Acquisitions Rijksmuseum Research Library: History of Science

• ALEX ALSEMGEEST AND JAN DE HOND •

Two nineteenth-century maxims adorn the west wall of the Cuypers Library, each enclosed within its own painted ornamental frame: ‘Zijn Wetenschap en Kunst vaak met elkaar in Strijd, Hier is de Wetenschap der Kunst een saal gewijd’, and directly next to it, ‘Versmade nooit de kunst der Wetenschappen gunst, Noch ook de Wetenschap de fijne hand der kunst’. An English translation, made two years after the library’s opening in 1888, reads: ‘Though Science and Art may often be at variance, here a hall is devoted to the Science of Art’, and ‘May Art never despise the favour of Science, nor Science the delicate hand of Art.’ These erudite words were indeed firmly rooted in the nineteenth-century notion that art and science were two very different, perhaps even irreconcilable worlds. Yet in the seventeenth and eighteenth centuries, this opposition was not viewed as such – beauty and science were ultimately both manifestations of a higher power. Was not the logical order, for example, evident in the detail and beauty of nature, the Creation and the Divine Master’s hand? In theory, science and art were quite compatible. And in practice, scientists and artists moved in the same intellectual circles – some even worked simultaneously in both areas – and were fairly

Library Rijksmuseum Amsterdam

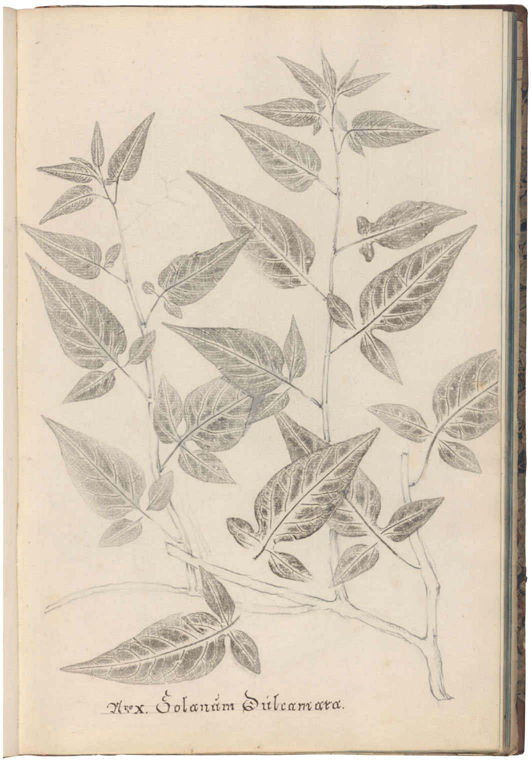
dependent on the same creative industry. To distribute their work in printed form, they both counted on draftsmen, engravers, typesetters, papermakers, bookbinders and printers, and the merchants and intermediaries selling their works.

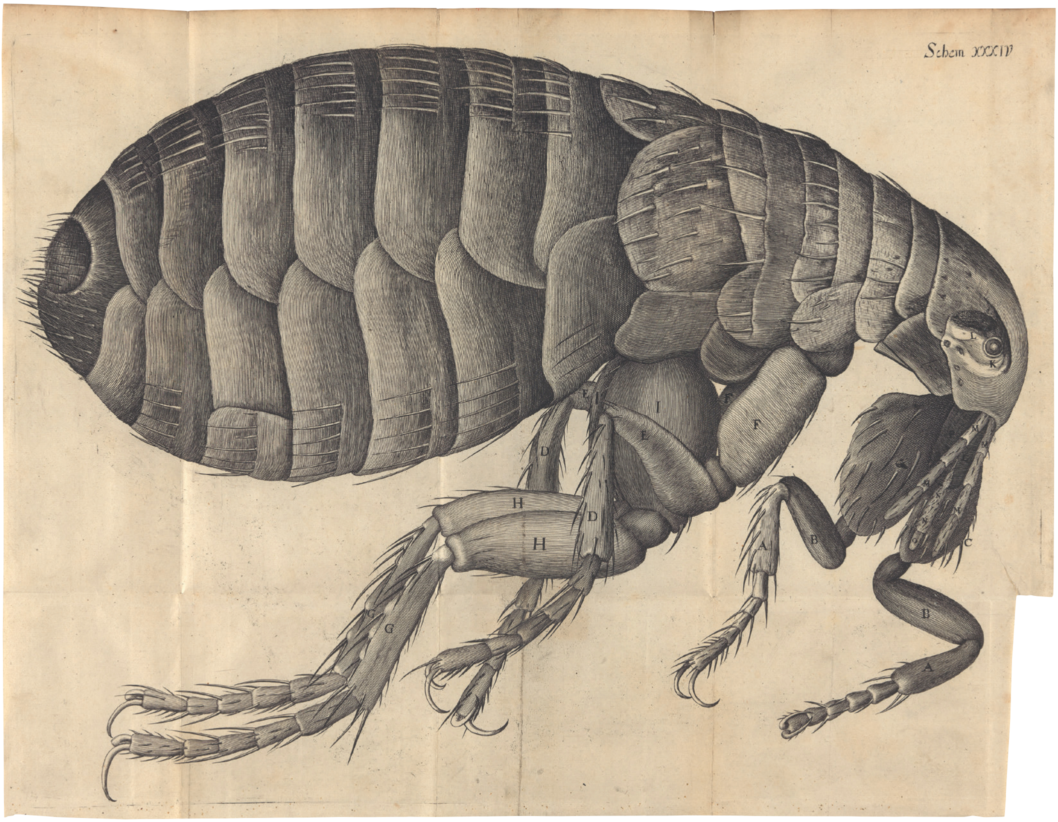
In the autumn of 2022, the Rijksmuseum Research Library welcomed a donation of twenty-eight books in the field of the history of science. Many of these books are iconic works written by seminal figures in mathematics and natural science from the seventeenth, eighteenth and nineteenth centuries, including Christiaan Huygens, Sir Isaac Newton, Benjamin Franklin, Pierre-Simon Laplace, Leonhard Euler and others. Some of the books together form the core of the eighteenth-century scientific debate in the fields of optics and mechanics. In addition, the donation includes a number of exquisite botanical and entomological works, including Abraham Munting's *Naauwkeurige beschryving der aardgewassen* (1696), in which depictions of plant species were set against a background of classic or pastoral landscapes, August Johann Rösel von Rosenhof's *De natuurlyke historie der insecten* (no. 7), and a nineteenth-century album with nature prints of medicinal plants made by the Culemborg physician Willem Johan Alpherts (no. 13).

The books were donated by the heirs of Willem Cornelis Mees (1947-2008). In the nineteenth century, the Mees family first made its name in the areas of science, trade and banking. The most renowned members of this Rotterdam-based family were Willem Cornelis Mees (1813-1884), president of De Nederlandse Bank for more than twenty years, and Rudolf Adriaan Mees (1844-1886), a mathematician and physicist, and university professor in Groningen. Several of the works on numismatics newly acquired by the museum formerly belonged to Willem Cornelis, while the books on mathematics and physics from the same donation appear to have been collected by Rudolf Adriaan. In the direct male line, Willem and Rudolf were the great-grandfather and great-great-grandfather of the later Willem Cornelis Mees, respectively. On the other side of his family, via his grandmother Willemina Jacoba Theodora Molengraaff (1887-1979), Willem was also related to the botanist Theodorus Abeleven (1822-1904) and the abovementioned Willem Johan Alpherts. Many of the botanical and entomological works were handed down via this latter family line.

Just prior to the donation, the history of science had been in the spotlight in the Rijksmuseum, thanks to the successful exhibition *Crawly Creatures*. The exhibition yielded many new insights into the close ties between art and science, with attention given to the various representational forms used by artists and scientists to depict nature. Towards the exhibition's close, the Rijksmuseum also managed to acquire a splendid copy of Robert Hooke's *Micrographia* (no. 1), an indisputable masterpiece in the field of European history of science. Appearing in 1665, the book was the first major publication of the recently founded 'Royal Society of London for Improving Natural Knowledge' to garner fame, a success largely credited to the way in which Hooke's microscopic observations were visually conveyed in thirty-eight spectacular engravings.

The Rijksmuseum Research Library contains hundreds of striking examples of works in which the artist's hand is used to visually communicate scientific findings, some of which are also recent acquisitions. Anyone examining works published by microscopists in the century after Hooke – such





< Unfinished nature print of the bittersweet (plate x) in Willem Alpherts's album, no. 13

Engraving of a flea (plate xxxiv) in Robert Hooke's *Micrographia*, no. 1

as Henry Baker, Martin Frobenius Ledermüller and Caspar Stoll (nos. 4, 6, 8) – recognizes that a scientific visual idiom was created, meant not only to illustrate their observations but also to document the instruments being used. This visual language, executed in woodcuts and engravings, continued to evolve in the nineteenth century and beyond, facilitated by the emergence of new reproduction techniques like nature printing, cyanotype, lithography and photography.

Conversely, in written works concerning art theory and practice, the natural sciences are omnipresent, albeit implicitly. Subjects range from theoretical discussions of light and colour to the sharing of practical insights on paint, paper, leather, glass, textiles, and metals. These publications seldom address the visual aspects but instead examine materials, processes and techniques – in short, all that actually makes a work of art. Various books, like John Smith's *The Art of Painting* (no. 9), are collections of painting instructions. The Research Library's acquisition of these compilations, with the support of the Receptuurboeken Fonds, facilitates the comparison of historical manuals with today's natural-scientific research into painting methods. As might be expected, these books show that raw materials from nature form the basis of artists' working materials, and that a knowledge of their properties is essential to good artistry.

At the heart of these seventeenth-, eighteenth- and nineteenth-century works in the fields of science, nature study and art practice lie the actual observations of scientists and artists and the scientific visual idiom they used to communicate their insights. In the Cuypers Library, these books come together under one roof, unified by the two nineteenth-century sayings adorning its west wall.

1 ROBERT HOOKE (Freshwater 1635-1703 London)
Micrographia: or, Some physiological descriptions of minute bodies made by magnifying glasses. With observations and inquiries thereupon
London, printed by Jo. Martyn, and Ja. Allestry, Printers to the Royal Society, and are to be sold at their Shop at the Bell, in S. Paul's Church-yard, 1665
18 leaves, 246 pages, 10 unnumbered pages, XXXVIII engraved plates (some folded); 30 x 20 cm (folio)

The Englishman Samuel Pepys (1633-1703), a member of Parliament and author of a world-famous journal, first encountered a copy of Robert Hooke's *Micrographia* in January 1665 during a visit to his bookseller in London. Impressed on sight, Pepys immediately ordered a copy for himself. Upon the book's arrival, he became so fascinated with its content, he continued reading late into the night. 'The most ingenious book that ever I read in my life,' he wrote enthusiastically. As the first book with engravings showing observations made through the microscope's lens, *Micrographia* has lost none of its appeal over the years, remaining a spectacular publication even today.

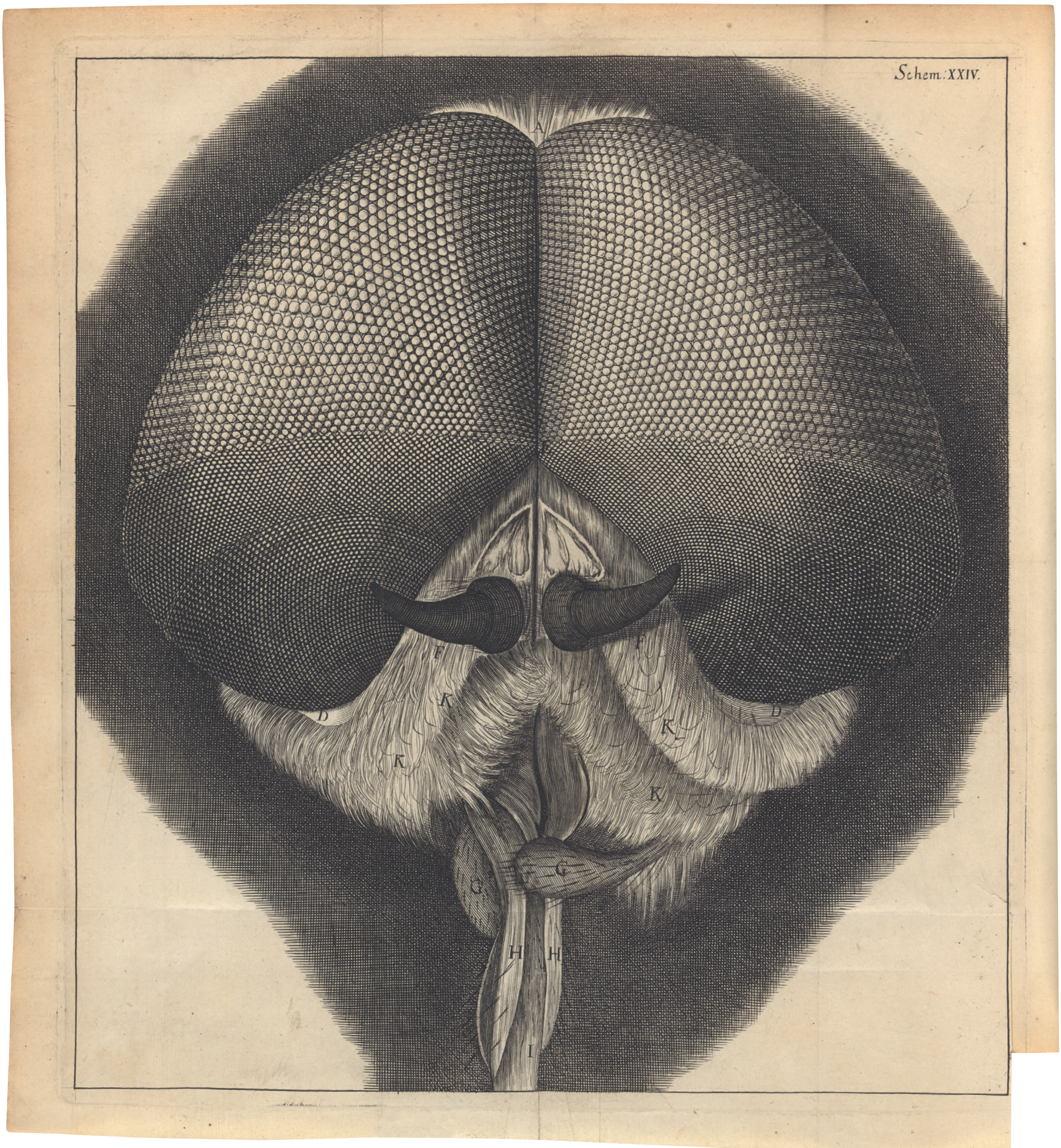
Robert Hooke was a highly versatile man: inventor, astronomer, physicist and architect. After studying at Oxford, in 1662 he became 'curator of experiments' at the newly founded Royal Society. In this capacity, he was responsible for the experiments performed in front of society members during their weekly meetings. Such activities showed how, in the seventeenth century, direct scientific observation had become increasingly important – critical personal observation, as opposed to classical authors, now stood at the forefront of the new sciences. During these same years, Hooke made a whole series of extraordinary observations. Through the lens of his own self-built microscope, he examined cork and plants, but also minute creatures. He then presented his observations in his *Micrographia*, by means of high-quality prints after his own drawings – an accomplished draftsman, Hooke had taken lessons from the painter Sir Peter Lely (1618-1680). Being one of the very first microscopists, he had only scant reference material: never before had images been made of what he saw through the microscope's lens. This is what makes these prints so special: nowadays, we are all familiar with images of a fly with its multi-faceted eyes. Hooke's challenge was to determine how best to interpret and visually convey such body parts (see plate XXIV). Equally spectacular is the engraving of a flea (see plate XXXIV on p. 165), showing a strange, armoured creature, equipped with hairy legs, sharp claws and piercing eyes. For his day, the level of detail was unprecedented; anyone comparing his depiction to a recent microscopic photo can only be amazed by the accuracy of Hooke's rendering of his flea. In any event, his contemporaries were shocked by these revelations: Do we truly coexist with such creatures? For the first time, people became acquainted with a world hitherto unknown to them thanks to Hooke's microscopic skills, and to no lesser degree, his artistic talent.

Scientific prints, like Hooke's microscopic images, formed a relatively new genre, in which a scientist's observations were communicated by visual means. Yet some were not only relevant as conveyors of knowledge but also important for their aesthetic quality. Hooke's prints are works in which art and science beautifully come together.

JdH

LITERATURE:
Jan de Hond, Eric Jorink and Hans Mulder, *Crawly Creatures: Little Animals in Art and Science*, exh. cat. Amsterdam (Rijksmuseum) 2022

PROVENANCE:
Ex libris: Thomas Knowyls Parr (1863-1938).
… ; sale, the collection of Prof. Dr Johannes Büttner (1931-2019), Pforzheim (Kiefer Buch- und Kunstauktionen), 15 December 2022, no. 176, to the museum, purchased with the support of Don Quixote Foundation/Rijksmuseum Fonds (Rijksmuseum Research Library GF 384 B 2, inv. no. NG-2023-02).


Schem: XXIV.
A
F
F
K
K
K
K
D
D
G
G
H
H
I

2 CHRISTIAAN HUYGENS (The Hague 1629-1695)
Traite de la lvmiere. Où sont expliquées les causes de ce qui luy arrive dans la reflexion, et dans la refraction. Et particulierement dans l'étrange refraction dv cristal d'Islande
A Leide, chez Pierre vander Aa, Marchand Libraire, 1690
8 unnumbered pages, pages 1-124, 2 unnumbered pages, pages 125-128, 2 unnumbered pages, pages 129-180, 89 woodcuts in the text; 25 x 21 cm (quarto)

The treatise *Traité de la Lumière* by Christaan Huygens is an iconic work in the Dutch history of science. A leading figure of international science in the seventeenth century, Huygens is renowned for his great achievements in the fields of mathematics, physics and astronomy. Today, he is still regarded as the inventor of the pendulum clock's working mechanism and the first man to discover Saturn's rings. Equally, if not more important, is Huygens's systematic application of mathematical formulas to describe physical phenomena. His *Traité de la Lumière* was the first work to describe light as a wave phenomenon, and it is still seen as a ground-breaking publication in the field of optics. Huygens's wave theory, though discounted by his contemporaries in favour of Isaac Newton's (1643-1727) particle theory, would ultimately be reconfirmed in the nineteenth century.

The son of the Dutch poet and diplomat Constantijn Huygens (1596-1687), Christiaan encountered the work of international scientists and philosophers at an early age, including that of René Descartes (1596-1650) and Marin Mersenne (1588-1648). Besides his studies in optics and mechanics, he also worked on the building of telescopes and microscopes. In 1663, Huygens became the first foreigner to be made a fellow of the Royal Society. Three years later, he was given an influential position in Paris within the newly founded Académie des Sciences. Huygens compiled a list of twenty-seven points outlining those areas in which he believed scientific research should be concentrated. By 1678, he was already working on his *Traité de la Lumière* in Paris; it was not until twelve years later, however, that the book was published by Pieter van der Aa (1659-1733) in Leiden, possibly sparked by the publication of Newton's *Philosophiae Naturalis Principia Mathematica* in 1687 and Huygens's visit to London in 1689. The two men were in strong disagreement. Although he is known to have spoken with Newton, Huygens never made any mention of their meeting in his letters.

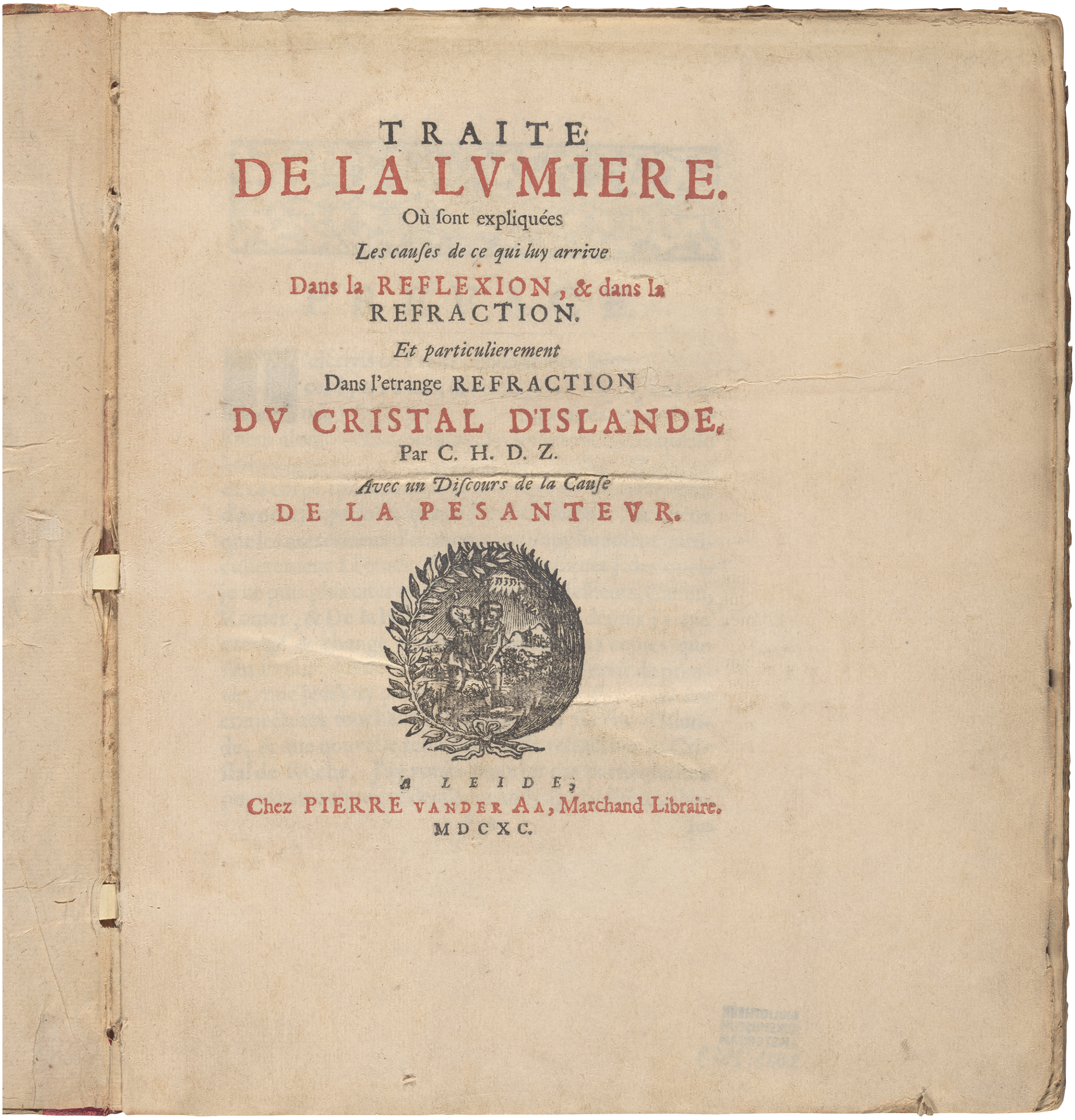
Traité de la Lumière is illustrated with dozens of simple woodcuts, significantly reducing the printing cost were it to include engravings. Although missing the visual appeal of works like *Micrographia,* this was never Huygens's aim. First and foremost, his audience centred on colleagues in his own field, with simple diagrams echoing Descartes's models used to explain the properties of light.

Printed on large-format paper with very wide margins, the Rijksmuseum copy was donated by the heirs of Willem Cornelis Mees; through a direct line in the family, it may have come from Rudolf Adriaan Mees. In 1867, he obtained his doctorate with a thesis on polarized light, titled *De trillingsrichting in het rechtlijnig gepolariseerde licht*. He then delved extensively into mathematics, physics and astronomy, writing on matters such as electrical phenomena and light theory. He became a leading mathematician and physicist, and professor in Groningen. The Nobel Prize laureate Heike Kamerlingh Onnes (1853-1926) was among his PhD students. The Rijksmuseum's copy of *Traité de la Lumière* is therefore more than a relevant contribution to the seventeenth-century debate on optics; its provenance also offers insight into the reception of Huygens's work in the nineteenth century.

AA

PROVENANCE:
? Rudolf Adriaan Mees (1844-1886); by descent through the family; donated by the heirs of Willem Cornelis Mees (1947-2008), 2022

(Rijksmuseum Research Library 349 B 16, inv. no. BI-2023-2529).


TRAITE
DE LA LVMIERE.
Où sont expliquées
Les causes de ce qui luy arrive
Dans la REFLEXION, & dans la
REFRACTION.
Et particulierement
Dans l'etrange REFRACTION
DV CRISTAL D'ISLANDE.
Par C. H. D. Z.
Avec un Discours de la Cause
DE LA PESANTEVR.

A LEIDE,
Chez PIERRE VANDER AA, Marchand Libraire.
MDCXC.

3 PIETER VAN MUSSCHENBROEK (Leiden 1692-1761)
Beginselen der natuurkunde, beschreven ten dienste der Landgenooten
Te Leyden, by Samuel Luchtmans, 1736
8 unnumbered pages, 800 pages, 16 unnumbered pages, XXIV plates (some folded), bound in blind-tooled parchment; 25.5 x 21 cm (quarto)
Also contains *Beschryving der nieuwe soorten van luchtpompen, zo dubbelde, als enkelde, benevens eene verzameling van veele aangenaame, en leerryke proeven, welke met dezelfde kunnen genomen worden*, and *Lyst der natuurkundige, wiskundige, anatomische, en chirurgische instrumenten, welke by Jan van Musschenbroek, te vinden zyn te Leyden*

Pieter van Musschenbroek was a prominent physician, mathematician, physicist, meteorologist and astronomer originating from Leiden. Inspired by the presence of the city's university, earlier generations of the Van Musschenbroek family had begun to specialize in the manufacture of scientific instruments. In the seventeenth century, Pieter's father, Johannes Joosten van Musschenbroek (1660-1707), continued to expand the company, selling instruments to Christiaan Huygens, Antoni van Leeuwenhoek (1632-1723) and others. After Johannes's death, son Jan van Musschenbroek (1687-1748) assumed the running of the company, while the younger Pieter further pursued his studies, also under the Leiden professor Willem Jacob 's-Gravesande (1688-1742), a fervent Newtonian.

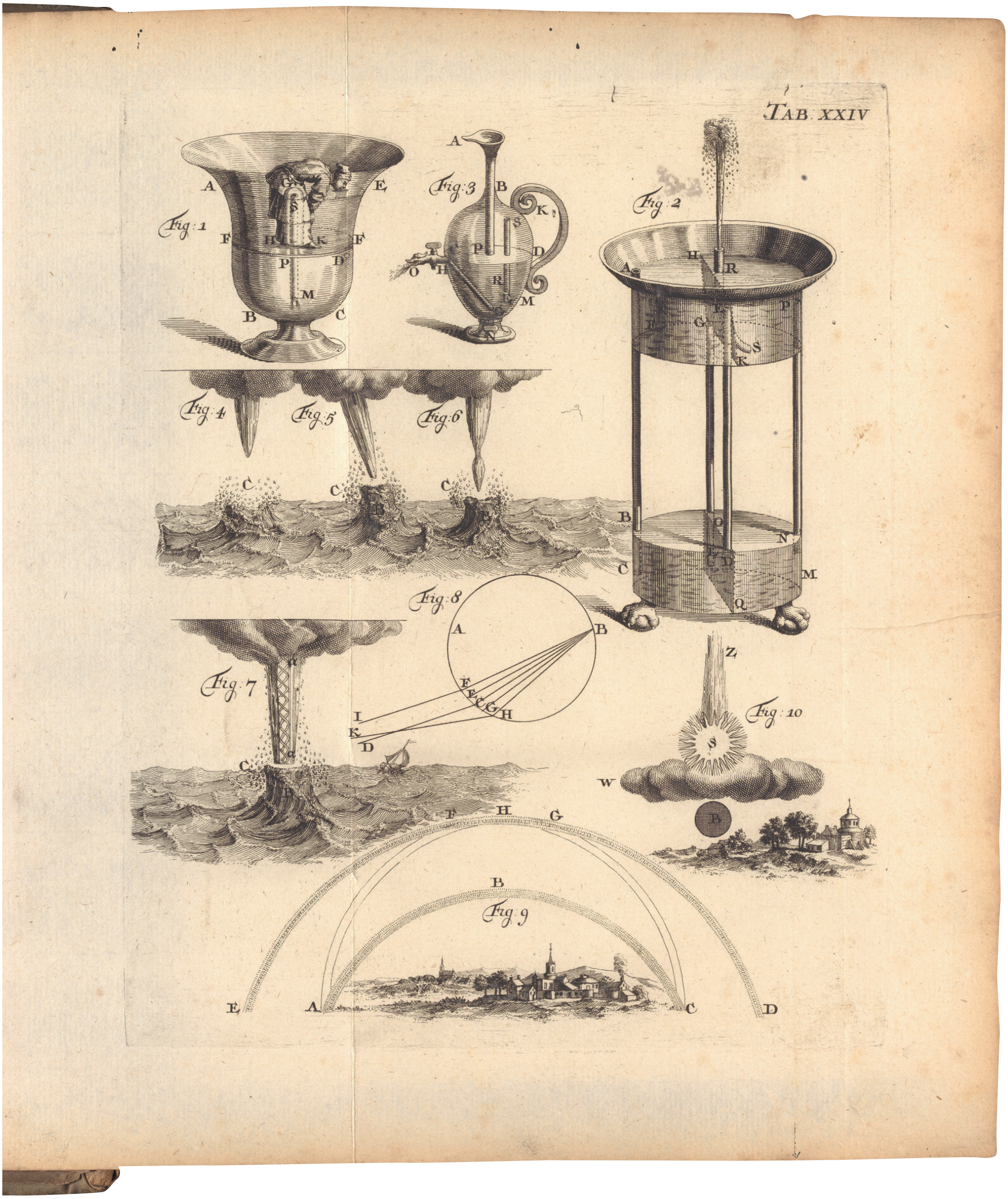
After his studies, Van Musschenbroek travelled to England, where he attended Isaac Newton's lectures. Made professor in Duisburg (1719) and in Utrecht (1723), in 1739 he succeeded 's-Gravesande at Leiden University as a professor of mathematics and philosophy. Like his teacher, Van Musschenbroek was a bona fide Newtonian. In his inaugural speech in Utrecht, titled *Oratio de certa methodo philosophiae experimentalis*, Van Musschenbroek advocated for Newton's empirical-mathematical methodology. In the years to follow, this would also become evident in his work at the university. The university's Theatrum Academicum was founded on his initiative, built to provide space for the chemistry, physics and anatomy laboratory. Van Musschenbroek chose to focus specifically on the topic of electricity. In 1746, he garnered international fame with the development of his 'Leyden jar' – a wide, glass bottle filled with conductive water, lined inside and out with tin foil, in which electricity could be stored.

Pieter van Musschenbroek's academic legacy is reflected in the various physics textbooks he wrote. His greatest success, *Elementa Physicae Consripta in uses Academicos* (1734), was revised several times during his lifetime and has been translated into English, German, Italian, Spanish, Swedish and Dutch. Many of Pieter van Musschenbroek's works were published by the Luchtmans company in Leiden. This was no coincidence: besides their prolonged activity as academic printers in Leiden, both the company's founder Jordaan Luchtmans (1652-1708) and his son, Samuel Luchtmans I (1685-1757), were married to a member of the Van Musschenbroek family. Pieter was the brother-in-law of Samuel I and the uncle of his two sons, Samuel II and Johannes, who took over the company in the mid-eighteenth century. Thanks to the publishing house's international network, Pieter van Musschenbroek's books were distributed throughout Europe.

The Dutch-language edition, titled *Beginselen der natuurkunde, beschreven ten dienste der Landgenooten*, was first published in 1736. In his foreword, Van Musschenbroek explains that as a scientist, of course, his works were chiefly published in Latin, but given the popularity of the natural sciences in the Netherlands, he also saw the need for a comprehensive textbook written in his native Dutch. The book's content adheres to a strict order divided into chapters: the first on philosophy, followed successively by chapters on general mechanics, hydrostatics, electricity, magnetism, optics, astronomy, and lastly, meteorology (see tab. XXIV). The book contains twenty-four plates (some folded), most with fairly technical, diagrammatic illustrations. Today, this work is considered one of the best illustrated introductions to Newtonian physics.

AA

PROVENANCE:
…; sale, Haarlem (Bubb Kuyper), 23 November 2022, sale no. 77, no. 1897, to the museum
(Rijksmuseum Research Library 311 CC 1, inv. no. BI-2023-0644).


TAB. XXIV
Fig: 1
Fig: 2
Fig: 3
Fig: 4
Fig: 5
Fig: 6
Fig: 7
Fig: 8
Fig: 9
Fig: 10

4 HENRY BAKER (London 1698-1774)
Two volumes, uniform gold-tooled mottled calf; 21 x 15 cm (octavo)
Het microscoop gemakkelyk gemaakt of Beschryving van de beste en nieuwste microscoopen, en van derzelver behandeling. Als mede een berigt van de verbaazende ontdekkingen gedaan met de vergrootglazen
Te Amsterdam, by Isaak Tirion, 1760
300 pages, XVI unnumbered engraved plates
Nuttig gebruik van het mikroskoop, of handleiding tot nieuwe waarneemingen omtrent de configuratiën en krystallen der zouten, de takschieting der metaalen, de vorming van de edele gesteenten, de koraalen, den barnsteen, enz.
Te Amsterdam, by Frans Houttuyn, 1756
16 unnumbered pages, 498 pages, 14 unnumbered pages, XVIII numbered engraved plates

The *Microscope Made Easy*, written by the English naturalist Henry Baker, was first published in 1742. In the foreword to the first Dutch edition, from 1744, the publisher credits the unavailability of the first English-language edition to the book's popularity, with his translation consequently based on the second edition. Even if a poorly disguised ploy to promote his book, his confession must be deemed plausible. As reflected in the number of publications on the microscope, by the mid-eighteenth century this scientific instrument held a great fascination shared by a wide range of nature enthusiasts. The English edition of Baker's work was reprinted no fewer than five times in the eighteenth century, with translated editions and reprints also appearing in Dutch, German and French.

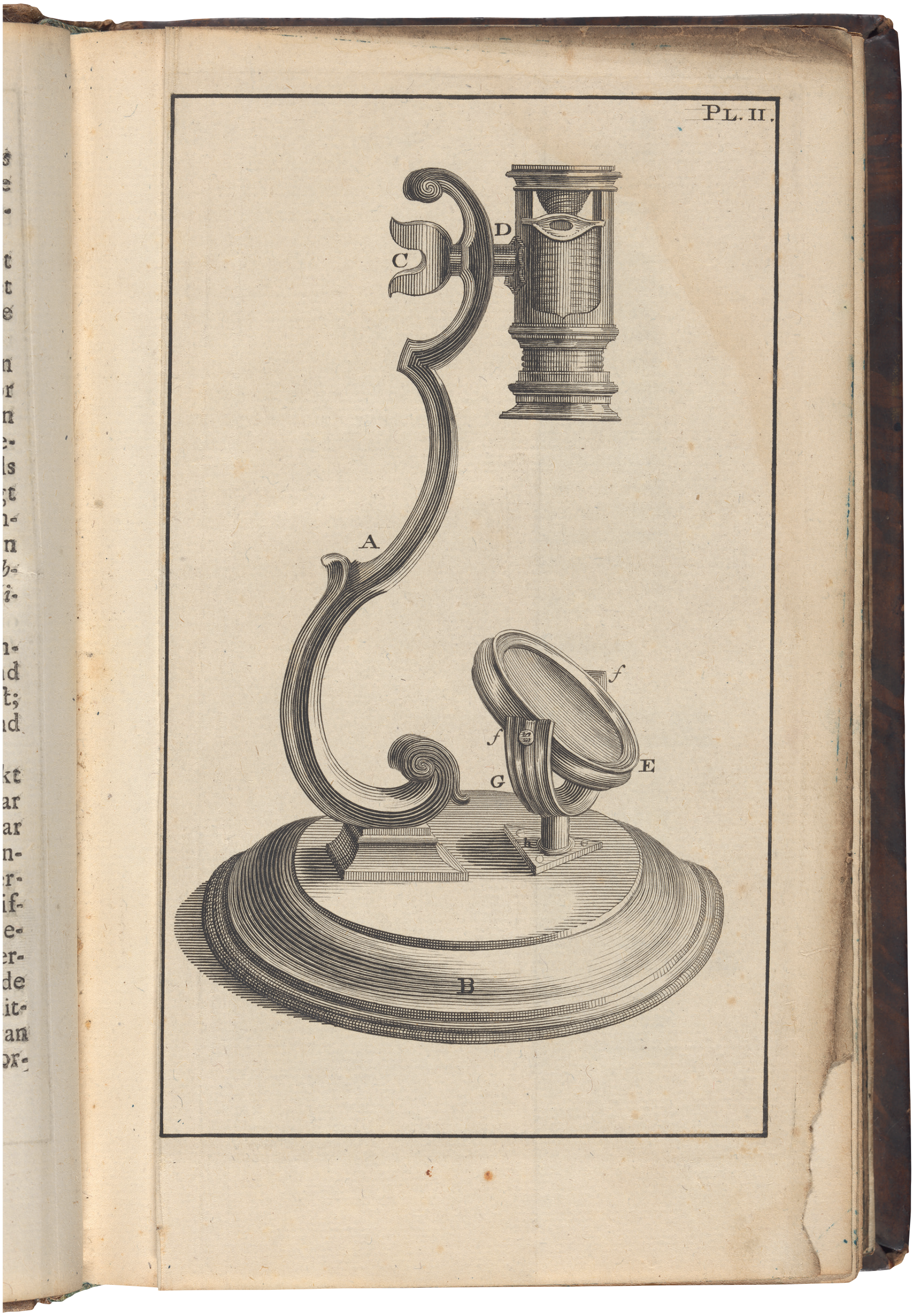
Henry Baker was a multi-faceted figure who made a name for himself both in the scientific world and in popular culture. He garnered renown from activities such as developing a therapy for helping the deaf-mute; by keeping his method secret, his earnings from it were substantial. Baker published scholarly essays in the Royal Society journal *Philosophical Transactions*, among them 'A Short History of Speech' (1723). But he also wrote poetry and opinion pieces for other publications. In 1729, Baker married the daughter of the writer and pamphleteer Daniel Defoe (1660-1731). Three years prior, Baker – under the name of Henry Stonecastle – had co-founded the popular weekly magazine the *Universal Spectator and Weekly Journal* in collaboration with his then future father-in-law.

Baker's publications on the microscope were keenly attuned to the growing fascination with natural history and empirical research among (amateur) practitioners of physics. In *The Microscope Made Easy*, he writes that, while it is true that much of humanity's understanding of the world could be credited to the microscope a mere one hundred and twenty years after its invention, this knowledge could have been much greater were it a little easier to use. In the book's first volume, Baker describes the various kinds of microscopes, how they operate, and the preparatory steps required before placing a specimen under the lens. In the second volume, he presents his observations regarding a vast number of objects. In addition to his book's success, in 1744 the Royal Society bestowed on him a prestigious award for his microscopic observations of salt crystallization. These findings were finally published in Baker's *Employment for the Microscope* in 1753, with the Dutch-language translation from 1756 now acquired by the Rijksmuseum.

The illustrations showing how to use the microscope were made not only by the author himself, but also by others. Among them was Hubert François Gravelot (1699-1773), a Frenchman who arrived in London in 1732, known for his spirited book illustrations. Although Baker rendered many of the drawings of his observations himself, the plates were made by engravers in London, including James Whigley (1700-1782) and James Mynde (1702-1771). In the Dutch edition, the names of the engravers have been omitted from the plates, but the representations are identical.

The original owner of the two volumes of Baker's works on the microscope held in the Rijksmuseum is unknown. Nevertheless, the fact that both are bound in the same richly decorated, gold-stamped brown calfskin clearly indicates that even a practical manual on using the microscope had already acquired the status of a collector's item in Baker's own day.

AA



BI-2023-0611

PROVENANCE:
…; from Forum Rare Books to the museum, 2023 (Rijksmuseum Research Library 330 G 2-3, inv. nos. BI-2023-0611 and BI-2023-0612).

5 BENJAMIN FRANKLIN (Boston 1706-1790 Philadelphia)
Experiments and Observations on Electricity made at Philadelphia in America… To which are added, Letters and Papers on Philosophical Subjects. The Whole corrected, methodized, improved, and now first collected into one Volume, and Illustrated with Copper Plates
London, printed for David Henry and sold by Francis Newbery, 1769
VII plates (engravings, 2 folded), 2 unnumbered pages, IV pages, 2 unnumbered pages, 496 [misnumbered, is in fact 510] pages; 23 x 18 cm (quarto)

Benjamin Franklin is a representative of the American Enlightenment. He was one of the Founding Fathers of the United States, drafted the Declaration of Independence and served as U.S. Ambassador to France. Having started out as a printer and newspaper publisher, Franklin became the first US Postmaster General, in which capacity he established the first national communications network. He moreover made a name for himself as a writer, philosopher and inventor. As an experimental physicist, he was the first American scientist to achieve international fame. Franklin owes his popular renown to his experiments with electricity. Best known is his kite experiment during a thunderstorm in Philadelphia in 1752, with which he successfully proved that lightning was a discharge of electricity.

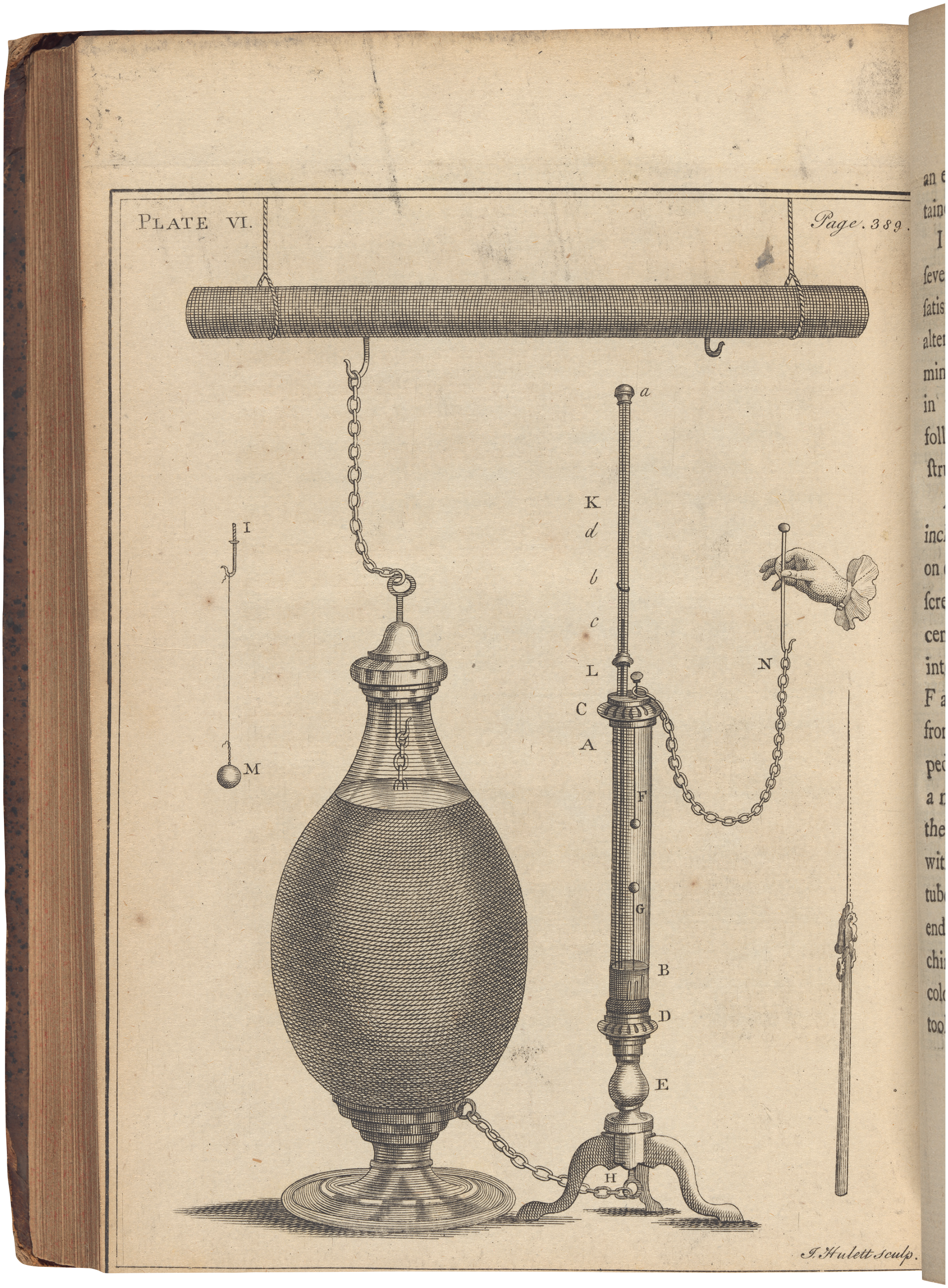
Franklin began studying electricity in the mid-seventeen-forties. While visiting family in Boston, he met the Scottish businessman Archibald Spencer (1698-1760), who showed him a Leyden jar. Upon returning to Philadelphia, he acquired a glass tube sent to him by Peter Collinson (1694-1768), a botanist and merchant, and a fellow of the Royal Society. In his letters to Collinson, Franklin described his experiments with electricity. Collinson presented them to the Royal Society, which subsequently published them in book form in England from 1751 onwards. New editions of this book were published in the ensuing years, supplemented with numerous articles and later correspondence, including exchanges between Franklin and other scientists.

The texts in Franklin's book offer a vivid picture of the way in which he and his contemporaries conducted their experiments. His 1761 correspondence with Ebenezer Kinnersley (1711-1778), for example, opens with the story of how Kinnersley, after having 'charged himself electrically', threw his hat at someone standing at a considerable distance. By holding a piece of flax in that person's vicinity, he was able to show that some of the electrical charge was transferred. It was an experiment that the reader could readily imagine. The letter continues with a consideration of the conductive qualities of water and other materials, followed by Kinnersley's invention of the electric thermometer. Originally published in 1761 in the journal of the Royal Society of London, *Philosophical Transactions*, the correspondence was accompanied by an engraving by James Mynde (1702-1771).

In the fourth edition of *Experiments and Observations on Electricity*, the essential texts originally appearing in dispersed letters and articles from previous decades superbly come together. Edited and significantly modified by Franklin himself, it is considered to be the first complete edition. For example, the first edition from 1751 contains only a single engraving featuring different images; the fourth edition from 1769, by contrast, contains seven engraved plates. In the later edition, the plate showing the electric thermometer was re-engraved in mirror image by James Hulett (d. 1771, see plate VI). Despite several cosmetic changes, the overall, diagrammatic style has been maintained. Moreover, the book also includes Franklin's written response to Kinnersley's letter, describing parallels with his own early experiments with the Leyden jar, again accompanied by an engraving.

The Rijksmuseum's copy of this famous fourth edition comes from the same donation as the aforementioned work by Christiaan Huygens (no. 2), made by the heirs of Willem Cornelis Mees. Together with Leonard Euler (1707-1783), Benjamin Franklin was one of the few scientists in the eighteenth century who favoured Huygens's wave theory of light over Newton's particle theory. This iconic book can therefore be linked to the experiments of Pieter van Musschenbroek (no. 3) and to Huygens's wave theory, but also to Huygens's reception in the Netherlands in the nineteenth century.

AA



LITERATURE:

John Carter and Percy H. Muir, *Printing and the Mind of Man: A Descriptive Catalogue Illustrating the Impact of Print on the Evolution of Western Civilization during Five Centuries*, London 1967, p. 119 (no. 199)

PROVENANCE:

? Rudolf Adriaan Mees (1844-1886); by descent through the family; donated by the heirs of Willem Cornelis Mees (1947-2008) to the museum, 2022

(Rijksmuseum Research Library 349 B 4, inv. no. BI-2023-1435).

6 MARTIN FROBENIUS LEDERMÜLLER (Nuremberg 1719-1769)
Mikroskoopische vermaaklykheden: zo voor de oogen als voor den geest, behelzende de afbeeldingen van veelerley voorwerpen, zo van dierlyke lighaamen, als van planten en delfstoffen … vermeerderd door Adam Wolfgang Winterschmidt
Te Amsterdam, by de erven van F. Houttuyn, 1776
4 parts in 2 volumes, 174 hand-coloured engraved plates (1-150 and 24 irregularly numbered), half-leather binding, red morocco title-labels; 28.5 x 22 cm (quarto)

A century after the publication of Robert Hooke's *Micrographia* (no. 1), microscopes had improved considerably. Manuals offering practical advice, among them Henry Baker's *The Microscope Made Easy* (no. 4), had also become available for the non-academic use of microscopes. People's undiminished amazement at microscopic observations inspired publishers in various European countries to create beautifully illustrated editions.

Mikroskoopische vermaaklykheden by the German naturalist Martin Frobenius Ledermüller presented the microscopic world in all its wonder, splendour and horror to eighteenth-century readers, while providing an overview of different microscopes, their setup and use. Originally published in German under the title *Mikroskopische Gemüths- und Augen-Ergötzung* (1759-62), the first edition contained one hundred engraved plates, with a later supplement comprising an additional fifty plates. Adam Wolfgang Winterschmidt (1733-1796), a specialist in natural history, produced most of the engravings. Maarten Houttuyn (1720-1798), a naturalist known for his contribution to *De Nederlandsche Vogelen,* his interpretation of Linnaeus's system in the thirty-seven-volume *Natuurlyke Historie* and other works, was likely responsible for the first Dutch-language translation. The Dutch edition contains an additional twenty-four plates and Dutch translations of two other works by Ledermüller: *Versuch bey angehender Frühlings Zeit die Vergrösserungs-Werkzeuge zum nutzlich und angenehmen Zeitvertreib anzuwenden* and *Letzte Beobachtungen seiner mikroskopischen Ergötzungen ... nebst der Beschreibung und Abbildung eines neuen und vollständigen Universalmikroskops*.

The use of the word *vermaaklykheden* in the title is by all means justified. Apart from the concise scientific explanations in the descriptions, the pleasure of observation is most remarkable. When describing what he has seen through his microscope – whether the fungus on a red grape, a fish's scales, the honeybee's sting or a butterfly's wing – Ledermüller maintains his boyish enthusiasm. In some cases, he even apologizes for the topics he addresses: 'I hope the reader will not be bored, upon seeing mould shown here once again'. In his descriptions, Ledermüller refers to both well-known microscopists and numerous naturalists. He generally adheres to existing scientific views, avoiding confrontation with other naturalists. In the fourth section of the book, however, he devotes attention to 'objections and comments' published by naturalist Wilhelm Friedrich von Gleichen-Russwurm (1717-1783). Ledermüller vehemently rejects his colleague's criticism, accusing him of having confused the ovipositor (egg-laying tube) of a female housefly with the reproductive organ of the male. Winterschmidt's masterful engraving of a housefly – the (unnumbered) last plate, and possibly the most beautiful engraving in the entire book – serves to further prove his point.

AA

LITERATURE:

John Landwehr, *Studies in Dutch Books with Coloured Plates, Published 1662-1875: Natural History, Topography and Travel Costumes and Uniforms*, The Hague 1976, p. 450 (no. 482)

PROVENANCE:

Former owner's inscription on half-title: Hubert; on fly-leaf: J.L Huyer.
…; Forum Rare Books, from which purchased by the museum, 2023
(Rijksmuseum Research Library 347 D 16-17, inv. nos. BI-2023-2392 and 2393).

BI-2023-2393

7 AUGUST JOHANN RÖSEL VON ROSENHOF (Augustenburg 1705-1759 Nuremberg)
De natuurlyke historie der insecten; voorzien met naar 't leven getekende en gekoleurde plaaten
Te Haarlem en Amsterdam, by C.H. Bohn en H. de Wit, c. 1764-82
8 parts in 4 volumes, 314 hand-coloured engraved plates; 29 x 22.5 cm (quarto)

The German-born August Johann Rösel von Rosenhof came from a family of artists. His grandfather, Frans Rösel, was an accomplished landscape and animal painter; his father, Pius, was an etcher and glass painter. After serving an apprenticeship with his uncle, the animalier Wilhelm Rösel von Rosenhof, August Johan moved to Copenhagen in 1726. There he evolved into a talented portrait and miniature painter. On his return trip to Germany two years later, Rösel was felled by a severe fever. During his recovery in Hamburg, an acquaintance presented him with a copy of Maria Sybilla Merian's *Metamorphosis insectorum Surinamensium* (1705). Captivated by the beauty of the illustrations, Rösel set out to produce a comparable work on the German insect world. The ultimate outcome of his efforts, entitled *Der monatlich-herausgegebenen Insecten-Belustigung*, was published in instalments between 1740 and 1761, later translated into Dutch as *De natuurlyke historie der insecten*.

In the introduction to the first part of Rösel's entomological magnum opus, he writes about the lengthy process leading up to his project. To create illustrations of the highest quality, he delved deeply into the natural sciences. As an apprentice to Johann Gabriel Doppelmayr 1677-1750), Rösel learned to grind microscope lenses. He was so skilful that he managed to build his own solar microscope with the aid of Henry Baker's translated treatise, *Het microscoop gemakkelyk gemaakt* (no. 4). During the same period, he also became acquainted with Ledermüller's *Mikroskoopische vermaaklykheden* (no. 6), the first book on microscopy illustrated with coloured plates. In 1740, Rösel finally published his very first plate, to gauge what people's reactions might be. Without exception, the response was overwhelmingly positive, with Rösel releasing new instalments up until his death in 1759. Christian Friedrich Carl Kleemann (1735-1789), Rösel's son-in-law, continued the publication for several years.

De natuurlyke historie der insecten comprises eight parts divided into four volumes. The first volume is chiefly devoted to butterflies, the second to beetles, grasshoppers, crickets, mosquitoes, flies and dragonflies (see frontispiece vol. 2). The third volume contains descriptions and depictions of crayfish and polyps. The fourth volume, which comprises a variety of beetles, butterflies and other insects, was edited by Kleemann. It also includes an index and an extensive biographical sketch of the life of Rösel von Rosenhof. Kleemann noted that, given the large number of plates, Rösel could not possibly have accomplished the colouring on his own. After completing the drawing and engraving, Rösel coloured one plate as an example, and then instructed a team of trained colourists to faithfully follow his example. Because of this method, colour differences between the copies are less than in coloured works in other genres. Many of the plates were coloured by Kleeman himself, together with his wife, Katharina Barbara Rösel von Rosenhof (1741-1804). From 1765 onwards, the couple also supplied the hand-coloured plates for the Dutch edition.

AA

LITERATURE:

John Landwehr, *Studies in Dutch Books with Coloured Plates, Published 1662-1875: Natural History, Topography and Travel Costumes and Uniforms*, The Hague 1976, pp. 28-30 and 167-74 (no. 161)

PROVENANCE:

? Willem Cornelis Alpherts (1795-1866); ? Theodorus Abeleven (1822-1904); by descent through the family; donated by the heirs of Willem Cornelis Mees (1947-2008) to the museum, 2022

(Rijksmuseum Research Library 349 C14-21, inv. no. BI-2023-2624 t/m 2631).


Aug. Ioh. Röſel fec. et exc.

8 CASPAR STOLL (Landgraafschap Hessen-Kassel c. 1725/1730-1791 Amsterdam)
Natuurlyke en naar 't leeven naauwkeurig gekleurde afbeeldingen en beschryvingen der Cicaden en Wantzen, In alle vier deelen der waereld Europa, Asia, Afrika, en America | Représentation exactement colorée des Cigales et des Punaises, qui se trouvent dans les quatre parties du monde, l'Europe, l'Asie, l'Afrique, et l'Amerique
Amsterdam, by Jan Christiaan Sepp, 1788
2 volumes (124 pages, XXIX engraved plates; 172 pages, XLI engraved plates), bound in green morocco, sides with gilt triple fillet border, all edges gilt; 30.5 x 24.5 cm (quarto)

In the same period that the Dutch-language translation of August Johann Rösel von Rosenhof's entomological work (no. 7) appeared, a comparable work was published in the Netherlands by the merchant, engraver and naturalist Christiaan Andreas Sepp (c. 1710-1775) and his son, Jan Christiaan Sepp (1739-1811): *Beschouwing der wonderen Gods in de minstgeachte schepzelen, of, Nederlandsche insecten*. Choosing from his own private collection of prepared insects, father Christiaan made drawings of the insects, which he engraved and printed. After he had completed the first thirty plates in the early seventeen-sixties – works later forming part of *Nederlandsche insecten* – Jan Christiaan registered as a bookseller to sell newly released instalments. It would ultimately take almost a century to complete the entire series (1762-1860); the instalments would add up to be the first major edition released by natural history publishers of the late-eighteenth and early-nineteenth centuries. In addition to *Nederlandsche insecten*, later generations of the Sepp family went on to produce two other exquisite books also held in the Rijksmuseum Research Library: *De Nederlandsche vogelen* (1770-1829), in collaboration with Cornelius Nozeman (1720-1798), and *Flora Batava* (1800-1934), initially under the editorship of Jan Kops (1765-1849).

Of equally high standing is another work recently acquired by the museum, *Natuurlyke en naar 't leeven naauwkeurig gekleurde afbeeldingen en beschryvingen der Cicaden en Wantzen*. Its author, the entomologist Caspar Stoll, is known for having completed Pieter Cramer's *De Uitlandsche Kapellen*, a book on exotic butterflies from the Indian Archipelago, Ceylon, Sierra Leone and Suriname. During the preparations of the final sections of this work, Sepp had approached Stoll to work on the next group of insects, cicadas and wants, which from 1780 on would also be featured in Sepp's issues. In his introduction, Stoll warns his readers that he will not be providing 'learned and analytical descriptions', quite simply 'because it is beyond my reach'. This is unnecessary, he explains, as the best and most comprehensive descriptions are already to be found in the entomological works of René-Antoine Reaumur, Charles De Geer, Étienne Geoffroy Saint-Hilaire and Maarten Houttuyn. He instead places chief importance on images drawn from life, each accompanied by a short description.

The first issue's release was announced on 24 August 1780 in the *Oprechte Haerlemsche Courant*. In addition to descriptive texts in Dutch and French, this first issue contains six hand-coloured plates, at a purchase price of four guilders. According to the publisher, nine or ten issues would be forthcoming. In the period 1780 to 1788, this would grow to a total of twelve issues comprising seventy-two plates, available at a substantial total cost of 48 guilders. Virtually all the specimens were coloured after life in a uniform manner in Sepp's workshop. All are generally high in quality with only minimal differences between the copies. Given the high price, only a select group of naturalists and collectors would likely have been able to afford this work. The Rijksmuseum's copy is luxuriously bound in slightly later, olive-green morocco.

AA

LITERATURE:

John Landwehr, *Studies in Dutch Books with Coloured Plates, Published 1662-1875: Natural History, Topography and Travel Costumes and Uniforms*, The Hague 1976, pp. 208-14 (no. 191)

PROVENANCE:

…; Erasmushaus, Basel, from which acquired by the museum, with support of Marina Aarts, 2022

(Rijksmuseum Research Library 341 C 14, inv. no. BI-2022-1350).

9 JOHN SMITH (London? 1647/48-before 1723)
The Art of Painting. Wherein is included The whole Art of Vulgar Painting, according to the best and most approved Rules for preparing, an [sic] laying on of Oyl Colours
London, printed for Samuel Crouch, at the Corner Shop of Pope's Head Ally, on the right hand next Cornhill, 1676
16 unnumbered pages, 82 pages, 2 unnumbered pages, no covers/binding; 14.5 x 9.5 cm (octavo)

Although a large divide separates the practice of science and the practice of art, in both areas people faced questions concerning light, colour, technology, observation and representation. Artist's manuals provided practical guidance in handwriting and in print, in word and sometimes also image. But were they actually actively used in this manner? *The Art of Painting* was written in the late seventeenth century by the English clockmaker John Smith. This work stands in a tradition of recipe books and manuals that artists wrote down. The title page of the first edition makes it quite clear that painters of the upper echelon were not the focus. On the contrary, the author's intended audience were practitioners of vulgar painting. Also known as draft painters, these artisans were specialized in the type of painting encountered in interiors – decorative motifs on walls, woodwork, furniture, smaller household items – and occasionally on paper.

In *The Art of Painting*, Smith primarily discusses the painting of sundials. He argues, however, that the same methods of painting can equally be applied to all kinds of woodwork. From the second edition on, the work bears the more encompassing title *The Art of Painting in Oyl*, thereby addressing the central role of oil painting. The treatise's chapters cover a variety of topics, including the use of different tools, the multitudes of colour, the making of oil paint, the application of paint to all sorts of surfaces and the use of gold leaf. In later editions, an additional chapter is devoted to the colouring of maps and prints.

One interesting aspect of Smith's work is the attention he gives to painting restoration. He writes: 'There is less trouble in the preserving what is already made, than in making new'. At first offering an almost perfunctory apology to professional draft painters, who have no need for his instructions, he then asserts that above all members of the rural gentry class stand much to gain when the painted woodwork ornamentation inside their homes can be preserved. Noting the influence of wind and weather on painted outdoor surfaces, Smith points out that decorations require regular repainting in the same colours. Indoors, he additionally underscores the importance of preventive measures. Regarding the decay of colours, for example, he warns: 'Their beauty may be much impaired by dust, smoke, fly-shits and the like'.

Previous to the present acquisition, the Rijksmuseum Research Library already held a second and a fifth edition of *The Art of Painting in Oyl* in its collection, published in 1687 and 1723 respectively. By the time of the latter edition, published some fifty years after its debut, Smith's book had obtained the status of a classic in the English-speaking regions. In his introduction to the fifth edition, he tells that previous editions had been well received and were completely sold out. The wording of the introduction is the same as that of the previous edition, from 1705, perhaps indicating that Smith had died at some point in the intervening period. A minimum of four new editions and two pirate editions followed in the eighteenth and nineteenth centuries, published posthumously. This provides insight into the work's widespread popularity, confirming its continued, intensive use over a period of at least one hundred and fifty years. Of the first edition, only a handful of copies have survived: presently, the Rijksmuseum's newly acquired copy is the sole copy held in a public collection outside the United States and Great Britain. Known copies of later editions are greater in number. Despite the numerous editions, each inevitably with substantial print runs, relatively few extant copies have survived, likely due to their intensive use by the many who held this work in their possession.

AA

PROVENANCE:
…; sale, London (Forum Auctions), 14 July 2022, to the museum with support of the Receptuurboeken Fonds (Rijksmuseum Research Library 307 F 2, inv. no. BI-2022-3288).

Licensed, *May* 10. 1676.

Roger L'Estrange.

THE

Art of Painting.

Wherein is included

The whole ART of *Vulgar Painting*, according to the best and most approved Rules for preparing, an laying on of Oyl Colours.

The whole T[R]TISE being so Full, Complea[...] Exactly fitted to the meanest Cap[...]y, that all Persons whatsover may by the Directions contained therein be sufficiently able to Paint in Oyl Colours not only Sun-Dials, but also all manner of TIMBER WORK, whether Posts, Pales, Pallisadoes, Gates, Doors, Windows, Wainscotting, Border Boards for Gardens, or what ever else requires either Use, Beauty, or Preservation from the Violence or Injury of Weather.

Composed by *John Smith*, Philomath.

LONDON,
Printed for *Samuel Crouch*, at the Corner Shop of *Pope's Head* Ally, on the rig[...] hand next *Cornhill*, 1676.

10 HENRICUS VAN DE VEHN

Beschrijving van recepten, om te schilderen einde XVIIIe eeuw
Limburg?, second half eighteenth century
Manuscript, 75 unnumbered folia, paper covers, with title on added label; 32 x 21 cm (folio)

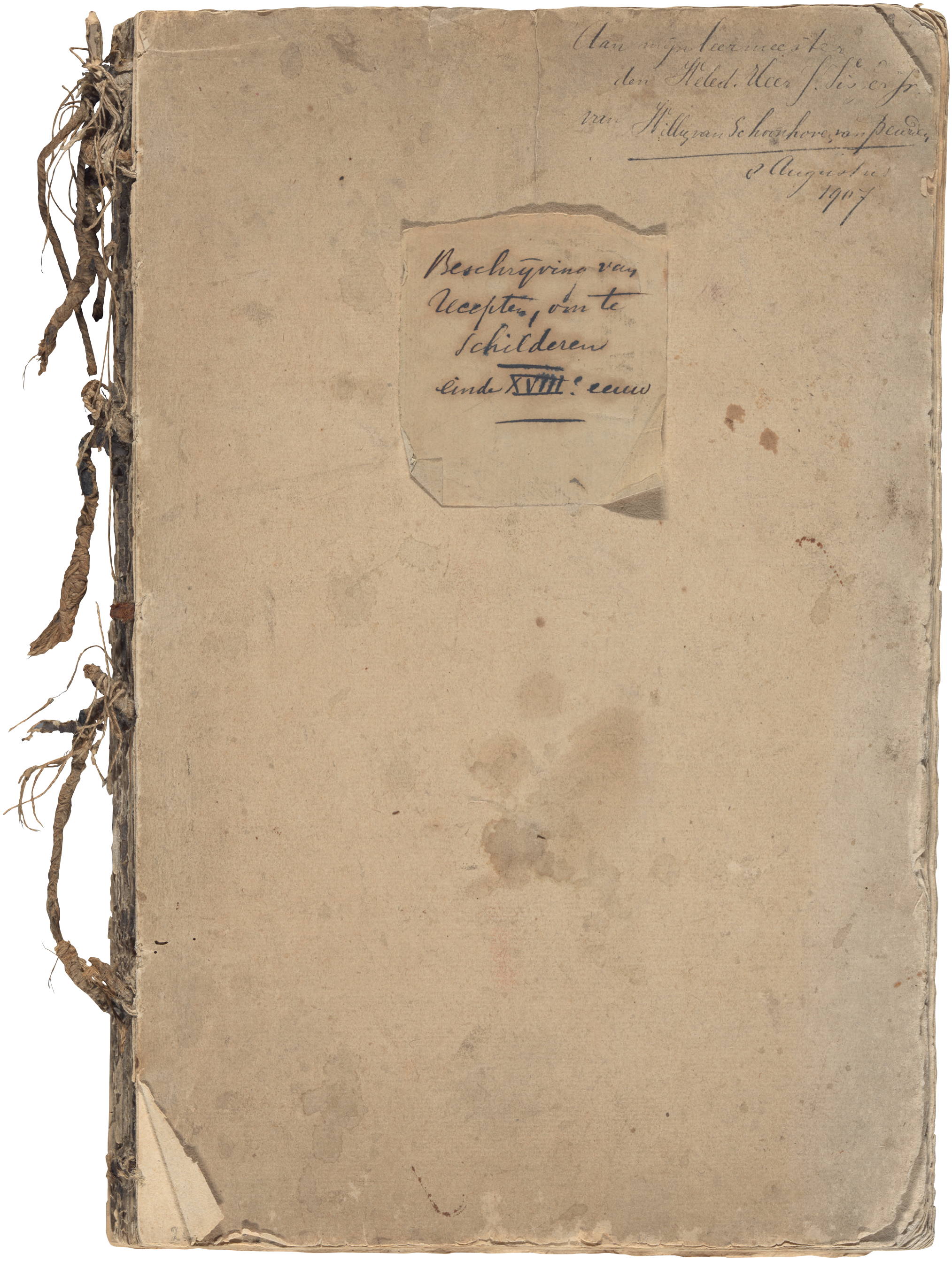
From its outer appearance, the manuscript *Beschrijving van recepten, om te schilderen einde XVIIIe eeuw* – a title added later – looks like it was used in an artist's studio, held together by little more than a few frayed pieces of rope. Most of its seventy-five pages are filled with a clearly legible, eighteenth-century handwriting in Dutch, except for the last nine pages containing a German-language supplement. A dedication on the first page reads: 'seer hoegh wel geboren heer, der heren tot Well aen de Maes wonende op het vreij adelijck huis Well, Henricus van de Vehn' (very high well-born lord of the lords of Well aen de Maes, living at the free noble house Well, Henricus van de Vehn). At present, the precise identity of this 'Van de Vehn' remains uncertain, as does the author's motivation for dedicating this collection of paint recipes and painting instructions to the inhabitants of Castle Well.

Located in Limburg on the German border, Castle Well was the property of the noble De Liedel family from 1771 to 1852. In the latter year, the castle passed into the possession of the Austrian Von Schloissnigg family. In 1905, the castle and its furnishings were sold to a consortium called 'Maatschappij Well'. The estate, including the library and the archive, were sold in the same year at Frederik Muller & Co in Amsterdam. Several documents acquired at the time by the amateur historian Alexander Franciscus van Beurden would later serve as source material for his article on Castle Well, published in the magazine *Buiten* (1910). A portion of what Van Beurden had acquired was later donated to the Dutch national archives. The present manuscript clearly was not, as its cover bears a dedication from Van Beurden's son, the painter Willy van Schoonhoven van Beurden, addressed 'to his teacher' and dated 8 August 1907.

Starting with the very first line, we learn the motivation of the manuscript's eighteenth-century author or compiler. Describing a method for so-called 'planing', i.e. the smoothing out of the surface on which one is to paint, he writes: 'Take the very best white glue and boil it in very clean rainwater so thin and so mixed, that when it is cold, it congeals like veal soup.' On subsequent pages, more technical instructions follow, including descriptions of the preparation and application of dozens of colours. Under 'sap green', the heading is inscribed in a green tint, as if on the spot, the writer had dipped his pen in crushed buckthorn berries from the castle garden. The manuscript continues with colour applications for a variety of subjects, i.e. how to paint people, animals, clouds, castles and landscapes: 'For the old women, one should take … lead-white and some brownish ochre mixed in there, and blossom with vermillion.' And 'The eagle should be underpainted with dense brown ochre and some black'. A separate section addresses the matter: 'How to set up and colour all kinds of flowers'. A number of short pieces follow on lacquer and varnish.

Manuscripts containing paint recipes and painting instructions were widespread in the eighteenth century. Used for practical purposes in the studio, however, few of these works survived. The Rijksmuseum Research Library has built a fair collection of handwritten recipe books, in addition to an even larger collection of printed works addressing the same subject. By assembling a corpus of similar texts, one comes to a better understanding of the practical use of these types of books and manuscripts. Yet it also facilitates the reconstruction of the textual history, as well as the bibliographic and historiographic context. The recipes, though sometimes a product of the painter's direct experience, were more often copied from other sources. The aforementioned German-language text appears to be quite faithfully copied from the printed colour book *Neu ausgefertigtes und mitviel Raren Kunst-Stücken geziertes Farben-Büchlein* (1745), of which the Rijksmuseum also holds a copy. That this part of the manuscript was written in German may simply reflect that these texts were available in German and therefore transcribed in the original language. Future research should likely reveal whether the Dutch-language paint recipes and instructions can also be traced to other texts.

AA



PROVENANCE:

From the collections of Kasteel Well; ? sold to Alexander Franciscus van Beurden (1857-1934) at an auction by Frederik Muller & Co, Amsterdam, spring 1905; given by Willy van Schoonhoven van Beurden (1883-1963) to an unidentified fellow artist, 8 August 1907; …; sale, Leiden (Burgersdijk & Niermans), 16 November 2021, no. 297, to the museum (Rijksmuseum Research Library GF 389 D 4, inv. no. BI-2021-5379).

11 JOHAN PETER WESTRING (Linköping 1753-1833 Norrköping)
Svenska lafvarnas färghistoria, eller Sättet att använda dem till färgning och annan hushållsnytta
Stockholm, tryckt hos Carl Delén, 1805-09
8 instalments in one volume, irregular pagination, 25 hand-coloured engraved plates (1-24 and 1 unnumbered), half-leather with marbled paper boards, gold-tooled spine; 22 x 14 cm

Johan Peter Westring was a Swedish physician and botanist. During his studies at Uppsala University, Westring wrote a dissertation on marsh rosemary (Ledum palustre) under Carl Linnaeus (1707-1778). After completing his studies in 1779 (with a dissertation on sneezing), he settled in Norrköping. In 1794, Westring was named personal physician to the king; in 1809, he was even elevated to 'first personal physician'. *Svenska lafvarnas färghistoria, eller Sättet att använda dem till färgning och annan hushållsnytta*, on the 'colour history' of Swedish lichens, is his seminal work.

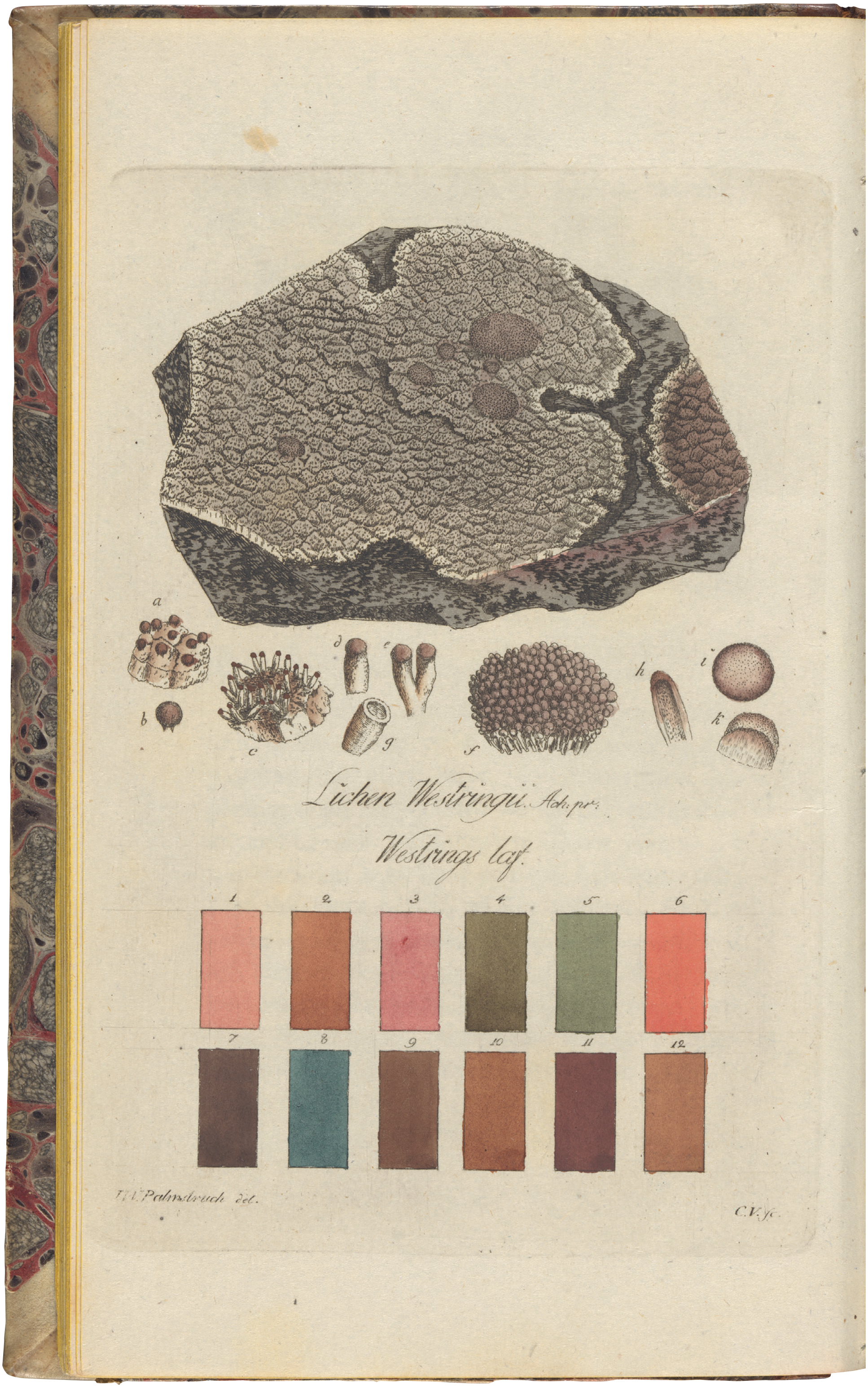
Lichens appear in many different colours, with the pigments that could be extracted considered potentially usable for dyes. A symbiotic life form, lichens consist of cohabiting fungi and cyanobacteria. Able to survive on very few nutrients, they flourish in harsh environments, on exposed rock surfaces at high elevations and in polar regions. Lichens also occur in manmade landscapes, in places as diverse as old buildings and gravestones. In the foreword to *Svenska lafvarnas färghistoria*, Westring notes that 'in nature's storehouse', many species still exist that have not been fully exploited. He argues that, even if often viewed rather disparagingly, the systematic mapping of lichens can be of great economic benefit. This seeking of economic utility in the field of botany in fact reflected a wider trend seen in other European countries at the onset of the nineteenth century. The grand illustrated overview of Dutch plants, *Flora Batava*, of which the first instalment was published in 1800, was motivated by the same principles of utility.

Svenska lafvarnas färghistoria appeared in eight instalments published between 1805 and 1809, each originally furnished with a printed blue cover and ultimately bound together into a single volume. The title page of this work states 'first volume', suggesting that more volumes were originally planned, but none were ever published. This was perhaps the consequence of Westring's promotion as the king's first personal physician, at which time he began to focus more on medical subjects in his published works. All eight instalments of *Svenska lafvarnas färghistoria* contained descriptions of three different lichens and three hand-coloured, engraved plates. The drawings were made by Erik Acharius (1757-1819), likewise a student of Linnaeus and a pioneer in the field of lichens. Each plate showed a specific lichen, supplemented with a numbered overview of the various colours extractable from the given species. After a general description of the species, Westring provides a systematic description for each colour, describing the process required to obtain the pigment in question and achieve the desired colour. Acknowledging the desirability of using actual lichen pigments for the colours in his own book, Westring apologizes, explaining that he simply lacked the capacity to extract the large quantities of pigments required to colour a print run. He was, after all, a botanist by profession, not an industrialist.

It comes as no surprise that Westring, a former student of Linnaeus, developed a preference for systematics. From the late seventeenth century onwards, systematic colour systems were devised and printed in tabular form, with Richard Waller's 'Tabula colorum physiologica', published in 1686 in the Royal Society's *Philosophical Transactions*, as the best-known early example. During the course of the eighteenth century, more and more complex colour systems emerged. What makes Westring's work remarkable is the evident practicality of his descriptions of lichens, rooted in a *materia medica* tradition (now pharmacology), while, at the same time, his visual representations of colour samples correlate with the more theoretical works on colour classification. From the perspective of both colour theory and recipe books in the eighteenth century, *Svenska lafvarnas färghistoria* is therefore a valuable addition to the Rijksmuseum Research Library.

AA

PROVENANCE:
…; sale, Stockholm (Stockholms Auktionsverk), 7 December 2023, no. 231, to the museum (Rijksmuseum Research Library 330 G 18; inv. no. BI-2024-0379).


a
b
c
d
e
f
g
h
i
k
Lichen Westringii. Ach. pr.
Westrings laf.
1
2
3
4
5
6
7
8
9
10
11
12
C.V. sc.

12 GEORG FRAUENFELD (Vienna 1807-1873)
Die Algen der dalmatischen Küste mit Hinzufügung der von Kützing im Adriatischen Meere überhaupt aufgeführten Arten
Wien, Druck und Verlag der kaiserlich-königlich Hof- und Staatsdruckerei, 1855
XVIII pages, 78 pages, 26 unnumbered nature-printed plates; 35 x 27.5 cm

The nineteenth century is considered a golden age for experimental graphic techniques. In just a few decades, dozens of new processes were developed in the fields of graphics, photography and photo mechanics. Some of these were forgotten as soon as they were invented. One curious technique that enjoyed brief popularity is nature printing, involving the use of plants or other objects to create a true-to-life print on paper. Its name suggests this method is much more faithful to the original than images produced with other printing techniques. The ostensible advantage is that it allows a two-dimensional representation of a three-dimensional plant without an artist's intervention, as with an etching or engraving. However, when considering the composition, the use of colour or simply the thicker parts of a plant less conducive to the nature printing process, one soon discovers that an artist's interpretation and trained hand are still essential to achieving a successful print.

While the direct method of nature printing – simply dipping a plant in ink and printing it on paper – had existed for centuries, an indirect method was developed in Austria around the mid-nineteenth century: using galvanoplasty, a copper printing plate was made from a plant. In his *Die Entdeckung des Naturselbstdruckes* (1854), Alois Auer (1813-1869), the director of the kaiserlich-königlich Hof- und Staatsdruckerei in Vienna, claimed to be the technique's inventor. Auer was proud to announce that with his process, Austria had also made a significant contribution to the development of printing in the form of *Naturselbstdruck*, after Russia, with Moritz Hermann von Jakobi's invention of galvanoplasty in 1837, and France, with Louis Daguerre's eponymous 'daguerreotype' in 1839.

Georg Frauenfeld's *Die Algen der dalmatischen Küste* is an early, successful example of nature printing. Frauenfeld was curator of the molluscan collection of the k.k. Zoologischen Hof-Cabinet, the precursor of the Naturhistorisches Museum Wien. His work on the algae of the Dalmation coast was printed and published at Auer's printing house. In his foreword, Frauenfeld expresses his admiration for the new technique, particularly as it facilitated the making of a colour edition of images taken from natural objects. It was especially suitable for obtaining a sharp, detailed image of algae structures. *Die Algen der dalmatischen Küste* contains twenty-six nature-printed plates showing hundreds of algae.

Relatively flat and easily arranged in two dimensions, nature printing is an ideal method for reproducing algae and ferns alike. Auer and Frauenfeld's applied technique is highly akin to Anna Atkins's *Cyanotypes of British algae* (1843), produced ten years earlier in Britain, and various manifestations of the Victorian fern craze, or 'Pteridomania', most famously reflected in Henry Bradbury's *The Ferns of Great Britain* (1855). The Rijksmuseum holds the works of Atkins and Bradbury, as well as other examples of nature printing. Frauenfeld's work is also to be seen within the larger perspective of nineteenth-century endeavours to reproduce nature on paper.

AA

PROVENANCE:
…; from Antiquariat Banzhaf to the museum, 2023 (Rijksmuseum Research Library GF 380 D 4, inv. no. BI-2023-1646).


Chondrus crispus Linn.
Halarachnion pinnulatum J. Ag.
Halymenia Cyclocolpa Mont.
Catenella opuntia Grev.
Euhymenia lactuca Ag.
Halymenia floresia Ag.
Chondroclonium Teedii Turn.
Naturselbstdruck aus der kaiserl Staatsdruckerei in Wien.
18

13 WILLEM JOHAN ALPHERTS (Elburg 1795-1866 Culemborg)
Afbeelding door natuur zelf-druk en beschrijving van medicinale planten
Culemborg, 1862
Album, 95 unnumbered folia, comprising 1 title page, 1 dedication, XXXVIII hand hand-numbered nature-printed plates, 14 blank folia, unnumbered pages with manuscript text in Dutch, multiple watercolour drawings in the text, bound in half-leather with marbled paper boards; 37.5 x 25 cm

On both a technical and commercial level, nature printing in the Netherlands has never seen a development comparable to that of the aforementioned works by Alois Auer in Vienna and Henry Bradbury in London (see no. 12). Small-scale experiments by the Wilson company in Meppel and the Enschede printing company in Haarlem are the exception, but no significant works that included nature prints were published in the Netherlands. Several individuals dabbled in the direct method, whereby plants are carefully inked or sooted and then pressed onto paper. In the Netherlands, the method's most successful practitioner was Willem Johan Alpherts, an amateur botanist and the municipal physician of Culemborg.

Between 1859 and 1866, Alpherts produced several albums of nature prints. To date, two albums from the period 1863-65, collectively titled *Flora Culenburgensis*, remain the hallmark of his work, with more than two hundred plants collected in the Culemborg area reproduced by means of nature printing. The work is of high technical quality and also in line with modern notions of plant geography, as presented around this time in the botanical masterpiece *Flora Batava*, the first illustrated overview of wild plants in the Netherlands. Alpherts was no stranger to this world: his son-in-law, the botanist Theodorus Abeleven (1822-1904), was secretary of the Dutch Botanical Society for more than thirty years. Through Abeleven and two of his own sons, Alpherts became increasingly familiar with what became known as the 'Dutch flora's expanding circle of friends'.

The *Flora Culenburgensis* was donated to the Dutch Botanical Society in the nineteenth century. Another album titled *Afbeelding door natuur zelf-druk en beschrijving van medicinale planten*, with nature prints and descriptions of medicinal plants, has until now remained in the family's possession. In terms of dating, this album falls precisely between Alpherts's known works. Like his other albums, this work comprises images of plants – thirty-eight in number, each with Roman enumeration – supplemented with various detailed drawings and structured descriptions. A standard description consists of a header with both the scientific and Dutch-language nomenclature, followed by paragraphs with calligraphed subheadings containing information on genus, species, flowering time, collecting time, potency, and the medicinal and domestic uses. Scientific reference citations, including standard botanical works by Linnaeus, Sepp, Geoffroy and Kops, are found at the bottom of each description.

The images in the *Afbeelding door natuur zelf-druk en beschrijving van medicinale planten* are far more similar to those in the *Flora Culenburgensis* as opposed to Alphert's early work, in which one finds, for example, his 'nature prints' of trees – in reality drawings supplemented with prints of details, e.g. leaves. This album clearly contains 'bona fide' nature prints subsequently complemented by hand. Almost all are beautifully coloured. One plate, plate X (see p. 165), showing the bittersweet (Solanum dulcamara), remains unfinished and clearly reveals Alpherts's working method: after carefully arranging the dried leaves, he created an impression by sooting them. When too large for the paper, part of the plant was omitted, or, as in the case of the ruffled rhubarb (Rheum undulatum) on plate XIX, an additional strip was added as a fold-out page in the album. The printing technique is especially noticeable in the veining, beautifully transferred to the paper. Alpherts then drew the stems, roots, flowers and fruits himself, subsequently colouring the print by hand with watercolours. Accordingly, in Alpherts's work the term 'print' must be applied with some reserve: in fact, the print serves as little more than an underdrawing for his watercolours. Due to this special graphic technique, this unique album – donated to the museum by the maker's descendants – is a seminal work in the nineteenth-century representation of nature on paper in the Netherlands.

AA

LITERATURE:

Alex Alsemgeest, 'Natuurzelf-drukken van Willem Johan Alpherts: Een negentiende eeuwse verkenning van de natuur tussen druk- en tekenkunst', *De Boeken-wereld* 39 (2023), no. 3, pp. 60-70

PROVENANCE:

Willem Johan Alpherts (1795-1866); by descent through the family; donated by the heirs of Willem Cornelis Mees (1947-2008) to the museum, 2022

(Rijksmuseum Research Library 317 A 3, inv. no. BI-2023-0919).