born patent agent continued in his post for more than fifty years in fact until the year before his death, and the eventual flora commemorates him in its title. Travis published an extensive series of articles on the local flora, some with an ecological slant during his period of tenure. At one stage it was decided to publish the flora parts, but "for various reasons" the first part was never sent to the printers. Sporadic work continued until, in 1956, "several members of the Liverpool Botanical Society decided to help Mr. Travis by looking after all the administration connected with the flora while he finished drafting the manuscript". Part of the book had been finished and revised by the time Travis died in 1958. There followed extensive revision (necessary since the format was now old-fashioned, based as it was on that of *The West Lancashire Flora* of fifty years earlier) and thorough verification of all records. In its original form there would have been "well over 900 pages"; this would have been very expensive to publish, and "did not seem to fit in with present-day requirements". Old records which were no longer valid because of factors such as rapid industrial expansion and the development of large housing estates were omitted, and it was decided ("reluctantly") not to include the fungi. With financial help from the Royal Society, a useful legacy and funds collected by many members of the Botanical Society, the flora was eventually printed, and indeed given a second printing the year after first publication. It covers bryophytes, fungi and lichens, as well, of course, vascular plants.

At last there was a major flora for the vice-county. It can perhaps be said that the work lacks a little in "personality", contrasted, say, with books such as Grindon's or Buxton's and other earlier publications, although of course authorship by a committee does not lead to the kind of idiosyncratic achievement possible when a flora is the work of an individual or small group of like-minded enthusiasts. But if the purpose of a flora is simply to present as accurate as possible a survey of the plant life of a region, then Travis's flora fulfills this purpose admirably.

Traditional printed books and slender volumes have still made occasional appearances in our area in to the late twentieth century. The natural history historian, David Elliston Allen (1932-), was born in Southport and published a *Flora of the Isle of Man* (vc71) in 1984. *The Natural History of Bolton* (1987) compiled by Bolton Field Naturalists Society was published privately with a chapters on flowering plants, fungi and lichens. Oldham botanists also kept busy. The Rev. C.E. Shaw of Oldham continued to collect information on local plant occurrences, and Leonard Nixon Kidd (1920 -2013) & William Foulkes Edwards (1917-2012) produced the *Flora of Saddleworth* in 1995, closely followed by Bruce Langridge of Oldham Museum who prepared an interesting account of the *Wildflowers of Oldham* published in 1996.

The emergence of ecology

The *modus operandi* of searchers and recorders developed and changed in the twentieth century, just as it did in the second part of the nineteenth. Now, the motorcar took over from the train as a means of "getting around" Cars enabled travel in to remoter areas not served by public transport and so enabled a wider perspective of vegetational study.

At the turn of the 20th century universities were well established in Manchester and Liverpool. Charles Edward Moss (1870-1930) obtained the degree of D.Sc. from Manchester in 1907 and undertook some fieldwork in the region. This gave rise to an interest in what we would now call an autecological approach to the study of plant distribution, and this perspective was reflected in his ambitious (and uncompleted) *Cambridge British Flora* (1914-1920).

William Travis, mentioned above, made an intensive study of the flora of the Sefton coastal sand dunes and his paper *Marram Grass and Dune Formation of the Lancashire Coast* (1915) was a pioneering ecological study. Travis was also interested in paleoecology, and he and his wife (C.B. Travis) wrote an account of the plant remains in the post-glacial gravels at Seaforth, north of Liverpool, in 1913. Frederick William Holder (1891-

1963) of Southport was another local naturalist who compiled a massive unpublished archive that included detailed phenological observations. This was deposited in Liverpool Museum. A large number of papers containing floristic records for v.c. 59 was published in the journal *The North Western Naturalist* (originally titled the *Lancashire Naturalist*), whose long-serving editor was Arthur Augustine Dallman (1883-1963).

The peat deposits of South Lancashire continued to provide a rich source of evidence for the reconstruction of post-glacial vegetation. Sir Harry Godwin (1901-1985), later a Professor at the University of Cambridge, published several papers (1959?) based on the study of pollen grains in peat from the former moss and lake sediments on the site of the University of Liverpool campus. These were predated by James Nield (1825-1895)? Studied the vegetation in new railway cuttings in the Oldham area.

John Dickinson Massey (1870-1943) was another author who published numerous papers in the 1920s and 1930s on aspects of the Flora of south-west Lancashire, with emphasis on introduced species. The subject of adventive plants has been intensively studied in this region, thanks to the rich supply of alien seeds imported with ship's ballast, wool shoddy, the raw materials for wallpaper manufacture and other means. These studies were continued by the Preston botanist Alice E. Ratcliffe (d. 1974), whose extensive herbarium of alien plants is kept in World Museum Liverpool.

David Elliston Allen wrote a remarkable paper on the Flora of the Liverpool Bombed Sites (Liverpool bomb sites 1951) recognised the importance of what we might now refer to as the flora of Post-industrial Urban Britain.

CE Shaw from the 1950s onwards recorded many alien species at sewage works and tips especially the Crown Wallpaper Tip often accompanied by BW Fox and even Edward Job Lousley.

One extraordinary by-product of the industrial age was the heated wastewater which certain factories discharged into local watercourses and canals. This created a microclimate in which exotic species thrived, and South Lancashire provided several first records of aliens that were introduced into this rather unusual habitat. *Ficus carica* grew alongside the terminal section of the Leeds-Liverpool canal near the Tate and Lyle sugar refinery, which closed in 1981, and the alien aquatic flora of the Hollinwood and Droylsden canals, which included *Lagarosiphon major*, was first recorded in the 1930s.

Enthusiasts had increasing support from good UK field guides, backed up in the second half of the century by the authoritative British Floras of Arthur Roy Clapham (1904-1990), Thomas Gaskell Tutin (1908-1987) and Edmund Frederic Warburg (1908-1966) produced in 1952, second edition 1962; then Clapham, Tutin and Moore (1997). Finally, the publication of Clive A. Stace (1923-), coincidentally another University of Manchester lecturer, who later moved to Leicester. He published the century's last and most successful New Flora of the British Isles (1987) with later editions in 1993, 2010, 2019. The first volume of the ambitious Cambridge University Press project by Peter Sell and Gina Murrell appeared in 1997.

Biological Recording

The resumption of field work after the Second World War coincided with the birth of the Botanical Society of the British Isles (BSBI). This became a society more concerned with the study of plant distribution than its predecessor, the Botanical Exchange Club, which as its name suggests saw its *raison d'être* more as a forum for the exchange of preserved specimens.

Other Organisations such as the British Mycological Society and the British Bryological Society attracted increasing membership as the years passed, and all produced much important back-up material.

Miss Vera Gordon, who served as Secretary of the Liverpool Botanical Society since before WW2, not only played a major role in the editing and publication of Travis's Flora of South Lancashire but also, as the B.S.B.I.'s vice-county representative for South Lancashire, was active in mapping plant distribution in the area on a 10 x 10 km grid basis. This work was published by the B.S.B.I. as the Atlas of the British Flora, edited by Dr Franklyn Perring and Dr Max Walters in 1962.

The dawn of the digital age facilitated the production of printed matter, through "desk-top publishing". Increasing the number of attractive, well-produced local floras across the UK published relatively inexpensively using the word-processor and laser printer. The 1990s saw the first Global Positioning Systems which revolutionized map-reading and gave accurate recording on a screen lessening the need for Ordnance

Survey maps on expeditions.

At the same time computer techniques now make it possible to enrich major publications more easily through, for example, the rapid production of mapping using computer techniques. Production of *The New Atlas of the British and Irish Flora* (2002) updating the 1962 publication & the eagerly awaited Atlas (2020) would have been an even greater task, if not an impossible one, had such techniques not been available.

Twenty-first century naturalists, expert or tyro, of course enjoy making proper use of new inventions.

Smart phones are now found in most people's pockets supporting a myriad of identification and recording aids. For example, the iRecord app allows recording all the wildlife groups observed and supports all UK species. It works fully offline and new records can be added with minimal effort. Benefits include automatic data checks and review by experts and sightings can be shared immediately with the recording community whilst contributing to science and conservation.

Centralised Data Banks

The Manchester area also saw a resurgence of fieldwork in the second half of the twentieth century. The creation of the Greater Manchester Metropolitan County Council in 1974 brought an enhanced appreciation of the natural environment by the strategic planning process, and some important surveys of sites of local and regional importance were carried out by Dr Ray Gemmell and associates.

Museum-based recording was a feature of the early 1980s, partly funded by Manpower Services Commission schemes for combating unemployment. The earlier establishment of a North-west Biological Field Data Bank by Eric Greenwood in 1969 led to a more systematic collecting and archiving of site-based botanical records; this was partly superseded in 2007 by Merseyside BioBank, located at the National Wildflower Centre in Knowsley, which holds plant distribution records in electronic form. Bolton Museum established a biological records centre in 1974? Initially this was to record Bolton's wildlife but by the 1990s this had expanded to include all of Greater Manchester and the neighbouring boroughs of Chorley and Blackburn. The expansion into Lancashire seemed an appropriate one because of the geographical and environmental relationship of the West Pennine Moors across political boundaries. Due to the contraction of service in Bolton this data was transferred in 2009 to the then newly formed Greater Manchester Record Centre launched in 2008.

The northern part of v.c.59 which historically was not served by a big natural history museum service had to wait until 2010 for the foundation of the Lancashire Environmental Record Network to take on the biological recording role, although records were being received as far back as 1994. LERN is administered Lancashire County Council's planning department.

Conclusion

Railways in the nineteenth century, the development of road transport in the twentieth, and the information technology revolution: all these profoundly affected almost every human activity, including the work of flora writers. Today, the future of the flora in book form may be in the balance. New floras might be compilations using electronic media or accessible only using the internet. Current technology would seem to make this the ideal format. Records may be added or altered almost immediately this proves necessary, and the latest information can be made available without the tiresome wait, and the expense, which publication in book form necessarily entails.

But floras are not just records of the distribution of plants, fungi and lichens for reference by experts. They can also stimulate and inform the vast army of amateurs who enjoy exploring their environment and learning about living things. For such non-professional botanists and mycologists' floras can be as interesting and useful as their field guides. Many would not wish to search the Internet or employ digital media, when they have spent an enjoyable day examining, say, plants on a seaside holiday or during a walk in the countryside where they live, and would like to know their local status. A book is a more companionable adjunct than a computer screen. Ideally, all future work recorded and reported digitally, using the latest IT, should also lead to the occasional publication of printed books which, while they would certainly become out-of-date almost

immediately, they appeared, would still remain useful and inspirational floras for the use of amateurs over a considerable time. Hopefully this publication will be a positive addition to all those others that have gone before.

Extensively edited and added to with permissions by Patricia Francis 2020 based on extensive notes made by Jack Smith and John Edmondson

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