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ABBREVIATIONS

MMA The Metropolitan Museum of Art
MMAB *The Metropolitan Museum of Art Bulletin*
MMJ *Metropolitan Museum Journal*

Height precedes width and then depth in dimensions cited.

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Joris Hoefnagel's Insects

MARJORIE SHELLEY

The fascination with insects, the most abject and ignoble of God's creations and the subject matter of Joris Hoefnagel's cabinet miniature of about 1594, *Ater* (fig. 1), was a manifestation of the enveloping passion for natural history among sixteenth-century Central European humanists in the circle of Rudolf II Habsburg, the Holy Roman Emperor. This fervor to acquire knowledge and specimens of plants, animals, and the physical world was grounded in the pervasive search to understand the harmony of the universe and the phenomena within it.¹ There was little distinction between nature and art, or between nature and theology, in Hoefnagel's milieu. Divine meaning permeated all God's creations and intellectuals were preoccupied with unlocking their deeper significance. Similar to Hoefnagel's other illuminations,

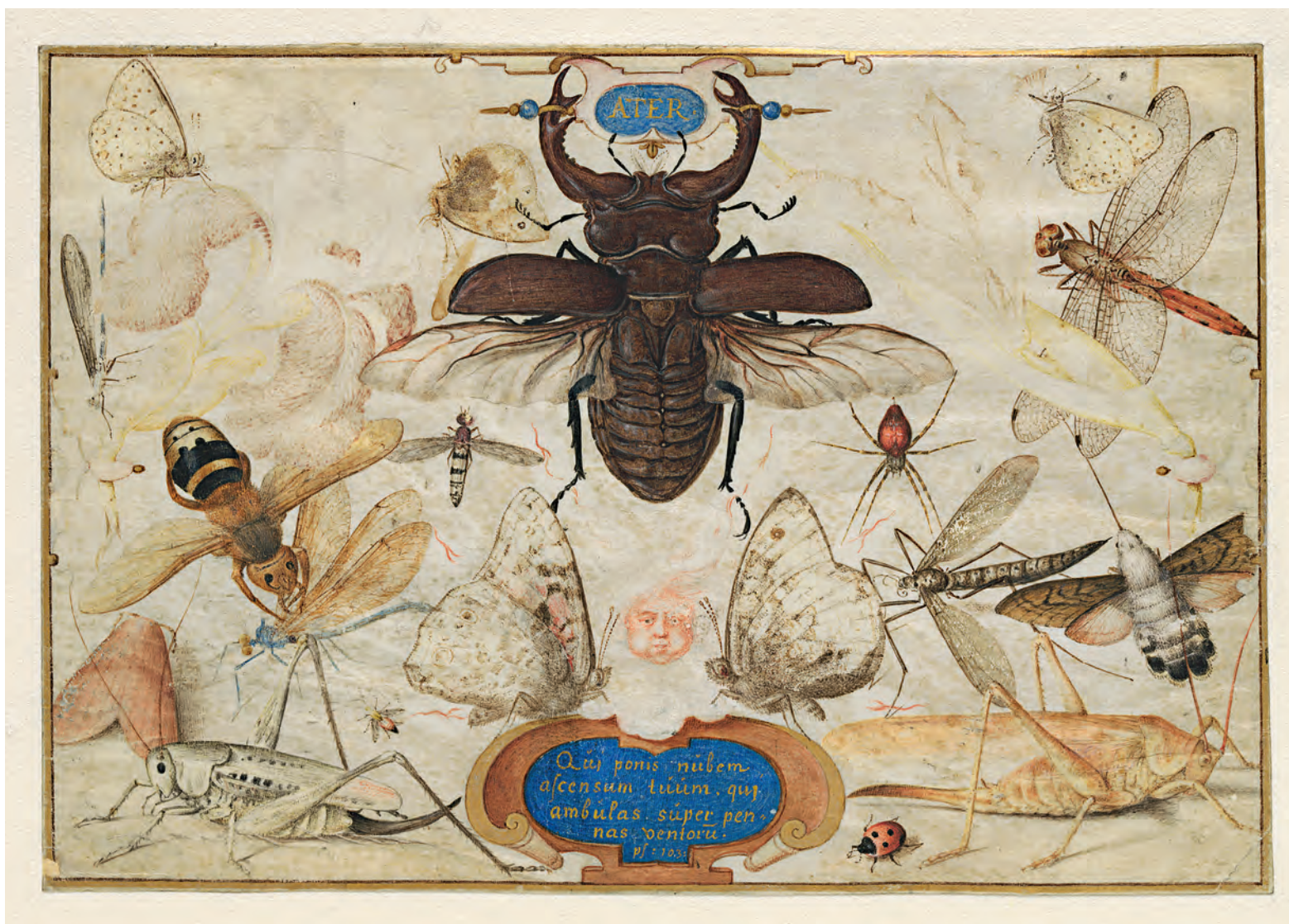


fig. 1 Joris Hoefnagel (Flemish, 1542–1600). *Ater*, ca. 1594. Pen and brown ink, watercolor, opaque paint, shell gold on vellum, $4\frac{3}{4} \times 6\frac{13}{16}$ in. (12 × 17.3 cm). The Metropolitan Museum of Art, Gift of Mrs. Darwin S. Morse, 1963 (63.200.4)

Ater reflects on these contemporary beliefs through its masterful, lifelike rendering, transcendental meaning, and ability to evoke the spirit of the wondrous in nature, all topics that would have been understood by an elite audience. This article examines the environment in which *Ater* was produced, as well as its tangible and earthly facets, while also investigating the emergence of insect imagery and the sources upon which Hoefnagel drew. The article addresses *Ater*'s materiality and interaction with the viewer, and how this unusual object served as both an amusement and an aid to contemplation in the culture of the court. This multilayered interpretation is based on the presence of fragments of actual butterfly wings among the painted insects, the worn condition of a once princely object, and the ambiguities of technique and title. *Ater* is of further interest, as it is positioned at a turning point between natural history illustration, in its accurate observation and recording of images, and “fine art,”

in its imaginative interpretation of nature and use of Renaissance pictorial devices.

REPRESENTATION OF INSECTS: A SPIRITUAL, PHILOSOPHICAL, AND CULTURAL AMALGAM

The impulse to describe and gather facts lay at the heart of Renaissance natural history, and is embedded in *Ater*'s insect imagery, a significant component of Hoefnagel's artistic repertory.² Historically, creatures of the earth, such as insects, were disdained and shunned. In the early decades of the sixteenth century, they served as no more than a reflection of sentiments that pervaded Northern Renaissance culture—curiosities referencing the inexplicable and nonnormative events and entities in nature that were bizarre, destructive, or sources of evil. This attitude would seem to imply that the title *Ater* (an age-old Latin term signifying dark, gloomy, and sordid occurrences) was an expression of negative attitudes toward insects; however, this

will be shown in this article to be otherwise.³ Stirred by Protestant and Catholic factions during the Reformation, monsters, prodigies, floods, and earthquakes—cataclysmic events and phenomena that existed beyond the predictable—were viewed as signs of God's wrath and portents of evil. By midcentury, Neo-Stoicism inspired a change in religious thinking, and a more benevolent mood prevailed in which insects and the aberrant were perceived as signs of God's divine presence.⁴ Now celebrated for their elusive habits and strange appearance, such ideas were commonplace, and disseminated in vernacular broadsides, ballads, and pamphlets, as well as through erudite sermons directed to the more learned, including those individuals for whom Hoefnagel made his cabinet miniatures. These images and literary forms encouraged reflection on nature and recognition of the dignity of the humble and inconsequential, among which insects figured prominently.⁵ In the second half of the century, spiritual and philosophical ideas as these persisted, expressed for example by the French essayist Michel de Montaigne, who wrote: "the most ordinary things, the most common and familiar, if we could see them in their true light, would turn out to be the grandest miracles of nature and the most marvelous examples, especially as regards the subject of the action of men."⁶ The English naturalist Thomas Moffett, for whom these lowly creatures were models for human behavior, wrote in the preface to his posthumously published *Insectorum Theatrum* (1634) an admonishment to the reader: "lest we should think God made them in vain . . . that in the universal world there is nothing more divine than these, except Man."⁷

The new charitable attitude toward insects was also supported by secular transformations. During the mid-sixteenth century, Europe was turning away from the dogmatic teachings of classical and medieval authority and poised on the cusp of the scientific revolution of the seventeenth century. *Ater*'s motifs eloquently convey and bring to mind the multiplicity of flora, fauna, and earthly wonders from all corners of the globe, which rapidly flowed into European ports from extraordinary voyages of exploration during a period that extended over 150 years. Its array of insects reflects the intrigue with all that was natural, artificial, and man-made, as well as the need to amass and collect objects from the exotic and rare to the familiar and commonplace. *Ater* invites close observation of nature that simultaneously attended and inspired the horticultural gardens and zoos that emerged during the Renaissance, and which provided opportunities for firsthand study of their holdings. In addition, *Ater*'s odd, unexpected ensemble

evokes the remarkable collections of the *Kunstammer*, princely cabinets abounding with objects that conferred knowledge and power. The grandest *Kunstammer* belonged to Rudolf II (r. 1576–1612), in whose court Hoefnagel worked, and where this cabinet miniature was likely housed.

Of equal importance in the culture of sixteenth-century Central Europe was the need to spiritually understand all God's creatures, from the least exalted to the "elusive, marvelous, or recondite."⁸ Such theologically inspired ideas corresponded to the new emphasis among natural philosophers, the "scientists" of the era, on empirical observation and description rather than the legends and hearsay of the past, and in turn became the basis of natural history illustration and underscored the pervasive desire among artists to imitate reality. Pictorially, the types of creatures portrayed from the 1550s provided intriguing imagery for audiences who were intently curious about all terrestrial dwellers—the normal and abnormal, exotic or familiar—and fascinated by the illusion of three-dimensional space and hyperrealistic forms imbued with life. To meet this growing desire to accurately record the appearance and habits of these beings, new visual means developed that encompassed perspective, foreshortening, trompe l'oeil illusion, and modeling, techniques that would soon flourish in painting and the graphic arts. It was through this amalgam of social, cultural, and artistic currents that insects, "the miracles of nature that are most conspicuous in the smallest things," entered the margins of mainstream art and thinking.⁹

HOEFNAGEL IN CONTEXT

Hoefnagel produced his miniatures within an inquisitive and vibrant climate. A highly educated and well-traveled naturalist and humanist, as well as a gifted linguist and illuminator, who was referred to as a painter, poet, and Latinist by the biographer Karel van Mander, Hoefnagel began his professional life in his family's thriving Antwerp mercantile business selling tapestries and jewels. Although having little or no formal training as an artist, he would later be appointed imperial court painter and acknowledged by the rulers of Central Europe for his remarkable skill in the illusionistic rendering of natural history and allegorical subjects.¹⁰

Ater, a gem-like miniature that Hoefnagel created in the final phase of his career, would have appealed to the Renaissance humanist in its portrayal of curiosities attributable to God. It is rendered in watercolor, a transparent paint that gradually found equal footing with opaque tempera, the medium that was traditionally

used for miniatures, but present here only in touches and admixtures. It is applied to fine, unblemished white vellum, a support Hoefnagel customarily employed for his illuminations as it imparted an underlying luminosity to the hues of the composition. Like other sixteenth-century miniatures, *Ater*'s palette is composed of the diverse pigments readily procured at the thriving trade fairs and apothecaries of the German states. The most costly colors were ultramarine blue made from lapis lazuli, and shell gold, a finely ground gold paint.¹¹ Set in a decorative framework with cartouches and illusionistic strapwork, the sumptuous materials and presentation were worthy of the emperor and members of the wide intellectual circle to whom such articles of luxury were directed: humanists, natural philosophers, botanists, apothecaries, physicians, merchants, artists, and diplomats. All were among Hoefnagel's colleagues and correspondents, united by a profound interest in worldly phenomena and their representation. Within the corpus of projects Hoefnagel carried out for his great patron and collector Rudolf II was the addition of illustrations to two calligraphy model books by the Hungarian Georg Bocskay. The first is the *Mira calligraphiae monumenta*, made for Rudolf's grandfather Ferdinand I Habsburg, the Holy Roman Emperor, in 1561–62 and completed in 1594–96,¹² which Hoefnagel painted with flowers, plants, small animals, and insects. The second is the Viennese writing model book (1571–73, completed 1591–94),¹³ inherited from Archduke Ferdinand II (r. 1564–95). Rudolf II additionally acquired Hoefnagel's four-volume emblematic natural history album, *The Four Elements* (1575–82), of which the first volume, *Animalia rationalia et insecta* (*Ignis*), primarily depicts insects.¹⁴ *Ater* was executed about or after 1594, when Hoefnagel worked at Hradschin, the imperial castle in Prague. Bordered and inscribed in gold, the word "ATER" is written in the smaller cartouche at the top center, and below in a larger cartouche, a praise of God: "Who maketh the clouds his chariot: who walketh upon the wings of the wind. ps. 103 [104:3]" (fig. 2).¹⁵

EARLY LITERARY AND VISUAL SOURCES ON INSECTS

Even on the threshold of the scientific revolution, there was little information on insects and fewer images documenting the appearance of individual types—circumstances that would have presented Hoefnagel with many challenges in compiling his imagery. Entomology was not yet a named or distinct discipline, and despite the far greater diversity in numbers and morphology than any other phylum, knowledge about

insects and sources for illustration were limited. Investigation into its secrets was thus pursued and shared in the greater context of related subjects: botany, medicine, art, and anatomy.¹⁶ As was the practice among his contemporaries who studied and portrayed the plant and animal kingdom, Hoefnagel corresponded over the course of decades with colleagues throughout Europe who shared his interests.¹⁷ Although there is no evidence that he undertook fieldwork, he and others who depicted these subjects exchanged, borrowed, and copied prints and drawings and worked from preserved, stuffed, and live specimens (though only the most sedentary of the latter were possible to portray). As early as 1563–67, while he was traveling in Spain, Hoefnagel's notebooks reveal that he drew exotic plants and animals directly from life, and in later years, he had access to the innumerable natural history objects and drawings of these subjects by multiple artists in Rudolf II's *Kunstkammer*.¹⁸ Typically, insect material was transmitted by purchase or bequest through generations of naturalists and circulated internationally and within communities of correspondents: artists, draftsmen, apothecaries, merchants, sailors, and others who forged connections through travel and letters. For example, images and specimens were transferred from the Englishman Edward Wotton and the Swiss Conrad Gessner (the "father of zoology") to the Englishman Thomas Penny. They then made their way to the "storehouse of insects" of Moffett, who completed Penny's manuscript that contained illustrations made by the English explorer John White from his travels in Virginia in 1585.¹⁹ Similar transactions originated with the English collector Leonard Plukenet, whose insect holdings came into the ownership of James Petiver, who sold them in 1710 to Hans Sloane, one of the founders of the British Museum, London. This, too, would have been the conduit of some of the material acquired by Hoefnagel.

Specimens and drawings were the most accessible sources of visual material on insects at the time. Apart from biblical stories and fables, written information was scarce but known from the classical authors. Among the few discourses on insects, Aristotle's ubiquitous *Historia animalium* (335–323 B.C.), a compilation of diverse and extensive data, had been greatly acclaimed. But by the late fifteenth century the text was viewed as dogmatic, and the tenets were rejected by Renaissance thinkers who believed that Aristotle's system could "no longer regulate honest inquiry into nature" and encouraged empirical observation to understand its phenomena.²⁰ There is no evidence that

Hoefnagel was directly inspired by Aristotle's text, or by Virgil, who wrote on bees. Pliny the Elder's *Naturalis historiae*, which also addresses this category of the animal kingdom, figured more favorably among the artist's contemporaries, notwithstanding criticism for its inaccuracies and exaggerations. In *Ater*, Hoefnagel depicts many of the individuals described in *Naturalis historiae*, including the eight-legged spider. Pliny believed the spider to be an insect, and he equated it with the scorpion, to whom he refers in his maxim as having been "given the power of flight by a south wind."²¹ It would be classified two centuries later as an arachnid because it had neither six legs nor wings. Its presence here speaks of the trust Hoefnagel's era continued to place in classical knowledge, despite the new primacy given to observation and description. Like his emblematic motifs in other illuminations, Hoefnagel transformed the humble being into one of reverence for God and nature as conveyed by the transcendental message in Psalm 103 in the miniature's epigram, and visually references its second phrase with the puffed cheeks: "Who maketh the clouds his chariot: who walketh upon the wings of the wind."²²

The few representations of insects prior to the sixteenth century were generally not intended as natural history illustrations. Some were associated with devotional practices or were decorative, such as those that appear in the borders of illuminated manuscripts from the fourteenth and fifteenth centuries. These hand-painted, bound folios had limited dissemination and despite their detail and brilliant color, they did not serve as models for proto-entomologists.²³ Only in the mid-1550s were insects studied for their physiological characteristics in order that they could be systematized into hierarchical schemes. Also in this period encyclopedias of the animal kingdom illustrated with woodcuts were circulated. This activity was spurred by the simultaneous flourishing of printing and papermaking and an interest in understanding divine creation through nature rather than bestiaries, fables, and lingering Aristotelian concepts. Among the general populace, such traditional beliefs would not dissipate for centuries, but books on botany, zoology, mineralogy, and other subjects allied to the physical world rapidly proliferated. Initially insects did not figure in this new literature. Their insignificant place in ancient teachings, the wellspring of inspiration for the Northern and Italian Renaissance, signaled a lower-magnitude importance to the humanist. Furthermore, the staggering number of species in this phylum was unmanageable and challenged organization, creating a stumbling

block to research. This neglected class of arthropods, however, was first addressed in 1602 by Ulisse Aldrovandi, the great naturalist and director of the botanical garden at the University of Bologna,²⁴ and some decades later in 1634 by the physician Moffett.²⁵ Both treatises sought to formulate an objective description of the humble beings with entries extending from nomenclature to discourses on their moral and practical value. The printed images in the compendia were circulated within the international network of correspondents. Despite Hoefnagel's possible familiarity with drawings prepared for these publications, their direct impact on him would have been limited, as they were not published until after 1600, by which time he was deceased. Additionally, though these texts represented most of their subjects accurately, they did not align with Hoefnagel's artistic aims in which nature, inventively presented, was conflated with emblematic art.

HOEFNAGEL'S SOURCES OF INSECT IMAGERY AND HIS FUSION OF ART AND NATURAL HISTORY

In addition to drawing upon the meager written and pictorial information on insects, Hoefnagel turned to other sources to formulate his expressive language. He copied drawings by Hans Verhagen van Stommen and woodcuts from Gessner's *Historiae animalium* for *The Four Elements*, among others,²⁶ but most of the insects depicted in *Ater* were based on Hoefnagel's own repository of motifs used during his twenty-year oeuvre. Among them were his illuminations (as noted above) in the Bocskay model books and *The Four Elements* (vol. 1, *Animalia rationalia et insecta* [Ignis]). Many of his images were also based on his drawings that had been engraved and published by his son Jacob Hoefnagel in the pattern book *Archetypa studii patris* (1592).

But above all, Hoefnagel's greatest inspiration was Albrecht Dürer, whose work he knew firsthand from the holdings of his benefactor Rudolf II. Dürer's exceptional fusion of art and factual description, today often referred to as "scientific naturalism," expressed a new aesthetic sensibility that imbued this subject matter with a lifelike quality.²⁷ The impact of his work on the younger artist is witnessed in particular in Hoefnagel's many repetitions and variants of the exceptional stag beetle (fig. 2), the leitmotif of the Dürer Revival that took place late in the century and the means by which Hoefnagel proclaimed himself heir to the great master. His interpretation of the iconic drawing, as seen in *The Four Elements*, *Archetypa studii patris*,²⁸ and the *Friendship Picture for Johannes Radermacher* (fig. 9),

exemplifies the transmission and reuse of natural history motifs common to this genre. It also speaks of Hoefnagel's emulation of Dürer in his use of nature as an inexhaustible source of subject matter, and of the precision and detail that underscore his art.

Ater evokes Dürer most profoundly because it is both a work of fine art and a natural history illustration. During the sixteenth century these two modes of representation were not clearly differentiated, in that both traditions employed the same models and described them with equal precision. However, whereas the naturalist sought objective representation or fidelity to nature based on stringent standards, *Ater*, as a work of fine art, relied on a subtle shift of these criteria. Hoefnagel iconographically achieved a spiritual dimension by uniting text with image in the medieval emblematic tradition, and by giving objects human attributes or associating them with venerated beings. For example, in this composition the stag beetle symbolizes Christ, and the iris is associated with the Virgin Mary, motifs to which he continually returned, and the Christian and humanist meanings of which were readily understood by his viewers.

But beneath this emblematic layer Hoefnagel also succeeded in creating an object appreciated for its art

and invention by using various pictorial devices and techniques perfected in the Renaissance that included exacting brushwork, modeling, foreshortening, and *trompe l'oeil*. Collectively, they enabled him to challenge perception with effects that imitated reality and deceived the eye. In *Ater*, unlike the natural history illustration, Hoefnagel visually engages the viewer in the artistic process. His manipulation of paint, rendering of space and volume, and imaginative interpretation of his subject led the eye to question the materiality of the subject matter. For example, his meticulous brushwork and modeling create nearly tactile beings with imperceptible layers and gradations of transparent watercolor, subtle touches of white body color, shell gold (in the wings of the hummingbird hawk-moth); opaque ultramarine blue (the cartouches and spots of the two *Ordonata*); and gum glazes (on the wings of the crane fly, at right, center). Unlike a naturalist's approach, Hoefnagel's brushwork does not simply capture the anatomy, volume, color, and iridescence of the individual insects—as seen in the diaphanous wings of the dragonfly and the beetle's hard shell. With the precision of his stroke he removes all evidence of his hand. This well-known *trompe l'oeil* strategy to deceive the eye was based on negating the presence of the artist to



fig. 2 Detail of *Ater* (fig. 1), stag beetle

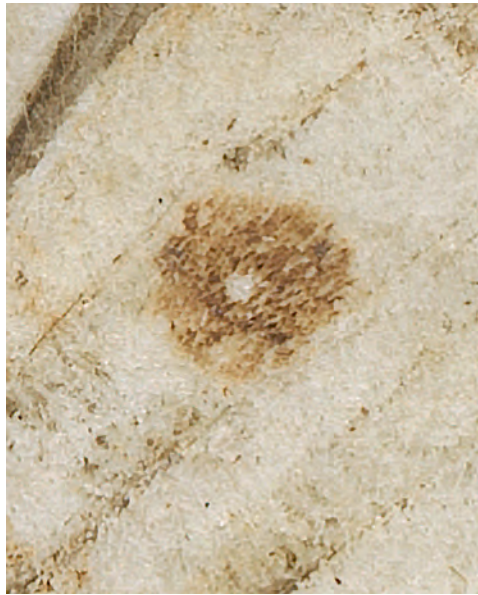


fig. 3 Detail of *Ater*, butterfly eye spot (original magnification, x40)



fig. 4 Detail of *Ater*, butterfly wing and incised exoskeleton (original magnification, x40)

make the painted motifs indistinguishable from actual objects and thereby enhance the illusion of their reality.

Hoefnagel also makes the composition lifelike by imparting a convincing sense of space and volume. *Ater* fools the eye in its small scale, dimensions that invite viewing at close range, and in the plausible size of the insects. Positioned on the picture plane, this unlikely assembly is perceived as if in a shallow box or as taking up residence on a sheet of vellum, just as it may have been displayed in a *Kunstkammer* or natural history collection, and have entered the viewer's space. Their deceptive volume, produced by subtle transitions of light and shadow, and for some by foreshortening and cast shadows (such as beneath the four foreground insects: moth, grasshopper, ladybug, and cricket), brings the forms into relief and projects them upward off the ground. Rendered inconsistently from one insect to the next, the varied treatment betrays diverse artistic sources. They might derive from individual images by Hoefnagel or other artists, or from specimens that were mounted with their wings spread flat as if flying (dragonfly), or mounted with their wings held vertically or pulled close to the body as if at rest (moth and butterflies).

Hoefnagel further challenges the viewer's perception of reality by his interpretation of the insects

themselves. They are not rare or monstrous, like many of the depictions in animal inventories of mid-century by Aldrovandi or Gessner, but common garden insects. They evoke the prevailing spiritual metaphors on the dignity of the meek, as Montaigne expressed, whereas their familiarity in appearance and habits confers a sense of reality. Unlike Hoefnagel's many illuminations that comprise images from both the animal and plant kingdoms, *Ater* includes multiple insect species but only two flowers. The insect population is heterogeneous: unrelated in type and each singular in color, size, and shape. Some are pollinators, some predators, or plant eaters; they are aquatic and terrestrial; some undergo metamorphosis, and others do not. They are unlikely to appear together or cohabit as they do here. The most prominent, the stag beetle with its spread wings, is the centerpiece of the loosely constructed symmetrical framework, beneath which are opposing butterflies, and a grasshopper and cricket back-to-back. Flanking the stag beetle are a bearded and a Siberian iris, and insects engaged in their customary behavior: the hummingbird hawk-moth with its unfurled proboscis is feeding, the moth reposing, the dragonfly in flight, the hornet hovering over a mayfly. In turn, they are surrounded by a crane fly, housefly, hoverfly, ladybug, spider, and five butterflies at rest with their ventral wings folded vertically.

But Hoefnagel takes his hyperrealistic subjects a step further than he had in his remarkable renderings in *Mira calligraphiae monumenta* with its fictive flower stems piercing the album pages.²⁹ Within this meticulously painted gathering are the most naturalistic yet inventive insects: two of the butterflies are specimens consisting of wings, now only partially preserved. They are adhered to the vellum, and seamlessly integrated into the composition with their bodies, legs, and club-ended antennae applied by brush (foreground, right and left).³⁰ Viewed under 20x magnification, the distinct overlapping scaled structure of the wing (the morphological feature accounting for the Greek name *lepidoptera*), is visible in the reddish-brown eye spots and along the wing margins (figs. 3, 4). Also visible are impressions of their veins: stiff, bonelike chitinous exoskeletons reinforced with a stylus (fig. 4). These uncanny details simultaneously place them in the realms of natural specimens and of artistic motifs. Hoefnagel had similarly applied dragonfly wings to vellum many years earlier in *The Four Elements*, and presumably, more composite works by him are yet to be discovered, but no earlier examples by other artists are known.³¹ By the seventeenth century, this unusual technique would be described in several treatises.³²

NATURAL HISTORY PRECEDENTS FOR HOEFNAGEL'S BUTTERFLIES

The source of Hoefnagel's unique treatment of the butterfly motif is unknown; however, several possibilities may have inspired him. Iconographically, the presence of butterfly specimens among the painted insects implies a *paragone*, a common humanist debate in the sixteenth century with roots in antiquity. Contesting the superiority of art or artifice, such as between a tactile object and its painted image, this debate was most often played out between sculpture and painting. It may have motivated Hoefnagel to add his hyperrealistic plants and animals to Bocskay's incomparable calligraphy in *Mira calligraphiae monumenta*.³³

It is equally plausible that his inclusion of insect specimens in *Ater* was generated by routine practices of naturalists. In these traditions the emphasis was on the preserved specimen, not its representation. Hoefnagel would have seen albums with insects pasted in them, made by fellow naturalists or housed in Rudolf's *Kunstkammer*, such as that compiled at a later date by Leonard Plukenet (fig. 6). Hoefnagel also would have known of herbaria, albums of dried pressed botanical specimens (*hortus siccus*), the origins of which can be traced to the mid-fifteenth century, possibly earlier, in North and Central Italy, and made as reconstructions of the herbals of classical antiquity. Both types of albums served naturalists as catalogues for study and identification of different taxa long before they were depicted in paint.³⁴ The *En Tibi herbarium* (ca. 1542–44), for example, among the most luxurious of these tomes, is believed to have been in Rudolf II's treasury in Prague and was circulated among the emperor's learned colleagues (fig. 5).³⁵ In the same humanist tradition as *Ater*, it is inscribed with a motto—"Here for you a smiling garden of everlasting flowers"—that combines Christian and classical rhetoric.³⁶ *En Tibi* is similar to *Ater* in its organization of material, in that the folios contain plant species and subspecies that are unrelated but grouped together.³⁷ Another established practice that may have entered into Hoefnagel's invention was the nature print (fig. 7). These printed impressions of leaves had become increasingly widespread in the second half of the sixteenth century, corresponding to the surge of interest in acquiring accurate knowledge of the plant world. They were made by inking the planar parts of the leaf specimen and applying pressure to transfer the image to paper or vellum; the volumetric veins, roots, and stems that could not be reproduced satisfactorily by this method were applied by brush.³⁸



fig. 5 Leonard Plukenet
(English, 1642–1706). Album
page containing mounted
insects, ca. 1680–90. Natural
History Museum, London

fig. 6 *En Tibi herbarium*, ca. 1542–44, *Allium ursinum* L., p. 139. Leiden University, Naturalis Biodiversity Center (L.2111033)

fig. 7 Nature print with hand-painted root system. Italian, ca. 1520. Biblioteca Nazionale Centrale, Florence (MS NA 995). Reproduced in Cave 2010, p. 27



Hoefnagel's butterflies are evocative of this hybrid technique: their leaf-like flat wings are pasted to the support, and the affixed specimen completed by adding the body, legs, and antennae in brush and paint.

CRITERIA FOR FINE ART AND NATURAL HISTORY REPRESENTATION IN THE SIXTEENTH CENTURY

To the modern viewer, natural history illustration and fine art are intertwined in their motifs and execution, but to the natural philosopher of the sixteenth century, they were not. Hoefnagel's precise handling and realism notwithstanding, *Ater* would not have met the demanding objective standards of natural history representation. Whereas the classical and medieval world had accepted incomplete or "diagrammatic" descriptions, the Renaissance naturalist demanded accuracy.³⁹ In the face of the plethora of specimens within the many emerging proto-scientific disciplines, careful observation and meticulous recording that imparted authority were critical to communicating the new information. To this end, even skilled naturalists would hire artists to illustrate their specimens.⁴⁰ Unlike many of his motifs in *Mira calligraphiae monumenta* that are imaginary or confections of two insects and unidentifiable, the insects in *Ater* are not fanciful, yet they are not entirely accurate according to contemporary standards.⁴¹

To advocates of truthful representation, specific requirements were in place. For example, Hoefnagel's insects are in close proximity, not in isolation as they are in depictions by naturalists, such as Aldrovandi, Moffett, or White (fig. 8), and as they are in the Plukenet and *En Tibi* albums in which the pasted specimens are carefully separated from others, allowing them to be studied without obstruction. In *Ater*, many of the insects' contours are partially obscured by an overlapping neighbor, compromising the clarity necessary for comparison. For example, the dragonfly's wings are interrupted by the iris, the moth's wings by the grasshopper, and the damselfly by the hornet. Close observation reveals that details essential for identification purposes, such as legs and antennae, are missing or summarily rendered (as in the pasted butterflies); patterns are not well defined (hoverfly); wings are not the correct size (mayfly); their segmented bodies (head, thorax, and abdomen), the defining feature of this vast taxonomic group, are not well articulated; and the motifs lack the customary descriptive annotations required for cataloguing. Similarly, Hoefnagel's artistic devices failed to meet the rigorous criteria of natural history illustration: the reflective shell gold and the fanciful mise-en-scène were not true to life. Not least, trompe l'oeil effects, such as cast shadows, were condemned as a

fig. 8 John White (English, 1533–1593). *Fireflies(?)*, 1585. British Museum, London (1906,0509.1.67)



means to deceive, not inform. Plato had rejected them as “nothing but a shadow play obscuring the truth.”⁴² According to Aldrovandi, natural history drawing was not to “suffer stylistic or otherwise ‘artistic’ impositions” or, as asserted by Carolus Clusius, the foremost sixteenth-century scientific horticulturist, lapse into “flights of fancy.”⁴³ These standards, which were primarily directed to botany because of its predominance in investigations of the physical world, were upheld for all natural history subjects. Images needed to contain the necessary visual information for purposes of identification, a point of view that would have made Hoefnagel’s drawings “incomplete and imperfect, and will cause difficulty to the viewers in recognizing [the specimen].”⁴⁴ These criteria were inarguable; natural history images were meant to stand in and to substitute for the living entity that was no longer available or had faded.⁴⁵ The specimen and the image were interchangeable, and to avoid errors, all insects, flora, fauna, birds, and fish were to be drawn from life, or *ad vivum*, a statement often inscribed on a drawing and conferring it with the status of a document.⁴⁶ Accordingly, in this light, *Ater* would not have been regarded as a truthful study and thus not a natural history illustration.

THE HOUSING AND FRAMING OF *ATER*

Ater is neither a natural history illustration nor a work of fine art but a fusion of diverse elements that was understood and enjoyed on many levels by Hoefnagel’s select audience. In addition to the pleasure and significance of its imagery, *Ater* was intended to challenge the eye and to intellectually engage the viewer in the artistic process. This dynamic is revealed when the miniature is interpreted in the context of its housing and framing. Rudolf II’s imperial repository, as that of all Habsburg rulers, had a particular character, and the Prague cabinet, which was accessible to his circle of learned individuals, was not only a center of natural history, art, and culture but additionally distinguished as a “place of study” or a “place of knowledge.”⁴⁷ It was also a place of amusement, as this miniature reveals. Rudolf II’s encyclopedic holdings were contained in four large rooms and corridors, separated into categories of *naturalia*, *artificialia*, and *scientifica* (wonders of nature, those made by human endeavor, and tools and instruments). Despite the abundance of riches, this *Kunstammer* did not aim to astound the viewer with the luxury or preciousness of its objects, nor did it have an antiquarian purpose. Rather, it was to serve in the



fig. 9 Joris Hoefnagel. *Friendship Picture for Johannes Radermacher*, and frame, 1589. Body color, opaque paint, watercolor, shell gold on vellum, 46½ × 64¼ in. (118 × 163 cm). Zeeuws Museum, Middelburg, The Netherlands (M98-O-072-01)

pursuit of understanding nature through the microcosm of its numerous artifacts.⁴⁸ According to visitors' accounts, the repository was cluttered and "more a depot than a display," with objects placed haphazardly and side by side without any hierarchy, organization, or categorization.⁴⁹ Objects stored along the walls in numerous cabinets were further described as "concealed in boxes, chests and cabinets."⁵⁰

These comments on the furnishings and lack of pretension in the Prague *Kunstammer* imply that stored objects were inaccessible for viewing when not being actively studied or admired. Although there are no reports on the framing of cabinet miniatures in sixteenth-century princely settings, the descriptions prompt conjecture as to the type of frame used for *Ater*. Based on its aesthetic and dimensional similarities to the friendship picture that Hoefnagel dedicated to his dear colleague Johannes Radermacher (German, 1538–1617), it is plausible that *Ater*'s frame was like the Radermacher one (fig. 9).⁵¹ Far different from the conventional frame that came into use in the seventeenth century, the Radermacher frame has a matching removable lid that fits into the molding on the front and covers the aperture. The lid lifts by a knob at the center to expose the picture. Since cabinet miniatures were regarded as paintings, not drawings, and customarily did not have glass, it is unlikely that *Ater* was glazed. This unusual construction, with the potential to show or conceal the work of art, suggests an interactive role with the viewer and gives insight into the purpose of *Ater*. Lacking a means to secure the cover implies that the object could not be hung vertically and would have been kept flat on a table or shelf and supported in the hand when viewed. This placement was not unusual for small works, as is known from the imagery in paintings from the period, as is seen in the unglazed framed miniature with a slide-out cover depicted in a luxurious collector's cabinet by an artist in the Circle of Hieronymus Francken II (fig. 10).⁵² In the case of *Ater*, once the drawing was taken from the storage cupboard and the lid removed, the unglazed miniature was revealed. At that moment an immediacy with the visitor was conferred and the beholder became aware of the hyperrealistic insects engaged in their characteristic habits in a simple yet plausible setting. On second glance, the astonished viewer would have touched at least one butterfly to verify what his eyes had registered as real and to distinguish it from the painted insects, inadvertently participating in a well-known trompe l'oeil deception, undoubtedly to the amusement of his companions.⁵³ The perception of the actual insects, coupled with the instinctive impulse to touch the exposed surface, must have been startling in this unexpected context. Over time the delicate wings were worn down to the underlying vellum by rubbing, which would account for the losses in the membrane, the diminished clarity of the pattern, and ultimately the present abraded condition of the butterfly specimens. A century would pass before a printed explanation was



fig. 10 Circle of Hieronymus Francken II (Flemish, 1578–1623). Detail of *Flemish Cognoscenti in a Room with Paintings*, ca. 1620. Oil on panel, 37 $\frac{3}{4}$ × 48 $\frac{5}{8}$ in. (96.5 × 123.2 cm). National Gallery, London (NG1287)

offered, cautioning the reader to “handle butterflies and moths with care as the wings were mealy and the color easily rubbed off with the fingers.”⁵⁴ In time, the beautiful coloration of these fragile surfaces would be recognized not as the result of pigmented layers but of minute overlapping scales, each one diffracting and reflecting light.

ATER, AN AMUSEMENT

Hoefnagel’s inventive composition was not merely decorative but intended to enlist the senses of sight and touch and to intellectually engage the viewer. This is evident in several aspects of the miniature. The illogical title, *Ater*, would have provoked a paradox as to whether the word referred to the ignobles and monsters familiar to sixteenth-century viewers, or if the title was intended as a word game. *Aier*, the erroneous title given to the work in recent times, was intended to fit it iconographically into an unrelated group of miniatures. It references air, winged insects, and the epigraph, each alluding to the lightness of air that gives flight to such creatures, manifestations of God with whom nature is imbued. *Ater*, on the other hand, has an ominous meaning and is unrelated to the four elements. The title *Aier* is based on the assumption that the letter “I” was transformed into the letter “T” by crossing it with a horizontal paint stroke, thereby yielding the word *Ater*. However, as revealed by high-power magnification and technical analysis, both the elemental composition of the surrounding gold paint and the brushwork of the letter “T” are consistent and original, indicating that the ironic title *Ater* is intended as a play on words and part of the artist’s lighthearted deception (see fig. 2).⁵⁵

In the same spirit of challenging perception, the viewer might have also puzzled over the exposed, sketchy black chalk drawing depicting the standards or upright petals of the bearded iris in this otherwise highly finished, lifelike composition (fig. 11).⁵⁶ Each of the other motifs in the composition is devoid of underdrawing or visible brushwork and thus appears to have been produced without human intervention. In the context of the surrounding *trompe l’oeil* insects, this discrepancy in technique between the images might have provoked the viewer to question whether the black chalk is simply an unfinished stage of Hoefnagel’s working process, or if the artist purposely left the marks visible to reveal his hand in the creation of a marvel that imitated reality.⁵⁷

Insects were part of God’s wonders and invited contemplation on their emblematic importance, their spiritual role, and their place in the discipline of natural history. Sophisticated “jokes” or deceptions in Hoefnagel’s *Ater*, including the butterflies, enigmatic title, ambiguous exposed underdrawing, the frame that concealed and revealed, and the contemplation they provoked, were both pensive and pleasurable diversions for the sixteenth-century humanist, and they speak of the social and intellectual functions of the *Kunstkamer* and of this cabinet miniature. With their origin in the classical era and much beloved by Rudolf II, these types

fig. 11 Detail of *Ater* (fig. 1),
bearded iris



of jokes were known as *lusus*.⁵⁸ Some were jokes of nature referencing paradoxical objects that could not be rationally explained: objects that looked like something they were not, such as unexpected, remarkable images in stone or wood. Others were jokes of knowledge, or *lusus scientiae*, that simultaneously taught and amused.⁵⁹ *Lusus* were games or manifestations of the widespread playfulness that emerged in many contexts: they were popular at court, at universities, and in books of secrets.⁶⁰ They appeared in scientific demonstrations,⁶¹ were played out in tricks of illusion,⁶² in practical jokes, “sports,” funny stories, and wordplay.⁶³ Picture frames, as the one presumably used for *Ater*, similarly entered into this playful mindset. Humanists and others delighted in artifice, and *lusus* of both types evidenced man’s ability to match nature’s complexity with his own.⁶⁴

Hoefnagel’s cabinet picture would have presented Rudolf II and elite viewers with a *lusus*. The imagery would have prompted the beholder to probe which insects were factual and which were invented, which were real and which were painted, and to examine the paradox of its title. Additionally, *Ater* would have referenced the deception of Zeuxis, the great illusionistic Greek painter of the fifth century B.C., and the superiority of nature over artifice, an ancient debate that continued to amuse and confound viewers. As an object of contemplation, *Ater* must also have provoked thoughts on the role of the commonplace and the meek in the Almighty’s grand design.

Along with the *lusus* one must ask if Hoefnagel’s

ensemble of diverse, lifesize insects was also intended as a humorous commentary on the state of natural history, a practical matter that would have been well known to him from his network of naturalist colleagues and would have appealed to the emperor’s passion for this subject. The proliferation of specimens pouring in from the New World and foreign lands challenged researchers, especially in the emerging field of entomology. No system of organization or binomial classification to accurately document information existed in these pre-Linnaean times. The massive amount of data drove Aldrovandi and Moffett to cut and paste their sheets of printed images of insects to create order that would enable them to assemble sequences and relationships among classes.⁶⁵ Even during the seventeenth century, entomological collections were reported to have been in “considerable confusion” and “disordered chaos.”⁶⁶ Not having the strictures of the natural history artist, Hoefnagel was able to indulge in invention and humor and to appeal to the love of amusement in the Rudolfine court. Perhaps *Ater* encompasses the artist’s reflections on this very real plight, evocative of the disorganization of the *Kunstammer* itself by depicting his insects in only a superficial state of symmetry without the strict underlying order demanded by the naturalist.

A marvel meant to astonish in its wondrous imagery, to amuse and to admire in its sumptuous materials and illusionistic rendering, Hoefnagel’s cabinet miniature of a “stag beetle, insects and head of a wind god” celebrates insects before their widespread aesthetic appreciation in the next century in still life painting and drawing, such as by Georg Flegl and Jacques de Gheyn II. *Ater* stands between objective natural history and the expressiveness and invention that underscore “fine art.” It must have found part of its purpose in the much beloved “sports” that were common in the *Kunstammer* and in the culture at large, but it also offered the viewer much to ponder. Not least, it provoked the viewer to contemplate nature’s complexities and respond to the insatiable desire to unravel its order, be it from the largest of God’s creations to the smallest creatures who walk the earth.

In loving memory of EMS

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MARJORIE SHELLEY

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NOTES

- 1 The discipline of natural history that emerged during the Renaissance, with roots in classical antiquity, the Latin Middle Ages, and the Roman encyclopedist Pliny the Elder's *Natural History*, had "neither a clearly demarcated realm of phenomena nor a set of precepts and methods for study" developed within the framework of humanism and philological investigations. Ogilvie 2006, pp. 1–6 (quote on p. 4).
- 2 Ibid., pp. 8–12.
- 3 *Ater* is purported by Thea Vignau-Wilberg to be one of two surviving miniatures from an allegorical set the *Four Elements* (1594–95). The other extant miniature is titled *Terra* (earth) (Prince of Lichtenstein collection), illustrated in Vignau-Wilberg 2017, pp. 180–81, fig. 1. The other two, which have never been seen, are presumed by her to be *Ignis* (fire) and *Aqua* (water). Many of the artist's miniatures were made as sets, but there is no evidence supporting the connection of *Ater* and *Terra*, other than the correspondence of their mottoes, as she proposes. Vignau-Wilberg's claim is based on her misinterpretation of the title as *Aier* (air) and not the correct *Ater*, a title that would not be included in the context of the four elements. See *ibid.*, p. 15n52, on its technical analysis.
- 4 On Hoefnagel's depiction of the marginal and wondrous, see Hendrix 1995. On monsters and their roots in the classical past, see Park and Daston 1981. Monsters were of great interest in the sixteenth century and were depicted alongside the naturalistic animals of Conrad Gessner (Swiss, 1516–1565) and Ulisse Aldrovandi (Italian, 1522–1605).
- 5 Many of these ideas were promoted by Justus Lipsius (Flemish, 1547–1606) in his *De constantia libri duo* (1584) and his *Physiologiae stoicorum libri tres* (1604, 1.2, 1.8–9); see Papy 2019. The Neo-Stoics believed that the laws of nature were a guide to righteous living.
- 6 For example, appearing as the subject of poetry and as a guise for political commentary. See Bourque 1999, pp. 148–50. Montaigne's essay "On Experience," as translated in Koeppe 2000–. The spiritual allusion to insects is similarly evoked by the theologian Tommaso Campanella (Italian, 1568–1639), who states that he had "learned more from the anatomy of an ant . . . than from any book ever written"; as quoted in Del Soldato 2019.
- 7 Topsell and Moffett 1658, unpaginated preface. Moffett's *Insectorum sive Minimorum Animalium Theatrum* was begun in 1588/90, completed by the Genevan physician Theodore de Turquet ce Mayerne (1573–1655) in 1634, and translated from the Latin by Edward Topsell and appended to his *History of Four-Footed Beasts and Serpents* in 1658.
- 8 Ogilvie 2006, p. 13. Such imagery was included in many mid- to late-sixteenth-century encyclopedias, such as Conrad Gessner, *Historiae animalium* (1551–58); Pierre Belon (1517–1564), *La nature et diversité des poissons* (1555); and the thirteen-volume encyclopedia of natural history by Ulisse Aldrovandi, published from 1599 to the 1640s, including his *De animalibus insectis* (1602) and *Monstrorum historia* (1642).
- 9 Topsell and Moffett 1658, unpaginated.
- 10 Van Mander 1604, fols. 262r–63v. For an accounting of Hoefnagel's life, see Vignau-Wilberg 1985 and Vignau-Wilberg 1992.
- 11 The blue pigment was made from the semiprecious stone lapis lazuli brought from mines in Afghanistan, the richest sources of the valuable mineral. Shell gold is powdered gold mixed with egg white or gum and traditionally kept in a mussel shell, hence its name.
- 12 *Mira calligraphiae monumenta*, J. Paul Getty Museum, MS 20 (86.MV.527).
- 13 *Schriftmusterbuch*, Kunsthistorisches Museum Wien, Vienna, Kunstkammer (975).
- 14 National Gallery of Art, Washington, D.C., 1987.20.5, www.nga.gov/collection/art-object-page.69668.html.
- 15 "Qüi ponis nübem / ascensum tüüm, qui / ambulas süper pen / nas ventoru / ps : 103." English translation from Vignau-Wilburg 2017, p. 180.
- 16 Ogilvie 2008, p. 6.
- 17 Among them, Carolus Clusius (French, 1526–1609), Abraham Ortelius (Flemish, 1527–1598), Lucas d'Heere (Flemish, 1534–1584), and Joachim Camerarius the Younger (German, 1534–1598) belonged to the prestigious Lime Street Naturalists, a community of English and foreign intellectuals. On the Lime Street group, see Harkness 2009, p. 49. Aldrovandi, Clusius, Hoefnagel, and Moffett exchanged correspondence on insects; see Vignau-Wilberg 2017, p. 14.
- 18 Eliska Fucikova (1985, p. 47) describes the wealth of *naturalia* and *artificialia* accessible to artists in Rudolf's *Kunstkammer*; Lee Hendrix (1984, app. II, pp. 333–34) writes that Hoefnagel borrowed images from hundreds of artists; see Hendrix and Vignau-Wilberg 1992, p. 16.
- 19 Harkness 2009, p. 49. On John White, see Sloan 2007, pp. 212–13.
- 20 Casini n.d., section 5, "New Philosophies of Nature." See also Kuhn 2018 and Del Soldato 2019.
- 21 Pliny, *Natural History* 11.30.87–90.
- 22 See note 15 above.
- 23 For representations of insects in the fourteenth and fifteenth centuries on the borders of Burgundian, Ghent-Bruges, and Lombard illuminated manuscripts, see Pächt 1950, pp. 13–41, fig. 5a; Kaufmann and Kaufmann 1991; and Kaufmann 1993, fig. 8. Insects depicted in other contexts are, for example, an illusionistic fly, possibly a reference to the name of the sitter, "Vlieger," in Petrus Christus, *Portrait of a Carthusian Lay Brother* (1446; MMA 49.7.19), and in the borders of an illustrated printed and hand-colored Pliny the Elder, *Naturalis historiae* (Venice: Nicolaum Jensen, 1492; British Library [002935943]).
- 24 Aldrovandi's treatise on insects, compiled in 1593–1602, was part of his thirteen-volume corpus on the animal kingdom, fossils, geology, humans, and monsters. See note 8 above.
- 25 See note 7 above.
- 26 See Hendrix 1984, app. 2, pp. 333–34, for a list of hundreds of artists from whom Hoefnagel borrowed images. For animal images that he might have seen in Rudolf II's court, see Maselis, Ballis, and Marijnissen 1999, pp. 24–28, 56–70.
- 27 On the stag beetle and its inspiration on Dürer's followers, see Koreny 1988, pp. 112–18.
- 28 *The Four Elements*, vol. 1, *Animalia rationalia et insecta (Ignis)*, pl. 54 (see note 14 above); *Archetypa studiaeque patris Georgii Hoefnagelii* (1592, National Gallery of Art, Washington, D.C., 1987.20.9), part I, no. 6.
- 29 Such as the stem of flowers painted on the recto seeming to pierce the actual sheet of vellum in, for example, *Mira calligraphiae monumenta*, fol. 37r, v, fig. 5b.
- 30 Because of insufficient sample material the adhesive could not be tested. Based on the lack of color and sheen, the butterflies appear to have been affixed with parchment size. The butterflies are the only insects in the composition that are specimens. The crane fly (lower right) is painted; it is not a specimen, nor are any insect outlines reinforced as claimed by Vignau-Wilberg 2017, p. 180.

- 31 This is recorded in the literature on this image. It has not been studied by this author. *The Four Elements*, vol. 1, *Animalia rationalia et insecta (Ignis)*, pl. 54 (see note 14 above).
- 32 In the seventeenth century the technique is alluded to by Henry Peacham (1606; 1970 rep., p. 43); and discussed by Samuel van Hoogstraten (1678, chap. 6). Otto Marseus van Schrieck pasted butterfly wings onto his canvases and drawings. In the eighteenth century pasting butterfly wings onto paper with gum arabic and ox-gall is described by Godfrey Smith (1756, pp. 73–74). See also Hildebrecht 2004.
- 33 Hendrix and Vignau-Wilberg (1997, p. 7) convincingly suggest a *paragone* is implied in *Mira calligraphiae monumenta* between Hoefnagel's imagery and Bocskay's masterful calligraphy.
- 34 For illustrations of the *hortus siccus*, see Herbarium A and B, mid-16th century, attrib. to Gherardo Cibo (1512–1600), Biblioteca Angelica, Rome, <http://www.bibliotecaangelica.beniculturali.it/index.php?it/322/erbario-cibo>.
- 35 Leiden University, Naturalis Biodiversity Center. See Stefanaki et al. 2018, pp. 1–2.
- 36 Stefanaki et al. 2019, p. 4.
- 37 *Allium ursinum* L. in the *En Tibi herbarium*, p. 139; illustrated in Stefanaki et al. 2018, p. 5, fig. 2; and online, http://bioportal.naturalis.nl/result?theme=en_tibi.
- 38 Cave 2010, p. 27, figs. 3, 4 (illustration of MS NA 995, Italian, ca. 1520. Biblioteca Nazionale, Florence); Reeds 2006.
- 39 Ogilvie 2006, p. 6. Despite strict standards that illustrations were based on direct observation, it was not always the case. Some of the unidentifiable composite images portrayed by the naturalist Aldrovandi in *Monstrorum historia* (1642) were based on dried specimens or were assembled entities. See Kusakawa 2010, p. 304.
- 40 Kusakawa 2010, p. 307.
- 41 For discussions of Hoefnagel's imaginary insects, see Hendrix and Vignau-Wilberg 1997, pp. 57–64, and Neri 2011, pp. 3–26. For his confirmation of the realism of the insects in *Ater*, I am grateful to Louis N. Sorkin, Department of Entomology, American Museum of Natural History, New York, personal communication.
- 42 Ebert-Schifferer 2002, p. 21.
- 43 For Aldrovandi, see Swan 1995, p. 359. For Clusius, see Neri 2011, p. xviii. Effects, such as shadows, were also condemned by Clusius and Leonhart Fuchs (German, 1501–1566), and distortions in the proportions or features of a specimen were condemned by Gessner (1551–58, vol. 1).
- 44 MS Aldrovandi 6, vol. 2, fols. 126–27, Biblioteca Universitaria, Bologna (<https://amshistorica.unibo.it/204>), as translated in Swan 1995, p. 359.
- 45 Swan 1995, p. 362. This was a critical issue, since specimens were mutable over seasons and life span and thus subject to color variations, a debate initiated in antiquity as to whether these drawings should be colored; see Freedberg 1994. Images made from direct observation of a live specimen were preferred but *ad vivum* representation was not a requirement for illustrated printed books. In the earlier sixteenth century, Gessner and Aldrovandi depicted members of the animal kingdom factually but also as conflations of real and imaginary, living and dead, or preserved specimens, acknowledging that some were false. Disparities in the appearance of animals of the same type stemmed from their diverse sources in books, broadsides, drawings, information from correspondents, or live examples exhibited at fairs, but were justified by many naturalists because encyclopedias were intended to be comprehensive and to serve as repositories of all knowledge on the subject. See Kusakawa 2010, pp. 324–27.
- 46 Swan 1995, pp. 355–72; Kusakawa 2010, p. 307.
- 47 Among the other roles of the *Kunstammer* were meditation and entertaining; Kaufmann 1993, pp. 175–80.
- 48 Dupre and Korey 2009. The contents were inventoried in 1606–11 by court artists Daniel Fröschl (German, 1563–1613) and Anselmus de Boodt (Flemish, 1550–1632); see also Kaufmann 1988, p. 16.
- 49 Simons 2013, p. 83; Dupre and Korey 2009, p. 406. Inventories taken from 1607 to 1621 indicate a variety of open and closed cabinets with careful lists made of the recorded contents, but many rooms did not have their contents organized or recorded, and the vast collection of *naturalia* and *artificialia* is estimated to have been two times the size of the 1621 inventory than it was in 1607, suggesting an unmanageable volume of objects and that the earlier visual impression was accurate; see Fucikova 1985, p. 51.
- 50 Simons 2013, p. 83; Dupre and Korey 2009, p. 406; on the organization of the *Kunstammer*, see also Kaufmann 1993, pp. 175–80.
- 51 Thea Vignau-Wilberg (2017, p. 155) describes the frame as contemporaneous or slightly older than the miniature. The reverse is described as having a slide mechanism with a small wooden knob. According to this author, this would have been the means by which the miniature was inserted and held in the frame.
- 52 The framed nature subject is held by the figure at the lower left. Amendola 2012.
- 53 Sybille Ebert-Schifferer (2002, p. 23) describes this response of touching as “When the object is no longer optically distinguishable from its representation, the sense of touch becomes a corrective to the sense of sight.”
- 54 James Petiver, “Brief Directions for the Basic Making and Preserving Collections of All Natural Curiosities” (1692–95), in MacGregor 1994, p. 114.
- 55 The inscription *Ater* was dismissed without technical examination by Vignau-Wilberg as being reworked from *Aier* by a later hand. Microscopic examination and multispectral imaging with infrared reflectography and long- and shortwave ultraviolet examination by the author, and X-ray fluorescence mapping and Raman spectroscopy, undertaken by Silvia Centeno, confirmed the identical elemental structure, texture, color, and stroke with shell gold applied elsewhere in the inscription. This indicates that the entire letter “T” is the work of the artist and not a reworking of the letter “I” to a “T” by a later hand, as proposed by Vignau-Wilberg (2017, p. 180).
- 56 The compromised condition of the irises results from the proclivity of most organic colorants to fade either from their inherent components or exposure to light. The alteration in the color and modeling of the irises has also impaired the illusion of three-dimensionality. These colorants, according to Silvia Centeno, Research Scientist, Department of Scientific Research, MMA, are below the detection level of nondestructive instrumentation and thus cannot be identified.
- 57 Infrared reflectography of the miniature reveals only traces of lightly sketched black chalk beneath the paint layer in the putto and in some of the insects, which indicates that the artist did not rely on an underdrawing as the means to build up the composition but worked more spontaneously.

Discrete areas of exposed underdrawing may indicate that the composition was not developed uniformly, but instead developed to different stages of completion for individual motifs, a working method seen in many unfinished Renaissance engravings, paintings, and drawings. For example, unknown artist after Jan van Eyck, *The Virgin and Child with a Donor*, copy after *The Virgin and Child with Canon Nicolas van Maelbeke*, ca. 1445 (silverpoint on prepared paper, Germanisches National Museum, Nuremberg); Michelangelo, *The Virgin and Child with Saint John and the Angels* (“*The Manchester Madonna*”), ca. 1497, possibly as early as 1494 (painting, National Gallery, London, NG809); Hendrick Goltzius, *The Crucifixion*, ca. 1590 (engraving, MMA 17.3.2989); and *The Adoration of the Shepherds*, ca. 1599 (engraving, MMA 17.3.492).

- 58 Dupre and Korey 2009. Fucikova (1985, p. 52) notes that it contained various curiosities to entertain and amuse.
 59 Findlen 1990, pp. 298, 320.
 60 Dupre and Korey 2009, p. 412n61. The *Kunstammer* was characterized as a *Spielkammer* by Horst Bredekamp (1993).
 61 Often based on optical devices in which Rudolf II was intently interested; see Dupre and Korey 2009, p. 412.
 62 For example, magnets, distorting mirrors, Ouija boards, and puzzles; see Findlen 1990, p. 320.
 63 Cave 2010, p. 25, as in Luca Pacioli’s *Books of Secrets*, 1409 (*De Veribus Quantitatis*, Ms. 250, Biblioteca Universitaria, Bologna).
 64 Findlen 1990, pp. 292–95.
 65 Neri 2011, pp. 27–61.
 66 Salmon 2000, p. 104; MacGregor 1994, pp. 23, 115–18.

REFERENCES

Aldrovandi, Ulisse

1602 *De animalibus insectis libri septum*. Bologna: Bellagambam.

1642 *Monstrorum historia*. Bologna: Typis Nicolai Tebaldini.

Amendola, Adriano

2012 “Frames for Drawings in Roman Collections: A Case Study.” *Getty Research Journal*, no. 4, pp. 45–56.

Belon, Pierre

1555 *La nature et diversité des poissons: Avec leurs pourtraicts, représentez au plus près du naturel*. Paris: Charles Estienne.

Bourque, Monique

1999 “‘There is nothing more divine than these, except Man’: Thomas Moffett and Insect Sociality.” *Quidditas: The Journal of the Rocky Mountain Medieval and Renaissance Association* 20, pp. 137–54. Electronic ed., <https://rmmra.byu.edu/files/2018/12/20.pdf>.

Bredekamp, Horst

1993 “Die Kunstammer als Ort Spielerischen Austausches.” In *Künstlerischer Austausch/Artistic Exchange: Akten des XXVIII. Internationale Kongresses für Kunstgeschichte, Berlin, 15.–20. Juli 1992*, edited by Thomas W. Gaehtgens, vol. 1, pp. 65–78. Berlin: Akademie Verlag.

Casini, Lorenzo

n.d. “Renaissance Philosophy.” In *Internet Encyclopedia of Philosophy*. Accessed April 7, 2019. <https://www.iep.utm.edu/renaissa/>.

Cave, Roderick

2010 *Impressions of Nature: A History of Nature Printing*. London: British Library.

Del Soldato, Eva

2019 “Natural Philosophy in the Renaissance.” In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/sum2019/entries/natphil-ren/>.

Dupre, Sven, and Michael Korey

2009 “Inside the Kunstammer: The Circulation of Optical Knowledge and Instruments at the Dresden Court.” *Studies in the History and Philosophy of Science* 40, pp. 405–20.

Ebert-Schifferer, Sybille

2002 *Deceptions and Illusions: Five Centuries of Trompe l’Oeil Painting*. Exh. cat. Washington, D.C.: National Gallery of Art.

Findlen, Paula

1990 “Jokes of Nature and Jokes of Knowledge: The Playfulness of Scientific Discourse in Early Modern Europe.” *Renaissance Quarterly* 43, no. 2 (Summer), pp. 292–331.

Freedberg, David

1994 “The Failure of Colour.” In *Sight and Insight: Essays on Art and Culture in Honour of E. H. Gombrich at 85*, edited by John Onians, pp. 245–62. London: Phaidon.

Fucikova, Eliska

1985 “The Collection of Rudolf II at Prague: Cabinet of Curiosities or Scientific Museum?” In *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, edited by Oliver Impey and Arthur MacGregor, pp. 47–53. Oxford: Clarendon Press.

Gessner, Conrad

1551–58 *Historiae animalium*. 5 vols. Zürich: Froschauer.

Harkness, Deborah E.

2009 “Elizabethan London’s Naturalists and the Work of John White.” In *European Visions: American Voices*, edited by Kim Sloan, pp. 44–50. British Museum Research Publication, no. 172. London: British Museum.

Hendrix, Lee

1984 “Joris Hoefnagel and the Four Elements: A Study in Sixteenth-Century Nature Painting.” PhD diss., Princeton University.

1995 “Of Hirsutes and Insects: Joris Hoefnagel and the Art of the Wondrous.” *Word and Image: A Journal of Verbal and Visual Inquiry* 11, no. 4 (October–December), pp. 373–90.

Hendrix, Lee, and Thea Vignau-Wilberg

1992 *Mira calligraphiae monumenta: A Sixteenth-Century Calligraphic Manuscript Inscribed by Georg Bocskay and Illuminated by Joris Hoefnagel*. Los Angeles: J. Paul Getty Museum.

1997 *Nature Illuminated: Flora and Fauna from the Court of the Emperor Rudolf II*. Los Angeles: J. Paul Getty Museum.

Hildebrecht, Douglas R.

2004 “Otto Marseus van Schrieck (1619/20–1678) and the Nature Piece: Art, Science, Religion, and the Seventeenth-Century Pursuit of Natural Knowledge.” PhD diss., University of Michigan, Ann Arbor.

Hoefnagel, Joris

1592 *Archetypha studiaque patris*. Frankfurt am Main: Jacob Hoefnagel.

van Hoogstraten, Samuel

1678 *Inleyding tot de Hooge Schoole der Schilderkonst*. Rotterdam: Fransois van Hoogstraeten.

- Kaufmann, Thomas DaCosta
1988 *The School of Prague Painting at the Court of Rudolf II*. Chicago: University of Chicago Press.
1993 *The Mastery of Nature Aspects of Art, Science and Humanism in the Renaissance*. Princeton: Princeton University Press.
- Kaufmann, Thomas DaCosta, and Virginia Roehrig Kaufmann
1991 "The Sanctification of Nature: Observations on the Origins of Trompe l'Oeil in Netherlandish Book Painting of the Fifteenth and Sixteenth Centuries." *J. Paul Getty Museum Journal* 19, pp. 43–64.
- Koepppe, Wolfram
2000– "Collecting for the Kunstkammer." In *Heilbrunn Timeline of Art History*. New York: MMA. http://www.metmuseum.org/toah/hd/kuns/hd_kuns.htm.
- Koreny, Fritz
1988 *Albrecht Dürer and the Animal and Plant Studies of the Renaissance*. Translated from the German by Pamela Marwood and Yehuda Shapiro. Boston: Little, Brown.
- Kuhn, Heinrich
2018 "Aristotelianism in the Renaissance." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. <https://plato.stanford.edu/entries/aristotelianism-renaissance/>.
- Kusukawa, Sachiko
2010 "The Sources of Gessner's Pictures for the *Historia animalium* [vol. 1]." *Annals of Science* 67, no. 3 (July), pp. 303–28.
- Lipsius, Justus
1584 *De constantia libri duo, qui alloquium praecipuè continent in publicis malis* (On Constancy, book 2). Leiden: C. Plantin.
1604 *Physiologiae Stoicorum libri tres* (Physical Theory of the Stoics). Antwerp: J. Moretus.
- MacGregor, Arthur, ed.
1994 *Sir Hans Sloane, Collector, Scientist, Antiquary: Founding Father of the British Museum*. London: British Museum Press.
- van Mander, Karel
1604 *Het Schilder-Boeck*. [Vol. 2], *Het leven der doorluchtighe Nederlandtsche en Hooghduytsche schilders*. Haarlem: Paschier van Wesbusch.
- Maselis, Marie-Christiane, Arnout Ballis, and Roger H. Marijnissen
1999 *The Albums of Anselmus de Boodt (1550–1632): Natural History Painting in the Court of Rudolph II in Prague*. Translated by Alastair Weir. Catalogue Heribert Tenschert 43. Tielt, Belgium: Lannoo.
- Neri, Janice
2011 *The Insect and the Image: Visualizing Nature in Early Modern Europe, 1500–1700*. Minneapolis: University of Minnesota Press.
- Ogilvie, Brian W.
2006 *The Science of Describing: Natural History in Renaissance Europe*. Chicago: University of Chicago Press.
2008 "Nature's Bible: Insects in Seventeenth-Century European Art and Science." *Tidsskrift for kulturforskning* 7, no. 3, pp. 5–21. Electronic ed., <https://pdfs.semanticscholar.org/e784/fdd1e3cff4ed8d56e4f2bf2d6844578bff0e.pdf>.
- Pächt, Otto
1950 "Early Italian Nature Studies and the Early Calendar Landscape." *Journal of the Warburg and Courtauld Institutes* 13, no. 1–2, pp. 13–47.
- Papy, Jan
2019 "Justus Lipsius." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/spr2019/entries/justus-lipsius/>.
- Park, Katherine, and Lorraine J. Daston
1981 "Unnatural Conceptions: The Study of Monsters in Sixteenth- and Seventeenth-Century France and England." *Past and Present*, no. 92 (August), pp. 20–54.
- Peacham, Henry
1606 *The Art of Drawing with the Pen*. London: Richard Braddock for William Jones. Facsimile reprint, Amsterdam: Theatrum Orbis Terrarum; New York: Da Capo Press, 1970.
- Reeds, Karen M.
2006 "Leonardo da Vinci and Botanical Illustration: Nature Prints, Drawings, and Woodcuts, ca. 1500." In *Visualizing Medieval Medicine and Natural History, 1200–1550*, edited by Jean A. Givens, Karen M. Reeds, and Alain Touwaide, pp. 205–37. London: Ashgate.
- Salmon, Michael A.
2000 *The Aurelian Legacy: British Butterflies and Their Collectors*. Berkeley: University of California Press.
- Simons, Madelon
2013 "The Door of the Kunstkammer." In *Libellus Amicorum: Beket Bukovinska*, edited by Lubomír Konečný and Lubomír Slaviček, pp. 72–85. Prague: Artefactum.
- Sloan, Kim
2007 *A New World: England's First View of America*. London: British Museum.
- Smith, Godfrey
1756 *The Laboratory; or, School of Arts*. . . . London: Printed for C. Hitch and L. Hawes, R. Baldwin, S. Crowder, and H. Woodgate.
- Stefanaki, Anastasia, Henk Porck, Ilaria Maria Grimaldi, Nikolaus Thurn, Valentina Pugliano, Adriaan Kardinaal, Jochem Saleminck, Gerard Thijsse, Claudine Chavannes-Mazel, Erik Kwakkel, and Tinde van Andel
2019 "Breaking the Silence of the 500-Year-Old Smiling Garden of Everlasting Flowers: The *En Tibi* Book Herbarium." *Plos One* 14, no. 6, pp. 1–13. <https://doi.org/10.1371/journal.pone.0217779>.
- Stefanaki, Anastasia, Gerard Thijsse, Gerda A. van Uffelen, Marcel C. M. Eurlings, and Tinde van Andel
2018 "The *En Tibi* Herbarium, a 16th Century Italian Treasure." *Botanical Journal of the Linnean Society* 20, pp. 1–31.
- Swan, Claudia
1995 "Ad vivum, near het leven, from the Life: Defining a Mode of Representation." *Word and Image* 11, no. 4 (October–December), pp. 353–72.
- Topsell, Edward, and Thomas Moffett
1658 *The History of Four-Footed Beasts and Serpents*. . . ; [vol. 3], *The Theatre of Insects; or, Lesser Living Creatures*, by Thomas Moffett. London: Printed by E. Cotes for G. Sawbridge at the Bible on Ludgate-hill, T. Williams at the Bible in Little-Britain, and T. Johnson, at the Key in Pauls Church-yard. Facsimile reprint, New York: Da Capo Press, 1967.
- Vignau-Wilberg, Thea
1985 "Joris Hoefnagels Tätigkeit in München." *Jahrbuch der Kunsthistorischen Sammlungen in Wien* 81, pp. 103–67.
1992 "Joris Hoefnagel, the Illuminator." In Hendrix and Vignau-Wilberg 1992, pp. 15–28.
2017 *Joris and Jacob Hoefnagel: Art and Science around 1600*. Berlin: Hatje/Cantz.

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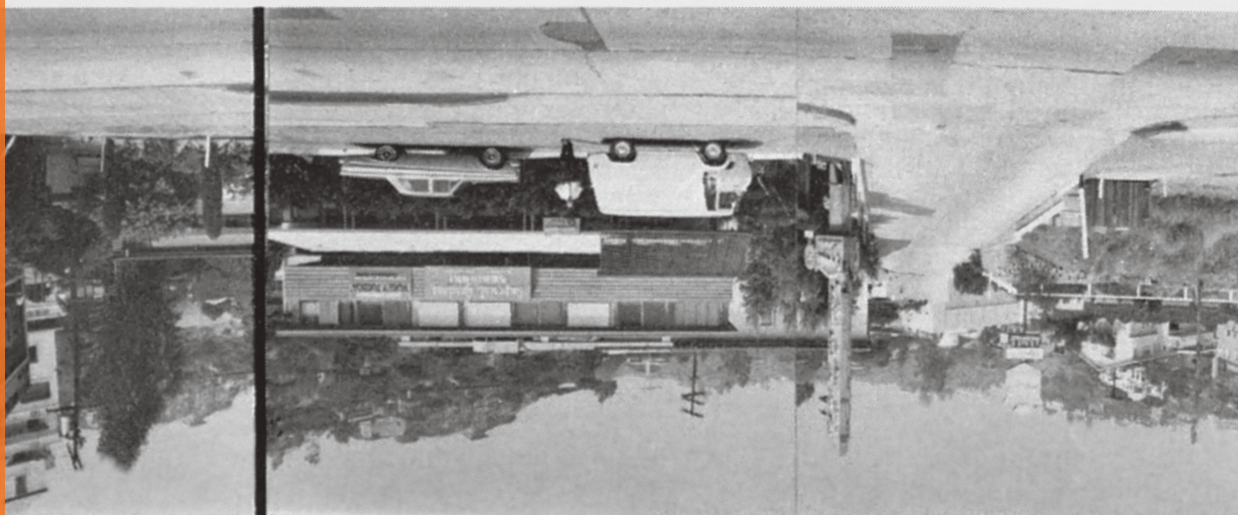
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