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The World of Carolus Clusius

Florike Egmond

Number 6

THE WORLD OF CAROLUS CLUSIUS: NATURAL HISTORY IN THE MAKING, 1550–1610

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BY

Florike Egmond

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2010 by Pickering & Chatto (Publishers) Limited

Published 2016 by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN
711 Third Avenue, New York, NY 10017, USA

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data

Egmond, Florike.
The world of Carolus Clusius: natural history in the making, 1550–1610. – (Perspectives in economic and social history)
1. Botany – Europe – History – 16th century. 2. Natural history – Europe – History – 16th century. 3. Clusius, Carolus, 1526–1609.
I. Title II. Series
580.9'4'09031-dc22

ISBN-13: 978-1-84893-008-7 (hbk)

Typeset by Pickering & Chatto (Publishers) Limited

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Figure 1. Portrait of Carolus Clusius. Engraving by Martinus Rota, Italian, sixteenth century. Collection Leiden University Library, BN 336.

PREFACE

My research in the field of early modern natural history – after many years spent in the domain of historical crime and punishment – started in the early 1990s and was triggered by 'meeting' Adriaen Coenen, a sixteenth-century Dutchman whose marvellous illustrated manuscripts on marine life continue to fascinate me. The humble Coenen was a contemporary of one of the most famous naturalists of the period, Carolus Clusius. They had some acquaintances in common and both spent the last years of their lives in Leiden, though not in the same period. It is thanks to Coenen that I became interested in Clusius and his world, and decided to focus – if I ever would have the opportunity – not so much on Clusius himself but on the men and women, famous or not, who formed part of his world and of the history of natural history.

That opportunity came in 2005 thanks to a grant from the Netherlands Organization for Scientific Research for the Clusius Project (2005–9), which was appropriately based at the Scaliger Institute of Leiden University; besides myself it comprised Professor Paul Hoftijzer and two PhD students, Esther van Gelder and Sylvia van Zanen. Shortly before the official start of the Clusius Project I moved to Rome, and was fortunate enough to find an apartment with a small garden. Most of the research and writing for this book was thus accompanied by putting into practice (on a small scale) what I read about in the sixteenth-century sources: trying out plants in a new setting; experimenting with bulbs and tubers transferred from Holland to a Mediterranean setting; importing exotica, such as a dragon tree and many succulents from the Canary Islands; and occasionally transplanting indigenous wild plants found on village walls or along the roadside. Excursions to the plateaus of Norcia and Castelluccio followed, to discover where sixteenth-century naturalists went botanizing.

While both the transfer of plants and my regular trips back and forth between Italy and the Netherlands drove home the importance of 'place' and setting in the widest sense of the word, the practice of learning about plants showed me more clearly than anything else could have done the difference between myself as an amateur gardener and Clusius and his friends: the real plant experts and

collectors. But the pleasure was probably much the same for all of us, and I have done my best to ignore the advice to keep work and pleasure separate.

For Clusius and friends the study of nature was in most respects a collective enterprise, involving many of them in exchanges with fellow enthusiasts all over Europe. The web of relations connected with the Clusius Project grew in a similar way and reached – at least in a geographical sense – similar dimensions. I found myself involved in weekly and sometimes daily exchanges of information about natural history in Clusius's age with colleagues and friends all over Europe. Those exchanges were enormously stimulating and the help I have received was invariably generous. It is impossible to thank all here with whom I have been involved in such exchanges during the last five or so years, but I would like to name in particular Karen Reeds, Deborah Harkness, Kim Sloan, Dirk van Miert, Roelof van Gelder, Francisco Bethencourt, Diogo Ramada Curto, Rea Alexandratos, Ian Rolfe, Michiel Verweij, Hugo Soly, Giuseppe Olmi, Lucia Tongiorgi Tomasi, Giuseppe Sandrini, Andrea Ubrizsy Savoia, Irene Baldriga, Harold Cook, Sven Dupré, Sachiko Kusukawa, Emma Spary, José Pardo Tomás, Sabine Anagnostou, Christoph Friedrich and Arthur MacGregor. The constant possibility of 'talking' on email to colleagues and friends in many different places and from many different disciplinary backgrounds about small and big questions has helped to give density to my research. Of course none of them is responsible for the errors which inevitably will have found their way into this study. Sincere thanks also go to the following institutes for their invitations to present parts of my research and test out ideas – sensible or far-fetched – in workshops, conferences or other sessions: the European University Institute, Florence; the Descartes Institute, Utrecht; the Huygens Institute, The Hague; the Free University, Brussels; the Institut für Geschichte der Pharmazie, Marburg; the Fundacion Canaria Orotava de Historia de la Ciencia, Tenerife; the University of Toronto, Canada; the Wellcome Institute and the Warburg Institute, London; St John's College, Oxford; and the Society of the History of Science and Technology, Barcelona.

Special thanks go to the Netherlands Organization for Scientific Research (NWO), whose project grant made my dream come true to be able to spend four years working on this subject, and to my colleagues in Leiden: Paul Hoftijzer, friend and excellent director of our project; Kasper van Ommen, key figure of the inspiring Scaliger Institute; Esther van Gelder and Sylvia van Zanen, the PhD students with whom it has been a pleasure to work; Gerda van Uffelen, Carla Teune, Jan de Koning and Pieter Baas at the Hortus Botanicus and the Nationaal Herbarium in Leiden for their expert advice on all plant matters – modern and historical – and much else; Harm Beukers and Rob Visser for their initiative in setting up the project and their continued support. I would also like to thank the staff of Leiden University Library for their assistance and their important role in making digital images of the complete Clusius Correspondence in Leiden freely

available on internet. The Scaliger Institute and Leiden University Library were also crucially important to the international conference in 2004 that opened the Clusius Project and the exhibition in Leiden to commemorate the 400th anniversary of Clusius's death in April 2009. The resulting publications (*Carolus Clusius: Towards a Cultural History of a Renaissance Naturalist*, 2007; and *The Exotic World of Carolus Clusius 1526–1609: Catalogue of an Exhibition on the Quatercentenary of Clusius' Death, 4 April 1609*, 2009) are very much the result of joint efforts.

New friendships have originated in the course of the project, often via long-distance mail, and old ones were strengthened. I would specially like to mention Arthur MacGregor, José Pardo Tomás, Giuseppe Olmi, Esther van Gelder and Paul Hoftijzer – all of whom have been kind enough to read the whole manuscript. Their advice and support and that of Lucia Tongiorgi Tomasi, Andrea Ubrizsy Savoia and Sabine Anagnostou were invaluable. Nell Riviere-Platt was kind enough to read and comment on the French chapters.

This book is dedicated to Mayke de Jong, my best friend, without whom neither history writing nor gardening would be the same, and to Peter Mason, companion in life, research and other adventures. He has read every letter of the many versions of this book and we have so often discussed ideas, compared notes and invented new plans that it has been a joint project in many respects. I hope the adventure continues.

TECHNICAL NOTE

Geography

During Clusius's lifetime the Netherlands split up as a consequence of the revolt of the northern provinces against Spanish rule. The Northern Netherlands became the Dutch Republic, while the southern provinces remained part of the Habsburg empire. I use the Netherlands or the Low Countries for the Southern and Northern Netherlands together; the Southern Netherlands (and the adjective Netherlandish) for the southern provinces, and either the Northern Netherlands or the Dutch Republic (and the adjective Dutch) for the Northern provinces. Holland was then and is now used both for the most powerful province of the Dutch Republic and for the whole of the Dutch Republic. I use it only for the province of Holland.

Plant Names

In this study, which focuses more on the fascination with plants than on the plants themselves, plant identification has not been my purpose. Where possible, I have tried to use common plant names (hyacinth, lilac, horse chestnut, sunflower), which are often close to the contemporary sixteenth-century ones, rather than their modern scientific (Latin) names. For less commonly known plants that are mentioned in the original texts by a name that allows identification, I have used the modern scientific name or both the old name and the modern scientific one. For these identifications I have used botanical handbooks; publications on Clusius, Dodoens, Lobel and several other contemporary naturalists; and especially the recent major publication which identifies the plants depicted in the sixteenth-century *Libri Picturati*: J. de Koning et al. (eds), *Drawn after Nature: The Complete Botanical Watercolours of the 16th-Century Libri Picturati* (Zeist: KNNV-Publishing, 2008). In some particularly tricky cases, I have had invaluable help from Gerda van Uffelen and Carla Teune from the Leiden Hortus Botanicus. Where identification was not possible or less relevant to my argument, I have generally kept the original name found in the sources, what-

ever the language used (lilium susanum, tusai, zomboul arabique, Christusogen, Schmalzblümchen, etc.). It should be emphasized that terms like narcissus or hyacinth were used at the time for a much larger category of plants than at present.

The Clusius Correspondence: Sources and References

The roughly 1,300 extant letters sent to Clusius from all over Europe by more than 300 correspondents, and the roughly 200 extant ones sent by Clusius himself, form the principal source of this study. The vast majority of these manuscript letters are in the University Library of Leiden. Most of them bear the same shelfmark VUL 101. All original letters to and from Clusius in the possession of Leiden University Library have been digitized. The digital images of the original letters in Leiden can be freely consulted and downloaded via the website of Leiden University Library (http://www.bibliotheek.leidenuniv.nl/ with a link to the Digital Special Collections), or directly via: https://socrates.leidenuniv.nl/exlibris/dtl/u3_1/dtle/www_r_eng/js/correspondents.html. Details concerning the language in which a particular letter is written (which is mentioned here only if relevant to the argument), and concerning the place of dispatch and the destination of each letter can be found there. This special situation enables everyone who is interested in the original sources to read them at her or his leisure – taking into account, however, that the letters are written in six different languages: Latin, French, Italian, Spanish, German and Dutch (in order of importance), and that the handwriting of the period is not always easy to decipher.

Thanks to the fact that the vast majority of the letters used here belong to one collection, share the same shelfmark and were addressed to Clusius, it was possible to use an abbreviated reference system to the letters throughout this book. In both text (after direct quotations) and notes, all manuscript letters used here are referred to by the surname of the sender (or surname plus initials or first name in cases of possible confusion) and the date of dispatch: e.g. Pona, 15 August 1596, or James Garet Jr, 13 September 1599. Unless otherwise indicated such letters belong to the Leiden University Library collection, have the shelfmark VUL 101 and were sent to Clusius. In all other cases – whether concerning letters to or from Clusius or other manuscript sources – full details are given in the relevant notes.

It is not always known whether the dating of letters is in old or new style; if indications are available these are included in the reference as OS or NS. Roman dates (such as 3 Id. Martius 1592) have been converted into modern ones.

For the proper names of Clusius's correspondents I have generally used the vernacular rather than the Latinized version – Levenier and not Venerius, Roels

and not Roelsius, Belli and not Bellus – unless this could lead to misunderstandings or when a correspondent is better known under the Latinized version.

Unless otherwise indicated I have consulted the original letters. All translations are mine with the constant advice and help of Peter Mason; certainly none of the errors are his.

ABBREVIATIONS

Curae	C. Clusius, *Curae posteriores, seu plurimarum non antè cognitarum, aut descriptarum stirpium, per egrinorumque aliquot animalium novae descriptiones* (Leiden and Antwerp: Officina Plantiniana, 1611).
Exoticorum	C. Clusius, *Exoticorum libri decem: quibus animalium, plantarum, aromatum, aliorumque peregrinorum fructuum historiae describuntur* (Leiden: Officina Plantiniana, 1605).
Rariorum	C. Clusius, *Rariorum plantarum historia* (Antwerp: Officina Plantiniana, 1601).

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INTRODUCTION

'The true monarch of flowers' is how in 1602 Emanuel, Prince of Portugal, addressed the old and famous Carolus Clusius (1526–1609) – naturalist and at that moment prefect of the botanical garden at the university of Leiden in Holland. The prince asked Clusius for a grape hyacinth on behalf of his wife Emilia of Orange-Nassau, who had picked up 'the gardening curiosity in which she takes a singular pleasure' from Marie de Brimeu, Princess of Chimay and a lifelong friend of Clusius.[1] And it was Marie de Brimeu – known in her time for the gardens which she designed and planted with rare flowers in the Netherlands – who hailed Clusius as 'the father of all the beautiful gardens in this country'.[2]

These courtly praises which acknowledge Clusius's merits and fame in flowery terminology direct us to a number of topics about which we will hear much more in the course of this book, such as long friendships celebrated and indeed formed by the gift exchange of plants; women and their involvement in gardens; the fashion of rare bulbs; the passion for plants and gardening, curiosity and collecting; and the fascination with rarity in Europe during the period 1550–1610. Those topics in their turn steer us towards themes that are at the heart of this study. We will be looking at the importance of passion, fashion and display in the formation of botany as a scientific discipline; at the role of men and women whose knowledge was mainly based on practice in the creation of a specialized field of expertise; and at the practices in which they engaged – in other words, at natural history in the making in the practical sense of the term.

Clusius himself was the first explicitly to recognize that his great expertise – universally acknowledged as scientific then and now – was rooted in pleasure. From Leiden, at the age of eighty and looking back on his long life and the origins of his interest in plants, he wrote to his young friend Matteo Caccini in Florence that he had never obtained any university degree,

> but I have merely followed studies for my own delectation, and since from boyhood I have always delighted in plants, I have now wanted to publish the history of all the rare plants which I have observed in my journeyings that have not been described by others.[3]

The many hundreds of letters to Clusius which constitute the most important source for the present study and at the time formed the web of exchange in which and on the basis of which botanical knowledge was being created, likewise abound in expressions of pleasure, love and fascination, but also of intense rivalry and jealousy centred on the discovery and possession of rare plants. It is these letters that allow us to reconstruct Clusius's world – what we might now be tempted to call a virtual network of relations criss-crossing the whole of sixteenth-century Europe, interlinking and coinciding, clashing and forming part of other individuals' networks or worlds. The need for that reconstruction follows from my two very simple points of departure: that the study of 'science before science' cannot proceed by focusing only on the recognized categories belonging to science (publications, universities, learned men, scientists, ideas) but needs to cast its net far wider to include categories, sources, practices and persons that are usually regarded as outside or beyond its domain given the fact that this domain was still being demarcated at the time; and, secondly, that knowledge of the relevant context (in the wide sense of place, social and cultural and sometimes political setting) is essential to our understanding of early modern natural history.

In the present exploration of early modern natural history I hope to join authors such as Lucia Tongiorgi Tomasi, Harold Cook, Giuseppe Olmi, Karen Reeds, Deborah Harkness, Stephen Pumfrey, Emma Spary, Paula Findlen, Pamela Smith, Brian Ogilvie and Mario Biagioli. By their inspiring work – which is constantly present in this study, even if it is not continually mentioned in the notes – all of them have thrown a great amount of new light on early modern research practices, practitioners and their relevance to the formation of early modern science. If by investigating the world of Carolus Clusius we find that the boundaries of the new history of science itself are being stretched and that it is turning into a cultural history of knowledge and its formation, so much the better.[4]

People and Practices in the Botanical Renaissance

Knowledge of nature had always formed part of everyday life. But in the sixteenth century – precisely during the lifetime of Clusius – a number of new phenomena emerged which together are known as the Botanical Renaissance and produced the greatest changes in European knowledge of living nature before the age of Linnaeus, or perhaps even before Darwin.[5] The face of the gardens of Europe changed with the introduction of a vast number of exotic plants from the Middle East, Africa, the Far East and the Americas. The indigenous flora of Europe itself was for the first time investigated by means of field trips and documented in text and image. The passion for gardening and the cultivation of rare plants spread like wildfire throughout Europe; the first university botani-

cal gardens and academic chairs in medicinal botany were created; and the first richly illustrated surveys of the world of plants and the world of animals were published. Clusius was a key figure in each and every one of these developments, and has been responsible more than anyone else for making exotic nature known to Europeans.

The major changes of the Botanical Renaissance were strongly stimulated by the discovery of exotic nature via the European voyages of exploration, and influenced by new and critical approaches (originating in Renaissance humanism) to classical descriptions of living nature. Many of the above-named innovations were unthinkable, moreover, without a complex phenomenon which we will try to explore in this book. In the sixteenth century the world of nature came for the first time to lie at the centre of interest of the European social and intellectual elites. It became a fashionable subject, a respectable pastime and even a passionate interest, manifesting itself in the cultures of collecting and gardening, and the fascination with the exotic and rarity. Attention has been paid to all of these phenomena, but they have usually been treated separately. We will see in the course of this study that they were indelibly linked together, and formed one of the driving forces of the Botanical Renaissance.

The focus on practices and practitioners follows directly from the attempt to study 'science before science'. It is the process of emerging expert knowledge in a phase before it had actually solidified into 'science' that interests us here, and more specifically the question of which practices generated which kinds of expertise in the field of natural history and which persons were involved. It seems unlikely that great expertise concerning living nature could have come to attain that quality exclusively on the basis of the learning of a relatively small group of men who published (mostly in Latin), had studied and had generally been trained as humanists. In this respect – but it is an important one – my point of departure is thus almost diametrically opposed to Ogilvie's, although many of our findings are not, and our paths often run parallel. Ogilvie looks at practices as well as texts, but in a social sense explicitly focuses his study on 'the Latin-writing, humanistically educated elite of the sixteenth century' and defines Renaissance natural history as the discipline developed in the community of this elite from which many people and their knowledge were excluded.[6] Precisely given the fact that the sixteenth century saw the origins of natural history as a discipline, it is unwarranted to assume that the roots of any field of scientific expertise (and that concerning living nature perhaps least of all) can be found exclusively in the knowledge circulating among the intellectual elite of the period. This exclusion seems to me a historiographical rather than a historical fact. In this respect I find myself much closer to the approach followed by Findlen in her investigation of Italian naturalists and collectors:

> The intellectual problem of understanding what Renaissance naturalists meant when they 'did science' also has social consequences. The indistinguishability of natural history from other aspects of learned and courtly culture certainly calls into question the notion of a scientific community, as historians have commonly understood it.[7]

My emphasis will therefore be on those persons who had a great amount of expertise concerning living nature to offer to Clusius, but most of whom would, according to Ogilvie's criterion, be outside the margins of the community of naturalists or at best on its edge. Few learned humanists will therefore be discussed here – even though Clusius maintained friendly relations with some of the major humanists of his age and was trained in this tradition himself. Universities will be looked at as only one (albeit an important) factor in the shaping of knowledge about nature and investigative methodology.[8] And printed works on animals and plants, even those by Clusius, will only rarely be discussed. If they occur, it is usually as instruments – often subsidiary ones, compared to practice – in the formation of expertise rather than as major stepping stones in the history of knowledge. Our social focus is wide and covers a heterogeneous mixture of apothecaries, aristocratic women, merchants, voyagers, physicians and local herborists as well as courtiers, high officials in the administration of the Habsburg empire, physicians and even a few princes, military men and revolutionaries. And we will try to show that a domain of knowledge in which even today laymen and women may develop very high-quality expertise, was shaped in a major way by practice-based knowledge and by the experience, methods, observations and types of insight developed by people who had no university background or humanist training.[9]

Again it is Clusius himself who pointed the way, in a remark made just a few months before his death in which he reminisced about his days as a young naturalist. Referring to the nobleman Jean Boisot in Brussels, he put their respective interest (*curiosité*) in and expertise concerning plants on a par, while explicitly rooting the knowledge of both Boisot and himself in practices – investigation by travel and growing plants in the garden:

> That gentleman was my very great friend, a learned man, and I think that he and I have been the first *curiosi* to understand the variety of plants, but he did not undertake any journeys but cultivated them in his garden.[10]

Clusius has been called the first scientific botanist for his extensive knowledge of living nature, his precision, his detailed descriptions – in which a critical comparison of information and personal observation of plants played a key role – his interest in ecology and his fascination with exotic, non-European nature. As we will discover, those characteristics by no means applied only to Clusius: many of his friends and correspondents had exactly the same interests. Their expertise was relevant to Clusius precisely because it was based on and tested in practice,

while first-hand observation, detailed description and a critical evaluation of observed evidence played a crucial part in its formation. We thus cannot prise the characteristics of Clusius's work loose from the much wider set of interests and practices to which they belonged at the time. Nor can we – when looking at practices relevant to the study of nature – impose an *a priori* distinction between those that have later come to be regarded as 'scientific' and others. We will look therefore at horticultural techniques, as well as fashions in the collecting of rare plants and in garden display, plant-hunting expeditions, the fascination with colour, botanical experiment, acclimatization, methods of evaluating evidence, modes of exchanging knowledge, styles of reporting and the idiom of friendly collaboration in the pursuit of knowledge.

Seeing that parts of natural history (botany first and foremost) were being turned into natural sciences in the course of Clusius's lifetime, we should ask ourselves to what extent we are dealing here with the professionalization of a certain domain of knowledge. Clusius, who studied medicine but never obtained his degree or practised as a physician, was regarded in his age as one of the very few and first professional naturalists: he earned his living as an expert in these matters; he helped to set the standards of professionalism with respect to the knowledge of plants; he was renowned for his expertise in this field; and he divulged his knowledge. Throughout our investigation we will explore, in so far as possible, which terms his correspondents used to describe their field or expertise concerning living nature, and look at their professions to see for how many members of Clusius's world that type of expertise formed a source of income, whether in the form of patronage or other earnings. And we will explore to what extent Clusius's friends too were involved in setting the standards of botanical expertise, by special expertise, research methods or divulging their knowledge. At the time, however, experts by no means only gained a reputation through publications, but also – and often more quickly and efficiently – by word of mouth, personal exchanges and correspondence.

Clusius and Friends: Correspondence and the Myth of the 'Isolated Genius'

Although Clusius is the central figure in this study, not he but his world is its subject. One of the purposes of studying that world is to (further) undermine a myth that has characterized the history of science in various more or less sophisticated forms since at least the nineteenth century: that of the isolated genius who almost single-handedly changed the direction of scientific progress. Without detracting from the fame or relevance of renowned and innovative men such as Darwin, Linnaeus, Galileo or Da Vinci, the attention is shifting to 'famous men in their context' in order to reach a different understanding of how (sci-

entific) innovation is connected with a socio-cultural background.[11] The myth of the isolated genius has been under attack for many years now from various directions, but by no means all of the implications have yet been explored. To investigate the men and women who belonged to the context of famous scientists is by no means always possible given the nature of historical sources, and it is generally even more difficult to trace their expertise and involvement in research.[12] In this case it is Clusius himself who allows us to do so. He kept their letters; he put himself on a par with the men and women with whom he investigated nature; and he included hundreds if not thousands of references to their information and knowledge in his printed works.

In particular Clusius's generosity as a man and a scholar opens up the possibility of tracing in some detail what his less famous friends contributed to natural history. He lived and worked in many different European countries, and in the course of his long life built up a correspondence network which covered most of Europe while spanning a considerable part of the social spectrum. Unusually, he preserved a very large number of letters sent to him by correspondents during almost half a century (*c.* 1560 until his death in 1609) – even though the extant letters can be but a fraction of those sent to him: there are some 1,200 extant letters written to Clusius by some 330 correspondents in six languages (Latin, French, Italian, German, Spanish and Dutch in order of importance).[13] Clusius's correspondents lived all over Europe, from England to Hungary and Austria, from Greece and Italy to Poland, and from Spain and Portugal to the Northern Netherlands, France, Germany and Norway. Some were his social equals, but there were also many persons of a higher or lower social position, ranging from ruling princes and the very top of the European aristocracy to diplomats and famous humanists, and from fellow physicians or naturalists to printer-publishers, artists and apothecaries. The better known Clusius became as a leading botanical expert, the more his epistolary contacts proliferated. Since many of Clusius's correspondents had their own epistolary networks of exchange and had access, moreover, to the partly overlapping networks of yet other friends with whom they maintained relations of exchange, it is no exaggeration to claim that he could be in touch, directly or indirectly, with all the then relevant experts on living nature in Europe. That is why the present study is called Clusius's world rather than Clusius's network, and why it does not aim at a network reconstruction in the strict sense of the term.[14]

The many, meticulous and usually generous references in Clusius's printed works to his friends and their gifts of plants, animals, information and knowledge are almost as important to the tracing of their expertise and contributions. If the correspondence did not already show us as much, these references by themselves tell us how the expertise of Clusius as an erudite, Latin-writing and publishing naturalist was inextricably linked with that of experts from extremely diverse

backgrounds. As will become clear, the 'practical experts' among his friends by no means merely acted as a kind of intellectual servant – carrying information to a scientist who then elevated that information by means of natural philosophy, classification, Latin, jargon, *et cetera* to the higher plane of 'science'.[15] Although correspondence networks were perhaps equally important to both Clusius and Darwin, Clusius was no Darwin-style scientist who fitted information carried to him by hundreds if not thousands of correspondents together into a grand theory. Cooperation and exchange in Clusius's world affected the very character of knowledge about living nature.[16] By exploring the expertise of Clusius's correspondents we will be able to trace which practice-based insights were suggested to Clusius by his partners in exchange and helped to shape his own way of dealing with nature, thereby contributing to the formation of the new scientific discipline of botany.

Pride of Place

The emphasis on the social and cultural construction of knowledge in the new cultural history of science entails paying explicit attention to contextualization and circulation as well as reception or permeation of knowledge. Not only people but also locations – or 'place' in the sense of geography, location and setting – have become immediately relevant, therefore. And knowledge is no longer disembodied, as shown in particular by Pamela Smith, but intrinsically linked with the body and the senses.[17] The attention to place, the importance of the body, circulation and reception, and the increasing attention to visual aspects (the latter an important topic which will, however, not be discussed in this book)[18] in the new cultural history of science reflect similar, often earlier, interests in the wider domain of cultural history, which was influenced in the course of the 1980s and 1990s by literary studies and reception theory, visual studies, the history of the body and historical anthropology. With a background in cultural history and historical anthropology rather than in the history of science, for me the focus on place as a crucial element of context is not only linked, therefore, to the new demands of the history of science but also to my earlier research in cultural and microhistory in which one of the recurring questions has been to find out which contexts can be regarded as relevant.[19] But well before that, Richard Cobb's *A Sense of Place* (1975) and several of his other books were the first historical studies to show me that it is indeed possible to get a historical sense of place and come to know even the not so famous in their setting.[20]

Place, interpreted as shifting geographies of expertise, to adapt slightly Lissa Roberts's phrase 'shifting geographies of skill', structures this book.[21] Moving from one European area and social setting to another, but in each part of Europe always keeping the focus on Clusius's many friends, we will explore the partic-

ular practices and forms of expertise concerning living nature and the ways in which they were embedded in those settings. The Southern Netherlands – as part of the Habsburg empire closely connected with both Spain and Austria at the time – and Italy receive special emphasis as the core areas of gardening and botanical culture in Europe. From there we will make brief excursions to Austria, Spain and Crete. Subsequently, we move northward along the Atlantic coast to France, England and the Dutch Republic. In each geographical section we will be dealing with a slightly different socio-cultural constellation: court and landed aristocracy in the Southern Netherlands and related Habsburg court circles in Austria and Spain; aristocratic women in the Habsburg countries; princes, aristocrats, members of religious orders and urban professionals in Italy; clergymen, aristocrats, physicians and apothecaries in France; physicians, merchants and apothecaries in the Dutch ports; intellectuals, merchants and other members of the urban elite in the Dutch university town Leiden; aristocrats, merchants, apothecaries and physicians in England.

Two important territories with which Clusius was closely connected play a very minor role in this study: the German-speaking world (i.e. Austria and the German states) and Spain. Vienna and its court-connected nobility figure mainly in the chapters on the Southern Netherlands and on Habsburg women. Spain too, which Clusius visited on an extended journey cum field trip in 1564–5 and with whose expert physicians in Valencia and Seville he established contacts in the course of the 1590s, mainly figures in the chapter on the Southern Netherlands, while the letters of these physicians are incidentally used in other chapters. The reasons are simple. While the letters by Clusius's Iberian correspondents are most interesting in terms of their contents concerning natural history, as shown for instance by Barona and Ramón-Laca, they do not provide enough material to form an image of how a cluster of people was 'making natural history' in Spain during the second half of the sixteenth century.[22] Politics and warfare interrupted and impeded exchanges by post between those places where Clusius lived and the Spanish naturalists. As a consequence the correspondence offers us only two, barely connected glimpses which are some forty years apart (the 1560s and around 1600) of a small number of naturalists in Spain who were in contact with Clusius. This problem of interrupted or obstructed contact did not only apply to Clusius, of course. Indeed, the political decisions taken at the time in Spain are to a large extent responsible for the fact that it is still under-represented on the scientific map of Europe for that period.[23] With respect to the German-speaking world the situation is almost the opposite. More literature is available on it than on any other part of Europe in connection with Clusius, while several new publications focus specifically on the connections between Clusius, Austria-Hungary and the German states.[24] In the light of that relative abundance, it seemed more important to concentrate here on other parts of Europe.

In the final chapters before the conclusion we step 'out of place', not by leaving a specific setting – here London and Amsterdam – but by looking at those locations as connecting nodes for relations at a local, regional, national, international and even intercontinental level. Rather than providing marked boundaries or enclosing spaces, place and setting should be seen to open up possibilities. Similarly, widening the history of science to a cultural history of knowledge formation, and stepping outside its usual boundaries into the domains of passion, curiosity, collecting and fashion, can lead to unexpected findings, which call for a rethinking of the concept of early modern science itself. But the most relevant act may be the transgression itself of those boundaries, and the rediscovery of the relevance of pleasure and passion to discovery – whether botanical or historical.

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I THE SOUTHERN NETHERLANDS

1 THE GARDEN OF EUROPE: BOTANY AS A COURTLY FASHION IN THE SOUTHERN NETHERLANDS

Cultivating Plants

According to the botanist Matthias de Lobel (1538–1616), his native Southern Netherlands occupied the first rank in botanical and horticultural matters in all of Europe. In this single country more plants, shrubs and trees could be found than in any other – not excluding 'ancient Greece, spacious Spain, the whole of Germany, England and France, and even Italy which is so well cultivated'. He particularly emphasized that plants and flowers from all over the world were brought to this 'most famous market [*emporium*] of Europe', and were cultivated there, in spite of the adverse climate, but thanks to the hard work, diligence and perseverance of the inhabitants.[1]

Lobel was neither the first nor the last to remark upon the special reputation of the Southern Netherlands in this respect. There are references to the enormous quantities of fruit trees, flowers, shrubs, trees and medicinal herbs that could be seen there in the early sixteenth century; every foreigner visiting this part of the world admired them. By the 1560s inhabitants of the Southern Netherlands were said to have developed a real taste for flowers and to spend great sums of money on plants just for pleasure.[2] And there is other evidence as well, such as the number of celebrated gardens of this period; the importance of Flemish printers-publishers – most famously Plantin – who produced works on plants; the prominence of the Flemish 'fathers of botany', Lobel (Lobelius),

Dodoens (Dodonaeus) and Clusius; and the importation and expert cultivation of rare plants from Turkey, the Middle East, Spain, Asia and the New World.[3]

With respect to the introduction in Europe of plants from the Middle East during the late 1550s and early 1560s, the role of the diplomat Ogier Ghislain de Busbecq (1522–92) and the physician Willem Quackelbeen (1527–61) was especially important. Originally from the Southern Netherlands, they were based at Emperor Ferdinand I's court in Vienna, and Busbecq was sent as ambassador to Sultan Suleiman the Magnificent. The trips to Turkey and Asia Minor of Busbecq and Quackelbeen resulted in the introduction – generally first in Vienna and subsequently in the Southern Netherlands and Italy – of a considerable number of plants. Among the ones now best known are the tulip, horse chestnut, lilac, mock orange, gladiolus, iris tuberosa and oriental plane tree.[4] These and later introductions from the Middle East in the course of the sixteenth century caused a rapid increase in the number of plant species that could be found in European gardens north of the Alps. Until *c.* 1550 that number is said not to have exceeded some 600, of which the majority were indigenous, a few were Mediterranean and a very few American or Asian.[5]

In the Southern Netherlands the phenomenon of the country house surrounded by extensive grounds was already widespread around the middle of the sixteenth century, while the earliest ones have been traced to the 1520s. Most of these *maisons de plaisance* belonged to aristocrats or members of the upper strata of the bourgeoisie, such as merchants or bankers. Inventories and visual representations indicate that the surrounding grounds consisted of much more than a simple kitchen or pleasure garden, and could comprise tree-lined lanes, a bridge, moat, lake or stream, meadows, a grotto, spring, island, sports area (such as an archery), labyrinth, fountains, herb garden and ornamental garden with shrubs in pots. Flowers and ornamental plants were never the only component. Such grounds generally combined zones of pleasure and zones of utility, such as a poultry run, fish pond, fruit trees, kitchen garden and an area for medicinal herbs.[6]

The sixteenth-century Southern Netherlands was also known for the development of special techniques of plant care, such as the cold frame, designed for protecting less hardy plants during the northern winters. Gardening utensils, plants and the expertise itself were exported to other parts of Europe – which, of course, did not exclude contemporaneous opposite movements. Throughout the second half of the sixteenth century and the early years of the seventeenth century, expert gardeners and botanical advisors from the Southern Netherlands were employed by princes in various parts over Europe. In Italy, for instance, we hear of Giuseppe Casabona (*c.* 1535–95), who became court botanist in Florence and prefect of the botanical garden of Pisa. His original name was Joost Goedenhuyse and he came from Flanders or Maastricht.[7] In sixteenth-century Europe the boundaries between the horticultural consultants, some of whom

had a medical university training, and the expert gardeners and architects-garden designers who generally had a practical training, were fluid in terms of their practical involvement with plants and gardens, even though their social status differed on account of their training.[8] The expert gardeners had generally received a practical training, but the highest ranking ones acted both as head-gardeners who supervised a considerable staff and as skilled landscape and garden designers.

Members of the Holbecque family, who worked for Emperor Charles V and his son Philip II, provide a well-documented example. When retiring to Yuste (Spain) in June 1556, Charles V discharged all of his servants except for a small staff which included his gardener from Brussels, François Holbecque, who was also an expert distiller and perfumer. François later returned to the Netherlands, where he acted as gardener of Cardinal Antoine Perrenot de Granvelle, then Bishop of Arras, before leaving for Spain once more in 1565, after his brother Jean Holbecque had been appointed by Philip II. The latter had been so impressed by the garden culture of the Southern Netherlands which he had seen as a young man during his two journeys through Europe in 1548–51 and 1554–9, that he hired a whole team from the Southern Netherlands to help create the court gardens of Aranjuez: it consisted of eight gardeners, besides masons, agricultural labourers and a dike engineer. Together with the team, a large transport consisting of seeds and many different types of gardening tools was sent to Aranjuez. There, Jean Holbecque soon became more than head gardener: as one of the architects of the Aranjuez gardens he had regular consultations with Philip II about their design, and he ordered large quantities of plants, shrubs and trees to be brought to Spain from the Southern Netherlands. François Holbecque eventually succeeded his brother as head gardener of Aranjuez in 1579, and from 1587 to 1594 yet another François Holbecque occupied the same position.[9]

Such expert gardeners did not only operate in the Habsburg countries. The head gardener Joachim Gille, to name but one example, was for some twenty years (from *c.* 1569 to at least the late 1580s) responsible for the private botanical garden of Wilhelm IV, Landgrave of Hesse-Kassel. Gille and Wilhelm IV regularly corresponded about garden design, planting and cultivation methods, and they discussed experiments with plants. Gille was sent several times on trips to the area of Venice in order to buy exotic plants and trees for Wilhelm's garden, and to supervise their transport across the Alps. His son studied medicine and eventually became court physician annex botanist to Moritz (Wilhelm's son) – he called himself 'botanologus' and 'botanographus' – as well as supervisor of the garden.[10] And we will come across more examples of father–son upward social mobility in which the father had a practical training while the son went to university, but both acted as expert gardeners cum naturalists.

Interest and expertise in the Southern Netherlands extended from the plants and gardens themselves to their images. Some of the most consummate painters and illustrators of *naturalia* during the second half of the sixteenth century – all of them personally known to Clusius – were from the Southern Netherlands: Jacques vanden Corenhuyse; Peter van der Borcht; Anselmus de Boodt; and Joris (Georg) and Jacob Hoefnagel. It was also in the Southern Netherlands that the art of tapestry weaving, in particular the huge *verdures* with plants and (exotic) animals, reached its height around the middle of the sixteenth century, with the work of the artists-designers Michiel Coxie and Pieter Coecke van Aelst.

This is the setting of Clusius and his circle of friends and contacts in the Southern Netherlands. That setting itself is by no means self-evident, however. How and when did this part of Europe become a prime zone for horticulture and botany? And can we connect the emergence of the Flemish trio of botanical experts – Clusius, Lobel, Dodoens – during the second half of the sixteenth century with the prominence of the Southern Netherlands in horticulture and the artistic representation of *naturalia*, beyond pointing, rather vaguely, to contemporaneity?

Gardens and Collections

Lobel singled out a number of individuals in the Southern Netherlands of the 1560s and 1570s on account of their impressive gardens and special contributions to the knowledge of plants. Clusius himself was seen by Lobel as the greatest botanical expert of all – with hindsight of course, since Clusius was still an up and coming botanical expert in need of patrons during the late 1550s and early 1560s. Four men mentioned by Lobel as great plant experts already belonged to the past by the time his work appeared in 1581: the Bishop of Tournai Gérard (Gilbert) d'Oignies, and the noblemen Reynoutre, Brancion and Van der Delft. Thereafter came a list of seventeen 'modern' experts, of whom the following seven also were friends and correspondents of Clusius: Charles de Croÿ; Charles de Houchin; Jean Boisot; Philippe Deurnaghele; Philips de Marnix, Lord of Saint Aldegonde; Mathias Laurin; and Jean Mouton.[11] Nearly all belonged to the overlapping circles of the landed aristocracy and the higher strata of government officials and other experts in the service of the Habsburg empire. All were rich. But politics, armed revolt and religious warfare affected all of them and theirs is a story of loss and destruction as much as of the creation of great gardens and collections.

That is especially true of several garden owners and collectors based in the Bruges-Antwerp-Malines area. In the course of the 1560s Charles de Saint Omer (1533–69), Lord of Reynoutre or Dranoutre and Moerkercke, became Clusius's very first patron. Apart from the fact that he was a wealthy young nobleman from

the highest circles of the aristocracy, little is known about Saint Omer's life prior to the mid-1560s. His health was not strong and he gave up his military career, probably even before he was thirty years of age. Upon retiring to his estate and castle at Moerkerke close to Bruges he devoted himself to the arts and sciences, in particular to the study of nature. Saint Omer's connection with Clusius – and perhaps even his patronage – dated from before Clusius's journey to the Iberian peninsula of 1564–5, and Clusius's own botanical interest plus the fact that he sent seeds to Saint Omer from Spain certainly stimulated the latter's fascination with plants, as we know from a mutual friend in Bruges.[12]

> I have delivered a bunch of seeds together with a letter [i.e. from Clusius] to the illustrious lord of Dranoutere in Moerkercke and somehow the opportunity provided by this letter enormously seduced him to the love of botany, and now for a fortnight the Lord and myself are doing nothing but that he keeps me occupied in identifying the simples (although it is the heart of winter), arranging into a certain order that wonderful book of which I believe you have seen a sample according to the Dioscoridean method. (G. Laurin, 25 November 1564)

After his return from Spain Clusius stayed for months on end at the castle of his patron at Moerkerke, where he saw various exotic substances, such as true cinnamon. In 1566 he gave seeds of the Brazilian pepper to Saint Omer, who managed to cultivate a pepper plant in his garden which even flowered that autumn. Another one of Clusius's gifts was a shoot of the aloe Americana, which had come from a big plant with some thirty small side-shoots in the garden of Clusius's host in Valencia. Clusius brought two of these back to the Netherlands.[13]

The setting at Moerkerke must have been more than congenial to Clusius, since Charles de Saint Omer was the creator and owner of one of the earliest and most remarkable collections of the *Kunst- und Wunderkammer*-type in Europe north of the Alps.[14] Living nature, dried *naturalia* and depicted nature played a crucial role in his collection. A lengthy inventory made shortly after Saint Omer's death in 1569 gives us some idea of his impressive possessions. Besides the estate and castle of Moerkerke, Saint Omer owned extensive gardens and parks, farms, mills, various feudal landholdings and rights, as well as a town house in Bruges. Around the castle of Moerkerke there were gardens, an orchard and a menagerie with not only horses, a mule, sheep, goats, swans and pheasants, but also the more special 'African chickens' (possibly guinea fowl), an eagle, a stork, a bear, a parrot and some other animals. Indoors a rich wardrobe, jewellery, tapestries (including *verdures*), silverware and paintings testified to his wealth. Possessions specifically pointing to Saint Omer's interests as a collector were his cabinet containing curiosities, and his collection of weapons and books. In a second cabinet, explicitly listed as belonging to his wife Anne d'Oingnies, seeds were kept as well as various albums with 'painted plants', fish and other animals.[15]

Albums of watercolours had been commissioned by Saint Omer, 'a man', according to Clusius, 'not only most expert in matters of plants and who had the plants themselves, birds, and quadrupeds depicted with outstanding skill in lively colours, but also very interested in the nature of all sorts of wonderful things'.[16] They formed the core of the famous zoological and botanical watercolours known as the *Libri Picturati* A.16–30, one of the most remarkable European collections of watercolours depicting *naturalia* of the sixteenth century. Much is still unknown about the history of the *Libri Picturati* watercolours, especially for the period after Saint Omer's death in 1569 until the early seventeenth century. There continued to be links with Clusius, however: some 122 illustrations in Clusius's printed works are directly based on watercolours in the *Libri Picturati* collection. Sheets with watercolours were added to it in the course of the century, some of which bear the names of Clusius's friends, and by the end of the century the whole collection came into the possession of an aristocrat of even higher rank than Saint Omer, yet another friend of Clusius: the Count of Arenberg.[17]

It seems likely that the botanical watercolours commissioned by Saint Omer served various purposes, but they did not form a visual handbook for the identification of medicinal plants, and very few of the annotations evince an interest in the medicinal use of the plants.[18] However, the brief annotation on the watercolours regularly mentions the natural habitat of the plants and provides ecological information concerning the parts of Europe where they could be found, as in the example of a small wild hyacinth: 'They grow spontaneously on the edges of fields preferably in a light and sandy soil, and are frequent near Malines'.[19] Indeed, we know that Saint Omer was interested not only in rare exotics but also in the local flora of his own area: comfortably seated in a carriage, Saint Omer and Clusius explored the marshy area of Maldegem not far from Bruges and discovered a pseudoasphodel.[20] Many of the annotations to the botanical watercolours of the *Libri Picturati* look like personal observations by a commentator who knew about both wild plants and horticultural practice, a person who was first and foremost interested in how and where plants grew and how they could be identified by their flowers, roots and leaves. Some of the watercolours probably served as documentation of plants grown in Saint Omer's own garden, but by no means all watercolours depicted *naturalia* that actually belonged to Saint Omer, so they clearly did not simply constitute a catalogue. Yet, they formed an integral part of Saint Omer's collection: as a painted collection on paper they complemented his live and dead animals and plants on the one hand, and his printed works about natural history on the other.

The *Libri Picturati* watercolours demonstrate an intimate link between the history of collecting of the *Kunst- und Wunderkammer*-type, botanical interest and scientific illustration. The key to an understanding of the interest in