Botanical relics of a lost landscape: herborising ‘upon the Cliffs about the Pharos’ in Genoa, March 1664

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ABSTRACT

This paper uses approaches derived from historical ecology to show how knowledge can be gained about the historical and cultural value of neglected urban landscapes. We study the area around Genoa’s lighthouse and consider the long-term survival of individual plant species and some implications for landscape conservation. We examine topographical representations over the last 500 years to establish the landscape context of the lighthouse. We then analyse the records of plants collected by two English naturalists of the seventeenth century, John Ray and Francis Willughby, and demonstrate how the plants were identified and documented. We survey the current vegetation to establish whether any species identified in 1664 still grow at the site. This exploration of botanical ancestry at a local scale makes it possible to demonstrate cultural–historical values of the lighthouse rocks and their vegetation which should be considered as part of the cultural heritage of the city of Genoa.

Introduction

This paper is about the landscape history, ecology and geography of the rocky outcrop on which Genoa lighthouse is built. The English naturalists John Ray (1627–1705) and Francis Willughby ([1635] 1672) collected plants around the lighthouse at Easter 1664 (Welch, 1972; Greengrass, Hildyard, Preston, & Smith, 2016; Mandelbrote, 2004). We analyse their records and compare them to a present day survey, to assess whether any of the plants they recorded exist at the same place today. The paper makes a contribution to the debate about the role of green spaces in urban planning and, in particular, the extent to which biodiversity associated with particular places can be understood (Ives & Kelly, 2015). There is an enormous literature on the history of urban landscapes including their street trees, arboreta, and gardens (Elliott, Watkins, & Daniels, 2011; Pellegrini & Baudry, 2014). Recently, there has been an upsurge of interest in the relationship and interconnections between plants and people (Head, Atchison, Phillips, & Buckingham, 2014). This paper adds to this literature by considering the role of historical plant collecting and topographical representations in landscape research (Piana, Balzaretti, Moreno, & Watkins, 2012). It also explores the heritage value of small urban sites, which have been largely forgotten and considered as blank spaces by urban planners (Unt, Travlou, & Bell, 2014). It shows that, by using approaches derived from micro-history (Balzaretti, Pearce, & Watkins, 2004; Ginzburg, 1993; Raggio, 2013), and historical ecology (Cevasco, 2007; Grove and Rackham, 2003; Moreno, 1990) cultural value can be derived, and ascribed to places which have hitherto been overlooked.
The intellectual importance of British visitors and collectors in Italy from the seventeenth century onwards is a fruitful and important area of research (Black, 2003; Chaney, 1998; Chaney & Wilks, 2014; Chard, 1999). Genoa was one of the main stop-overs in Northern Italy on the route down to Tuscany and Florence (Sweet, 2012, p. 75). The implications of the Grand Tour for art and architectural history were enormous not only in the spread of ideas, but also in the establishment of museums, and the encouragement of conservation and tourism in contemporary Italy. But visitors were also interested in the natural world. In this paper, we consider the collection of plants by two of the leading English naturalists of the seventeenth century. We consider how they collected and identified the plants in the field, and how the dried specimens they took back to England were later conserved and used for further analysis. We consider the long-term survival of species at this site of different plant species, and the implications for contemporary urban conservation.

**Genoa Lighthouse**

By the fourteenth century, Genoa had a population of over 100,000 and had become the leading port, trading, and banking centre of the Western Mediterranean. The population within the city boundaries grew to 688,447 by the mid-twentieth century (1951 census), but had fallen to 587,469 by 2015 (Arvati, 2007, p. 394; Pesce, Piaggio, Acerbo, Bodrato, & Medicina, 2015, p. 17). The city developed next to a large natural harbour on the narrow coastal plain of Liguria (Poleggi, 1982). The lighthouse has been on the promontory on the western side of the harbour below St Benigno Hill since, at least, 1128. The first illumination was the burning of heather (‘brugo’ in dialect) or broom branches on top of a tower; the first olive-oil lantern was in 1326 (Praga, 1998). The Lighthouse was completely rebuilt in 1543 financed by the Banco di San Giorgio (Poleggi & Cevini, 1981, p. 84). During the seventeenth-century St Benigno Monastery and the Lighthouse were included in the new city walls (Mura Nuove), but following the Napoleonic takeover in 1798, the monastery was abolished. In the nineteenth and twentieth centuries, most of the hill was quarried away during the rapid industrialisation of the city.

We examined depictions and descriptions of the city over the last 500 years to establish how the lighthouse and its immediate context were represented. Early birds-eye views of the city (Dubbini, 2002; Poleggi, 1976; Poleggi, 1982; Poleggi & Cevini, 1981) were mainly by cartographer–painters such as Jan Massys, *Venus with the view of Genoa*, 1561 (Galassi, 2014) and Cristoforo de’Grassi dated 1597 (Poleggi & Cevini, 1981, p. 82) where St Benigno hill is clearly drawn. Travellers to Genoa in the seventeenth century frequently described the Lighthouse, and climbed the hill of St Benigno to look across the harbour to the city. Carignano to the east was the best place to view the Lighthouse on its rocky promontory (Stoye, 1989, pp. 124–5). Francesco Scotto’s guidebook (Scotto, 1615) first published in 1600 includes a view of Genoa which depicts the Lighthouse with rocks and walls, but hardly any signs of vegetation (Figure 1). Two English authors described the Lighthouse in the mid-seventeenth century. John Evelyn (1620–1706) noted on 16 October 1644: ‘we got to Anker under the Pharos or Watch-towre erected on a high rock, at the mouth of the Mole of Genoa [...]’ (De Beer, 1959, p. 96). Richard Lassels in his *Voyage of Italy* (1670) described the site and history of the Pharos:

... At one end of this Mola stands a Pharos upon a little rock, with a Lantern upon it, to give notice, by known signes, what Ships, how many, and from what side they Come: or else to guide their own Ships home safely in the night.’ (Lassels, 1670, p. 84)

A drawing of the landscape immediately around the Lighthouse dated 26 June 1699 (Figure 2) depicts the area with fluid lines of ink similar to the ones around the monastery and the villas on the promontory of St Benigno. In 1754, George Keate (1729–1797) drew a view of the Lighthouse from the west which shows the Lighthouse on its rocky base (Binyon, 1902; Figure 3). The first of these drawings emphasises the semi-rural context of the lighthouse and both hint at the vegetation growing on the lighthouse rock.

Two early nineteenth century views show vegetation adjoining the lighthouse. That by Domenico Del Pino (1793–1851) shows the Monastery above the lighthouse surrounded by agricultural terraces.
and cultivated land (Figure 4). One can just detect a patch of vegetation on the lighthouse rock itself. That by Luigi Garibbo (1784–1869) dated 1812–14, (Figure 5) shows the view to the west taken from the Lighthouse rock. Next to the person sitting on the rocks, there is shrubby vegetation; behind the guard there is a shrub, which is too indistinct to identify; the walls of the promenade are possibly covered by

Figure 1. View of Genoa in F. Scoto Itinerario d’Italia (Padua, 1659). © R. Bruzzone.

Figure 2. Sketch of the area around the Lighthouse related to the construction of the new dry dock in the new pier dated 26 June 1699, Padri del Comune, filza 231–96. © Archivio Storico del Comune di Genova.
Capparis spinosa L. (caper). The rocks above, underneath the fortification, are partially covered in green, unidentified vegetation.4 The lighthouse is one of the most prominent structures in Genoa, and so figures in many drawings and descriptions. This analysis of the representations of the Lighthouse through time shows that there is a strong possibility for continuity of vegetation on the rocks below the Lighthouse between 1600 and the early nineteenth century. However, we can only guess about the species that grew there. In the next section, we consider evidence for the existence of particular species taken from botanical surveys.

**Ray and Willughby collecting plants at Genoa, March 1664**

John Ray (1627–1705) and Francis Willughby ([1635] 1672) were early members of the Royal Society and together collected and catalogued many plant and animal species. Ray entered Trinity College Cambridge in 1644, and gained a fellowship in 1649 (Oswald & Preston 2011, pp. 4–5). He is ‘remembered as Linnaeus’s predecessor in the science of taxonomy, but he had not Linnaeus’s gift for publicity’ (Rackham, 2011, p. vii). He met Francis Willughby at Trinity College, and they collaborated on botanical trips, first around Cambridgeshire for Ray’s *Catalogus plantarum ca. Cantambrigiam nascentium* (1660), and made extensive travels around England and Wales collecting botanical specimens. They toured Europe 1663–1666 with Philip Skippon and Nathaniel Bacon, both Ray’s pupils (Greengrass et al., 2016;
Figure 4. ‘Veduta del porto di Genova verso la Lanterna, dai pressi di San Teodoro’, Domenico Del Pino (first half of nineteenth century). © Collezione Topografica e Cartografica, Genoa.

Figure 5. ‘Veduta del sobborgo di Sampiardarena al ponente della città di Genova presa dallo scoglio della Lanterna’, Luigi Garibbo (1812–14). © Collezione Topografica e Cartografica, Genoa.
They arrived in Italy in October 1663 and Ray stayed there until March 1665. He published his own account of the journey as *Observations Topographical, Moral, & Physiological Made in a Journey Through part of the Low-Countries, Germany, Italy, and France: with A Catalogue of Plants not Native of England, found Spontaneously growing in those Parts, and their Virtues* (Ray, 1673). On their journey, they collected and purchased many items of natural history interest including drawings and prints of birds, fish and plants, and a volume of dried plants from Padua. They collected many specimens of plants in the field and dried them so that they could be identified and taken home to England. One of their known collecting points was on the rocks below the Lighthouse at Genoa, and in this section we examine whether we can identify the plants that they collected there.

Descriptions of their time at Genoa were provided by John Ray and Philip Skippon. The group arrived in Genoa on 20 March 1664, travelling from Asti in Piedmont across the Apennines through Novi, and staying overnight in the small hilltop town of Voltaggio. Ray’s account of Genoa is similar to others in recording the sumptuous architecture of Strada Nuova (today Via Garibaldi) with its palaces built above the mediaeval city. He quotes the proverb ‘montagne senza alberi, mare senza pesce, huomini senza fede & donne senza vergogna’ that is, ‘Mountains without trees, a Sea without fish, Men without faith, and Women without shame’ (Ray, 1673, p. 253). Skippon’s (1732) account of the journey provides more detail: ‘many chestnut trees grow on the hills, and near Genoa are large olive grounds.’ After they ‘left Voltaggio we met and overtook about 500 or 600 mules and asses laden’ and also gardens full of orange trees just before entering ‘the outwall of Genoa nigh the Pharos, and rode by the haven’s side, then came thro’ a gate where a guard of soldiers was kept.’ Skippon’s account confirms that the Pharos was the first place they saw in Genoa, and he then gives detailed descriptions of the churches, the palaces in *Strada Nuova*, the Hospital and the Duke’s palace. On Holy Thursday 1664, they attended the famous noon procession ‘which lasted till two hours in the night’ and which was probably one of the reasons...
they chose to be in Genoa over Easter. They stayed in Genoa until 2 April and then sailed in a felucca onto Tuscany describing the shore of the ‘Riviera di Genoa’ as being ‘hilly, and full of pleasant houses’.

The identification of the plants they collected at Genoa is not a simple task. First, we needed to establish what had happened to the collected plants. Unfortunately not all the specimens survive and most of those that do seem to be from Sicily, where they later spent two months collecting plants. Much of their collection of dried specimens is now found within the pages of a copy of John Ray’s Historia Plantarum printed in 1686/8 held at the University of Nottingham. This is in five volumes and dried plants are mounted next to the corresponding description. The production and preservation of this collection have a complicated history, and it is likely that it was undertaken by Francis Willughby’s children Thomas and Cassandra. The specimens collected from Italy were mixed up with plants collected in many other places including some from the Botanical Garden in Padua. Some dried specimens collected in Europe are now part of Ray’s herbarium in the Sloane Collection at the Natural History Museum (London), in nine volumes of loose sheets known as Hortus Siccus Rayanus. These plant specimens are also from British and European travels and are mainly labelled with Ray’s handwriting but also Skippon’s. The herbarium has been used and modified through time and many of the specimens have been cut out as we can see in the example of Herba Paris (Figure 6).

When John Ray and Francis Willughby collected plants along the route of their journey, Ray wrote a list of the names of the plants identified on the first and last blank pages of his copy of the catalogue of the Botanical Garden in Padua printed in 1662 (Della Torre, 1662; Greengrass et al., 2016). This list demonstrates that they collected a total of 14 specimens around the Lighthouse ‘upon the Cliffs about the Pharos’. Ray used this pocket book as a notebook, but did not link his manuscript entries with plants listed in his published text (Ray, 1673). A transcription of the manuscript list is given in Table 1.

| Plant name            | Common name  | Place                                           | Date           | Herbal          | Collection     |
|-----------------------|--------------|-------------------------------------------------|----------------|-----------------|----------------|
| Hyoscyamus albus L.   | White henbane| ‘Rocce litorali presso la Cava a Genova’       | Marzo 1894     | Sestri Ponente  | MCSNGDGe       |
| Lobularia maritima (L.) Desv. | Sweet alyssum | ‘Cava [Genova]’                                 | Undated        | Baglietto       | MCSNGDGe       |
| Lobularia maritima (L.) Desv. | Sweet alyssum | ‘Genova sotto le mura della Cava’               | 17 Marzo 1902  | Esposto         | MCSNGDGe       |
| Lobularia maritima (L.) Desv. | Sweet alyssum | ‘Genova, presso la Galleria S. Benigno’         | 20 Aprile 1948 | Mazzantini      | MCSNGDGe       |
| Lobularia maritima (L.) Desv. | Sweet alyssum | ‘Vulg: in Liguria’                              | Undated        | Durazzo         | MCSNGDGe       |
| Matthiola incana (L.) R.Br. | Stock       | ‘Genova alla Cava’                              | Maggio 1840    | Brignole        | MCSNGDGe       |
| Matthiola incana (L.) R.Br. | Stock       | ‘Genuae in moenii maritimis prope la Cava’      | 9 maggio 1902  | Esposto         | MCSNGDGe       |
| Matthiola incana (L.) R.Br. | Stock       | ‘Rupi maritimae alla Cava [Genova]’             | Marzo 1894     | Sestri Ponente  | MCSNGDGe       |
| Matthiola incana (L.) R.Br. | Stock       | ‘Ala Cava Genova’                               | Undated        | Botanical Garden | PBHUGE     |
| Psoralea bituminosa L. | Pitch trefoil| ‘Prati fuori Porta degli Angeli’               | 12 Maggio 1894 | Sestri Ponente  | MCSNGDGe       |
| Cineraria maritima L.  | Silver ragwort| ‘Genua alla Cava’                               | Undated        | Baglietto       | MCSNGDGe       |
| Cineraria maritima L.  | Silver ragwort| ‘Genova, scoglì al mare’                        | 1843           | Mazzini         | MCSNGDGe       |
| Cineraria maritima L.  | Silver ragwort| ‘Rocce del Tunnel [Ge]’                         | 9 Luglio 1894  | Sestri Ponente  | MCSNGDGe       |
| Cineraria maritima L.  | Silver ragwort| ‘Rocce maritimae al Tunnel (Genova)’            | 9 Luglio 1894  | Sestri Ponente  | MCSNGDGe       |
| Thymus vulgaris L.     | Common thyme | ‘Terrapieni fuori Porta Angeli’                 | 1 Giugno 1862  | Chiappori       | MCSNGDGe       |
The manuscript list indicates that they did not make a complete list of all plants on the rock, but only those that were new to them or interested them.

Upon the rockes near the Pharos by ye port at Genoua
1. Trifolium bituminosum.
2. Jacobaea marina sive Cineraria.
3. Conyza odorata Monspeliaca.
4. Alaternus.
5. Carduus lacteus peregrinus.
6. Thymus moscatus.
7. Geraniū Althaeae folio.
8. Thlaspi incarnū marinū flore albo.
9. Lotus an Cytisus villosus?
10. Dorycniū Monspeliens:
11. Smilax aspera.

On the rockes on the east side of ye town besides the former
12. Genista hispanica.
13. Adianthum nigrum.
14. Hyoscyamus 2 Tab. in Icon.

The Thlaspi incarnū is somewh like Leucoium luteum but much lesse. It may be thus described. Ex rad. Alba, simplici lignosa, perenni, paucis fibris capillata ramulos emittit pluros, humi procumbentos, striates quos folias occupant alternatim nullo ordine posita: Flores summitatibus ramulorum albi, quadrifoli medio coloris obscurioris, in universe flore Narturtij aquatici simillimi ? Vasculū seminale parvū compressum, in […]emitato acutum, due vel forte tria so[…] comple[…]. Saporem habet acrem[…],poliqua hujus generis, odorem nullū.

Haec species Hyoscyami quam in muris crescentem vidimus & in rupibus ca. Genuam a vulgari differt quod folia habeat viridiora, breviora, rotundiora, minus laciniata; florem minorem, totum luteum, cum fundus floris in vulgari niger sit, & flos ipso albidior. In universum planta hæc propriūs accedit Hyoscyamū luteum Peruvianū Tobacco Anglicum dictum quàm Hyosc. Vulgari.

The last part of the note can be translated as:

This species of Henbane which we saw growing on walls and on rocks around Genoa differs from the common one because it has greener, shorter, rounder, less divided leaves and a smaller, wholly yellow flower, since the eye of the flower in the common species is black and its flower whiter than in this plant itself. Altogether this plant comes closer to the Peruvian yellow Henbane called English Tobacco than to the common Henbane.

This indicates Ray's working method of identification in the field and his interest in recognising new species.

A comparison of this list with the dried specimens held in Nottingham and London showed that only two could be identified as those collected around the Lighthouse: Jacobaea marina sive Cineraria in rupibus maritimis and Smilax aspera. Further analysis, however, showed that in the published list (Ray, 1673) all the plants were carefully identified and cross referenced with botanical books which were in Willughby's and Ray's libraries. It is possible to check this thanks to a manuscript list of books of the Willughby family, and the auction catalogue of Ray's library which was sold in 1708. Both men had rich collections of botanical books, such as the Historia Plantarum by J. Bauhin, and other works by Parkinson, Brunfels, Fuchs, Mattioli, Morrison, and Petiver. In Ray (1673) plants are identified and cross referenced to sources by the following abbreviations: C. B. (Caspar Bauhin), J. B. (Jean Bauhin), Ger. (John Gerarde), Park. (John Parkinson). In the manuscript notebook, the only abbreviated source reference found is Tab. next to henbane (Hyoscyamus albus L.), which stands for Tabernaemontanus, referring to the Icones Plantarum (1590), a printed catalogue of plants they could easily carry when travelling. This book consists of botanical iconographies reproduced from other authors including Bock, Fuchs, Dodoens, Mattioli, de l'Ecluse and de l'Obel (Arber, 1912, pp. 67–8). This analysis shows the complex background to the identification of plants collected in 1664 with some being identified
Evidence for survival of species from plant collecting at the Lighthouse in the nineteenth century and today

What evidence do we have that there is continuity in the species found on the Lighthouse rock in later years? The first evidence of botanical collecting at the Lighthouse after 1664 is that done by Antonio Bertoloni, who compiled a Genoese flora and collected at least four plants ‘sub la Lanterna’ (Bertoloni, 1804). One of these is *Cineraria maritima* (*Jacobaea maritima* (L.) Pelser & Meijden). The volume is enriched with botanical watercolours probably made by the author himself or by a collaborator (Figure 7). An entry of *Matthiola incana* around ‘alla Cava’ has been found in the notes by Otto Penzig on De Notaris’ work (1844, p. 43). The same plants have been found in many records of the historical herbal held at the Museo Civico di Storia Naturale ‘Giacomo Doria’ (Natural History Museum of Genoa).
and the Polo Botanico Hanbury (Botanical Garden, Genoa (Table 1), with place names which indicate the area around the Lighthouse and the St Benigno Hill such as ‘La Cava’ (the quarry), ‘Il Tunnel,’ ‘Galleria S. Benigno’ (the St Benigno tunnel), ‘sotto le Mura della Cava’ (underneath the quarry’s walls), ‘Genuae in moeniis maritimis prope la Cava’ (in Genoa on maritime walls around the quarry, Figure 8). Overall, we have little botanical evidence from nineteenth century sources but there is some evidence of continuity in a small number of species.

Although most of the hillside and the surrounding semi-rural areas were removed during the twentieth century by quarrying, and road and factory construction, there is still some vegetation immediately around the Lighthouse. In order to ascertain whether any of the species listed by Ray (1673) was still found on the rock, we carried out five surveys between September 2014 and September 2015 at various times of the year, and it was possible to identify nine species of plant on the rocks and walls that had been noted by Ray (Table 2), and an additional 28 species were also identified. The survey was undertaken by following paths and access points on the Lighthouse rock which were all accessible to members of the public visiting the Lighthouse. A few areas were impossible to survey because they

Figure 8. *Matthiola incana* (L.) R. Br., ‘Flora Liguriae exsicata. N. Esposto. *Cheiranthus incausus*. Lin. Genuae in moeniis maritimis prope la Cava species sponte nascitur majo.9.1902. Esposto Nicolo. © Museo Civico di Storia Naturale ‘Giacomo Doria’, Genoa.
Table 2. Plants around the Lanterna with different correspondences: the ones from the list in the notebook at the Chelsea Physic Garden (Ms CPG), in the printed volume (Observations), the Linnaean name and their presence/absence around the Lighthouse today (2014–2015).

| Ms CPG | Observations (1673) | Linnaean name (according to Pignatti, 1982) | Common name | Around the Lighthouse (2014–2015) |
|--------|---------------------|-----------------------------------------------|-------------|-----------------------------------|
| 2. Trifolium bituminosum | Trifolium bituminosum Ger. | Psoralea bituminosa L. | Pitch trefoil | X |
| 3. Jacobea marina sive cineraria | Jacobea marina Ger. | Senecio cineraria DC. | Silver ragwort | X |
| 4. Conyza odorata Monspiliaca | Conyza major Monspeliensis odorata J.B. | Inula viscosa (L.) Aiton. | Yellow fleabane | X |
| 5. Alaternus | Alaternus | Rhamnus alaternus L. | Italian buckthorn | |
| 6. Carduus laiteus peregrinus | Carduus galactites J.B. | Galactites tomentosa Moench. | Purple milk thistle | |
| 7. Thymus moscatus | Thymum vulgare rigidus folio cinereo J.B. | Thymus vulgaris L. | Common thyme | X |
| 8. Geraniu Althaeæ foliù | Geranium folio Althææ C.B. | Erodium malacoides (L) L’Hér. | Mediterranean storksbill | X |
| 9. Thlaspi incamù marinù flor a bù | Thlapsi alysson dictum maritimum C.B. | Lobularia maritima (L) Desv. | Sweet alyssum | X |
| 10. Lotus an Cytisus villosus? | Lotus Libya Dalechampii; Lotus pentaphyllus silquosus villosus C.B. | Dorycnium hirsutum (L) Ser. | Hairy canary clover | |
| 11. Dorycniiu Monspelions | | | | |
| 12. Smilax aspera | Smilax aspera | Smilax aspera L. | Common smilax | X |
| 13. Genista Hispanica | | Spartium junceum L. | Spanish broom | |
| 14. Adianthum nigrum | Adianthum sive Capillus veneris J.B | Adiantum capillus-veneris L. | Southern maidenhair fern | |
| 15. Hyosciamus 2 Tab. In icon | Hyosciamus albus Park | Hyoscyamus albus L. | White henbane | X |
| | Stock-July- flowers | Matthiola incana (L.) R. Br. | Stock | X |
were dangerous to reach or covered by aggressive species like *Ipomoea purpurea* (L.) Roth and *Rubus ulmifolius* Schott (blackberry).

A comparison was made between the results of our field survey and Ray and Willughby’s lists from the notebook at Chelsea Physic Garden and the botanical list in Ray’s *Observations* (1673). At least nine plants from the 1664 herborising were also found today, and these were identified with their current scientific name (Table 2). The identification of the plants was carried out through John Ray’s *Historia Plantarum* (Ray, 1686, 1688, 1704) and other works they could have used at the time (Bauhin, 1650, 1658; Gerarde, 1636; Parkinson, 1640) but also through the Linnaean system (Jarvis, 2007; Petermann, 1840; Richter, 1840) and the historical approach was privileged. In the case of *Genista hispanica*, Ray must have seen *Spartium junceum* (whose common name is also Spanish broom and we find it in Ray, 1688, p. 1726). The relics of the plants collected by Ray and Willughby found on the rocks and on ancient walls around the Lighthouse were: *Bituminaria bituminosa* (L.) C.H. Stirt., *Hyoscyamus albus* L., *Jacobaea maritima* (L.) Pelser & Meijden, *Lobularia maritima* (L.) Desv., *Smilax aspera* L., *Thymus vulgaris* L., *Erodium malacoides* L., *Matthiola incana* (L.) R. Br. (Figure 9) and *Inula viscosa* (L.) Aiton. The plants
that no longer survive were probably on the area that has been quarried away or have been replaced by invasive species.

We presented some of these research results at a public engagement event organised together with the association ‘Giovani Urbanisti Fondazione Mario e Giorgio Labò’, a group of young Genoese urban, land and environmental planners. Initial discussions with this group showed that members had no prior knowledge of the history of plant collecting at the site. We also, as part of the CIRCKNOW project, organised an educational activity for children in the context of the European Researchers’ Night in September 2015 about the botanical history around the Lighthouse, the making of herbaria, and the history of the identification and naming of plants. We also provided a guided walk around parts of the Lighthouse rock. The Giovani Urbanisti were interested to discover the botanical history of the rock, and a display panel about the importance of the historical–botanical heritage of the lighthouse rock was displayed during this event which is now part of the permanent exhibition at the Lighthouse. The research results provide evidence which allows the Giovani Urbanisti to increase the interest and the perception of this symbol of the city and its surrounding semi-natural heritage. We hope that through guided tours and other activities it will be possible to encourage the local public and tourists to take greater interest in the landscape and botanical heritage of the city (Caneva, 2005, pp. 293–297).

Conclusion

There has recently been a call for more studies of the subtle interconnections between plants and animals at different sites and places (Head et al., 2014). This paper makes a contribution to this debate by considering the history of plants growing on urban rocks and walls which are often seen as ephemeral (Francis, 2011). We show that such places may have a botanical history that is worth exploring. The botanical history of such small, forgotten sites can be examined to assist conservation policies and to ensure that species seen as ephemeral and unimportant are accorded greater value. The paper demonstrates that the analysis of topographical art can be a useful way of identifying potential sites with a long vegetation history within urban areas (Piana et al., 2012).

The paper also shows that by reconnecting documents scattered in different archives and libraries in London, Nottingham and Genoa with the place to which they relate, it is possible to give greater value both to the archives and the place itself. Using a micro analytical approach at a local scale, it is possible to ascribe new values and meanings to the area around the lighthouse, an area that had become ‘lost’ over the centuries. While the plants found at the site today are few, their botanical ancestry can be explored through the use of the records of past collecting (Caneva, 2004).

More research is needed on the potential value of such sites for increased public engagement and understanding of botanical and ecological history by bringing the history of natural history out of museums and into the field. This paper has shown that it is possible using contemporary botanical surveys and comparing these to a survey of the seventeenth century to establish long-term continuity in the types of plant species growing in a place that became heavily urbanised in the nineteenth and twentieth centuries. Approaches derived from historical ecology, and more usually used in the study of rural habitats such as ancient woodlands and herb-rich meadows, can be useful for gaining knowledge about the historical and cultural value of urban landscapes which might otherwise be neglected and overlooked. We have demonstrated that the landscape around the Lighthouse and its rocks, and the vegetation growing on them should be considered as part of the cultural heritage of the city of Genoa.

Notes

1. M. C. Galassi (2014) argues that the landscape in the background may have been by Anton van den Wyngaerde, who in 1553 executed a large etching with a view of Genoa and its surroundings (View of Genoa, 1553. Stockholm, National Library of Sweden Maps and Pictures De la Gardie 64).
2. Or Francesco Scoto or Franz Schott from Antwerp. There are two editions in the British Library (London) which include different views of Genoa. In the edition published in Vicenza (1615), the view is simpler and rougher than the one published in Padova (1659). This is similar to an etching dated 1572–1576 by Franz Hogenberg, Genua
Ligurum Domina [...] (Collezione Topografica e Cartografica del Comune di Genova, inv. 1956), part of the Civitates orbis terrarium (1572–1618).

3. Archivio Storico del Comune di Genova, Padri del Comune, filza 231–96.

4. L. Garibbo, Veduta del sobborgo di Sampiladarena al ponente della città di Genova presa dallo scoglio della Lanterna, 470 × 642 mm, etching, and watercolour (Collezione Topografica e Cartografica, Genoa, n.inv. 1404). For details on Garibbo’s paintings see the catalogue of the exhibition (Papone & Serra, 2011).

5. Passports from Whitehall on 10 April 1663, in the Nottingham University Library (NUL) Mi 4/149/2/1–3//1.

6. We find the same quote in Fynes Moryson’s travel account in Lytton Sells (1964, p. 154).

7. This ancient tradition still takes place and all the Genoese confraternities participate. According to Black (2003, pp. 39–40), one of the reasons tourists chose certain routes was the wish to attend to specific religious ceremonies around Easter.

8. Hortus Siccus Rayanus, voll. 9, Sloane Collection, Natural History Museum—London (NHML).

9. NUL (Mi LM 17–21). Mary Welch provides a detailed description of all the materials held at the Manuscripts and Special Collection, NUL (Welch, 1972) and so does Christopher Preston in the Appendix in Greengrass et al. (2016), discussing in detail the plant specimens in the Middleton Collection (NUL). The cited documents are: birds drawings and engravings (Mi LM 24), fishes drawings, paintings and engravings (Mi LM 25), a collection of different kind of botanical iconographies later made into a volume (Mi LM 22), a volume of dried specimens from the Padua Botanical Garden (Mi LM 23) and the dried specimens collected both in Great Britain and during the European Travel at least by Francis Willughby, John Ray, Philip Skippon and also from other hands (Mi LM 17–21).

10. The Hortus Siccus Rayanus is first described by Trimen (1870), pp. 82–84 and Dandy (1958), pp. 189–190. Ray’s herbarium after his death went to his friend Samuel Dale in Essex, and then to the Chelsea Physic Garden, onto the British Museum and finally the Sloane Collection at the Natural History Museum today.

11. See Dandy (1958), p. 190 who notes that the mutilation of the sheets is explained in Kalm’s Account of his Visit to England: Kalm saw the collection in 1748 at the Chelsea Physic Garden and he states that Dr Sherard borrowed the collection from Samuel Dale, cutting out any rare or interesting plant.

12. The notebook was first discovered by Daisy Hildyard and it is first mentioned in Greengrass et al. (2016).

13. Catalogvs plantarvm Horti Patavini. Nouo incremento locupletior. GEORGIO A. TVURRE. Eiusdem Horti Praefecto Et Rei Herbariae Professore Ordin. PATAVII. MDCLXII. Typis Pauli Frambotti. Superiorum Permissu, Padua, 1662. The book is conserved at the library of the Chelsea Physic Garden (C2/40 IL). The binding is 12.8 × 7.0 cm, a very small, pocket volume.

14. The plant is clearly Hyoscyamus albus, as indeed Ray states in Observations. Part of the transcription, the translation and the quote are taken from Greengrass et al. (2016).

15. Hortus Siccus Rayanus VI, f. K10, Sloane Collection, NHML.

16. Hortus Siccus Rayanus VII, f. R1, Sloane Collection, NHML. Smilax aspera is on the same sheet with Erica ramulis termis arborescens, the same order they list the plants in the notebook and in the Observations. (They found the first plant between Voltaggio and Genoa: ‘1. Petasites flo. albo on the mountains about 3 or 4 m. distant from Voltage on the way to Genova’).

17. The same list is in Ray 1694, p. 266.

18. Mi I 17/1, Library Catalogue, Manuscripts and Special Collection, NUL.

19. A couple of examples from Ray’s library can be found in the catalogue published for the auction (Hooke, 1708), 6. Casp. Bauhini Theatrvm Plantarvm Bas. 1658, 28. Morrisoni Historia Plantarum, Tom. II Oxon. 1680, 44. Raii Historia Plantarum, 3 vol. (Charta magna), 63. Historia botanica Bolog. 1675, 149. Theod. Thabermae Montanus De Herbis, 2 vol. Bas. 1687.

20. The explanation of the initials can be found in Ray (1673), after the Catalogue of plants there is an Explicatio Nominum abbreviatorum, which contains all the authors used and cited by Ray. A complete list with biographical notes is in Oswald & Preston (2011, pp. 70–96).

21. In Ray’s library, there was a copy of Theod. Thabermae Montanus De Herbis, 2 vol. Bas. 1687.

22. The copy we consulted is held at the Biblioteca della Scuola di Scienze MFN—Sede BTM (University of Genoa) and it is decorated with botanical drawings opposite some of the plants described.

23. The other plants are:

   ‘50. Triticum loliaceum […] Genuae in moeniis sub la Lanterna. Ann.
   67. Sagina apetala […] Genuae ubique in moeniis maritimis. Ann. P. 35.
   78. Hyoscyamus albus […] Genuae in moeniis maritimis et in liggito alla Foce. Ann.
   178. Alyssum maritimum […] In moeniis maritimis Genuae. Floret tota hyeme. Peren. alla Cava [added by pen].
   184. Cheiranthus incanus […] Genuae in moeniis maritimis prope la Cava. Frutex. [Matthiola incana].
   187. Erodium malacoides […] Genuae sub la Lanterna Ann. [geranium].
   215. Trifolium stellatum […] Genua sub la Lanterna, et in moeniis passim. Ann.
   228. Sonchus tenerissimus […] Genuae in moeniis praecepiumaritimis. Peren.

24. For an inventory of the herbals held at the Natural History Museum in Genoa, see Mariotti and Poggi (1983).

25. Apart from the plants in Table 2, it was possible to identify: Allranthus altissima (Mill.) Swing, Asparagus acutifolius L., Atriplex hortensis L., Calamintha nepeta (L.) Savi, Centranthus ruber (L.) DC., Crithmum maritimum L., Ficus carica L.,
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Foeniculum vulgare L., Galium aparine L., Fraxinus ornus L., Fumaria officinalis L., Hypericum perforatum L., Glaucium flavum (Vent.) Rothm., Parietaria judaica L., Portulaca oleracea L., Oxalis acetosella L., Rubus ulmifolius Schott, Scolimus hispanicus L., Solanum nigrum L., Scolium sp., Vicia sativa L., Vitis vinifera L. Other works with a similar methodology (but more botanically focused) are the ones on vegetation studies in Roman archaeological areas like Blasi and Pignatti 1984 and Caneva 2004. For an interesting cultural interpretation of *Ailanthus altissima*, see Patrick (2014).
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