

RYFF'S ACANTHUS

ON FIELD RESEARCH IN RENAISSANCE ARCHITECTURE

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ABSTRACT

This article proposes a new framework for examining the empirical research of early modern architects. It explores the rise of nature study in sixteenth-century architectural theory and practice through the works of medical practitioner and architecture expert Walther Hermann Ryff (c. 1500–1548). The article argues that Ryff's 1548 *Vitruvius Teutsch*, the first German translation of Vitruvius's *De architectura*, gave architects pathbreaking advice about performing design research in nature. Ryff's book supported the botanical investigations of architects by aping empirically derived botanical imagery from the *De historia stirpium* of Leonhart Fuchs (1501–1566) and by comparing architectural nature study to the period craze for examining ancient ruins first-hand. In proposing a new mode of architectural empiricism, *Vitruvius Teutsch* reconciled tensions between abstract theory and hands-on practice in the formation of architectural knowledge.

KEYWORDS

Renaissance architecture; nature study; empiricism; botany; archaeology.

In 1548, the age-old dialogue between nature and architecture took an unexpected turn. Until this year, the Holy Roman Empire remained one of the last regions of Western Europe without a translation of the continent's paradigmatic guide to architectural naturalism and its sole architecture book to survive antiquity, Vitruvius's *De architectura*. Medical practitioner and editor Walther Hermann Ryff (c. 1500–1548) seized the opportunity, baiting anticipation for his German edition of Vitruvius's text.¹ In 1543, Ryff contributed to a version of the first Latin *De architectura* published in the German-speaking lands, and in 1547 produced a *scholion* or companion text to Vitruvius in German, the so-called *Architectur*.² But when Ryff finally did release his German *De architectura* translation and commentary, the *Vitruvius Teutsch*, some months later, it contained an image unmentioned by Vitruvius and unlike any theretofore printed in architectural literature [Fig. 1].³ Alongside his remarks on Vitruvius's account of the acanthus-laden capitals of the Corinthian Order, Ryff set a woodcut acanthus with tangled roots, a slim stalk of nascent buds, and leaves that curl into parabolic surfaces with delicate hatching. An open bloom floats beside the plant, figuring the flower's mature state.

This detailed portrayal of the life stages of the acanthus deploys the pictorial rhetoric of what is now known as the “nature study”, an image of life rendered with apparent fidelity to observed nature, and a result of what Ryff's mid sixteenth-century contemporaries would term *autopsia*, that is, direct observation.⁴ As in the detailed yet legible presentation of specimens in Albrecht Dürer's canonical, early contribution to the genre, the *Large Piece of Turf* of 1503 [Fig. 2],

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Ryff's architectural publications are considered in Julian Jachmann, *Die Architekturbücher des Walter Hermann Ryff. Vitruvrezeption im Kontext mathematischer Wissenschaften*, Stuttgart 2012. On the 1543 work, see Werner Oechslin, Marcus Vitruvius Pollio, in: Werner Oechslin, Tobias Büchi, and Martin Pozsgai (eds.), *Architekturtheorie im deutschsprachigen Kulturraum 1486-1648*, Basel 2018, 237–244. On the parallel function of Ryff's architectural books as accompaniments to Virgil, see Michael Gnehm, Ryff's Scholien zu Vergil, in: *Scholion* 1, 2002, 69–87, esp. 83.

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The book's publication history is detailed in Michael Gnehm, *Druckgeschichte und Bibliographie. W.H. Ryffs "Vitruvius Teutsch"*, in: *Scholion* 3, 2004, 175–180.

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On *autopsia* in nature studies and natural history, see Sachiko Kusukawa, *Picturing the Book of Nature. Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany*, Chicago/London 2012, 21.

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Das Viert Buch Vitruuſij

Ganz eygentliche lebliche Contrafactur des waren
Acanthi / ſambt ſeiner wachſung vnd geſtalt der ge-
flochten Sänen oder Körblein.



bletlein ſind bekleidet / darzwiſchen ſchöne weiſſe blumlein wachſen / darauff dann ein ſeng-
lechter gelber ſamen wirt / hat ſolche furnemen vrsach geben / diſe künstliche Capiteel in ſol-
che der natur zu volgen / aber vmb merer bequemheit wegen / iſt diſer ſtengel von den alten
Bawmeiſtern in zwey theil gethallet worden / Der ein windet ſich bis zu oberſt vnter die
platten des Capiteels / Der ander aber erſtrecket ſich mit den kleinern wyrblein mit weiter
dan in mitte des Capitals. Diſes kraut haben wir aber nit allein dem kunſtreichem Archi-
tecto zu eygentlicher erkandnuß auffreiſſen wollen / ſonder auch zu mancherley nußlichem
gebrauch in der arney.

Der kunſtreich vnd berümbt meißter von welchem auß wunderbarlicher anzeigung vnd
imitierung oder nachuolgung der natur die Corinthiſchen Capiteel alſo gezierd worden /
wirt

[Fig. 1]

Unknown artist after Heinrich Füllmaurer, Albrecht Meyer, and Veit Rudolf Specklin, *Counterfeit Image of the True Acanthus*, woodcut illustration to Vitruvius/Walther Hermann Ryff, *Vitruvius Teutsch* [...] (Nuremberg: Johann Petreius, 1548). Heidelberg, Universitätsbibliothek Heidelberg, T 2017 RES, fol. CXXXV.



[Fig. 2]

Albrecht Dürer, *The Large Piece of Turf*, 1503, watercolour and body colour with white heightening, 40.8 × 31.5 cm. Graphische Sammlung, Albertina, Vienna, Inv. 3075, www.albertina.at © The Albertina Museum, Vienna.

the nature study balances pictorial specificity with representational clarity to pose as a trustworthy conduit of knowledge about the natural world. The nature study purports to derive either from specific observations of life or to collate and generalize such investigations (a synthesis Lorraine Daston dubbed an “epistemic image”), cultivating through its economy of detail a more or less mediated record of some experience.⁵ Having germinated in manuscripts and painting in the decades around 1400, when writers came to esteem the study of life as well as art as foundations of artistic mastery, the nature study took root in new terrain during Ryff’s lifetime.⁶ It flourished in drawing and print as those media gained prestige and autonomy from painting, and as natural history’s descriptive ambitions grew more enmeshed with artists’ mimetic enterprise.⁷ Above all, the nature study consolidated interest in the epistemic authority of depicted experience.

Vitruvius had supplied the Renaissance with a foundational argument for the emulation of nature in architecture. *De architectura* praised Greek architects because “[...] in the proper completion of their works, they expressed everything as it certainly was, drawn from the true customs of Nature, and they approved those things of which the explanations, when examined, can be shown to possess the ground of truth”.⁸ Because Vitruvius held that the effective emulation of nature results in decorous, or correct and appropriate structures, he advised architects to design works that register the ratios of anthropomorphic anatomy, and extolled the resonance between temple columns and the proportions of various human

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See Lorraine Daston, Epistemic Images, in: Alina Payne (ed.), *Vision and Its Instruments. Art, Science, and Technology in Early Modern Europe*, University Park, PA 2015, 13–35, here 17–18. On the period’s evolving notions of the image taken from life, see Claudia Swan, *Ad vivum, naer het leven*, from the life. Defining a mode of representation, in: *Word & Image. A Journal of Verbal/Visual Enquiry* 11, 1995, 353–372.

6

As Cennino Cennini wrote some time around 1400, “[...] sopra i maestri tudei ritrarre senpre del naturale con chontinuo”, / “[...] On top of the masters, you should always copy from life, practicing continuously”, Cennino Cennini, *Cennino Cennini’s Il libro dell’arte. A New English Translation and Commentary with Italian Transcription*, ed. and trans. Lara Broecke, London 2015, here 48. On the origins of the Renaissance nature study, see, for instance, *Albrecht Dürer und die Tier- und Pflanzenstudien der Renaissance* (exh. cat. Vienna, Albertina), ed. by Fritz Koreny, Munich 1985, esp. 13–15.

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On the descriptive enterprise of early modern natural history, see Brian W. Ogilvie, *The Science of Describing. Natural History in Renaissance Europe*, Chicago/London 2006. The intersections of Renaissance art and natural history are deftly addressed in Pamela H. Smith, *The Body of the Artisan. Art and Experience in the Scientific Revolution*, Chicago/London 2004.

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“Omnia enim certa proprietate et a veris naturae deducta moribus transdlexerunt in operum perfectiones, et ea probaverunt, quorum explicationes in disputationibus rationem possunt habere veritatis.” Vitruvius, *De architectura*, 4.2.6; this and all subsequent passages as transcribed in Vitruvius, *Vitruvii de architectura libri decem*, ed. Fritz Krohn, Leipzig 1912. Translation from Vitruvius, *Ten Books on Architecture*, trans. Ingrid D. Rowland, commentary and illustrations by Thomas Noble Howe, with additional commentary by Ingrid D. Rowland and Michael J. Dewar, Cambridge 1999, 57.

physiques.⁹ Vitruvius also encouraged architects to study medicine and the environment so they might identify salubrious sites for construction.¹⁰ With the circulation of *De architectura* and Vitruvian publications from the later fifteenth century on, Europe revived a long-dormant mode of classicizing architectural naturalism and developed a coherent discourse on architectural naturalism as such. The conversation ranged across buildings and books, from Donato Bramante's tree columns at the Canonica of the Basilica of S. Ambrogio of c. 1492–1497 [Fig. 3] to the dendriform Order pictured in Philibert de L'Orme's 1567 *Premier Tome de l'Architecture* [Fig. 4].¹¹

Yet art historians have seldom scrutinized the nature study as a tool of Renaissance architectural design; and architectural historians, while thorough in considering early modern architects' first-hand research of buildings and ruins, have rarely probed the circumstances of Renaissance architectural nature study in depth. The acanthus woodcut in Ryff's *Vitruvius Teutsch* thus would have raised, and still raises, many questions. How does the acanthus function within the body of architectural knowledge presented in Ryff's Vitruvian text? What can it tell us about the evolving scope and methods of early modern architectural fieldwork? And if art theorists deemed knowledge of the natural world a prerequisite for artistic mastery, what role did nature study play in Renaissance notions of *architectural* expertise? These questions matter not only to the history of architectural theory and practice, but to the history of observation as such.

Ryff's acanthus marks a watershed moment when Renaissance architectural literature began to engage queries about the observation of nature that once existed primarily in artistic discourse.¹² The present article advances three claims about Ryff's pivotal but little-noted intervention. First, I contend that Ryff's acanthus sig-

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See Vitruvius, *De architectura*, 3.1.1–9, 4.1.6–8. On decorum in Ryff's milieu, see Hans Joachim Dethlefs, *Wohlstand and Decorum in Sixteenth-Century German Art Theory*, in: *Journal of the Warburg and Courtauld Institutes* 70, 2007, 143–155.

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“Disciplinam vero medicinae novisse oportet propter inclinationem caeli, quae Graeci *κλίματα* dicunt, et aeris et locorum, qui sunt salubres aut pestilentes, aquarumque usus; sine his enim rationibus nulla salubris habitatio fieri potest.” / “He should know the science of medicine, as this depends on those inclinations of the heavens which the Greeks call climates, and know about airs, and about which places are healthful and which disease ridden, and about the different applications of water, for without these studies no dwelling can possibly be healthful.” Vitruvius, *De architectura*, 1.1.10; translation from Vitruvius, *Ten Books on Architecture*, 23.

11

On the arboreal theme in Renaissance building and architectural theory, see Hubertus Günther, *Das Astwerk und die Theorie der Renaissance von der Entstehung der Architektur*, in: Michèle-Caroline Heck, Frédérique Lemerle, and Yves Pauwels (eds.), *Théorie des arts et création artistique dans l'Europe du Nord du XVI^e au début du XVIII^e siècle*, Lille 2002, 13–32.

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Here I understand observation as a function of historically specific visual practices and strategies, as proposed in Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, Cambridge, MA/London 1990.



[Fig. 3]

Donato Bramante, Pilasters and tree column, c. 1492-1497. Canonica, Basilica di S. Ambrogio, Milan. Photo © Elizabeth J. Petcu.



[Fig. 4]

Arboreal Order, woodcut illustration to Philibert de l'Orme, *LE PREMIER TOME DE L'ARCHITECTURE* [...] (Paris: Frederic Morel, 1567). Bern, Universitätsbibliothek Bern, MUE Bong IV 783, fol. 218', <http://dx.doi.org/10.3931/e-rara-15161>.

nals a new investment in the direct observation of nature as a form of architectural research, by which I mean the principled gathering of knowledge for insight on the processes, products, and performance of architectural design.¹³ Second, I establish that Ryff oriented architecture's novel affinity for botanical study within the era's growing fascination with surveying ancient architecture, and the new forms of first-hand architectural investigation that antiquarianism entailed. Finally, I argue that Ryff's seemingly paradoxical mingling of the rhetoric of observation with plagiarized images speaks to his keen grasp of what was at stake here: the question of how architects know what they know.

Ryff had good reason to weigh the relative authority of direct experience, images, and written reports in the formation of architectural knowledge. Sixteenth-century architecture faced multiplying and often contradictory models of expertise, a predicament exacerbated by the era's dizzying proliferation of architectural styles and treatises, and the contested professionalization of the architectural discipline.¹⁴ Ryff's case for architectural nature study confronted Renaissance architecture's crisis of expertise with an empiricism that reconciled tensions between abstract theory and hands-on practice in the formation of architectural knowledge.

I. Counterfeit Architecture

Despite its sway in early modern architectural culture, Vitruvius's charge to emulate nature remained an obscure edict for architectural theorists until the middle of the sixteenth century.¹⁵ Authors had urged architects to research nature but seldom specified how, and rarely stipulated the degree to which building should cleave to natural models. Even Leon Battista Alberti, a key Renaissance ambassador of Vitruvianism, broached the topic in general terms, promoting a naturalism of harmonious ratios, correct syntax, and unity of structure and ornament.¹⁶ Alberti did not cite detailed tactics for imitating specific natural specimens as such. Architectural *anti*-naturalism inspired more colourful commentary. Dismissing

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I draw this definition from the influential essay by Jeremy Till, *Architectural Research. Three Myths and One Model*, *Collected Writings*, 2007, URL: https://jeremytill.s3.amazonaws.com/uploads/post/attachment/34/2007_Three_Myths_and_One_Model.pdf (21.02.2018).

14

A recent assessment of architecture's emergence as a profession is Elizabeth Merrill, *The Professione di Architetto in Renaissance Italy*, in: *Journal of the Society of Architectural Historians* 76, 2017, 13–35.

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See Alina A. Payne, *The Architectural Treatise in the Italian Renaissance. Architectural Invention, Ornament, and Literary Culture*, Cambridge 1999, 152.

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On naturalism in Alberti's architectural theory, see Caroline van Eck, *Goethe and Alberti. Organic Unity in Nature and Architecture*, in: *The Structurist*, 1995, issue 35, 20–26.

the unusual tectonics of building in the North, a letter to Pope Leo X drafted between 1517 and c. 1519/1520 and now attributed to Raphael concluded that “The Germans, whose *maniera* still survives in some places, often include as ornament a *figurino rannicchiato* and badly made and even worse conceived as a bracket (*mensola*) to support a beam, and other strange animals and figures and leaves lacking any kind of reason.”¹⁷ Here the alleged qualities of German architectural anti-naturalism – poor figuration, unconvincing tectonics, and odd ornament – are clear. Theorists wrote with greater candour when detailing the conditions under which architecture was allowed to appear unnatural. Paraphrasing Serlio’s remarks on Raphael’s Vatican loggia grotesques and ancient Roman wall painting, a 1542 German translation of Pieter Coecke van Aelst the Elder’s adaptation of the *Quarto libro* admitted that “[...] in vaults it is acceptable to apply such things with free will, [...] according to what one wants, be it foliage, nests, flowers, animals, birds, and figures of all sorts, combined”.¹⁸ Already taciturn on strategies for naturalistic design, architecture experts remained virtually mute when it came to methods for researching nature first-hand. Ryff could blame this silence on the incommensurability of words and experience. As both Ernst Kris and Pamela Smith have observed, Ryff aborted an attempt to explain life casting in his 1547 *Architectur* by declaring the near-ineffability of the technique, which he regarded as “[...] much easier [...] to understand from instruction on the spot than from written report”.¹⁹ Text, Ryff held, could not convey insight about architecture as experience could.

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“E li Tedeschi (la maniera de’ quali in molti luoghi ancor dura) per ornamento spesso ponevano solamente un qualche figurino rannicchiato e mal fatto per mensola, a sostenere un trave, e animali strani, e figure e fogliami goffi e fuori d’ogni ragione naturale.” Transcription of Version C of the letter, in the Archivio Castiglioni di Casatico in Mantua, from Raphael, *Gli scritti. Lettere, firme, sonetti, saggi tecnici e teorici*, ed. Ettore Camesasca with Giovanni M. Piazza, Milan 1994, 282. Translation from Payne, *Architectural Treatise*, 155.

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“[...] welche ding in den gewelbē vast wol komen vmb der freyigkayt willen, so man darein machē mag, zūwissen was man will, als bletter, nāst, blūmen, thier, vogel, figuren mit allerlay sorten vermengt.” Sebastiano Serlio, *DIE GEMAYNEN REGLEN VON DER ARCHITECTVR VBER DIE FVNF MANIEREN DER GEBEV, ZV VVISSEN, THOSCANA, DORCIA, IONICA, CORINTHLA, VND COMPOSITA, MIT DEN EXEMPLN DER ANTIQVITATEN SO DVRRCH DEN MERERN TAYL SICH MIT DER LEER VITRVVJ VERGLEICHEN*, 1539 Dutch trans. Pieter Coecke van Aelst; 1542 German trans. Jacob Rechlinger (Antwerp: Pieter Coecke van Aelst, 1542), Wolfenbüttel, Herzog August Bibliothek A: 10.2 Geom. 2° (3), fol. 68^r.

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“[...] vor gegenwertiger berichtug vil leichtlicher zuvernemen, dann aus der schriftlichen anzeigung.” Walther Hermann Ryff, *Der furnembsten, notwendigsten, der ganzen Architectur angehörigen Mathematischen und Mechanischen künst, eygentlicher bericht und vast klare, verständliche unterrichtung, zu rechtem verstandt der lehr Vitruuij in drey furneme Bücher abgetheilet. Als Der newen Perspectiua das I. buch Vom rechten gewissen Geometrischen grund, alle Regulierte und Unregulierte Körperliche ding, deßgleichen ein yeden Baw, und desselbigen angehörige glieder, und was uns im gesicht furkomen mag, künstlichen durch mancherley vorthail und gerechtigkeit Zirckels und Richtscheidts, auff zureissen, in grund zu legen, und nach Perspectiuischer art auff zu ziehen, mit weiterem bericht des grundts der abkurtzung, oder vermerung aller ding nach verdrerung der distantz, mit erklärung der furnembsten puncten Künstlichs unnd Perspectiuischen Reissens und Malens, verstandt der Farben, Mit getrewer unterweisung der ganzen Sculptur oder Künstlicher Bildung, ein yedes ding aus gewissem grund in rechter Proportion und Simmetria, artlichen un̄ gerecht zu Formieren und Bilden, durch Schnitzen, Hawen, Graben, Etzen, Stechen, Abformen, Possieren, Abgiessen un̄ Abtrucken, in aller Handt Zeug, als*

Renaissance reticence about architectural nature study also had epistemological roots – that is, it hinged on beliefs about how knowledge was attained. Until Ryff's time, authors conceived architectural naturalism in terms of general principles or ideals rather than specific conditions revealed through observation. Cesare Cesariano's pioneering printed, illustrated Italian translation of *De architectura* from 1521 contends, for instance, that its Vitruvian man woodcut [Fig. 5], a model for building ratios, features “the measure of the human body and [the way] to find from it all eurhythmic and proportionate measurements by means of geometric forms, as this picture shows”.²⁰ Whereas Cesariano tends to extrapolate the forms of nature from *a priori* knowledge of geometry, Ryff stresses the *a posteriori* wisdom of experience and description. Ryff's rhetoric of fidelity to observation persists even when he peddles a copy of another Cesariano Vitruvian man [Fig. 6] as an accurate image of nature rather than a clone of another's print; “a clear and manifest representation of the foundation of the human body parts according to correct symmetry”.²¹ Artists could, of course, allow *a priori* expectations about “natural” architectural proportions to inform

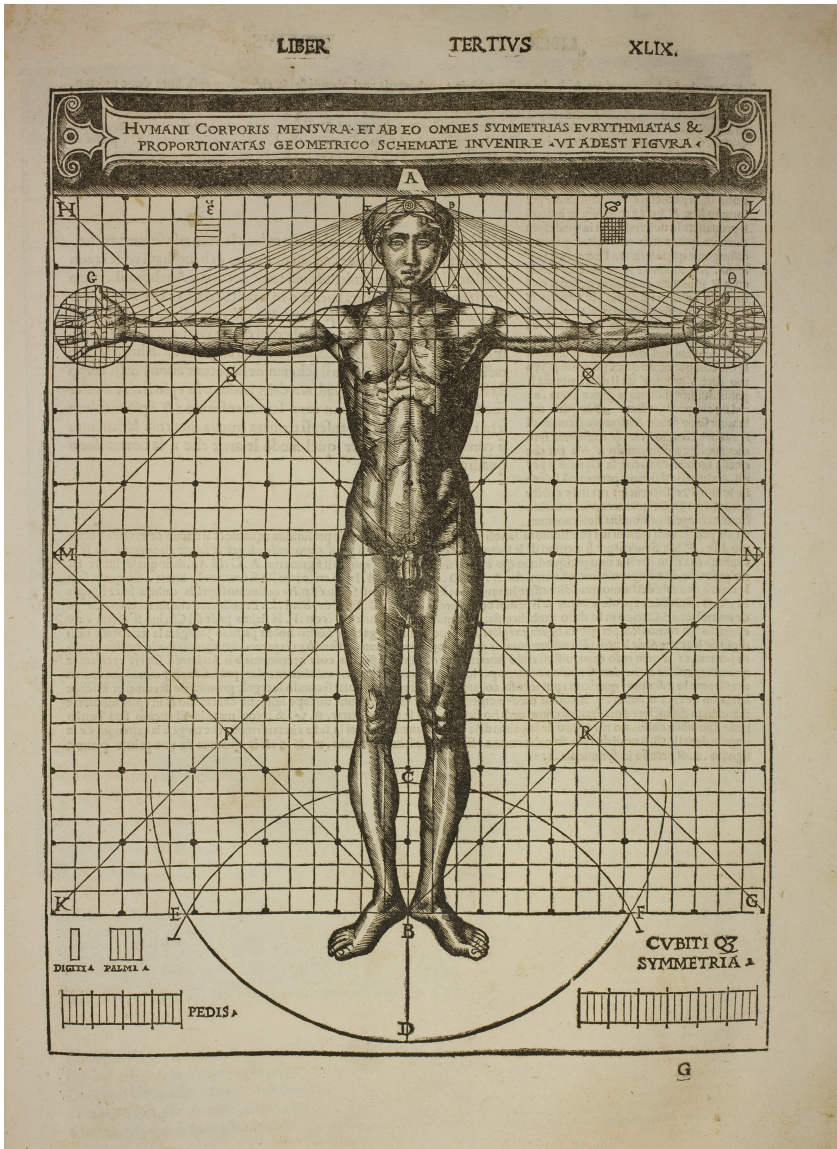
Holtz, Stein, Marbel, Metal, Helffenbein, Gyps, Wax, Gießsand, uñ dergleichen. Mit sonderlicher abtheilung, der rechten proportion unnd Simmetria Menschlichs Cörper, und was weiter zu der Kunst der Perspectiva erfordert werden mag, alles mit schönen Figuren für augen gestellt. Weiteren inhalt des II. und III. Buchs der Geometrischen Büxenmeisterey und Geometrischen Messung, sampt den kurzen Summarien, des gantzen begriffs der selbigen vnterschiednen theil findestu hernach nechst der Vorred verzeichnet. Allen Künstlichen Handtwerckern, Werckmeistern, Steinmetzen, Bawmeistern, Zeug oder Büxenmeistern, Maleren, Bildhaweren, Goltschmiden, Schreineren, und was sich des Zirkels und Richtscheidts künstlichen gebraucht, zu sonderlichem nutz und vilfeltigem vorthail in Truck verordnet (Nuremberg: Johann Petreius, 1547), Munich, Bayerische Staatsbibliothek München Rar. 612, under “Unterrichtung der Sculptur”, fol. XLI'. Translated in Smith, *Body of the Artisan*, 80–81. See also Ernst Kris, *Der Stil* “Rustique”. Die Verwendung des Naturabgusses bei Wenzel Jamnitzer und Bernard Palissy, in: *Jahrbuch der Kunsthistorischen Sammlungen in Wien* NF 1, 1926, 137–208, here 141.

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“HVMANI CORPORIS MENSURA. ET AB EO OMNES SYMMETRIAS EVRYTHMIATAS & PROPORTIONATAS GEOMETRICO SCHEMATE INVENIRE. VT ADEST FIGVRA.” Vitruvius and Cesare Cesariano, *DI Lucio Vitruuio Pollione de Architectura Libri Dece traducti de latino in Vulgare affigurati: Cōmentati: & con mirando ordine Insigniti: per il quale facilmente potrai trouare la multitude de li abstrusi & reconditi Vocabuli a li soi loci & in epsa tabula con summo studio expositi & enucleati ad Immensa utilitate de ciascuno Studioso & beniuolo di epsa opera*, trans. Cesare Cesariano (Como: Gottardo da Ponte, 1521), Edinburgh, University of Edinburgh Main Library Special Collections JY973, fol. XLIX'. Translation from Carol Herselle Krinsky, *Cesare Cesariano and the Como Vitruvius Edition of 1521*, Ph.D. Dissertation, New York University 1965, 171.

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“Augenscheinliche anzeigung wie in die grundlegung menschlicher glidmassung nach rechter Symmetri [...]” Vitruvius and Walther Hermann Ryff, *Vitruuius Teutsch. Nemlichen des aller namhaftigsten vñ hocharnesten, Römischen Architecti, vñ Kunstreichen Werk oder Bawmeisters, Marci Vitruuij Pollionis, Zehen Bücher von der Architectur vñ künstlichem Bawen. Ein Schlüssel und einleytung aller Mathematischē uñ Mechanischen künst, Scharpffsiniger fleissiger nachtrachtung oder Speculation künstlicher werck, Aus solchem hohen verstand, rechtem grund, sattem und gewissem fundament aller löblichen künst, Der massen fleissig uñ ordentlich in Schriften verfasst, das hierin ein yeder Kunstbegriper leser der Architectur und künstlichen Bawwerks unterweisen wirt, vñ der Architectur angehörigen Mathematischen und Mechanischen künsten ein rechten verstand, leichtlichen erlernen und fassen mag. Alles mit schönen künstlichen Figuren und Antiquiteten, und sonderlichen Commentarien zu mererem bericht und besserem verstand gezieret und erkleret. Allen Künstlichen Handtwerckern, Werckmeistern, Steinmetzen, Bawmeistern, Zeug uñ Büxenmeistern, Brunnen leyteren, Berckwerckern, Malern, Bildhawern, Goltschmiden, Schreineren, und allen denen, welche sich des Zirkels und Richtscheidts künstlichen gebrauchen, zu sonderlichem nutz und vilfeltigem vorthail Erstmals verteutschet, und in Truck verordnet*, trans. Walther Hermann Ryff (Nuremberg: Johann Petreius, 1548), Munich, Bayerische Staatsbibliothek München Res/2 A.lat.b. 804, fol. CI'. The woodcut is identified as a copy of Vitruvius/Cesariano, *De Architectura Libri Dece*, fol. L', in: Jachmann, *Architekturbücher*, 116.



[Fig. 5]

Cesare Cesariano (designer) and unknown woodblock cutter, *Vitruvian Man*, woodcut illustration to Vitruvius/Cesare Cesariano, *DI Lucio Vitruvio Pollione de Architectura Libri Dece* [...] (Como: Gottardo de Ponte, 1521). Einsiedeln, Stiftung Bibliothek Werner Oechslin, A05c ; app. 2917, fol. XLIX © Stiftung Bibliothek Werner Oechslin, Einsiedeln.

their observations of life. Albrecht Dürer began experimenting with the anatomical ratios that *De architectura* had attributed to beautiful Orders by imposing Vitruvian proportions on drawings evidently made from live models.²² Later, Dürer reversed this *a priori* approach, instead tabulating measurements of individually observed human bodies to create a typological system of anatomical proportions potentially useful for architectural design.²³ It seems likely that Ryff was thinking of Dürer's empirical anatomical system, published in 1528 in the artist's *Vier Bücher von menschlicher Proportion* (*Four Books on Human Proportion*), when the editor called on architects to draw on encounters with nature.²⁴ Ryff's innovation was to shift the emphasis from generalizing, theoretical formulations of natural bodies to the direct observation and apt architectural translation of those forms.

Ryff's interest in architectural design as a product of specific, first-hand encounters with nature aligned with his era's maturing apparatus for discussing the concept of *autopsia*, or direct observation. Prior to the middle of the sixteenth century, neither artists nor natural scientists in Europe possessed precise terminology for acts of attentive visual observation. The word *autopsia*, a Latin neologism derived from the Greek term for "eyewitness", *autoptēs*, came into use along with *observatio* (direct or indirect observation) and *phainomena* (phenomena, or how things appear) as astronomers, anatomists, and botanists traded Aristotelian confidence in *a priori* principles for ancient Empiric and Sceptical philosophy, which had instead promoted direct observation.²⁵ The concept of *autopsia* gained currency in Renaissance architecture through travel literature and archaeology. Ciriaco d'Ancona, among the first authors to champion direct investigation as a tool of archaeology and history writing, made first-hand observations of Greek and Roman antiquities in Athens that became sources for Giuliano da Sangallo's sketchbook, now known as *Codex Vaticanus Barberinus latinus* 4424. In the Codex drawings, the Athenian monuments Ciriaco had described, which Giuliano himself had never seen, assumed

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On Dürer's early encounters with Vitruvius and the ensuing anatomical studies, see Albrecht Dürer and Hans Rupprich, *Dürer. Schriftlicher Nachlass. Zweiter Band. Die Anfänge der theoretischen Studien / Das Lehrbuch der Malerei; Von der Maß der Menschen, der Pferde, der Gebäude; Von der Perspektive; Von Farben; Ein Unterricht alle Maß zu ändern*, ed. Hans Rupprich, Berlin 1966, 34–39.

23

The canonical discussion of the genesis of Dürer's theoretical writings on anatomy occurs in Erwin Panofsky, *The Life and Art of Albrecht Dürer*, Princeton, NJ 1943, vol. 1, 266–284.

24

A critical edition of Dürer's treatise with commentary is Albrecht Dürer and Berthold Hinz, *Albrecht Dürer. Vier Bücher von menschlicher Proportion (1528). Mit einem Katalog der Holzschnitte*, trans. Berthold Hinz, Berlin 2011.

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On the emergence of *autopsia* and the related terms discussed here, see Gianna Pomata, *Observation Rising. Birth of an Epistemic Genre, 1500–1650*, in: Lorraine Daston and Elizabeth Lunbeck (eds.), *Histories of Scientific Observation*, Chicago/London 2011, 45–80, here 65–66.

the forms of structures Giuliano studied during his own travels in Roman Italy and France.²⁶ With the proliferation of print, archaeologists refined their procedures for translating descriptions of ancient architecture and other antiquities into visual images consistent with their observed models.²⁷

This empiricism colours Ryff's claim that the *Vitruvius Teutsch* figures an "extremely accurate, lifelike counterfeit [*Contrafactur*] image of the true Acanthus, with its growth and the structure of the wreathed perforations or basket [of the Corinthian capital]".²⁸ Clashing the acanthus woodcut as a *Contrafactur*, Ryff aligns the print with a mode of representation also known as the *imago contrafacta*. The term *imago contrafacta* and vernacular derivatives like *Contrafactur* connoted an image either based on first-hand observation or a figure that reproduces such an image; visual proof of experience.²⁹ The category of the *imago contrafacta* came to prominence in the decades before *Vitruvius Teutsch* appeared, as novel technologies of reproduction – print, medal striking, stamping, and even waxwork – saturated the German-speaking lands, complicating notions of archaeological authenticity and artifice as well as the procedures of artistic research.³⁰ Peter Parshall has argued that the epithet *imago contrafacta* leveraged the perceived trustworthiness of the eyewitness account to lend epistemic weight to print and other new media of copying, allowing certain images to claim fidelity to nature even without actually having been made from life.³¹ Ryff's architectural culture had unprecedented use for the category of the *imago contrafacta* because the era's multiplying accounts of antiquity and the natural world had also raised questions about what counted as valid

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Beverly Louise Brown and Diana E. E. Kleiner, Giuliano da Sangallo's Drawings after Ciriaco d'Ancona. Transformations of Greek and Roman Antiquities in Athens, in: *Journal of the Society of Architectural Historians* 42, 1983, 321–335.

27

Christopher S. Wood, Notation of visual information in the earliest archaeological scholarship, in: *Word & Image. A Journal of Verbal/Visual Enquiry* 17, 2001, 94–118.

28

"Gantz eygentliche lebliche Contrafactur des waren Acanthi, sambt seiner wachung und gestalt der geflochten Zänen oder Körblein." Vitruvius/Ryff, *Vitruvius Teutsch*, fol. CXXXV^v.

29

On the *imago contrafacta* in Ryff's world, see Peter Parshall, *Imago contrafacta*. Images and Facts in the Northern Renaissance, in: *Art History* 16, 1993, 554–579; and Kusakawa, *Book of Nature*, 8–19.

30

The impact of technologies of reproduction on artistic research in the German Renaissance is treated in Christopher S. Wood, *Forgery, Replica, Fiction. Temporalities of German Renaissance Art*, Chicago/London 2008. For their effects on architectural culture, see Mario Carpo, *Architecture in the Age of Printing. Orality, Writing, Typography, and Printed Images in the History of Architectural Theory*, trans. Sarah Benson, Cambridge, MA/London 2001.

31

Parshall, *Imago contrafacta*, here esp. 555–560.



[Fig. 7]
Veit Rudolf Specklin (woodblock cutter) after Heinrich Füllmaurer and Albrecht Meyer (draftsmen), *ACANTHVS VERA*. *Welsch bernklaw.*, woodcut illustration to Leonhart Fuchs, *DE HISTORIA STIRPVM COMMENTARII INSIGNES* [...] (Basel: Michael Isingrin, 1542).
Basel, Universitätsbibliothek Basel Lo I 4, p. 52.

architectural evidence.³² When Ryff classifies the *Vitruvius Teutsch* acanthus as an *imago contrafacta*, he is asserting the image's *origins* in nature study and its status as a legitimate source for design, not its status as a life study itself. The acanthus woodcut is not, as we might first believe, an immediate record of architectural nature study. Rather, it is an argument for such hands-on research.

But if Ryff invoked the language of *imago contrafacta* to cast the *Vitruvius Teutsch* print as a purveyor of fact, the facts of the acanthus print prove difficult to establish.³³ We do not know if Ryff made any of the woodcuts for *Vitruvius Teutsch* or the dozens of other books that bear his name or his pseudonym "Q. Apollinaris".³⁴ It appears that multiple artists devised and cut the *Vitruvius Teutsch* blocks; the prints have been variously and diversely attributed to Hans Brosamer (c. 1500–after 1554), Peter Flötner (between 1485 and 1496–1546), Georg Pencz (c. 1500–1550), and Virgil Solis the Elder (1514–1562).³⁵ This is not the place to identify the artist of the still-unattributed acanthus, not least because the notion that this particular design arose from a specific author cannot hold water. Like the woodcuts in most Ryff productions, the acanthus and many other *Vitruvius Teutsch* woodcuts derive from other printed sources and multiple phases of copying.³⁶

Ryff's use of the plagiarized acanthus as an emblem of architectural fieldwork may seem counterintuitive – until we consider its source. Savvy readers could trace the *Vitruvius Teutsch* acanthus design to a pivotal work of sixteenth-century botany: Leonhart Fuchs's 1542 *De historia stirpium (On the History of Plants)* [Fig. 7] (or its German adaptation, the *New Kreüterbuch*, the *New Herbal*, of 1543) – a fact first observed in a modern publication by Heinrich Röttinger.³⁷ A design devised by Albrecht Meyer, transposed to the

32

An influential theory of architectural evidence and imitation before this juncture is Alexander Nagel and Christopher S. Wood, *Anachronic Renaissance*, New York 2010.

33

On the slippery question of originality in Ryff's works, see Alexander Marr, Walther Ryff, Plagiarism and Imitation in Sixteenth-Century Germany, in: *Print Quarterly* 31, 2014, 131–143.

34

Ryff's bibliography is catalogued in Josef Benzing, *Walther H. Ryff und sein literarisches Werk. Eine Bibliographie*, Hamburg 1959.

35

The foundational contribution to the attribution issue is Heinrich Röttinger, *Die Holzschnitte zur Architektur und zum Vitruvius Teutsch des Walther Rivius*, Strasbourg 1914. On the current state of the question in relation to the *Architektur* woodcuts, from which numerous *Vitruvius Teutsch* prints derive, see Marr, Walther Ryff, 140, n. 38.

36

Ryff also recycled images from his previous treatises in new books, though not in the case of the acanthus.

37

The original image is in Leonhart Fuchs, *DE HISTORIA STIRPIVM COMMENTARII INSIGNES, MAXIMIS IMPENSIS ET VIGILIIS ELABORATI, ADIECTIS EARVNDEM VIVIS PLVSQVAM quingentis imaginibus, nunquam antea ad naturæ imitationem, artificiosius effectis & expressis* (Basel: Michael Isingrin, 1542), Munich, Bayerische Staatsbibliothek München Rar. 2036, p. 52. It also appeared in Leonhart Fuchs, *New Kreüterbüch, in welchem*

woodblock by Heinrich Füllmaurer, and carved by Veit Rudolf Specklin, this and other *De historia stirpium* woodcuts consolidated the authority of images in natural history.³⁸ *De historia stirpium* augmented ancient botanical expertise by picturing the normative characteristics of over 500 species in printed images all purportedly deriving from first-hand investigations.³⁹ Fuchs championed *autopsia* in describing the genesis of these woodcuts, bragging, “[...] we had decided to include in our commentaries no history of a plant without its pictures from life [...]”.⁴⁰ Prior botanical tracts, such as Otto Brunfels’s 1530–1536 *Herbarum vivae eicones* (*Lively Images of Plants*), also contained woodcuts allegedly taken from life. The *De historia stirpium* prints differed, though, in eschewing descriptions of individual specimens for canonical images of each species in different developmental stages, synthesized from multiple observations. Fuchs acknowledged the prints’ integral role in his argument, allowing the book’s artists to immortalize themselves in the act of drawing botanical specimens [Fig. 8]. He also extolled how the lucid appearance of the unmodelled prints promoted the accurate portrayal of botanical form.⁴¹ Promising that “Over and over again, we have purposely and deliberately avoided the obliteration of the natural form of the plants lest they be obscured by shading and other artifices that painters sometimes employ to win artistic glory”,⁴² he made an innovative case for the epistemic import of graphic style. Fuchs recognized that to avoid cross-hatching was to set visual legibility and the reporting of pictorial fact above the pleasing artistic bravado of deceptive volumetric effects. Ryff the apothecary may have consulted Fuchs’s books for information on medical botany,

nit allein die gantz histori, das ist, namen, gestalt, statt und zeit der wachung, natur, krafft und wirkung, des meysten theyls der Kreüter so in Teütschen unnd andern Landen wachsen, mit dem besten vleiß beschriben, sonder auch aller derselben wurtzel, stengel, bletter, blümen, samen, frucht, und in summa die gantze gestalt, also artlich vnd kunstlich abgebildet vnd contrafayt ist, das deßgleichen vormals nie gesehen, noch an tag komen (Basel: Michael Isingrin, 1543), Munich, Bayerische Staatsbibliothek München Rar. 2037, Pl. XXIX. See Röttinger, *Holzschnitte*, 29.

38

Agnes Arber, *Herbals, Their Origin and Evolution. A Chapter in the History of Botany, 1470–1670*, Darien CT²1970, here 212–220.

39

Sachiko Kusakawa, The Uses of Pictures in the Formation of Learned Knowledge. The Cases of Leonhard Fuchs and Andreas Vesalius, in: Sachiko Kusakawa and Ian Maclean (eds.), *Transmitting Knowledge. Words, Images, and Instruments in Early Modern Europe*, Oxford 2006, 73–96, here 77–84.

40

“Siquidem cum nullius stirpis historiam sine uiua eiusdem imagineijs nostris cōmentarijs inserere constituissēmus [...]” Fuchs, *De historia stirpium*, sig. a6^v. Translation from Frederick G. Meyer, Emily Emmart Trueblood, and John L. Heller, *The Great Herbal of Leonhart Fuchs. De historia stirpium commentarii insignes, 1542* (*Notable Commentaries on the History of Plants*), Stanford 1999, vol. 1, 212.

41

On Fuchs’s priorities for the qualities of the images, see Sachiko Kusakawa, Leonhart Fuchs on the Importance of Pictures, in: *Journal of the History of Ideas* 58, 1997, 403–427.

42

“De industria uerò & data opera cauimus ne umbris, alijsq. minus necessarijs, quibus interdum artis gloriam affectant pictores, natia herbarum forma obliteraretur [...]” Fuchs, *De historia stirpium*, sig. a6^v. Translation from Meyer et al., *Great Herbal*, vol. 1, 213.



[Fig. 8]

Unknown colourist and Veit Rudolf Specklin (woodblock cutter) after Heinrich Füllmaurer and Albrecht Meyer (draftsmen), *PICTORES OPERIS; SCVLPTOR*, woodcut illustration to Leonhart Fuchs, *DE HISTORIA STIRPIVM COMMENTARII INSIGNES* [...] (Basel: Michael Isingrin, 1542). Glasgow, University of Glasgow Library, Sp Coll Hunterian L.1.13, p. 897, by permission of University of Glasgow Library, Archives & Special Collections.

but Ryff the art director took note of *De historia stirpium*'s pictorial strategy. If *De historia stirpium* mounted a pioneering argument for images as tools of botanical study, *Vitruvius Teutsch* developed a cutting-edge case for botanical images as implements of architectural research.⁴³ What Ryff borrowed from Fuchs was not only an acanthus design, but confidence in representations of first-hand experience as valid sources of knowledge.

Yet the *Vitruvius Teutsch* woodcut is no exact replica of the *De historia stirpium* acanthus, nor even the first copy after the print that Ryff sponsored. Fuchs pilloried Ryff and Ryff's Frankfurt publisher Christian Egenolff for printing *De historia stirpium* designs in Ryff's 1543 edition of Pedanius Dioscorides's *De materia medica*, releasing an "Apologia, by which [Fuchs] refutes the malicious criticism of the sly fox, Walther Ryff", in 1544.⁴⁴ It appears that Ryff's edition of Dioscorides contained the earliest copy of the Fuchs acanthus produced under Ryff's direction, evidently made from an intermediary drawing in a process that reversed the original scheme [Fig. 9]. The copyist who devised the Dioscorides acanthus rendered the figure at about one-third the size of the *De historia stirpium* version, placing the bloom on a wider but shorter stalk of buds, making the tangle of roots more chaotic, and eliminating the outermost leaves visible in the original print [see Fig. 7]. The *Vitruvius Teutsch* acanthus [see Fig. 1], reversed again when evidently copied from this *De materia medica* model or one of its analogues, reincorporates the missing flowers and returns the mature bloom to its hovering position while

43

On Ryff's confidence in the authority of images when used in concert with text, see Michael Gnehm, "Cum auctoritate et ratione decoris". Bildinterpretation in den Vitruv-Kommentaren W.H. Ryffs, in: Frank Büttner and Gabriele Wimböck (eds.), *Das Bild als Autorität. Die normierende Kraft des Bildes*, Münster 2004, 129–156.

44

Leonhart Fuchs, *Apologia LEONHARTI FVCHSII medici, qua refellit malitiosas Gualtheri Ryffii ueterariorum pessimi reprehensiones, quas ille Dioscoridi nuper ex Egenolphi officina procedenti attexit: obiterque quam multas, imò propemodum omnes, herbarum imagines è suis de stirpium historia inscriptis cōmentarijs idem suffuratus sit, ostendit* (Basel: Michael Isingrin, 1544), London, British Library General Reference Collection 1038.a.41.(1). Translation from Kusakawa, *Book of Nature*, 126. On the ensuing fracas, see *ibid.*, 88–90; 125–126. The offending acanthus image is Pedanius Dioscorides, *PEDANII Dioscoridis ANAZARBEI DE MEDICINALI MATERIA LIBRI SEX* [...], trans. Jean Ruel with commentary by Walther Hermann Ryff (Frankfurt am Main: Christian Egenolff, 1543), London, The British Library General Reference Collection 546.l.8., *LIBER TERTIVS*, page marked as p. 305. A similar image occurs in the Egenolff-published *HERBARVM, ARBORVM, FRVTICVM, FRVMENTORVM AC LEGVMINVM. Animalium præterea terrestrium, uolatiliū & aquatiliū, aliorumque quorum in Medicinis usus est, Simplicium, Imagines, ad uiuum depictæ, Vnâ cum nomenclaturis eorundem usitatis* [...] (Frankfurt am Main: Christian Egenolff, 1546), London, The British Library General Reference Collection 546.h.12., p. 10. A truncated version of the *De historia stirpium* acanthus with a different arrangement of leaves meanwhile appears in Leonhart Fuchs, *Leonharti Fuchsij, MEDICI, PRIMI DE STIRPIVM HISTORIA COMMENTARIORVM TOMI utiue imagines, in exiguam angustioresq. formam contractæ, ac quàm fieri potest artificiosissimè expressæ, ut quicunq. rei herbariæ radicitus cognoscendæ desiderio tenentur, eas uel deambulantes uel peregrinantes in sinu cōmodius gestare, adq. natiuas herbas conferre queant* (Basel: J. Bebel, 1545), London, The British Library General Reference Collection 968.g.3, p. 30. A reversed version of the Egenolff acanthus with revised roots surfaced after the publication of *Vitruvius Teutsch* in Hieronymus Bock, *HIERONYMI TRAGI, DE STIRPIVM, MAXIME EARVM, QVAE IN GERMANIA NOSTRA NASCUNTVR, usitatis nomenclaturis, proprijsq. differentijs, necnon temperaturis ac facultatibus, Commentariorum Libri tres* (Strasbourg: s.n., 1552), Edinburgh, University of Edinburgh Main Library Special Collections JA382-383, sig. Kkk vii^r. My gratitude goes to Sachiko Kusakawa for these references.

Acanthus.



Caput XVII.

Acanthus, Romani pæderotam uocant, nascitur in hortis, petrosus, & riguis, folia habet multò lactuca eis latiora, & longiora, eruca diuisura, nigricantia, pinguis, læuia: caulem binum cubitorum, digitali crassitudine, læuem, propè uerticem ex interuallis circumdatum foliis, cui nucamenta quædam oblonga referentibus, spinosis, è quibus flos prodit albus: semè oblongum, luteum: caput thyrsi specie. radicibus nititur longis, mucosis, rubris, & glutinosis: quæ usis igni & luxatis artibus illitæ subueniunt. portæ urinam ciunt, sed alium cohibent, ruptis, conuulsis, tabem sentientibus, mirè profunt. Nascitur & syluestris acanthus, scolyo similis, aculeatus, breuior quàm satiuus, & is qui in hortis prouenit, cuius radix ad eadè ad quæ superior efficax.

NOMINA ET explicatio.

Græcè ἀκανθῶς. ἢ ἀκανθῶς.

Latine Acanthus siue Acantha.

Officina à similitudine, quæ in eius folia cum anterioribus urforum pedibus habent. Brancam urfinam uocant. Ad quam etiam similitudinem, Germani respicientes, Beren Uaw/ Beren ta

pen/Welsch beren tlaw/ nominant, Galli brantze urfine.

Dioscoridis designatio (nec fallor) omnino eam noscitur explicare, cuius nomenclaturam & picturem dedimus, siquidem in quibus sensus folijs extenditur, lactuca longioribus, multò latioribus, ut quæ nonnunquam cubiti longitudinem æquant, pinguis, carnosus, eruce ritu laciniosis, nigro colore nitentibus, caule tripedaneo, digitali crassitudine, læui, cuius uertex foliorum in aculeos molles excuntium cingitur uallo, & uelut in àbiscentem paniculam nucamentum fastigiat. Summitatem scapus erumpit thyrsi figura, flores candidi, semè oblongum, luteum, radicibus oblongis, pinguis, lenis. Hæc folijs liras areorum, puluinos & porcas obuelat: nec alia nobis adhuc uisa fuit, cui descriptio ad amissim magis respondeat.

Hæc non ita esset in aculeatarum censu, nisi foliorum extrema per caulem in spinulis occalescerent & cæ.

Acanthus uel acantha, folijs modicè digerit, radice siccat, incidit, est tenuium partium, emolliendæ aluo mictionibus hodie desinata.

Anonis.

Cap. VIII.

Anonis, quam aliqui ononida appellant, ramos habet fruticosos, do drante maiores, frequentibus geniculis cinctos, cauis alarum multis, capitibus rotundis, folijs lenticulæ pusillis, ad rutæ aut pratensis loti folia accedentibus, subhirsutis, odoratis, non inuicundè olentibus. Muria conditur antè quàm spinosa fiat, cibus gratissima, rami acutioribus spinis, & ueluti spiculis firmioribus horrent, radicem mittit candidam, quæ ex calfacit, & extenuat. huius cortex ex uino potus urinam ciet, calculos comminuit, margines ulcerum erodit, radix cum decoquitur in posca, dolorem dentium collutione mitigat, decoctum eius potum hæmorrhoidas sanare creditur.

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[Fig. 9]

Unknown artist after Heinrich Füllmaurer, Albrecht Meyer, and Veit Rudolf Specklin, *Acanthus*, woodcut illustration to Pedanius Dioscorides, *PEDANII DIOSCORIDIS ANAZARBEI DE MEDICINALI MATERIA LIBRI SEX* [...], with commentary by Walther Hermann Ryff (Frankfurt am Main: Christian Egenolff, 1543). Munich, Bayerische Staatsbibliothek München Res/2 A.gr.b. 512, p. 281, <http://daten.digital-e-sammlung.de/-db/0008/bsb00087764/images/>.

reviving the proportions, if not the large scale, of the *De historia stirpium* design. Yet hatching occurs in both copies, an obfuscating device Fuchs had charged his artists to avoid. The spare, linear acanthus in Fuchs's book eliminates the vagaries of texture, which could differ from specimen to specimen, in order to serve readers intent on identifying acanthus in the wild. The volumetric, haptic effects of Ryff's acanthi court audiences seeking vivid images.

According to Alexander Marr, we can discern a certain "dis-ingenuous ingenuity" in Ryff's plagiarism.⁴⁵ Outfitting his treatise with a "counterfeit" botanical image descended from Fuchs's famous work of nature study, Ryff implies that architecture, like the *Contrafactur* acanthus, can arise either from first-hand research of the kind that produced the original image, or from the imitation of designs *x* degrees removed from nature, like the *Vitruvius Teutsch* acanthus print. Ryff's *Vitruvius Teutsch* acanthus concludes a chain of replication in which each pictorial link has been formulated to serve the priorities of the bibliographic genre in which it occurs.⁴⁶ The acanthus in *De historia stirpium*'s modern botanical corpus [see Fig. 7] resurfaces in translated form within Ryff's Dioscorides [see Fig. 9], a Latin translation of an ancient Greek text on botany. A more poetic adaptation reappears in Ryff's vernacular *Vitruvius Teutsch* [see Fig. 1], destined for art enthusiasts, completing a trajectory of mimetic modes that runs from art emulating nature to art imitating art.

Alois Riegl, in his *Stilfragen* of 1893, would later contend that the ancient acanthus motif first arose not from the observation and imitation of botanical specimens, but from even older palmette ornaments.⁴⁷ It serves to recall Riegl's scepticism about the myths of naturalism when we interrogate Ryff's copying practices. That the *Vitruvius Teutsch* acanthus was not made from life would seem to cheapen Ryff's case for botanical fieldwork in architectural design. And yet print, in Ryff's day, was beginning to outstrip drawing as a preferred means to reliably copy an architectural image: the drafting hand could err, but the printing matrix promised consistency in execution.⁴⁸ In illustrating a counterfeit acanthus derived from a paradigmatic treatise on nature study, *Vitruvius Teutsch* accommodates a culture of architectural research with terms of pictorial

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Marr, Walther Ryff, here 135.

⁴⁶

Here I refer to the processes of serial imitation theorized in George Kubler, *The Shape of Time. Remarks on the History of Things*, New Haven 1962.

⁴⁷

Alois Riegl, *Stilfragen. Grundlegungen zu einer Geschichte der Ornamentik*, Berlin 1893, 212–219.

⁴⁸

Mario Carpo, How Do You Imitate a Building That You Have Never Seen? Printed Images, Ancient Models, and Handmade Drawings in Renaissance Architectural Theory, in: *Zeitschrift für Kunstgeschichte* 64, 2001, 223–233, here 231–233.

authenticity newly forged by the copious copies of the German Renaissance.

II. Callimachus in the Field

At the time *Vitruvius Teutsch* appeared, northern Europe entertained two paradigms of architectural naturalism. Ryff came of age in a milieu dominated by what has been called the North's "Renaissance Gothic" architecture, a style integrating complex tracery and ornate botanical forms, often seemingly derived from life, with the sober proportions of more classicizing design.⁴⁹ From the second decade of the sixteenth century, a more rigorously *Vitruvian* mode of architectural naturalism had begun to inflect this style in the German-speaking lands, promoting the abstract manifestation of natural harmonies over the vivid description of natural forms.⁵⁰ By 1518, the completed Fugger Chapel at St. Anna in Augsburg could align a blind *all'antica* arcade with gothicizing rosettes and prismatic ribbing, alternative means to the common end of naturalistic design [Fig. 10]. Northern Vitruvianism benefitted from the adaptation of *De architectura* into French, Flemish, and German, as well as the North's increasingly intimate tryst with images of antique architecture, at first a long-distance affair conducted for the most part by graphic means, as prints and drawings of classical forms filtered over the Alps and began to breed locally.⁵¹ Northern encounters with Vitruvian architecture invigorated interest in architectural fieldwork as well. Design research had once been a matter of turning to jealously guarded pattern-books or conversations with a seasoned building master. The northern Renaissance's multiplying modes of architectural naturalism and the waxing prominence of print as a driver of that stylistic change spurred authors like Ryff to reprioritize how architects should research design, whether through first-hand study of the world or through secondary sources such as text and images.⁵²

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On this style, see the essays in: Monique Chatenet, Krista de Jonge, Ethan Matt Kavalier, and Norbert Nufsbäum (eds.), *Le gothique de la Renaissance. Actes des quatrième Rencontres d'architecture européenne, Paris, 12–16 juin 2007*, Paris 2011; and Ethan Matt Kavalier, *Renaissance Gothic. Architecture and the Arts in Northern Europe, 1470–1540*, New Haven/London 2012.

50

Henry-Russell Hitchcock, *German Renaissance Architecture*, Princeton 1981, 3. On the rise of Vitruvianism in Germany, see Werner Oechslin, "Vitruvianismus" in Deutschland, in: *Architekt und Ingenieur. Baumeister in Krieg und Frieden* (exh. cat. Wolfenbüttel, Herzog August Bibliothek), ed. by Ulrich Schütte with Hartwig Neumann, Wolfenbüttel 1984, 52–59.

51

Christopher P. Heuer, Northern Imaginative Antiquarianism. The Dismembered Column as Relic and Tool, in: Alina A. Payne (ed.), *Renaissance and Baroque Architecture. The Companion to the History of Architecture, Vol. 1*, Hoboken, NJ 2017, 717–741.

52

On the reorganization of architectural knowledge *vis-à-vis* printed, illustrated books in northern Europe, see Carpo, *Age of Printing*, 81–102.



[Fig. 10]

Unknown architect, *Fugger Chapel*, 1509–1518, St. Anna, Augsburg. Photo
© Elizabeth J. Petcu by permission of the Fürstlich und Gräfllich
Fuggersche Stiftungen and the Evangelisch-Lutherisches Pfarramt St. Anna.

It is against the backdrop of the North's growing commitment to the Vitruvian naturalism of *all'antica* architecture and the new forms of architectural research that print entailed that we can read the text accompanying the acanthus woodcut. This is *De architectura's* origin myth for the Corinthian Order, and Ryff's commentary on that narrative. As in his account of Doric and Ionic columns, Vitruvius related the Corinthian shaft to a human physique, specifically, the body of a young maiden.⁵³ He veered from the formula used for the other Orders, however, by explaining the genesis of the acanthus-laden Corinthian capital as a product of nature study as well. Vitruvius divulged how the sculptor Callimachus encountered the grave of a Corinthian girl adorned by a small bushel containing an acanthus root and covered with a tile. The artist, Vitruvius wrote,

[...] noticed the basket and the fresh delicacy of the leaves enveloping it. Delighted by the nature and form of this novelty, he began to fashion columns for the Corinthians on this model, and he set up symmetries, and thus he drew up the principles for completing works of the Corinthian type.⁵⁴

This tale was recycled *ad nauseam* through the early modern period, for it explained the Corinthian capital as well as the jump from nature research to architectural invention.⁵⁵ Roland Fréart de Chambray's 1650 dichotomy of antique and contemporary Orders, the *Parallèle de l'architecture antique et de la moderne* (or *Parallel of Ancient and Modern Architecture*), even showed Callimachus in the act of drawing the acanthus capital [Fig. 11], mobilizing the classical sculptor-cum-researcher as a cipher for Fréart de Chambray's empirical argument for the superiority of the ancients over the moderns.⁵⁶ Ryff's modern architect emulates Callimachus in the field, seeking inspiration in experience. Equipping readers to follow Callimachus's example, Ryff augments Vitruvius's narrative with advice on identifying the acanthus in the wild: "[...] just so that you know how to recognize the same acanthus that grew around the basket, precisely because this herb is foreign and unknown in German lands, for it does not grow [here] without careful cultivation, which the experienced physicians spare

⁵³

See Vitruvius, *De architectura*, 4.1.8.

⁵⁴

"[...] animadvertit eum calathum et circa foliorum nascentem teneritatem, delectatusque genere et formae novitate ad id exemplar columnas apud Corinthios fecit symmetriasque constituit [et] ex eo in operis perfectionibus Corinthii generis distribuit rationes." Vitruvius, *De architectura*, 4.1.10. Translation from Vitruvius, *Ten Books on Architecture*, 55.

⁵⁵

On the Callimachus narrative, see Payne, *Architectural Treatise*, 43–44.

⁵⁶

On the visualization of this episode in early modern architectural treatises, see Joseph Rykwert, *The Dancing Column. On Order in Architecture*, Cambridge, MA/London 1996, here 321, and 496 n.17.



[Fig. 11]

Attributed to Charles Errard, *Callimachus Invents the Corinthian Capital*, engraved illustration to Roland Fréart de Chambray, *PARALLELE DE L'ARCHITECTURE ANTIQUE ET DE LA MODERNE* [...] (Paris: Edme Martin, 1650). Zürich, ETH-Bibliothek Zürich Rar 221, p. 63, <https://doi.org/10.3931/e-rara-9303>.

no little effort in attempting.”⁵⁷ Ryff also specifies how to distinguish between the acanthus or so-called “foreign bear claw” (*Welschen Bern kloe*) and the “bear claw” (*Bern kloe*) native to the German-speaking realm, a passable substitute for the rare, foreign acanthus.⁵⁸ It is tempting to read these musings on nature’s *ersatz*-acanthus as justification for Ryff’s own copying practices.

Ryff proceeds by instructing architects on how to adapt botanical studies to architectural design. On the one hand, he assures us that the acanthus specimen provides architects with a basis to devise “this artful capital [...] following nature”,⁵⁹ making few alterations to the observed plant’s form. Yet he also permits architects to stylize the specimen’s appearance in a manner illustrated in a previous chapter [Fig. 12], citing ancient precedent: “For the purpose of superior adaptation, the ancient architects split this [acanthus] stem stalk into two parts, one of which extends up to the abacus of the capital, the other of which, by contrast, extends itself with a smaller vortex no further than to the middle of the capital.”⁶⁰ Sebastiano Serlio’s 1551 *Extraordinario libro* has been credited with paradigmatically posing the judicious amendment of architectural models as a key basis for architectural invention.⁶¹ Arriving three years before, *Vitruvius Teutsch’s* approach to the expeditious amendment of botanical models in architectural design anticipates Serlio’s innovation.

Ryff developed *Vitruvius Teutsch’s* sophisticated methodology of architectural nature study amidst a revolution in architectural fieldwork: the rise of rigorous efforts to survey ancient buildings.⁶² Evidence of such first-hand antiquarian research abounds in northern artists’ sketchbooks and albums of drawings made on site, as

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“[...] allein das du wissest das selbig kraut Acanthum zu erkennen, mit welchen das körblein umbwachsen war, und ist zwar solchs kraut in Teutschen landen frembt und unbekant, dan es nit wachsen mag on fleissige pflantzung, welches den erfarnen Medicis nit wenig hat zu schaffen geben.” Vitruvius/Ryff, *Vitruvius Teutsch*, fol. CXXXV^r.

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Vitruvius/Ryff, *Vitruvius Teutsch*, fol. CXXXV^{r-v}. Ryff likely gleaned these insights from Fuchs, who illustrated and explained the difference between the true acanthus and the German “bear claw” in Fuchs, *De historia stirpium*, pp. 51–54.

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“[...] dise künstliche Capiteel in solchē der natur zu volgen.” Vitruvius/Ryff, *Vitruvius Teutsch*, fol. CXXXV^r.

60

“[...] aber umb merer bequemheit wegen, ist diser stengel von den alten Bawmeistern in zwey theil getheilet worden, Der ein windet sich bis zu oberst unter die platten des Capiteels, Der ander aber erstreckt sich mit den kleinern wyrblein nit weiter dan in mitte des Capitals.” Ibid. The passage adapts the advice to render the capital in three parts in Vitruvius, *De architectura*, 4.1.12.

61

On Serlio and the “reform” of architectural models, see Mario Carpo, *La maschera e il modello. Teoria architettonica ed evangelismo nell’Extraordinario Libro di Sebastiano Serlio (1551)*, Milan 1993.

62

The literature on this topic is too vast to encapsulate here. For a recent summary with extensive bibliography, see Carolyn Yerkes, *Drawing after Architecture. Renaissance Architectural Drawings and Their Reception*, Venice 2017.



[Fig. 12]
Unknown artist after Agostino dei Musi, *Foliata ornament*, woodcut illustration to Vitruvius/Walther Hermann Ryff, *Vitruvius Teutsch* [...] (Nuremberg: Johann Petreius, 1548). Einsiedeln, Stiftung Bibliothek Werner Oechslin A04d ; D2, fol. CXIII^r © Stiftung Bibliothek Werner Oechslin, Einsiedeln.

well as in paintings that allegorize such investigations.⁶³ One thinks here of the ruinscape that Herman Posthumus (c. 1512 – after 1566) made at Rome in 1536 before migrating to Landshut, in Ryff's South German stumping grounds, around 1540 [Fig. 13].⁶⁴ Posthumus places his main protagonist, a minute, turbaned figure measuring a column base, amongst a fantastic assemblage of theatres, baths, grottoes, temples, and archaeological bric-a-brac ostensibly drawn from the painter's own encounters with antiquity. These ruins are set within the sweeping, craggy terrain and bluish atmosphere of a Netherlandish world landscape. Tellingly, the architecture teems with botanical specimens; Posthumus's crumbling reinterpretation of the dome of Santa Costanza practically heaves under the weeds. Obscuring the architectural forms, the plants vie with the ruins for prominence as the architect's source material.

Ryff promoted the fashion for scrutinizing classical ruins first-hand with his 1547 *Der fünff maniren der Colonen* (*The Five Manners of Columns*), published within a year of his *Vitruvius Teutsch* and *Architectur* by the same Nuremburg press.⁶⁵ Comprising a mere five woodcuts and a single page of text, *Der fünff maniren* arranges a battery of architectural fragments (some lifted from Serlio's 1540 volume on antiquities, the *Terzo libro*) into a streamlined selection of bases, capitals, friezes, cornices, architraves, and columns.⁶⁶ The accompanying key nevertheless denies the images' pirated origins, instead marshalling the rhetoric of eyewitness to describe the architectural sources. In a reference to the half-elevation of a capital from the Pantheon in the centre of one print, labelled "3" [Fig. 14], Ryff explains that, "[...] these capitals are seen (*werden gesehen*) in Rome in the estimable work of S. Maria rotunda, and tread far outside the rules and teachings of Vitruvius [...] but are nevertheless

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For instance, on the precocious case of Jan Gossart in Rome, see Ethan Matt Kavalier, Gossart as Architect, in: Maryan W. Ainsworth (ed.), *Man, Myth, and Sensual Pleasures. Jan Gossart's Renaissance. The Complete Works* (exh. cat. New York, Metropolitan Museum of Art), New York/New Haven/London 2010, 31–43, here 33–34. On northern ruins and landscapes in period sketchbooks, see Christopher P. Heuer, On the Peripatetics of the Sixteenth-Century Sketchbook, in: Piet Lombaerde (ed.), *The Notion of the Painter-Architect in Italy and the Southern Low Countries*, Turnhout 2014, 149–160.

64

See Nicole Dacos, Hermannus Posthumus. Rome, Mantua, Landshut, in: *The Burlington Magazine* 127, 1985, 427 and 433–438.

65

Walther Hermann Ryff, *Der fünff maniren der Colonen, sampt aller derselbigen zierung von Possament, Basen, Capiteelen, Cornizen oder Architraben: mit allen jren vnter scheidnen glydern mancherley Gesimps augenscheinliche exempeln, von den aller ältesten berümbtestē Antiquischen wercken, so aus rechtem grundt vnd verstandt, der lehr Vitruuij, zu Rom vnd durch gantz Italliam, im Werck gesehen werden, ersucht, und fleissig in gerechter maß vnnd proportion verjüngt* (Nuremberg: Johann Petreius, 1547), Berlin, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Abteilung Historische Drucke 4^{er} Ny 9349/70 : R, <http://resolver.staatsbibliothek-berlin.de/SBB0000286F00000000> (24.03.2019).

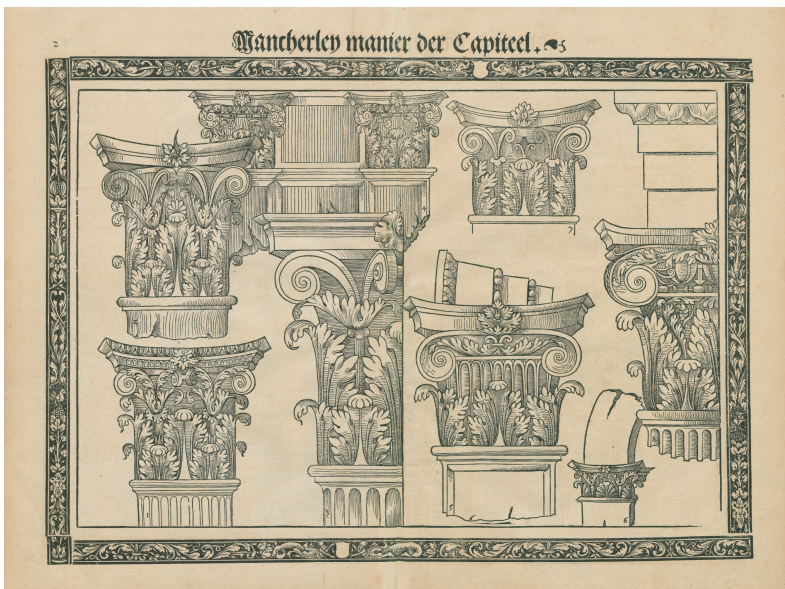
66

Michael J. Waters, A Renaissance without Order. Ornament, Single-Sheet Engravings, and the Mutability of Architectural Prints, in: *Journal of the Society of Architectural Historians* 71, Special Issue on Architectural Representations 2, 2012, 488–523, here 511.



[Fig. 13]

Herman Posthumus (1512–1566), *Landscape with Roman Ruins*, 1536. Liechtenstein, The Princely Collections – Vaduz-Vienna, oil on canvas, 96.0 × 141.0 cm, Inv.: GE 740 © 2020. LIECHTENSTEIN. The Princely Collections, Vaduz-Vienna / © Photo SCALA, Florence.



[Fig. 14]

Unknown artist after Sebastiano Serlio, *Various Manners of Capitals*, woodcut illustration to Walther Hermann Ryff, *Der fünff manieren der Colonen* [...] (Nuremberg: Johann Petreius, 1547). Berlin, Staatsbibliothek zu Berlin – PK, Abteilung Historische Drucke, Signatur: 4^o Ny 9349/70 : R, fol. 2^r, <http://resolver.staatsbibliothek-berlin.de/SBB0000286F00000000> © bpk / Staatsbibliothek zu Berlin.

regarded to be the loveliest and best capitals in all of Rome".⁶⁷ Flagging the discrepancy between the text of *De architectura* and actual observations of antiquity, Ryff frames the first-hand study of architecture as a vital addendum to Vitruvius, a tactic perhaps aimed at pushing copies of *Der fünff maniren* to supplement his Vitruvian treatises. But while *Der fünff maniren* poses as antiquarian reportage, it also offers itself as a tool of such investigations. Printed in quarto format, the book fit under the crooked arm of the architect roving from the workshop to an archaeological or building site and back, ready for him to consult its images in the acts of architectural research, design, and construction. In 1545, Fuchs had likewise released *Primi de stirpium historia commentariorum* (*Foremost Commentaries on the History of Plants*), an epitome of his *De historia stirpium*, in a more portable octavo format, creating a handbook version of his great herbal that botanists could consult in the field.⁶⁸ As a slim companion to his Vitruvian tomes, Ryff's *Der fünff maniren* supplied a similar field guide to ancient architecture.

It has been said that the early modern era regarded antiquities, unearthed as if in an archaeological harvest and often displayed alongside *naturalia*, as products of nature.⁶⁹ *Vitruvius Teutsch* projects the adjacent idea that the study of antique ruins and the study of plant life constitute complementary facets of architectural fieldwork. Ryff's remarks on the observation of plants take cues from the evolving culture of first-hand research on ancient building. Paraphrasing Vitruvius's account of Cretan sites in a passage likewise joined by a print [Fig. 15] derived from an image in Fuchs's *De historia stirpium*,⁷⁰ Ryff notes:

[...] on this Island about one hundred cities were built and maintained, including the noble and wondrous Labyrinth [...], which is still in this time to be found broken and ruined. On this Island the ancient physicians noticed through many observations a healthy disposition, for in certain places the livestock [graze upon] woad, which completely discharges the spleen, and therefore, as Vitruvius reports, is found and used as Spleenwort[,] *Asplenium* [...] Of such a Spleenwort

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"Dise Capiteel werden gesehen zu Rom am trefflichen werck S. Maria rotunda, tretten weidt aus der Regel und lehr Vitruuij [...] werden aber doch nit desto weniger für die aller schönsten uñ besten Capiteel in gantz Rom geachtet." Ryff, *Der fünff maniren der Colonen*, fol. 6^r.

68

Fuchs, *Primi de stirpium historia commentariorum*. See Kusukawa, *Book of Nature*, 131.

69

Horst Bredekamp, *The Lure of Antiquity and the Cult of the Machine. The Kunstammer and the Evolution of Nature, Art and Technology*, trans. Allison Brown, Princeton 1995, 11.

70

Fuchs, *De historia stirpium*, p. 294; also Fuchs, *New Kreüterbuch*, Pl. CLXV. See Röttinger, *Holzschnitte*, 29.

Von der Architectur / das .4. Cap. XXXVII

den trefflichen wunder gebew des Labirinthen oder Yrrgarehē / so noch diser zeit zerbrochen vnd zerfallen gespürt wird / in diser Insel haben die alten Arzte auß oberzelter auffmerckūg gesunder stat wargenomen / das an etlichen ortē das vihe von der waid / des milkes genli chen entledigt worden ist / daher wie Vitruuius meldet das Milkkraut Asplenum erfunden vnd auffbrachte / daß man das vihe so dieses kraut waidet on milks gefunden hat / wurde daraus gemutmasset das solchs kraut dz auff geschwollen milks ringern vñ kleinern solt / solches Milkkrauts hastu hie bey ein contrasac tur / wie es bey vns Teutschen wechft.

Gleicher gestalt als Vitruuius schreibt / dz vñ diesem kraut dem vihe dz milks verschwinde / vñ geringert werde / also hat man auch warge nomen bei denē thieren so von Schindern auf erzogen werden / das inen solcher gestalt das milks auch verzeret wird wann sie das wasser auß dem leischstrog trincken / darin das gluend eyßen abgesechet wirt / darumb das gestehet wasser in quellung des milkes von Cornelio Celso in sonderheit hoch gelobe wird / wie daß auch von den warmen Wasseren so durch die adern des Eyseners fließen mag verstanden werde. Weiter setzt Vitruuius zu besetzung

seiner furgenomenen red ein crempel der Gallischen gemöß / wie bey der Stat oder Flecken Alcinum / welches als man sagt vor vil jaren ein Stelein gewesen / auff vierzehen Welscher meyl von Benedig / wie dann ein Castell an solchem ort noch heutigs tags den namen behalten / solcher gestalt werden auch noch diser zeyt die Pfügen vñ bech im Bistumb Pavia gesehe im Comacier thal / vnd vmb Polesimo vnd Rouicho in der Ferrarischer her schafft / welches Thal sich durch gar mancherley krümmen an das gestat des Meers begibt gegen Benedig vnd Rauenna zu. So ist Aquilegia die scheidung Italie vnd Gallie / diser seyt der Alpen / welche Stat sambt dem Patriarchat die Benediger inhaben / Aber in der Herr schafft Ferrar sind solcher wag oder stillstehender Wasser / so wir billichen Sumpff nennē vast vil die gar fein außgang haben / sonder wachsen vom Regen / aber von schönē Wetter nemen sie wider ab / solche pfügen vñnd sumpffige ort sind nit allein des bösen schedlichen dampffs / den sie von sich geben / denen so in der nehe wonen vnd iren lufft vñ athem dauon schöpffen / schedlich vñnd tödtlich / sonder machen auch die weg vñnd straffen vn sicher / dieweil sich die mörder / rauber vñnd dieb in solchē sumpffen im Kōr vñnd gewechs verstecken vñnd verhalten mögen / wie dann Plinius in sonderheit von der Pontinischen pfügen oder solchem sumpff im Römer gebiet gelegen klarlichen schreibt . Dieweil nun nach der anzey gung Vitruuij gar vil von nöten mit höchstem fleiß auff zumercken / warzunemen / vñd erkündigen in erwelung gesundes vnman gelhafftiges ortes vñnd gegent / so aller oberzelter man gel vnstreffliche / sollen sich Fürsten vñnd Herren vñnd alle die so diser zeit erwo herliche gebew furnemen zubawen vñnd auffrichten / vorhin ein gute zeyt nit allein mit iren Rehten vñd Consiliarien / sonder auch mit den natürlichen Philosophen / Astrologern vñd erfarnen Baumeystern berathschlagten / wie solcher baw fur zunemen sey / damit man nit sprechen

Hemionitis, Phillitis, Lingua Ceruina
Hirschzüg, Asplenon, Scolopendrium,
Ceterach, Welsch Milkkraut.



[Fig. 15]

Unknown artist after Heinrich Füllmaurer, Albrecht Meyer, and Veit Rudolf Specklin, *Welsch Miltzkraut*, woodcut illustration to Vitruvius/Walther Hermann Ryff, *Vitruvius Teutsch* [...] (Nuremberg: Johann Petreius, 1548). Einsiedeln, Stiftung Bibliothek Werner Oechslin, A04d ; D2, fol. XXXVII^r © Stiftung Bibliothek Werner Oechslin, Einsiedeln.

you have here a *Contrafactur*, as it grows among us Germans.⁷¹

Moving fluidly from the Labyrinth to the spleenwort, Ryff aligns antiquity and botany as subjects of a single research outing. Because Ryff and other northern architecture experts operated at a remove from a contiguous landscape of classical ruins, they had keen incentives to invent an alternative to the mode of architectural fieldwork embodied in the first-hand investigation of antiquity. *Vitruvius Teutsch's* concept of architectural nature study met that need.

Crucially, Ryff's account of architectural nature study also promotes the Vitruvian idea that architecture entails medical knowledge. Speaking of the counterfeit acanthus print, Ryff explains he illustrated the plant "[...] not only so that the artful architect might recognize and draw it [in the field], but also for its varied, useful applications in medicine".⁷² As a medical practitioner and author of both medical texts and architectural literature, Ryff embodied the Vitruvian ideal of dual architectural and medicinal expertise, but he also innovated on that ideal.⁷³ While Vitruvius had suggested that medical knowledge allowed the architect to determine healthy sites and orientations for buildings, Ryff discerned parallels between architecture and medicine in their common use of botany, and their shared observational practices.

Ryff concludes the spleenwort passage by insisting that architectural mastery demands first-hand study of the world. He asserts:

In order for the *Architectus* to be sufficiently experienced [in such things], it is not only necessary for him to hold these rules firmly in [his] memory, and likewise to know well the old histories and such that Vitruvius [tells] of this place, and how they truly transpired [.]. Rather, it will also be necessary that [the architect] have seen the old buildings and diverse, artful works that the ancient building-masters [*Bawmeistern*] erected with great understanding and care, [and] that he does not merely stay behind the hearth, as they say, but instead in various countries and foreign nations, learns and brings to realization the full scope of this art, so that he can

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"Dann in diser Insel 100 Stet etwan erbawt und bewaret gewesen, sambt den trefflichen wunder gebew des Labirinthen oder Yrrgarthē, so noch diser zeit zerbrochen und zerfallen gespürt wird, in diser Insel haben die alten Artzt auß oberzelter auffmercküg gesunder stat wargenomen, das an etlichen ortē das vihe von der waid, des miltzes gentzlichen entledigt worden ist, daher wie Vitruuius meldet das Miltzkraut Asplenum erfunden und auffbracht [...] hastu hie bey ein contrafactur, wie es bey uns Teutschen wechst." *Vitruvius/Ryff, Vitruvius Teutsch*, fols. XXXVI^r–XXXVII^r.

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"[...] nit allein dem kunstreichem Architecto zu eygentlicher erkandnuß auffreissen wöllen, sonder auch zu mancherley nutzlichem gebrauch in der artzney." *Ibid.*, fol. CXXXV^r.

73

On the intersections of architectural and anatomical expertise in Renaissance Strasbourg, see Elizabeth J. Petcu, *Amorphous Ornament*. Wendel Dietterlin and the Dissection of Architecture, in: *Journal of the Society of Architectural Historians* 77, 2018, 29–55; on Ryff's acanthus in this context, see *ibid.* 42.

verify his rhetoric not only on the basis of writings, but also on the examples of eyewitness.⁷⁴

In charging architects not only to read, but to probe modern monuments and ancient ruins in person – no modest task for many northerners – Ryff frames architectural expertise as a result of integrating book learning with first-hand investigations. In so combining theoretical and empirical knowledge, the architect, like the botanist, garners insight capable of sustaining the rhetoric of learned argument.

III. Index and *Autopsia*

In the wake of *Vitruvius Teutsch*, architecture books across Europe pictured plants and animals as observed specimens, framing nature study as a normative facet of architectural design. Giovanni Antonio Rusconi filled his *Della Architettura*, a *De architectura* commentary composed around mid-century but published posthumously in 1590, with botanical prints to illustrate Vitruvius's remarks on woods for construction, the origins of the Corinthian capital, and plants used for pigment.⁷⁵ However, like the *Vitruvius Teutsch* acanthus, most such images in fact arose through copying. For instance, Juan de Arfe y Villafañe illustrated his 1585 *DE VARIA COMMENSURACION PARA LA ESCULPTURA, y Architectura (On Various Proportions for Sculpture and Architecture)* with a copy of the 1515 *Rhinoceros* and other creatures from Dürer's graphic oeuvre [Fig. 16].⁷⁶

Like Ryff, these authors admitted to the mediated status of the nature studies that filled their tracts. De L'Orme's *Premier Tome de l'Architecture (First Book on Architecture)* pictures a stalk the author claims to have personally copied from an ancient frieze at the Roman garden of Cardinal de Gady [Fig. 17], asserting:

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“Damit aber in solchen Sachen der Architectus gnugsam erfahren sey, ist im nit allein von nôtē dise Reglen wol in gedechtnuß zufassen, desgleichen alter Hystorien wie sich solchs und anders so Vitruuius dise orts erzelet zutragen und warhaftig verlossen hat gut wissen zuhaben, sonder im wirt auch von nöten sein, das er die alten gebew uñ mancherley künstliche werck von alten Bawmeistern mit grossem verstand und fürsichtigkeit auffgericht, gesehen hab, darumb er nit wie man spricht hinder dem ofen sonder in mancherley land und frembder Nationen die volkommenheit diser knnst erlernen und zuwegen bringen muß, damit er nit allein auß den schrifftten sonder augenscheinlichen exempeln sein red bestettigen mög [...]” Vitruvius/Ryff, *Vitruvius Teutsch*, fol. XXXVII’.

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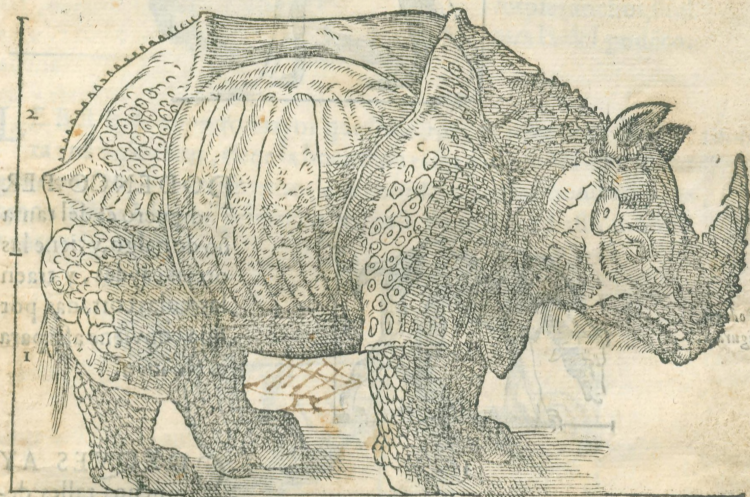
Giovanni Antonio Rusconi, *DELLA ARCHITETTURA DI GIO. ANTONIO RVSCONI, Con Centosessanta Figure Dissegnate dal Medesimo. Secondo i Precetti di Vitruuio, e con chiarezza, e breuità dichiarate LIBRI DIECI. Al Serenissimo Sig. Duca d’Vrbino* (Venice: I Giolitti, 1590), Edinburgh, National Library of Scotland Nha.M79, pp. 41–44, 71, 114–116. On Rusconi's book, see Gábor Hajnoczi, *Un traité vitruvien. Le Della Architettura de Giovan Antonio Rusconi*, in: Jean Guillaume (ed.), *Les traités d'architecture de la Renaissance. Actes du colloque tenu à Tours, du 1er au 11 juillet 1981*, Paris 1988, 75–81.

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On de Arfe y Villafañe's appropriations from Dürer, see Maria Portmann, *L'image du corps dans l'Art espagnol aux XVIe et XVIIe siècles. Autor du "Libro Segundo" de Juan de Arfe y Villafañe (1585)*, Bern 2014, 125–155.

ANIMALES TIT. II.

sobre la nariz y los pies con tres de dos, el talle es como lechon, el color pardo, otros animales de cuernos ay, pero por no los aver visto vi vos no tratamos dellos, que la noticia de escritores antiguos, no es bastante para saber la forma y grandeza suya, que es el fin nuestro.



CAPITVLO QVARTO, TRATA DE

los perros, contiene seys figuras.

Los perros son de formas diferentes galgos, podencos, gozques, y mastines
 Otros que en agua cortan las corrientes
 otros lebreles que ay para otros fines
 Todos ellos offenden con los dientes
 y ladrando con todos son malsines,
 Mas son para sus amos mas leales
 que son todos los otros animales.

EL GALGO ES
 perro ligero y que
 corre mucho, tiene la
 cola larga y enroscada,
 y los pies d tras largos,
 el cuerpo delgado, su
 altura tres quartas de
 vara, es mortal enemi-
 go de las liebres.

podenco

[Fig. 16] Juan de Arfe y Villafañe, *Rhinoceros*, woodcut illustration to *DE VARIA COMMENSURACION PARA LA ESCVLPTVRA, y Architectura*. [...] (Seville: Andrea Pescioni, y Juan de Leon, 1585). London, The Wellcome Library, Wellcome Collection, 396/D, LIBRO TERCERO fol. 8^r.



[Fig. 17]
Stalk from an ancient frieze at the garden of Cardinal de Gady,
woodcut illustration to Philibert de l'Orme's *LE PREMIER TOME DE
L'ARCHITECTURE* [...] (Paris: Frederic Morel, 1567), Bern, Universitätsbiblio-
thek Bern, MUE Bong IV 783, fol. 214^v, <http://dx.doi.org/10.3931/e-rara-15161>.

Therefore, this sprig of leaves will serve to teach and give a start to those who will want to know the splits of leaves and foliage, where it is necessary to have the judgement to know the nature of the curvature and shade, to bring them out in representation; and also to know how to represent and carve [the plant] in stone, imitating the natural as best as possible.⁷⁷

Offering a print of a carving of a plant as a model for architectural foliage some degrees removed from life, de L'Orme explicitly celebrates a form of nature study by proxy that is merely evoked in Ryff's counterfeit acanthus. Such acknowledgement of the gulf between nature and building, however, begged the question: could architecture ever mediate a first-hand experience of nature? Up to this point, we have been concerned with the *processes* Ryff and his contemporaries developed for pursuing architectural nature research. However, the products of these pursuits – architectural naturalism – also mattered.

The problem of architectural (non)verisimilitude to nature dogs a canonical example of the epistemic image, the British Museum sheet with a Flemish copy of Dürer's *Rhinoceros* and a French inscription on one side [Fig. 18], and an etching of a mausoleum from Jacques Androuet Du Cerceau the Elder's *Temples à la manière antique* from circa 1550 on the other [Fig. 19].⁷⁸ Originating from an album in the collection of Sir Hans Sloane, the sheet was likely assembled in the second half of the sixteenth century.⁷⁹ More striking than the seemingly strange conjunction of rhino and temple, though, are the diverse nature prints – that is, impressions made from unaltered *naturalia* – covering recto and verso, indexes of a

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“Doncques ce bouillon de feuilles seruira pour apprendre & donner commencement à ceux qui voudront scauoir les refentes de feuilles & feuillages : ou il faut auoir le iugement de cognoistre la nature du destour et vmbre, pour la releuer en protraicture: & aussi pour scauoir cognoistre comme il la faut représenter & tailler en pierre, imitant le naturel au mieux que faire se peult.” Philibert de l'Orme, *LE PREMIER TOME DE L'ARCHITECTURE* (Paris: Frederic Morel, 1567), Munich, Bayerische Staatsbibliothek München Res/2 A.civ. 111 k, fol. 214^r.

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This impression of the *Rhinoceros* is treated in Aaron Wile, Unknown artist after Albrecht Dürer, German, 1471–1528, and Hans Lieftrinck the elder, Netherlandish, c. 1518–1573, *Rhinoceros*, c. 1550; in: *Prints and the Pursuit of Knowledge in Early Modern Europe* (exh. cat. Cambridge, MA, Harvard Art Museums), ed. by Susan Dackerman, New Haven/London 2011, 180. Du Cerceau's series is dated in Peter Fuhring, *Catalogue sommaire des estampes*, in: Jean Guillaume with Peter Fuhring (eds.), *Jacques Androuet du Cerceau. “Un des plus grands architectes qui se soient jamais trouvés en France”* (exh. cat. Paris, Musée des Monuments français), Paris 2010, 301–321, here 313.

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On the album's provenance and assembly, see Giulia Bartrum, Anonymous, Flemish, after Dürer, *Rhinoceros*, mid–16th Century; in: *Albrecht Dürer and His Legacy. The Graphic Work of a Renaissance Artist* (exh. cat. London, the British Museum), ed. by Giulia Bartrum, London/Princeton 2002, 287. For Sachiko Kusakawa and Michael Waters's identification of the Du Cerceau print, see *Rhinoceros (Rhinoceros)*, *The British Museum Collection online*: http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=1342292&partId=1&searchText=1928,0310.98&page=1 (30.01.2018).



[Fig. 18]
Anonymous printmaker after Albrecht Dürer, Hans Liefrinck the Elder (publisher), and unknown nature printmaker and colourist, *Rhinoceros (Rhinoceros)*, hand-coloured woodcut and letterpress c. 1550, assembly of sheets and inked impressions of plants after c. 1550, 26.1 × 41.3 cm. London, The British Museum 1928,0310.98 recto © The Trustees of the British Museum. All rights reserved.



[Fig. 19]

Jacques Androuet Du Cerceau the Elder and unknown nature printmaker, *Elevation of a mausoleum, surrounded by impressions of inked leaves*, etching c. 1550, assembly of sheets and inked impressions of plants after c. 1550, 26.1 x 41.3 cm. London, The British Museum 1928,0310.98 verso © The Trustees of the British Museum. All rights reserved.

direct experience of plant life.⁸⁰ Ryff's contemporaries discerned something architectural about nature prints; Gerolamo Cardano even compared the compartmentalized, cellular impressions left by nature prints to "[...] vestiges similar to an *ichnographia* [...]",⁸¹ an architectural ground plan.⁸² Whether architecture could match the nature print's status as an index of life was another story.

Consorting with a rhinoceros and an ancient mausoleum, the Sloane sheet's nature prints eschew the genre's conventional ambitions as a substitute for botanical drawings or preserved specimens. In a compelling analysis of the recto side, Susan Dackerman proposed that the leaf prints identify the *Rhinoceros*, with its woodblock-like armour, as an "indexical fantasy", a dream of xylography as a direct, unmediated impression of nature as well as the artistic imagination.⁸³ The Du Cerceau etching and its botanical addenda, omitted from most interpretations of the sheet, complicate this reading. If the printed leaves accompanying the *Rhinoceros* position the woodcut as an index of nature, the inky foliage adorning Du Cerceau's mausoleum proposes that architecture, too, descends from brushes with living forms. Yet the etched edifice differs from the *Rhinoceros* in its refusal to echo the structures and textures of the nature prints. Du Cerceau's pristine, geometrical house of death stands aloof from the wild impressions that adorn it. As a result, the Sloane sheet imagines a direct, indexed form of architectural naturalism untenable for building but accessible to graphic architecture. Ryff's counterfeit acanthus, many times removed from its living, botanical subject, indulges a similar vision. Using print to fake architectural fieldwork even as he urges architects to probe nature first-hand, Ryff invents a rhetoric of architectural eyewitness, *autopsia*, that might overcome the medium's failure to record a direct experience of nature as the indexed nature print could.⁸⁴

More than the crisis of architectural naturalism challenged Ryff and his colleagues to augment the scope of architectural research so that it would encompass nature study. The advent of print as well as

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Nature printing in fifteenth to seventeenth-century continental Europe is treated in Roderick Cave, *Impressions of Nature. A History of Nature Printing*, New York/London 2010, 21–35.

81

"Herba virens imprimitur chartæ, vt vestigium quasi ichnographia remaneat [...]" Gerolamo Cardano, *HIERONYMI CARDANI MEDIOLANENSIS MEDICI, DE SVBTLITATE LIBRI XXI. NVNC DEMVM ab ipso autore recogniti atque perfecti* (Lyon: G. Rouillé, 1554), Glasgow, University of Glasgow Library Sp Coll Ferguson Ag-d. 103, p. 517.

82

See Kusakawa, *Book of Nature*, 37–38.

83

Susan Dackerman, *Dürer's Indexical Fantasy. The Rhinoceros and Printmaking*, in Dackerman et al., *Prints and the Pursuit of Knowledge*, 164–171.

84

On the imperfect, shifting links between art and empirical observation in the era after Ryff, see Svetlana Alpers, *The Studio, the Laboratory, and the Vexations of Art*, in: Caroline A. Jones and Peter Galison (eds.), *Picturing Science, Producing Art*, New York/London 1998, 401–417.

architectural treatises, academies, and other institutions of architectural knowledge raised questions about the relative value of direct and indirect experience – of nature or any other model for building – in the formation of architectural expertise. Ryff knew this well. We have no evidence that the author ever practised as an architect, but he was nonetheless far from alone amongst the non-practitioners who became dominant voices of Renaissance architectural discourse. The wave of *De architectura* translations and commentaries produced in the author's lifetime made such figures as Ryff and Jean Martin, scholar-translators lacking experience in building practice, among the most influential players in the architectural culture of the period. Yet in an era when artisans were coming to play an ever more crucial part in advancing learned knowledge, non-architect authors like Ryff experienced pressure to match the empirical insights that tradesmen brought to architectural debates.⁸⁵ With the *Vitruvius Teutsch* acanthus and its philosophy of architectural nature study, the architectural knowledge of non-practitioners like Ryff found a place alongside the *savoir faire* of architects and builders.

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For the thesis that artisans played a key role in the rise of empiricism, see Edgar Zilsel, The Sociological Roots of Science, in: *American Journal of Sociology* 47, 1942, 544–562, here 551–558. A recent response is Pamela O. Long, *Artisan/Practitioners and the Rise of the New Sciences, 1400–1600*, Corvallis, OR 2011.