De materia medica

De materia medica (Latin name for the Greek work Περὶ ὕλης ἰατρικῆς, *Peri hulēs iatrikēs*, both meaning "On Medical Material") is a pharmacopoeia of medicinal plants and the medicines that can be obtained from them. The five-volume work was written between 50 and 70 CE by Pedanius Dioscorides, a Greek physician in the Roman army. It was widely read for more than 1,500 years until supplanted by revised herbals in the Renaissance, making it one of the longest-lasting of all natural history books.

The work describes many drugs known to be effective, including aconite, aloes, colocynth, colchicum, henbane, opium and squill. In all, about 600 plants are covered, along with some animals and mineral substances, and around 1000 medicines made from them.

De materia medica was circulated as illustrated manuscripts, copied by hand, in Greek, Latin and Arabic throughout the mediaeval period. From the sixteenth century on, Dioscorides' text was translated into Italian, German, Spanish, and French, and in 1655 into English. It formed the basis for herbals in these languages by men such as Leonhart Fuchs, Valerius Cordus, Lobelius, Rembert Dodoens, Carolus Clusius, John Gerard and William Turner. Gradually these herbals included more and more direct observations, supplementing and eventually supplanting the classical text.

Several manuscripts and early printed versions of *De materia medica* survive, including the illustrated Vienna Dioscurides manuscript written in the original Greek in sixth-century Constantinople; it was used there by the Byzantines as a hospital text for just over a thousand years. Sir Arthur Hill saw a monk on Mount Athos still using a copy of Dioscorides to identify plants in 1934.

Contents

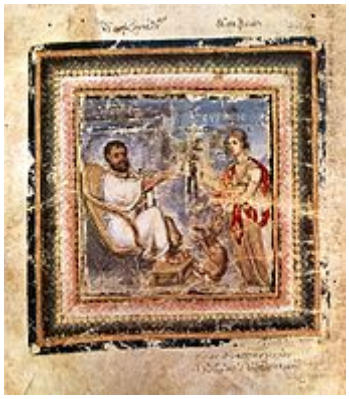
De materia medica

Cover of an early printed version of *De materia medica*. Lyon, 1554

Author	Pedanius Dioscorides
Country	Ancient Rome
Subject	Medicinal plants, drugs
Publication date	50–70
Pages	5 volumes
Text	*De materia medica* at Wikisource

Book

Between 50 and 70 AD, a Greek physician in the Roman army, Dioscorides, wrote a five-volume book in his native Greek, Περὶ ὕλης ἰατρικῆς (*Peri hules iatrikēs*, "On Medical Material"), known more widely in Western Europe by its Latin title *De materia medica*. He had studied pharmacology at Tarsus in Roman Anatolia (now Turkey).[1] The book became the principal reference work on pharmacology across Europe and the Middle East for over 1500 years,[2] and was thus the precursor of all modern pharmacopoeias.[3][4]



Dioscorides receives a mandrake root. *Vienna Dioscurides* manuscript, early sixth century

In contrast to many classical authors, *De materia medica* was not "rediscovered" in the Renaissance, because it never left circulation; indeed, Dioscorides' text eclipsed the Hippocratic Corpus.[5] In the medieval period, *De materia medica* was circulated in Latin, Greek, and Arabic.[6] In the Renaissance from 1478 onwards, it was printed in Italian, German, Spanish, and French as well.[7] In 1655, John Goodyer made an English translation from a printed version, probably not corrected from the Greek.[8]

Blackberry. *Vienna Dioscurides*, early sixth century

While being reproduced in manuscript form through the centuries, the text was often supplemented with commentary and minor additions from Arabic and Indian sources. Several illustrated manuscripts of *De materia medica* survive. The most famous is the lavishly illustrated Vienna Dioscurides (the *Juliana Anicia Codex*), written in the original Greek in Byzantine Constantinople in 512/513 AD; its illustrations are sufficiently accurate to permit identification, something not possible with later medieval drawings of plants; some of them may be copied from a lost volume owned by Juliana Anicia's great grandfather, Theodosius II, in the early 5th century.[9] The Naples Dioscurides and Morgan Dioscurides are somewhat later Byzantine manuscripts in Greek, while other Greek manuscripts survive today in the monasteries of Mount Athos. Densely illustrated Arabic copies survive from the 12th and 13th centuries.[10] The result is a complex set of relationships between manuscripts, involving translation, copying errors, additions of text and illustrations, deletions, reworkings, and a combination of copying from one manuscript and correction from another.[11]

De materia medica is the prime historical source of information about the medicines used by the Greeks, Romans, and other cultures of antiquity. The work also records the Dacian names for some plants,[12] which otherwise would have been lost. The work presents about 600 medicinal plants in all, along with some animals and mineral substances, and around 1000 medicines made from these sources.[13][14] Botanists have not always found Dioscorides' plants easy to identify from his short descriptions, partly because he had naturally described plants and animals from southeastern Europe, whereas by the sixteenth century his book was in use all over Europe and across the Islamic world. This meant that people attempted to force a match between the plants they knew and those described by Dioscorides, leading to what could be catastrophic results.[15]

Approach

Mandrake (written 'ΜΑΝΔΡΑΓΟΡΑ' in Greek capitals). *Naples Dioscurides*, seventh century

Each entry gives a substantial amount of detail on the plant or substance in question, concentrating on medicinal uses but giving such mention of other uses (such as culinary) and help with recognition as considered necessary. For example, on the "Mekon Agrios and Mekon Emeros",[16] the opium poppy and related species, Dioscorides states that the seed of one is made into bread: it has "a somewhat long little head and white seed", while another "has a head bending down"[16] and a third is "more wild, more medicinal and longer than these, with a head somewhat long — and they are all cooling."[16] After this brief description, he moves at once into pharmacology, saying that they cause sleep; other uses are to treat inflammation and erysipela, and if boiled with honey to make a cough mixture. The account thus combines recognition, pharmacological effect, and guidance on drug preparation. Its effects are summarized, accompanied by a caution:[16]

> A little of it (taken with as much as a grain of ervum) is a pain-easer, a sleep-causer, and a digester, helping coughs and abdominal cavity afflictions. Taken as a drink too often it hurts (making men lethargic) and it kills. It is helpful for aches, sprinkled on with rosaceum; and for pain in the ears dropped in them with oil of almonds, saffron, and myrrh. For inflammation of the eyes it is used with a roasted egg yolk and saffron, and for erysipela and wounds with vinegar; but for gout with women's milk and saffron. Put up with the finger as a suppository it causes sleep.
>
> — Dioscorides—Mekon Agrios and Mekon Emeros[16]

Physician preparing an elixir, from an Arabic Dioscorides, 1224

Dioscorides then describes how to tell a good from a counterfeit preparation. He mentions the recommendations of other physicians, Diagoras (according to Eristratus), Andreas, and Mnesidemus, only to dismiss them as false and not borne out by experience. He ends with a description of how the liquid is gathered from poppy plants, and lists names used for it: *chamaesyce*, *mecon rhoeas*, *oxytonon*; *papaver* to the Romans, and *wanti* to the Egyptians.[16]

Cumin and dill from an Arabic book of simples (c. 1334) after Dioscorides

As late as in the Tudor and Stuart periods in Britain, herbals often still classified plants in the same way as Dioscorides and other classical authors, not by their structure or apparent relatedness but by how they smelt and tasted, whether they were edible, and what medicinal uses they had.[17] Only when European botanists like Matthias de l'Obel, Andrea Cesalpino and Augustus Quirinus Rivinus (Bachmann) had done their best to match plants they knew to those listed in Dioscorides did they go further and create new classification systems based on similarity of parts, whether leaves, fruits, or flowers.[18]

Contents

The book is divided into five volumes. Dioscorides organized the substances by certain similarities, such as their being aromatic, or vines; these divisions do not correspond to any modern classification. In David Sutton's view the grouping is by the type of effect on the human body.[19]

Volume I: Aromatics

Volume I covers aromatic oils, the plants that provide them, and ointments made from them. They include what are probably cardamom, nard, valerian, cassia or senna, cinnamon, balm of Gilead, hops, mastic, turpentine, pine resin, bitumen, heather, quince, apple, peach, apricot, lemon, pear, medlar, plum and many others.[20]

Volume II: Animals to herbs

Volume II covers an assortment of topics: animals including sea creatures such as sea urchin, seahorse, whelk, mussel, crab, scorpion, electric ray, viper, cuttlefish and many others; dairy produce; cereals; vegetables such as sea kale, beetroot, asparagus; and sharp herbs such as garlic, leek, onion, caper and mustard.[21]

Volume III: Roots, seeds and herbs

Volume III covers roots, seeds and herbs. These include plants that may be rhubarb, gentian, liquorice, caraway, cumin, parsley, lovage, fennel and many others.[22]

Volume IV: Roots and herbs, continued

Volume IV describes further roots and herbs not covered in Volume III. These include herbs that may be betony, Solomon's seal, clematis, horsetail, daffodil and many others.[23]

Volume V: Vines, wines and minerals

Volume V covers the grapevine, wine made from it, grapes and raisins; but also strong medicinal potions made by boiling many other plants including mandrake, hellebore, and various metal compounds, such as what may be zinc oxide, verdigris and iron oxide.[24]

Influence and effectiveness

On Arabic medicine

Along with his fellow physicians of Ancient Rome, Aulus Cornelius Celsus, Galen, Hippocrates and Soranus of Ephesus, Dioscorides had a major and long-lasting effect on Arabic medicine as well as medical practice across Europe.[25][26] *De materia medica* was one of the first scientific works to be translated from Greek into Arabic. It was translated first into Syriac and then into Arabic in 9th century Baghdad.[27][28]

De materia medica in Arabic, Spain, 12th-13th century

In Europe

Wild Cucumber in Arabic Dioscorides. 13th century, Persia

Writing in *The Great Naturalists*, the historian of science David Sutton describes *De materia medica* as "one of the most enduring works of natural history ever written"[29] and that "it formed the basis for Western knowledge of medicines for the next 1,500 years."[29]

The historian of science Marie Boas writes that herbalists depended entirely on Dioscorides and Theophrastus until the sixteenth century, when they finally realized they could work on their own.[7] She notes also that herbals by different authors, such as Leonhart Fuchs, Valerius Cordus, Lobelius, Rembert Dodoens, Carolus Clusius, John Gerard and William Turner, were dominated by Dioscorides, his influence only gradually weakening as the sixteenth century herbalists "learned to add and substitute their own observations".[30]

The historian of early science and medicine Paula Findlen, writing in the *Cambridge History of Science*, calls *De materia medica* "one of the most successful and enduring herbals of antiquity, [which] emphasized the importance of understanding the natural world in light of its medicinal efficiency", in contrast to Pliny's *Natural History* (which emphasized the wonders of nature) or the natural history studies of Aristotle and Theophrastus (which emphasized the causes of natural phenomena).[31]

The historian of medicine Vivian Nutton, in *Ancient Medicine*, writes that Dioscorides's "five books in Greek On Materia medica attained canonical status in Late Antiquity."[32]

The historian of science Brian Ogilvie calls Dioscorides "the greatest ancient herbalist", and *De materia medica* "the *summa* of ancient descriptive botany", observing that its success was such that few other books in his domain have survived from classical times.[33] Further, his approach matched the Renaissance liking for detailed description, unlike the philosophical search for essential nature (as in Theophrastus's *Historia Plantarum*). A critical moment was the decision by Niccolò Leoniceno and others to use Dioscorides "as the model of the careful naturalist—and his book *De materia medica* as the model for natural history."[34]

Byzantine *De materia medica*, 15th century

The Dioscorides translator and editor Tess Anne Osbaldeston notes that "For almost two millennia Dioscorides was regarded as the ultimate authority on plants and medicine",[35] and that he "achieved overwhelming commendation and approval because his writings addressed the many ills of mankind most usefully."[35] To illustrate this, she states that "Dioscorides describes many valuable drugs including aconite, aloes, bitter apple, colchicum, henbane, and squill".[36] The work mentions the painkillers willow (leading ultimately to aspirin, she writes), autumn crocus and opium, which however is also narcotic. Many other substances that Dioscorides describes remain in modern pharmacopoeias as "minor drugs, diluents, flavouring agents, and emollients ... [such as] ammoniacum, anise, cardamoms, catechu, cinnamon, colocynth, coriander, crocus, dill, fennel, galbanum, gentian, hemlock, hyoscyamus, lavender, linseed, mastic, male fern, marjoram, marshmallow, mezereon, mustard, myrrh, orris (iris), oak galls, olive oil, pennyroyal, pepper, peppermint, poppy, psyllium, rhubarb, rosemary, rue, saffron, sesame, squirting cucumber (elaterium), starch, stavesacre (delphinium), storax, stramonium, sugar, terebinth, thyme, white hellebore, white horehound, and couch grass — the last still used as a demulcent diuretic."[36] She notes that medicines such as wormwood, juniper, ginger, and calamine also remain in use, while "Chinese and Indian physicians continue to use liquorice".[36] She

observes that the many drugs listed to reduce the spleen may be explained by the frequency of malaria in his time. Dioscorides lists drugs for women to cause abortion and to treat urinary tract infection; palliatives for toothache, such as colocynth, and others for intestinal pains; and treatments for skin and eye diseases.[36] As well as these useful substances, she observes that "A few superstitious practices are recorded in *De materia medica*,"[36] such as using *Echium* as an amulet to ward off snakes, or *Polemonia* (Jacob's ladder) for scorpion stings.[36]

In the view of the historian Paula De Vos, *De materia medica* formed the core of the European pharmacopoeia until the end of the 19th century, suggesting that "the timelessness of Dioscorides' work resulted from an empirical tradition based on trial and error; that it worked for generation after generation despite social and cultural changes and changes in medical theory".[5]

At Mount Athos in northern Greece Dioscorides's text was still in use in its original Greek into the 20th century, as observed in 1934 by Sir Arthur Hill, Director of the Royal Botanic Gardens, Kew:

> "At Karyes there is an official Botanist Monk ... he was a remarkable old Monk with an extensive knowledge of plants and their properties. Though fully gowned in a long black cassock he traveled very quickly, usually on foot, and sometimes on a mule, carrying his 'Flora' with him in a large, black, bulky bag. Such a bag was necessary since his 'Flora' was nothing less than four manuscript folio volumes of Dioscorides, which apparently he himself had copied out. This Flora he invariably used for determining any plant which he could not name at sight, and he could find his way in his books and identify his plants – to his own satisfaction – with remarkable rapidity."[37]

References

1. Nutton 2012, p. 178.
2. "Greek Medicine" (https://www.nlm.nih.gov/hmd/greek/greek_dioscorides.html). National Institutes of Health, USA. 16 September 2002. Retrieved 22 May 2014.
3. Hefferon, Kathleen (2012). *Let Thy Food Be Thy Medicine* (https://books.google.com/books?id=iORoAgAAQBAJ&pg=PA46). Oxford University Press. p. 46. ISBN 9780199873982.
4. Rooney, Anne (2009). *The Story of Medicine* (https://books.google.com/books?id=jBMEAwAAQBAJ&pg=PT143). Arcturus Publishing. p. 143. ISBN 9781848580398.
5. De Vos, Paula (2010). "European Materia Medica in Historical Texts: Longevity of a Tradition and Implications for Future Use" (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956839). *Journal of Ethnopharmacology*. **132** (1): 28–47. doi:10.1016/j.jep.2010.05.035 (https://doi.org/10.1016%2Fj.jep.2010.05.035). PMC 2956839 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956839). PMID 20561577 (https://pubmed.ncbi.nlm.nih.gov/20561577).
6. Some detail about medieval manuscripts of *De materia medica* at Ibidis Press (http://www.ibidispress.scriptmania.com/custom.html) Archived (https://web.archive.org/web/20140924163805/http://www.ibidispress.scriptmania.com/custom.html) 2014-09-24 at the Wayback Machine
7. Boas 1962, p. 47.
8. Dioscorides 2000, Preface.
9. Janick, Jules; Hummer, Kim E. (2012). "The 1500th Anniversary (512-2012) of the Juliana Anicia Codex: An Illustrated Dioscoridean Recension" (https://hort.purdue.edu/newcrop/pdfs/ch5203.pdf) (PDF). *Chronica Horticulturae*. **52** (3): 9–15.
10. Selin, Helaine (2008). *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures* (https://books.google.com/books?id=kt9DIY1g9HYC&pg=PA1077). *Encyclopaedia of the History of Science*. Springer. p. 1077. Bibcode:2008ehst.book.....S (https://ui.adsabs.harvard.edu/abs/2008ehst.book.....S). ISBN 9781402045592.

11. Saliba, George; Komaroff, Linda (2008). "Illustrated Books May Be Hazardous to Your Health: A New Reading of the Arabic Reception and Rendition of the "Materia Medica" of Dioscorides". *Ars Orientalis*. **35**: 6–65.
12. Nutton 2012, p. 177.
13. Krebs, Robert E.; Krebs, Carolyn A. (2003). *Groundbreaking Scientific Experiments, Inventions, and Discoveries of the Ancient World*. Greenwood Publishing Group. pp. 75–76.
14. Dioscorides 2000, pp. xx (Introduction).
15. Sutton 2007, p. 35.
16. Dioscorides 2000, pp. 607–611.
17. Thomas, Keith (1983). *Man and the Natural World*. Allen Lane. pp. 52–53. ISBN 978-0-7139-1227-2.
18. Thomas, Keith (1983). *Man and the Natural World*. Allen Lane. p. 65. ISBN 978-0-7139-1227-2.
19. Sutton 2007, p. 34.
20. Dioscorides 2000, pp. Suggested translations in Book 1.
21. Dioscorides 2000, pp. Suggested translations in Book 2.
22. Dioscorides 2000, pp. Suggested translations in Book 3.
23. Dioscorides 2000, pp. Suggested translations in Book 4.
24. Dioscorides 2000, pp. Suggested translations in Book 5.
25. Saad, Bashar; Azaizeh, Hassan; Said, Omar (1 January 2005). "Tradition and Perspectives of Arab Herbal Medicine: A Review" (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1297506). *Evidence-Based Complementary and Alternative Medicine*. **2** (4): 475–479. doi:10.1093/ecam/neh133 (https://doi.org/10.1093%2Fecam%2Fneh133). PMC 1297506 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1297506). PMID 16322804 (https://pubmed.ncbi.nlm.nih.gov/16322804).
26. Tomczak, Matthias (15 December 2008) [2004]. "Lecture 11: Science, technology and medicine in the Roman Empire" (https://web.archive.org/web/20110429201149/http://www.es.flinders.edu.au/~mattom/science+society/lectures/lecture11.html). *Science, Civilization and Society (Lecture series)*. Archived from the original (http://www.es.flinders.edu.au/~mattom/science+society/lectures/lecture11.html) on 29 April 2011. Retrieved 23 May 2014.
27. Sadek, M.M. (1983). *The Arabic materia medica of Dioscorides* (https://books.google.com/books?id=-_naAAAAMAAJ). Québec, Canada: Les Éditions du sphinx. ISBN 978-2-920123-02-1.
28. "Walters Ms. W.750, Four leaves from the Arabic version of Dioscorides' De materia medica" (http://www.thedigitalwalters.org/Data/WaltersManuscripts/html/W750/description.html). *The Digital Walters*. Retrieved 4 June 2017.
29. Sutton 2007, p. 33.
30. Boas 1962, pp. 49–50.
31. Findlen, Paula; edited by Roy Porter, Katharine Park and Lorraine Daston (2006). *Natural History* (https://books.google.com/books?id=2kvjAp92zcY). *The Cambridge History of Science: Volume 3, Early Modern Science*. Cambridge University Press. p. 438.
32. Nutton 2012, p. 174.
33. Ogilvie, Brian W (2008). *The Science of Describing: Natural History in Renaissance Europe* (https://books.google.com/books?id=f8FmrXT1jdIC). University of Chicago Press. p. 96. ISBN 9780226620862.
34. Ogilvie, Brian W (2008). *The Science of Describing: Natural History in Renaissance Europe* (https://books.google.com/books?id=f8FmrXT1jdIC). University of Chicago Press. pp. 137–138. ISBN 9780226620862.
35. Dioscorides 2000, pp. xxi–xxii (Introduction).
36. Dioscorides 2000, pp. xxv–xxvi (Introduction).

37. Arthur Hill, "Preface" (https://www.jstor.org/stable/4107714) in Turrill, William Bertram. "A contribution to the botany of Athos Peninsula." Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew) 1937.4 (1937): 197.

Bibliography

- Boas, Marie (1962). *The Scientific Renaissance 1450–1630*. Fontana. p. 47.
- Nutton, Vivian (2012). *Ancient Medicine* (https://www.questia.com/read/107508464/ancient-medicine) (2 ed.). Routledge. (subscription required for online access)
- Sutton, David (2007). "Pedanios Dioscorides: Recording the Medicinal Uses of Plants". In Robert Huxley (ed.). *The Great Naturalists*. London: Thames & Hudson, with the Natural History Museum. pp. 32–37. ISBN 978-0-500-25139-3.
- Allbutt, T. Clifford (1921). *Greek medicine in Rome* (https://archive.org/details/greekmedicineinr00allbuoft). London: Macmillan. ISBN 978-1-57898-631-6.
- Hamilton, J. S. (1986). "Scribonius Largus on the medical profession". *Bulletin of the History of Medicine*. **60** (2): 209–216. PMID 3521772 (https://pubmed.ncbi.nlm.nih.gov/3521772).
- Riddle, John M. (1980). "Dioscorides" (http://catalogustranslationum.org/PDFs/volume04/v04_dioscorides.pdf) (PDF). *Catalogus Translationum et Commentariorum*. **4**: 1.
- Riddle, John M. (1985). *Dioscorides on pharmacy and medicine*. Austin: University of Texas Press. ISBN 978-0-292-71544-8.
- Sadek, M. M. (1983). *The Arabic materia medica of Dioscorides*. Québec, Canada: Les Éditions du sphinx. ISBN 978-2-920123-02-1.
- Scarborough, J.; Nutton, V (1982). "The Preface of Dioscorides' Materia Medica: introduction, translation, and commentary". *Transactions & Studies of the College of Physicians of Philadelphia*. **4** (3): 187–227. PMID 6753260 (https://pubmed.ncbi.nlm.nih.gov/6753260).
- Stannard, Jerry (1966). Florkin, M. (ed.). *Dioscorides and Renaissance Materia Medica*. *Materia Medica in the XVIth Century*. Oxford: Pergamon. pp. 1–21.

Editions

Note: Editions may vary by both text and numbering of chapters

Greek

- (http://digitale.bnnonline.it/index.php?it/113/dioscurides-neapolitanus)Naples Dioscurides: Codex ex Vindobonensis Graecus 1 ca 500 AD, at Biblioteca Nazionale di Napoli (in Italian) site
  - English description, World Digital Library (http://www.wdl.org/en/item/10690/)
- Edition of (https://books.google.com/books?id=JwAUAAAAQAAJ&hl=en&source=gbs_navlinks_s)Karl Gottlob Kühn, being Volume XXV of his *Medicorum Graecorum Opera*, Leipzig 1829, together with annotation and parallel text in Latin
  - Book I (https://archive.org/details/b23982500_0001) - Book II (https://books.google.com/books?id=JwAUAAAAQAAJ&pg=PA167#v=onepage&q&f=false) - Book III (https://books.google.com/books?id=JwAUAAAAQAAJ&pg=PA3381#v=onepage&q&f=false) - Book IV (https://books.google.com/books?id=JwAUAAAAQAAJ&pg=PA503#v=onepage&q&f=false) - Book V (https://books.google.com/books?id=JwAUAAAAQAAJ&pg=PA686#v=onepage&q&f=false) - Indices (https://books.google.com/books?id=JwAUAAAAQAAJ&pg=PA829#v=onepage&q&f=false)

- Edition of Max Wellman, Berlin
  - Books I, II (http://gallica.bnf.fr/ark:/12148/bpt6k6226074d) - Books III, IV (http://gallica.bnf.fr/ark:/12148/bpt6k6228793s) - Book V (http://gallica.bnf.fr/ark:/12148/bpt6k6254651p)

Greek and Latin

- Dioscorides (1549). *Libri octo graece et latine. Castigationes in eosdem libros* (https://archive.org/details/bub_gb_YWJE2oD4VOEC) (in Latin and Greek). Paris: Arnold Birkmann. (*Index in frontispiece*)

Latin

- Edition of (https://www.biodiversitylibrary.org/bibliography/9317#/summary)Jean Ruel 1552
  - Index (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/5/mode/1up) - Preface (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/33/mode/1up) - Book I (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/38/mode/1up) - Book II (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/175/mode/1up) - Book III (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/349/mode/1up) - Book IV (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/504/mode/1up) - Book V (https://www.biodiversitylibrary.org/ia/mobot31753003467922#page/659/mode/1up)
- *De Medica Materia : libri sex, Ioanne Ruellio Suesseionensi interprete*, translated by Jean Ruel (1546).
- *De Materia medica : libri V Eiusdem de Venenis Libri duo. Interprete Iano Antonio Saraceno Lugdunaeo, Medico*, translated by Janus Antonius Saracenus (1598).

English

- *The Greek Herbal of Dioscorides ... Englished by John Goodyer A. D. 1655*, edited by R.T. Gunter (1933).
- *De materia medica*, translated by Lily Y. Beck (2005). Hildesheim: Olms-Weidman.
- Dioscorides, Pedanius (2000) [ca. 70]. Osbaldeston, Tess Anne (ed.). *De materia medica: Being an herbal with many other medicinal matters. Written in Greek in the first century of the common era* (https://archive.org/details/Dioscorides_Materia_Medica). **2**. Johannesburg: Ibidis. ISBN 0-620-23435-0. (from the Latin, after John Goodyer 1655])

French

- Edition of Martin Mathee, Lyon (1559) (https://books.google.com/books?id=d0o8AAAAcAAJ&dq=orpiment&source=gbs_navlinks_s) in six books

German

- Edition of J Berendes, Stuttgart 1902 (https://archive.org/stream/despedaniosdios00pedagoog#page/n6/mode/2up)

Spanish

- Edition of Andres de Laguna 1570 (http://web2.bium.univ-paris5.fr/livanc/?cote=00821&do=chapitre) (in French) site
- Andres de Laguna, published at Antwerp 1555 (http://bdh.bne.es/bnesearch/detalle/228705), at Biblioteca Nacional de España (in Spanish) site
- Dioscórides Interactivo (http://dioscorides.eusal.es/p1.php?tipo=6) Ediciones Universidad Salamanca. Spanish and Greek.

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