In 1587, after John White returned to England following his second voyage to Virginia, copies of some of his watercolors of New World fauna came into the possession of two of Elizabethan England's two best known naturalists: Thomas Penny and Thomas Moffett. Penny, who is frequently called the father of English entomology, and Moffett, whose name is inextricably linked to spiders and tuffets, were fellow physicians and close friends who were interested not only in the study of insects but also the study of plants and other naturalia, and they were especially interested in rare, foreign, and exotic specimens. It is not surprising, therefore, that they were eager to receive illustrations of never-before-seen New World creatures such as the firefly (Fig. 1) and a spectacular swallow-tail butterfly (Fig. 2). Once in the hands of Penny and Moffett, these drawings were associated with hundreds of detailed drawings of insects and insect specimens that the two men had collected over decades of intensive study, and were used as reference points for their investigations into the natural world (Fig. 3).

When Moffett and Penny acquired White's insect studies, the images began to circulate within Elizabethan London's most distinguished community of naturalists. In the downtown neighborhood around Lime Street, adjacent to Leadenhall Market, (Fig. 4) behind garden walls, inside apothecary shops, and within the well-appointed houses of merchants and physicians, an important community of naturalists lived and worked. Lime Street was the English outpost of a European-wide network of students of nature – including plant hunters, gardeners, rock and fossil collectors and scholars interested in animals and insects. Its members included English citizens, foreign immigrants, physicians, apothecaries and merchants. It was with this important community that John White made contact, and shared his New World discoveries.

How White made contact with Penny and Moffett has long been questioned. It is an important question among historians of early modern science interested in how naturalists obtained information about the Americas. While I have not discovered irrefutable evidence of the ‘missing link’ that could tie White, Penny, and Moffett nearly together, my purpose here is to suggest one possible way that the men may have been introduced, and give some explanation why a man like John White would have been a person of interest to the Lime Street naturalists. Today, little is known about the naturalists on Lime Street or the contributions they made to the study of nature in the early modern period. In John White’s lifetime, however, the Lime Street naturalists were well-known in both local and international intellectual circles.

This paper will focus on the five core members of the Lime Street naturalist community to which Penny and Moffett belonged, and explore the relationships they had with others on the Continent who were interested in the New World such as Abraham Ortelius and Carolus Clusius. After introducing five of the Lime Street naturalists and their work, the paper examines how their belief in the importance of fieldwork, and the value they placed on accurate representations of natural objects, may well have brought John White to their attention. John White, who was both an artist and an explorer, was precisely the kind of person that Penny, Moffett and the other Lime Street naturalists would have wanted to rely on for information about the newly discovered lands.

Living on Lime Street
Had you lived on Lime Street between 1585 and 1590, and been interested in natural history, there is no question that you would have made every effort to get into the good graces of a Flemish silk merchant who was known in the City by the very
English name of James Cole. Some knew him under another name – Jacobus Colius Ortelianus – for he was the nephew of Abraham Ortelius, the great geographer and antiquarian (Fig. 5). Christened Jacob Coels in Antwerp in 1563, he became ‘James Cole’ at the age of eight when his family fled religious persecution in the Netherlands and joined hundreds of immigrant Protestants living in London. James Cole was the person who kept the Lime Street natural history community together, and it is probable that he was the first member of the community to make contact with John White.

The evidence for this hypothesis comes from the correspondence that moved back and forth across the English Channel between Abraham Ortelius and James Cole. In the winter of 1587, just days after John White received his charter from Walter Raleigh to return to the New World for a third time, Ortelius wrote a letter to his young nephew in London. The letter was full of matters of common intellectual concern, namely geography, history, and botany. In the letter Ortelius thanked Cole for ascertaining the precise location of ‘Wigandecua’, more familiar to us as Virginia, from his informants in England. Ortelius also praised Cole’s knowledge of history, while lamenting the fact that his nephew could not take advantage of his well-stocked Antwerp library. To bridge the gap between Antwerp and London, however, Ortelius enclosed some valerian and sunflower seeds (one of the trendiest garden flowers at the time) gathered from his garden by Cole’s aunt Anna. Ortelius reckoned that sending seeds to Cole was like ‘sending owls to Athens’ because his nephew already had such an impressive garden. No doubt Ortelius hoped that they would serve as an adequate substitute for the African marigold seeds that Cole wanted, and which Ortelius could not procure.

Ortelius’s letter and the packet of seeds made their way across the English Channel, into the City of London, and were delivered to James Cole’s comfortable house on the curving expanse of Lime Street. It was a wealthy street, described by the Elizabethan historian John Stow as an expanse ‘of fair houses for merchants and others’. At the north end Lime Street opened up to Cornhill Street and Leadenhall Market, where a variety of plants, vegetables and herbs were sold. The southern end of Lime Street intersected with Lombard Street, where the foreign merchants residing in London met twice a day to exchange news and information until 1568 when they were expected to transact their business under the porticoes of the Royal Exchange.

Cole’s father was one of these foreign merchants, and from his youth the family seems to have seen in young James the intellectual curiosity and abilities of his uncle. The two became close through occasional visits and regular correspondence, and today this correspondence reveals that James Cole was not just a silk merchant, but also a well-read Latinist with an avid interest in plants, fossils and old coins. By the age of 12 he was studying Greek and receiving simple Latin letters from Ortelius, who also sent his young nephew parcels of books. In his mid-twenties Cole went to Antwerp to stay with his uncle and aunt, Anna. ‘He does not pass his time uselessly’, Ortelius
wrote proudly to Cole’s father back in London; ‘he studies, he
writes. He learns every day, which I observe with pleasure.’
Cole’s studies were not limited to natural history, and he also
delved into matters of history, theology and philosophy. In
time, Cole became a published author who wrote a wide-
ranging assortment of treatises popular enough to be reprinted
and translated, including a work in praise of the study of
plants, a description of the plague in London and religious
texts. 

The Lime Street neighborhood was home not only to James
Cole, but also to four other men who were equally interested in
natural history: Thomas Penny (c. 1530–88), Thomas Moffett,
Mathias de L’Obel and James Garret. Thomas Penny was a
popular City physician, but his real passion was reserved for
the study of animals, insects and plants. He had studied
in London. While still in Europe, Penny also became close to
Joachim Camerarius (1534–98), the author of pioneering books
in fields of study that would become botany and zoology.
Camerarius described Penny in his Hortus medicus (1588) as
‘the eminent London doctor, very skilled in natural history,
and my particular friend’. 

It was Penny who drew Thomas Moffett (1553–1604),
another physician and naturalist, into the Lime Street
community. Moffett was a London native who was often at
odds with the College of Physicians, which disapproved of his
interest in the controversial new chemical medicines of an
itinerant German medical practitioner called Paracelsus. But
he was also fascinated by natural history, and was an active
figure in the Lime Street community. After Penny’s death,
Moffett gathered up all his friend’s manuscripts on insects and
compiled them with his own observations into a monumental
work of more than 1,200 pages. No London printer would agree
to publish it, especially since Moffett could not resist tinkering
with it and adding new entries whenever an exciting specimen
came to his attention. It was only after Moffett’s death that the
volume finally saw the light of day as The Theater of Insects, or
Lesser Animals (Insectorum sive minimorum animalium
theatrum) in 1634. 

Lime Street’s most distinguished naturalist was
undoubtedly the Flemish physician Matthias de L’Obel (1538–
1616) (Fig. 6), one of the two most important botanists of the
16th century. Known for his pioneering work on botanical
taxonomy, L’Obel first resided in England between 1569 and
1571, when he met up with the naturalist Carolus Clusius to do
some botanical fieldwork around Bristol and struck up a
friendship with Hugh Morgan, Queen Elizabeth I’s apothecary,
who had a number of novel West Indian plants in his garden. In
1585 L’Obel returned to London to take up permanent residence
at the southern end of Lime Street, and became friends with,
and then father-in-law to, James Cole. 

James Garrett (d. 1610), a Flemish apothecary and exotic
plant specialist, also lived on Lime Street, close to L’Obel at the
southern end. Garret was well known in London for importing
novel drugs from the East and West Indies, and his fellow
apothecaries knew that they could rely on his manuscript
translation of Christopher Acosta’s important treatise on these
drugs. Well connected to a European-wide network of
naturalists, Garret was a close friend of the 16th century’s
other great botanist, Carolus Clusius (1526–1609), who
described him as ‘my dear friend, a man of honour, greatly
delighting in the study of herbarism’. Clusius’s affection for
Garret may have stemmed from their mutual passion for
tulips, which Garret cultivated in his London garden plot
along the city wall in Aldgate. When Clusius visited England,
as he did three times, he always stayed on Lime Street with
either L’Obel or Garret. On his third visit, in 1581, Clusius
received some strange roots Sir Francis Drake had gathered on
his 1580 voyage through the Straits of Magellan, which he
named Drake’s Root. 

This was an impressive group of intellectuals, who had a
deep interest in understanding the natural world. But for the
community to flourish, they needed to forge connections with
people like John White, who had access to exotic plants,
animals and mineral specimens. These specimens were the
intellectual capital of the Republic of Letters, an early modern
Euro that could travel freely and be exchanged easily no matter
where the specimens originated, or where they concluded their
journey. Rare plants, cultivated and propagated in Lime Street
gardens, became important items of exchange, accompanying
letters to learned naturalists in Italy, Germany, France and the
Netherlands, as did New World plants that were received from
contacts who had been on the voyages. It was through the
circulation and collection of these naturalia – a packet of seeds,
...
information about Virginia – that the Lime Street community expressed its vitality at home and made its reputation abroad.

Though it is easy to dismiss these objects as intellectual bric-a-brac, the fragmentary evidence of an unsystematic interest in the natural world, each item was part of an intricate web of exchange that stretched from Russia to the New World and from Denmark to Africa. Every time a specimen changed hands it became infused with new cultural and intellectual currency as its provenance became richer, its associations greater. Every gift of a flower bulb, a drawing of a firefly, or a fossil came with an unspoken understanding that the recipient would take the specimen and not only credit its donor but find some way to repay the donor either directly or indirectly with something of equal value and importance.12

On Lime Street, these valuable objects were treated carefully, and placed in curiosity cabinets that were specially designed to hold varied collections. Thomas Penny, for instance, maintained a ‘dried garden’, or hortus siccus, a collection of preserved plant specimens that he kept safely between sheets of paper. He also collected artistic representations of insects as well as actual specimens, and these later passed into the hands of his friend Thomas Moffett. Moffett treasured his ‘storehouse of Insects’, where he kept his rarest items, including an African grasshopper that he received from Pieter Quiccheberg of Antwerp, the son of the famous collector Samuel Quiccheberg. James Cole inherited Abraham Ortelius’s large collection of natural objects, maps and antiquities – including artifacts from the New World, the therapeutically treasured gallstones of Persian goats known as bezoar stones, precious gems and ancient marble statues – and stored them all on Lime Street within two large curiosity cabinets that had both shelves and drawers.16

Among the Lime Street naturalists, these objects, specimens, and works of art led double lives. They were both subjects of study and inquiry, and artifacts cherished for their rarity and beauty. As subjects of study, natural objects provoked commentary and argument as their features and merits were debated and discussed within the community. As material objects, they were hoarded in cabinets, were swapped for other desired items on a naturalist’s wish list of specimens, and provided cultural ornamentation that spoke to kings and queens interested in the rare and unusual, as well as to scholars and intellectuals. At a time when most of Europe was locked in war over matters of religion and imperial ambition, the exchange of natural objects prompted an intellectual civility that stood in stark contrast to national disputes. While a naturalist like Cole might have difficulty traveling from England to the Jura mountains with Thomas Penny. After moving to England, L’Obel traveled on the border between England and Wales, and identified two new plant varieties: a yellow pulsatilla and a blue-flowered butterwort. ‘I am discovering some beautiful plants in the mountains!’ L’Obel enthused in a letter to his son-in-law James Cole. Moffett was also a tireless field-worker, scouring ‘all Helvetia, Germany and England’ for firsthand knowledge of a particular species of grasshopper, but he was unable to find his elusive prey. When he spotted an unusual specimen, like the ‘rare fly, not every where to be seen ... that feeds on a mud wall made with mud and putrefied materials’, Moffett preserved it ‘though dead, in a box for the rarity of it’.17

For the Lime Street naturalists, one of the joys of fieldwork was the opportunity it presented for collaborative work. Moffett and Penny enjoyed doing fieldwork together, wandering ‘here and there a-sampling’. L’Obel and Penny also went out into the field to examine plant specimens. James Garret helped Moffett study the field cricket by pulling off its wings and rubbing them together ‘very cunningly’ to determine whether their music came, as other naturalists thought, from their wings or from a kind of hollow tube in the insect’s stomach. Garret also studied the habits of the worms he observed living among the violets in his garden for Penny’s work on insects, reporting that they were ‘very small and black, and run very fast’.18

Closer to home, the cultivation of gardens gave naturalists like those on Lime Street another important opportunity to make hands-on inquiries into nature. Ortelius was jealous of his nephew’s London garden, and the rare muscari, tulip, narcissus and lily specimens he had there, some of which were unknown in Antwerp.19 Plants came into the Lime Street gardens from all corners of the globe, along with their donor’s expectation that their health and welfare would be carefully tracked and reported as they became acclimatized to English conditions. Ortelius sent South American sunflower seeds and North American chestnuts on to Lime Street that he had acquired from friends with New World connections. James Garret was internationally renowned both for his ability to propagate ever more colorful varieties of tulip as he unwittingly exploited the virus that was becoming rampant in the flower stock, and for his ability to procure new plant specimens from all over the world. John Gerard noted in The herball or Generall historie of plantes how the apothecary had ‘undertaken to find out, if it were possible, the infinite sorts [of tulip], by diligent sowing of their seeds, and by planting those of his own propagation, and by others received from his friends beyond the seas for the space of twenty years’. More plants poured through the door of his shop on Lime Street: West Indian grasses, seeds from the Peruvian balsam tree obtained

The importance of fieldwork
Briefly put, the Lime Street naturalists prized firsthand knowledge of the animal and plant kingdoms over all other forms of natural knowledge. One could read about a spider in a book, or hear reports of the color of a tulip flower in a letter, but there was nothing like actually seeing a plant or animal in its native habitat to really understand it. The Lime Street naturalists were avid proponents of what we would call fieldwork, and when out in the field, their goal was to observe something novel, rare or peculiar. L’Obel, in particular, loved fieldwork, a passion that was born during his student days at the University of Montpellier when he had studied plants in Geneva and the Jura mountains with Thomas Penny. After
by Lord Hunsdon, new species of beans, a potted *Herba mimosa*
brought out of Puerto Rico by the Earl of Cumberland and a
Virginian version of the china root. 

When a Lime Street naturalist took a trip abroad it was
almost always to do fieldwork, rather than to simply engage in
recreational travel. Fieldwork could be conducted in new
environments, specimens previously seen only in books could
be examined *in situ* growing wild or in cultivated gardens, and
friendships made through correspondence could be
strengthened by face-to-face contact. James Cole undertook a
natural history tour of Europe in the summer of 1597
accompanied by another ‘learned Englishman’. They traveled
throughout Europe, visiting the naturalist Joachim Camerarius
in Nuremberg, the historian Marcus Welser in Augsburg and
the collector Adolphus Occo in Aachen before sweeping the
length and breadth of Italy. In Italy, Cole and his English friend
visited Professor Magini at the University of Bologna to see
whether he had any interesting ancient maps, met artists in
Florence and visited Fulvio Orsino’s unparalleled precious
stone collection at the Vatican. In Naples, at the house and
museum of the della Porta brothers, Cole had the opportunity
to participate in the vital intellectual scene and their natural
history expeditions.

While Naples was impressively remote from London by
early modern standards, even more exotic fieldwork
opportunities were emerging as voyages of exploration opened
up new worlds. Eager naturalists were quick to acquire
examples of novel specimens from North America, South
America and Africa from returning explorers. Acquisition of
these desirable, trendy natural commodities was not cheap, as
Thomas Moffett discovered when he had to purchase a praying
mantis ‘from Barbary that was brought out of Africa with some
cost to us’. It was far more cost efficient to procure exotic
specimens from friends like Pieter Quiccheberg in Antwerp,
who sent Penny a young African grasshopper, which Moffett
continued to treasure in his storehouse of insects after his
friend’s death. And so it is less surprising that the surgeon
Ludovicus Armacus brought Penny a grasshopper from Guinea
and a caterpillar from Africa, and John White presented him
with another grasshopper ‘brought forth from Virginia’.

These Lime Street naturalists were interested in topics of
perennial interest to gardeners: new species that promised
strange colors or interesting flowers, information about species
that refused to adapt to new climates and reports on how their
favorite plants were faring in the gardens of their friends. But
they were also living at a time of unprecedented challenge, as
naturalists tried to sort through the findings of their own
fieldwork and the overwhelming range of new plants and
animals that seemed to be coming into their hands from every
direction. The pressing issue among naturalists was how best
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animals that seemed to be coming into their hands from every
direction. The pressing issue among naturalists was how best
to study specimens that were not directly available, without
falling victim to wild and inaccurate secondhand reports?

**Representing nature**

The answer, the Lime Street naturalists found, was to rely on
representations of natural objects, specifically sketches,
drawings and even colored portraits of plants, animals and
insects. While all manner of intriguing objects were sent to
Lime Street – hairy caterpillars from Normandy, strange biting
caterpillars from Hispaniola and scorpions from Barbary – not
all specimens could be transported to the City for firsthand
inspection. If a specimen could not be had, the Lime Street
naturalists greatly preferred a careful drawing to a verbal
description. An image of a plant, insect or animal froze the
specimen in time, enabling it to be shared with other interested
parties and studied minutely and at leisure.

The Lime Street naturalists found that an artistic
representation of a natural object could impart a greater sense
of verisimilitude to the viewer than a verbal description,
especially when the descriptive power of words seemed
unequal to the task of capturing an especially rare or
magnificent specimen. Moffett was glad that he received an
elegant drawing of a colorful butterfly from his friend Clusius,
for example, because it was ‘easier to wonder at and admire,
than with fit expressions to describe’. Even so, representing a
specimen – in words or visually – was recognized as an
imperfect process of translation from the real object.

‘How hard and uncertain it is to describe in words the true
proportion of plants (having no other guide than skilful, but
yet deceitful, forms of them, sent from friends ...) they best do
know who have most deeply waded in this sea of simples,’
wrote Mathias de L’Obel.

In spite of these difficulties, Moffett and Penny were eager
to receive detailed sketches of plants and other *naturalia* that
were of interest to them. They happily received an illustration
of a praying mantis discovered in Greece, and depictions of
magnificent butterflies from the one-time Lime Street resident
Carolus Clusius, who was then living in Vienna, for example.
These included an image of a butterfly that was so splendid and
unusual Moffett rhapsodized that it was ‘as if Nature in
adorning ... this had spent her whole painter’s shop’. Lime
Street returned the favor by sending Clusius dried plant
specimens from the New World. Penny was particularly eager
to receive an image of a tarantula rumored be in the possession
of Abraham Ortellius that had four eyes. He urged Ortellius to
have the tarantula sketched immediately, as the sketches
already made for him of Italian tarantulas, sadly, had but two
eyes.

Even when a careful line drawing was made for publication
or to send to a friend, the absence of color could limit its
usefulness to other students of nature. Moffett carefully
instructed his readers how to modify the line drawings that
were to be included in his published *Theater of insects* to make
them better reflect live specimens. ‘We have here set down
exactly the form and magnitude of the Cranesbill-Eater’,
Moffett wrote next to a drawing of a hairy caterpillar, but to
fully appreciate what it looked like, the reader ‘must make the
white spots that adorn its black girdles of an iron color; and
paint the belly and feet, and the white space between the
girdles, with a leek-green color’. Moffett gave similar
instructions for hand-coloring the line drawing of a tarantula:
‘If you paint the white places with a light brown, and the black
with a dark brown, you have the true spotted Tarantula.’

Much of the reliability associated with drawings and other
representations of plants and insects depended on the quality
of artists who made the drawings, and though most naturalists
of the period were very good craftsmen, their skills were minor
in comparison to the artists the Lime Street naturalists
considered friends: Marcus Gheeraerts the Elder, Marcus
Gheeraerts the Younger and Joris Hoefnagel. The middle men
between the Lime Street naturalists and these artists were James Cole and his uncle, Abraham Ortelius—the same pair who found out the location of Wigandecua in 1587. The Gheeraerts family lived close to Cole on Lime Street, and used the family’s merchant connections to get letters and gifts back to friends on the continent. Joris Hoefnagel, one of Rudolf II’s court artists, had once lived in London among the immigrant community and after departing for the continent he continued to use Abraham Ortelius to procure works of art that he wanted to study. In 1593, Hoefnagel sent him ‘a little drawing from my hand, hoping that it will not displease you’, along with an old sketch of a flowerpot he had long ago dedicated to the cartographer as a token of thanks. Having settled his debts, Hoefnagel now wanted Ortelius’s assistance completing his ‘book of art’ that already had examples of ‘about three hundred good and notable masters’. ‘This study requires the help of friends’, Hoefnagel earnestly explained, ‘and for the little flowerpot I desire nothing but art for art.’ Later in the letter, after sharing the latest news, Hoefnagel dropped broad hints to friends on the continent. Joris Hoefnagel, one of Rudolf II’s strong ties that the community had to artists on the continent and after departing for the continent he continued to use Abraham Ortelius to procure works of art that he wanted to study. In 1593, Hoefnagel sent him ‘a little drawing from my hand, hoping that it will not displease you’, along with an old sketch of a flowerpot he had long ago dedicated to the cartographer as a token of thanks. Having settled his debts, Hoefnagel now wanted Ortelius’s assistance completing his ‘book of art’ that already had examples of ‘about three hundred good and notable masters’. ‘This study requires the help of friends’, Hoefnagel earnestly explained, ‘and for the little flowerpot I desire nothing but art for art.’ Later in the letter, after sharing the latest news, Hoefnagel dropped broad hints to the artists whose works he would like to acquire: ‘I possess nothing by Henry Bles, nor of Joos van Cleve, Frans Floris, or the Pourbuses.’

Back in London, the Flemish immigrants on Lime Street collected the signatures and sketches of their artist friends in their _album amicorum_. Another of Cole’s uncles, the Dutch community’s London postmaster Emmanuel van Meteren, had an album that included entries by Cole, Ortelius and Clusius, as well as beautiful still-life miniatures by Joris Hoefnagel, Marcus Gheeraert’s and Lucas de Heere. Matthew de L’Obel’s son, Paul, had a similarly star-studded _album amicorum_, with entries by the classical scholar Joseph Scaliger, France’s royal gardener Jean Robin and two of King James I’s apothecaries.

Given the strong emphasis on fieldwork among the Lime Street naturalists, their belief in the value of artistic representations as objects of study as well as value, and the strong ties that the community had to artists on the continent and in London through the Cole–Ortelius family, it is less difficult to imagine how John White’s pictures of the firefly and the butterfly made it into Penny and Moffett’s hands. There were doubtless many rumors circulating in London about the New World after the members of the Virginia voyages returned home. But when the opportunity came for the Lime Street naturalists to acquire drawings by John White, they no doubt pounced on their first opportunity to meet the artist and confer with him about what he had seen in his first views of America.

Notes

1 This paper is a modified and abbreviated version of chapter 1 of Deborah E. Harkness, _The Jewel House: Elizabethan London and the Scientific Revolution_, New Haven/London, 2007, 15–56. I wish to thank Yale University Press for allowing me to republish the information on Elizabethan naturalists here. In addition, I would like to offer my sincere thanks to Kim Sloan, who offered her assistance to me as I tried to piece together White’s relationship with the Lime Street naturalists and gave so generously of her time and expertise. I am also deeply appreciative of the comments and feedback that I received at the British Museum’s conference in association with the John White exhibit in June 2007: Stephen Clucas, Florike Egmond, Michael Gaudio, Karen Kupperman, and Kim Sloan helped to sharpen aspects of this paper because of their own contributions to the conference, as well as their questions to me, and I am grateful for their assistance. James Cole, Sr. had already established an outpost of his silk business in the city of London in the early 1550s, and by 1571 James, Elizabeth and their young son were living in the crowded parish of St. Botolph’s Bishopsgate in the northern part of the city. They appear to have fled the Low Countries for religious reasons, along with many other members of their extended family including Elizabeth Ortel’s cousins Emmanuel van Meteren and Daniel Rogers. For more information on the participation of foreign immigrants in English science of the period, see D.E. Harkness, ‘Strange Ideas and English Knowledge: Natural Science Exchange in Elizabethan London’, in P. Smith and P. Findlen, eds, _Merchants and Marvels: Commerce, Science, and Art in Early Modern Europe_, New York, 2002, 137–62.


3 Hessels transcription writes ‘Marvella’, which I suspect is a mistranscription of ‘marnella’, a form of wild valerian with medicinal properties. See J. Gerard, _The herbal or General historie of plantes_, London, 1597, 918.


5 Supra n. 5, 209.


7 Cole’s published works include the _Syntagma herbarum encomiasticum_, Leiden, 1606, which went through a number of editions, and _Den staet van London in hare Groote Peste_, Middelburg, 1606. For more on the latter publication, see O.P. Grell, ‘Plague in Elizabethan and Stuart London: the Dutch Response’, _Medical History_ 34, 1990, 424–29.


14 L’Écluse, _Epistola_, 9, 1621. For further information on _L’Écluse_, see F. Egmond, _Cultures of Natural History_, Amsterdam, 2006. Insights into tulip mania can be found in A. Goldgar, _Tulipmania: Money, Honor, and Knowledge in the Dutch Golden Age_, Chicago, 2007.

For descriptions of their fieldwork, see Moffett, supra n. 10, 947, 949, 994; L'Obel, Stirpium adversaria nova, perfacilis vestigatio, London, 1605, 41 and 233; Gerard, 1633, supra n. 3, 168 and 271; Ortelius Correspondence, letter 353, 7 June 1610, 832–4; letter 352, 10 September 1609, 831–2.


For nature as artist, see A. Goldgar, 'Nature as Art: the Case of the Tulip', in Smith and Findlen, supra n. 1, 324–46.

Johnson in Gerard, supra n. 14, 434, 1610, 1618.

Ortelius Correspondence, letter 152, 12 June 1587, 566–7.


Moffett, supra n. 10, 924, 959, 963, and 983. For nature as artist, see A. Goldgar, 'Nature as Art: the Case of the Tulip', in Smith and Findlen, supra n. 1, 324–46.


Ortelius Correspondence, letter 232, 16 April 1593, 556–67; letter 239, 20 September 1593, 556–7.

Van Meteren’s album amicorum is now Bodleian Library MS Douce 68. Paul de L’Obel’s album is now British Library MS Harley 6467.