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PRELIMINARY NOTES ON THE PHYSICIAN KRATEUAS (2ND–1ST CENTURY BC). A NEW COLLECTION OF HIS T AND F

Abstract. The physician Krateuas lived in the first part of the 1st century BC, worked at the court of Mithridates and wrote a *Rhizotomikon* (*Herbal*) of which only a few fragments remain. More than a century ago, Max Wellmann studied this physician (1897; 1898) and collected his Testimonies (T) and Fragments (F) as an appendix of his edition of Dioscorides *De materia medica* (1914). After Wellmann, only short studies (mostly encyclopedia entries) have been carried on Krateuas, whose work influenced Dioscorides. This paper is a first step towards a monograph on this physician and a new edition of T and F with translation and historical commentary.

Keywords: Krateuas, ancient physicians, ancient medicine

Introduction

Many studies have been published about different aspects of ancient medicine and on famous physicians such as Praxagoras of Kos (Steckerl 1958), Erasistratus of Keos (Garofalo 1988), Herophilus of Chalkedon (von Staden 1989), Diokles of Karystos (van der Eijk 2000–2001)¹.

In the year 2004 I started approaching the important figure of Menekrates of Syracuse (4th century BC) with a couple of preliminary articles² and a large monograph in which I collected and studied all his extant T and F³. In 2013, I began a second research project on another physician of Great Greece, Philistion

¹ *The Fragments of Praxagoras of Cos and his School*, ed. F. STECKERL, Leiden 1958; *Erasistrati Fragmenta*, ed. I. GAROFALO, Pisa 1988; HEROPHILUS, *The Art of Medicine in early Alexandria*, ed. H. VON STADEN, Cambridge 1989; *DIOCLES OF CARYSTUS, A Collection of the Fragments with Translation and Commentary*, vol. I–II, ed. P. VAN DER EIJK, Leiden 2000–2001 [= SAM, 22–23].

² G. SQUILLACE, *Le lettere di Menecrate/Zeus ad Agesilao di Sparta e Filippo II di Macedonia*, Kok 46, 2004, p. 175–191; IDEM, *Medicina e regalità: Menecrate di Siracusa e Filippo II*, [in:] *Tyrannis, basileia, imperium. Forme, prassi e simboli del potere politico nel mondo greco e romano*, ed. M. CALTABIANO CACCAMO, C. RACCUA, E. SANTAGATI, Soveria Mannelli 2010, p. 192–207.

³ MENEKRATE DI SIRACUSA, *Un medico di IV secolo a.C. tra Sicilia, Grecia e Macedonia*, ed. G. SQUILLACE, Hildesheim 2012 [= S.SKPG, 141].

of Lokroi (4th century BC), on which I published two preliminary articles and finally a monograph in which I collected, translated, and commented all the T⁴.

As for Menekrates and Philistion, studies on the physician Krateuas, who lived at the court of Mithridates VI Eupator, king of Pontus from 120 to 63 BC⁵, are few. In 1897 Wellmann published an article dealing specifically with Krateuas, and in 1898 a second on the authors of *Herbaria*, among which Krateuas⁶. Finally in 1914 he published Krateuas' T and F as an Appendix to the 3rd volume of his edition of Dioscorides' *De materia medica*⁷.

Wellmann's two long articles (1897 and 1898) and *Fragmentesammlung* (with a detailed preface)⁸ were followed by a paper of Singer (1927) and a monograph of Riddle (1985) – only partially specifically devoted to Krateuas⁹ – and more recently by an article of González Castro (1999)¹⁰. All the other works on Krateuas are short encyclopaedic entries (Kind 1922; Kudlien 1969; Touwaide 1999; Ihn 2005; Jacques 2008)¹¹; dictionary entries (Scarborough 2012; 2018)¹²; brief

⁴ G. SQUILLACE, *Tra Grecia e Magna Grecia: le dottrine mediche di Filistione di Locri*, [in:] *La Calabria nel Mediterraneo. Flussi di persone, idee e risorse*, ed. G. DE SENSI SESTITO, Soveria Mannelli 2013, p. 69–81; IDEM, *Da Locri a Siracusa: percorsi possibili per il medico Filistione*, *Hor* 6, 2014, p. 129–138; FILISTIONE DI LOCRI, *Un medico del IV secolo a.C. tra Grecia, Magna Grecia e Sicilia*, ed. G. SQUILLACE, Hildesheim 2017 [= S.SKPG, 170].

⁵ On Mithridates: T. REINACH, *Mithridates Eupator König von Pontus*, Leipzig 1895; A. DUGGAN, *King of Pontus. The Story of Mithradates Eupator*, New York 1959; J. HIND, *Mithridates*, [in:] *CAH*, vol. IX, *Last Age of the Roman Republic, 146–43 BC*, ed. J.A. CROOK, A. LINTOTT, E. RAWSON, ²Cambridge 1994, p. 129–164; L.P. BALLESTEROS, *Mithridates Eupator, rey del Ponto*, Granada 1996; M. ARSLAN, *Mithradates VI Eupator. Roma'nin Büyük Düşmanı*, Istanbul 2007; P. MATYSZAK, *Mithridates the Great, Rome's Indomitable Enemy*, London 2008; J.M. HØJTE, *Mithridates VI and the Pontic Kingdom*, Aarhus 2009 [= BSS, 9]; A. MAYOR, *The Poison King. The Life and Legend of Mithradates, Rome's Deadliest Enemy*, Princeton 2010.

⁶ M. WELLMANN, *Krateuas*, *AAWG.PHK NF* 2, 1897, p. 3–32; IDEM, *Das älteste Kräuterbuch der Griechen*, [in:] *Festgabe für Franz Susemihl*, Leipzig 1898, p. 1–31.

⁷ *Pedanii Dioscuridis Anazarbei De materia medica libri V*, vol. I–III, ed. M. WELLMANN, Berolini 1906–1914 (cetera: DIOSCORIDES, *De materia medica*), vol. III, *Appendix* 1. *Krateuas*, Berolini 1914, p. 139–146.

⁸ DIOSCORIDES, *De materia medica*, vol. II, p. V–XXVI.

⁹ C. SINGER, *The Herbal in Antiquity and its Transmission to Later Ages*, *JHS* 47, 1927, p. 1–52, part. p. 5–18; J.M. RIDDLE, *Dioscorides on Pharmacy and Medicine*, Austin 1985, p. 20–21, 176–177, 185–191.

¹⁰ J.F. GONZÁLEZ CASTRO, *Crateuas: su influencia en Dioscórides y en Plinio el Viejo*, [in:] *Τῆς φιλικῆς τὰδε δῶρα. Miscelánea léxica en memoria de Conchita Serrano*, ed. L.C. PÉREZ CASTRO, F.R. AD-RADOS, Madrid 1999, p. 477–482.

¹¹ F.E. KIND, *s.v. Krateuas*, [in:] *RE*, vol. XI.2, Stuttgart 1922, col. 1644–1646; F. KUDLIEN, *s.v. Krateuas*, [in:] *Der Kleine Pauly*, vol. III, Stuttgart 1969, col. 329; A. TOUWAIDE, *s.v. Krateuas*, [in:] *Der Neue Pauly*, vol. VI, Stuttgart 1999, col. 815–816; S. IHM, *s.v. Krateuas*, [in:] *Antike Medizin. Ein Lexikon*, ed. K.H. LEVEN, München 2005, p. 537–538; J.M. JACQUES, *s.v. Krateuas*, [in:] *The Encyclopedia of Ancient Natural Scientists. The Greek Tradition and its Many Heirs*, ed. P. KEYSER, G. IRBY MASSIE, London–New York 2008, p. 491.

¹² J. SCARBOROUGH, *s.v. Krateuas*, [in:] *The Oxford Classical Dictionary*, ed. S. HORNBLOWER, A. SPAWFORTH, E. EIDENOW, ⁴Oxford–New York 2012, p. 391; IDEM, *Pharmacology in the Early Ro-*

quotations in studies on different topics (for instance Weitmann 2013)¹³, or in monographs on Mithridates¹⁴, ancient medicine¹⁵, ancient botany¹⁶. They all provide some biographical information about life and career of Krateuas, but they do not offer anything new on the *Quellenforschung* and on the historical, scientific, and cultural context in which this physician was trained, lived and worked, or on the transmission of his writings from the East (Kingdom of Pontus) to the West (Rome).

Krateuas was an herbalist, and is called ‘roots picker’ (*rhizotomos*) by the sources¹⁷. Probably he wrote an essay entitled *Rhizotomikon* (*Herbal*) in which the entries on plants included their synonyms, a formal description, and a list of their medicinal properties¹⁸. In honour of his king, Krateuas called a plant *Mithridatia*¹⁹. It provided an effective antidote against poisons and magical practices²⁰. He also dealt with the remedies extracted from metals (*metallika pharmaka*), which, as in the case of his writings about medicinal botany, may have been exposed in a larger pharmacological work²¹. Krateuas also wrote a popular *Herbal* in which descriptions were illustrated in colour plates²².

On Krateuas Wellmann collected 32 T and 10 F. Most of them come from Pliny the Elder, Dioscorides, Galen, and the *scholia* to Theocritus and to Nikander’s *Theriaka*. Today, nevertheless, Wellmann’s excellent edition appears obsolete, and it is necessary:

man Empire: Dioscorides and his Multicultural Gleanings, [in:] *Oxford Handbook of Science and Medicine in the Classical World*, ed. P.T. KEYSER, J. SCARBOROUGH, Oxford 2018 (online).

¹³ P. WEITMANN, *Zu Charakter und Genese des Herbariums des Wiener Dioskurides*, CMI 89–90, 2013, p. 1–12.

¹⁴ E.g. A. MAYOR, *The Poison King...*, p. 101, 125, 238, 240.

¹⁵ V. NUTTON, *Ancient Medicine*, ²London–New York 2013, p. 143–144.

¹⁶ E.H.F. MEYER, *Geschichte der Botanik*, vol. I, Königsberg 1854, p. 250–256; M.E. IRWIN, *Greek and Roman Botany*, [in:] *A Companion to Science, Technology, and Medicine in Ancient Greece and Rome*, vol. I, ed. G.L. IRBY, Malden–Oxford–Chichester 2016 [= BCAW], p. 265–280, part. p. 271–272; G. HARDY, L. TOTELIN, *Ancient Botany*, London–New York 2016, p. 93, 100, 113, 118.

¹⁷ KRATEUAS TT 7–8 Wellmann, but also KRATEUAS FF 1–10 Wellmann.

¹⁸ KRATEUAS T 23 Wellmann, but also KRATEUAS FF 1–10 Wellmann.

¹⁹ KRATEUAS T 1 Wellmann. J. SCARBOROUGH, s.v. *Krateuas...*, p. 391, identifies the plant with the *Erythronium dens canis* L.

²⁰ C. *Plini Secundi Naturalis historiae libri XXXVII*, XXV, 127, vol. I–VI, ed. C. MAYHOFF, Lipsiae 1875–1906 [= BSGR] (cetera: PLINY, *Naturalis historia*).

²¹ KRATEUAS T 4 Wellmann.

²² PLINY, *Naturalis historia*, XXV, 8 = KRATEUAS T 2 Wellmann: *Praeter hos graeci auctores prodidere, quos suis locis diximus, ex his Crateuas, Dionysius, Metrodorus ratione blandissima, sed qua nihil paene aliud quam difficultas rei intellegatur. Pinxere namque effigies herbarum atque ita subscripsere effectus. Verum et pictura fallax est coloribus tam numerosis, praesertim in aemulationem naturae, multumque degenerat transcribentium socordia. Praeterea parum est singulas earum aetates pingi, cum quadripertitis varietatibus anni faciem mutant. Cf.: J.M. JACQUES, s.v. *Krateuas...*, p. 491.*

1. to review all the extant texts in the light of the new critical editions of the transmitting sources, like Galen;
2. to verify the nature of the quotations (T or F?)²³;
3. to pay more attention to the features of the sources and to the context in which they are placed;
4. to provide modern translations of T and F;
5. to give, as in most current editions of fragmentary works²⁴, a historical commentary, that sheds light on the teacher/teachers of Krateuas; his links with other contemporary physicians; his influence on Mithridates, who was an expert on plants, remedies, poisons, and antidotes.

Towards a new edition: first traces of a historical commentary

While most T come from Pliny the Elder, Dioscorides, Galen, and the *scholia* to Theocritus and to Nikander's *Theriaka*, F are all drawn from the *Codex Constatinopolitanus* (Wien, Österreichische Nationalbibliothek) also called *Codex Vindobonensis*, *Codex medicus graecus 1*, *Juliana Anicia Codex*, or *Vienna Dioscorides Codex*. This manuscript, organized in alphabetical order and illustrated with 383 paintings of plants and 391 descriptions²⁵, was composed at Constantinople in the

²³ On the distinction between T and F cf. *Collecting Fragments. Fragmente sammeln*, ed. G.W. MOST, Göttingen 1997 [= A.KSP, 1]; *Le età della trasmissione. Alessandria, Roma, Bisanzio. Atti delle giornate di studio sulla storiografia greca frammentaria*, Genova 29–30 maggio 2012, ed. F. GAZZANO, G. OTTONE, Tivoli 2013; *Historia para doxan. Documenti greci in frammenti: nuove prospettive esegetiche. Atti dell'incontro internazionale di studi*, Genova 10–11 marzo 2016, ed. G. OTTONE, Tivoli 2017.

²⁴ For instance: HEROPHILUS, ed. H. VON STADEN (on the physician Herophilus); DIOCLES OF CARYSTUS, ed. P. VAN DER EIJK (on the physician Diocles); *Brill's New Jacoby*, ed. I. WORTHINGTON, Leiden–Boston 2007– (online) and *I frammenti degli storici greci*, ed. E. LANZILLOTTA, V. COSTA, Tivoli 2002– (both on fragmentary historical works); the editorial project *Fragmenta Comica* (Albert Ludwigs Universität of Freiburg) part of which is, e.g., EPHIPPUS, *Introduction, Translation, Commentary*, ed. A. PAPACHRYSTOMOU, Göttingen 2021 (on the comedian Ephippus).

²⁵ *Folia 12v–387r* of *Codex Constatinopolitanus* reproduce Dioscorides' text accompanying it with wonderful colour pictures of the plants: cf. E.H.F. MEYER, *Geschichte der Botanik*, vol. I..., p. 252–256; DIOSCORIDES, *De materia medica*, vol. II, p. XVI; L. BRUBAKER, *The Vienna Dioskorides and Anicia Juliana*, [in:] *Byzantine Garden Culture*, ed. A. LITTLEWOOD, H. MAGUIRE, J. WOLSCHKE-BULMAHN, Washington 2002, p. 189–214; A. MOTTANA, *Ricerche di iconografia mineralogica: I. La pietra «gagate» nel Codex medicus graecus 1 della Biblioteca Nazionale Austriaca*, RL.SFN 13, 2002, p. 89–112, part. p. 91–94; J. JANICK, K.E. HUMMER, *The 1500th Anniversary (512–2012) of the Juliana Anicia Codex: an Illustrated Dioscoridean Recension*, CHor 52.3, 2012, p. 9–15, part. p. 9–10; A.E. MÜLLER, *Ein vermeintlich fester Anker. Das Jahr 512 als zeitlicher Ansatz des «Wiener Dioskurides»*, JÖB 62, 2012, p. 103–111; G. HARDY, L. TOTELIN, *Ancient Botany...*, p. 118–119; F. MARCHETTI, *La trasmissione delle illustrazioni del Dioscoride di Vienna negli anni intorno alla caduta di Costantinopoli*, JÖB 66, 2016, p. 153–178. Three facsimile printed editions of *Codex Vindobonensis* with commentary have

year 512 AD (or some times before)²⁶ in honor of the princess Juliana Anicia, daughter of Anicius Olybrius, emperor of the Western part of the Roman Empire for a few months of 472 BC²⁷.

Si tratta di un codice miscelaneo di 491 fogli, in parte scritti e in parte illustrati, entrato nella biblioteca nel 1569 grazie a un acquisto effettuato circa dieci anni prima a Istanbul dall'inviato imperiale presso la Sublime Porta, Augerio di Bulbecke, che lo pagò 100 ducati d'oro al figlio dell'ultimo utente: l'ebreo Hamon, medico personale del sultano Solimano I il Magnifico²⁸.

According to Wellmann, the author of the *Codex Constantinopolitanus* copied the plant images from Krateuas' work. His hypothesis was followed by Singer according to which

these illustrations (*sc.* from *Juliana Anicia Codex*), like the texts which accompany them, are presumably copied from the older Krateuas herbal. [...] If, as there is no reason to doubt, they come ultimately from Krateuas himself, then we can obtain a glimpse of his work in something like its original form²⁹.

A. T, F and other sources

In his edition Wellmann reported the main sources citing Krateuas and listed other texts which, without mentioning the physician, nevertheless offer similar information. Wellmann applied this method to his entire collection. For instance, the main source of T 11 is the scholion to Theocritus³⁰, but Wellmann also names

been edited by J. VON KARABACEK, A. VON PREMIERSTEIN, C. WESSELY, J. MANTUANI, *De codicis Dioscuridei Aniciae Iulianae nunc Vindobonensis Med. Gr. 1*, vol. I–IV, Leiden 1906; J. GERSTINGER, *Dioscurides Codex Vindobonensis Med. Gr. 1*, vol. I–V, Graz 1965–1970; O. MAZAL, *Der Wiener Dioskurides. Codex medicus graecus 1 der Österreichischen Nationalbibliothek*, vol. I–II, Graz 1998–1999.

²⁶ A. MOTTANA, *Ricerche di iconografia mineralogica: I. La pietra...*, p. 92; F. MARCHETTI, *La trasmissione delle illustrazioni del Dioscoride di Vienna...*, p. 153, note 2.

²⁷ M. WELLMANN, *Krateuas...*, p. 21–22; but also IDEM, *Das älteste Kräuterbuch der Griechen...*, p. 1–31; DIOSCORIDES, *De materia medica*, vol. II, p. XVI; C. SINGER, *The Herbal in Antiquity...*, p. 6; A. MOTTANA, *Ricerche di iconografia mineralogica: I. La pietra...*, p. 96; J. SCARBOROUGH, *s.v. Krateuas...*, p. 391. Against a direct borrowing from Krateuas' work: J.M. RIDDLE, *Dioscorides on Pharmacy and...*, p. 190–191, but also M. COLLINS, *Medieval Herbals. The Illustrative Traditions*, London 2000, p. 48. On the writing of the *Codex*: G. CAVALLO, H. MAEHLER, *Greek Bookhands of the Early Byzantine Period A.D. 300–800*, London 1987, p. 58.

²⁸ A. MOTTANA, *Ricerche di iconografia mineralogica: I. La pietra...*, p. 91.

²⁹ C. SINGER, *The Herbal in Antiquity...*, p. 7, 8–17 (images of the plants depicted and described by Krateuas in his *Herbal* and survived in the *Fragments* selected by Wellmann – DIOSCORIDES, *De materia medica*, vol. III, p. 144–146).

³⁰ *Scholia in Theocritum vetera*, V, 92, ed. C. WENDEL, Stutgardiae 1967 (1914) [= BSGR] = KRATEUAS T 11 Wellmann.

Dioscorides and Pliny the Elder³¹; likewise the main source of T 6 is the scholion to Nikander³², but Wellmann mentions also Dioscorides³³.

I think, it would be appropriate to cite extensively all the other sources after the main text, since they complete it and help the *Quellenforschung* on Krateuas. Sometimes the data coming from a T can be integrated by other sources: although they do not mention explicitly our physician, we can be sure they used his work. For instance, according to Pliny the Elder, Krateuas called a plant *Mithridatia* in honor of his king Mithridates (T 1)³⁴. This information is clarified by another passage of Pliny, who passes Krateuas under silence – and for this reason Wellmann does not include it among the T on Krateuas –, but names the *Mithridatia* among the plants that can be useful against poisons³⁵. Furthermore, immediately after the *Mithridatia*, Pliny mentions the *Eupatoria*, another plant whose name honored Mithridates Eupator. This time the Roman naturalist does not cite Krateuas, but it is likely that the physician, who used to honor his king this way, was the author of both names, *Mithridatia* and *Eupatoria*³⁶.

B. Krateuas at Mithridates' court

Some sources give a more precise historical contextualization of Krateuas' medical activities at Mithridates' court. Dioscorides, mentioning the toxic honey from Pontus, does not name his source³⁷. We can presume that this information originated

³¹ DIOSCORIDES, *De materia medica*, II, 176; PLINY, *Naturalis historia*, XXI, 164.

³² *Scholia in Nicandri Theriaca cum glossis*, 529, ed. A. CRUGNOLA, Milano–Varese 1971 = KRATEUAS T 16 Wellmann.

³³ DIOSCORIDES, *De materia medica*, IV, 153.

³⁴ PLINY, *Naturalis historia*, XXV, 62 = KRATEUAS T 2 Wellmann: *Ipsi Mithridati Crateuas adscripsit unam, Mithridatiam vocatam. huic folia II a radice, acantho simile, caulis inter utraque sustinens roseum florem.*

³⁵ PLINY, *Naturalis historia*, XXV, 127: *Proxima ab his malis venena sunt, quae sibimet ipsi homines excogitant. Contra haec omnia magicasque artes erit primum illud Homericum moly, dein Mithridatia ac scordotis. et centaurium potu omnia mala medicamenta exigit per alvum, Vettonicae semen in mulso aut passo vel farina drachma in vini veteris cyathis IIII; vomere cogendi atque iterum bibere.*

³⁶ PLINY, *Naturalis historia*, XXV, 65: *Eupatoria quoque regiam auctoritatem habet, [...].* Cf.: A. MAYOR, *The Poison King...*, p. 101. On Pliny and his work, cf. M. BEAGON, *Roman Nature. The Thought of Pliny the Elder*, Oxford 1992 [= OCM].

³⁷ DIOSCORIDES, *De materia medica*, II, 82.4–5. We find the information also in Xenophon: *Xenophon's Expeditio Cyri. Anabasis*, IV, 8.20, ed. C. HUDE, Leipzig 1972 (cetera: XENOPHON, *Anabasis*). According to him the soldiers who ate of the honey all went off their heads, and suffered from vomiting and diarrhoea, and not one of them could stand up, but those who had eaten a little were like people exceedingly drunk, while those who had eaten a great deal seemed like crazy, or even, in some cases, dying men (trans. by C.L. BROWNSON, *Xenophon. Anabasis*, Oxford 1980). According to J.W.I. Lee *The drunken, crazed behavior the Cyreans exhibited* (XENOPHON, *Anabasis*, IV, 8.20–22) on this occasion was probably the result of ingesting toxic honey containing grayanotoxins from rhododendron pollen (J.W.I. LEE, *A Greek Army on the March. Soldiers and Survival in Xenophon's Anabasis*, Cambridge 2007, p. 29, note 72, who cites above all S. GEROULANOS, B. ATTINGER, M. ÇAKMAKÇI, *Honigbedingte*

at Mithridates' court and, perhaps, from Krateuas himself, whose work Dioscorides used and cited in many circumstances³⁸. Because Krateuas had a vast knowledge on Pontus (a part of Mithridates' kingdom) and its natural resources³⁹, and, as already said, in honor of his king he called *Mithridatia* a plant offering an effective remedy against all kinds of poison⁴⁰, he very likely knew also the toxic Pontic honey, like Mithridates himself who, as we all know, was so familiar with plants and poisons to personally prepared an antidote called *Mithridatium*/*Mithridation* and to mix the blood of the Pontic ducks into his potions⁴¹.

Royal court was a place where medical and botanical knowledge was developed, produced and disseminated. Mithridates was in touch with famous physicians: Zopyrus of Alexandria sent to him a recipe for an antidote that was useful against snakebites and poisons⁴²; Asclepiades of Bithynia, whom he in vain tried

Intoxikationen, SRM 81.17, 1992, p. 535–540; N. SÜTLÜPINAR, A. MAT, Y. SATGANOĞLU, *Poisoning by Toxic Honey in Turkey*, ATox 67, 1993, p. 148–150; A. MAYOR, *Mad Honey!*, Archo 48.6, 1995, p. 32–40). Today – it notes A. Mayor in a second study – in northern Turkey and the Caucasus, the honey is called deli bal (“mad honey”) and known to Westerners as miel fou: A. MAYOR, *Greek Fire, Poison Arrows and Scorpion Bombs. Biological and Chemical Warfare in the Ancient World*, New York 2009, p. 145–148, part. p. 146.

³⁸ KRATEUAS TT 7; 12; 14–15; 17; 28–29 Wellmann. Cf.: M. WELLMANN, *Krateuas...*, p. 3–32; C. SINGER, *The Herbal in Antiquity...*, p. 5–7; J.M. RIDDLE, *Dioscorides on Pharmacy and...*, p. 20–21, 176–177, 185–191; J.F. GONZÁLEZ CASTRO, *Cratevas: su influencia en Dioscórides y en Plinio el Viejo...*, p. 477–482.

³⁹ J. SCARBOROUGH, V. NUTTON, *The Preface of Dioscorides' Materia Medica. Introduction, Translation, and Commentary*, TSCPP 4.3, 1982, p. 187–227; D. FAUSTI, *La prefazione al De materia medica di Dioscoride: vocabolario tecnico e retorica*, [in:] *Odoi dizisios: le vie della ricerca. Scritti in onore di Francesco Adorno*, ed. M.S. FUNGHI, Firenze 1996, p. 191–200.

⁴⁰ PLINY, *Naturalis historia*, XXV, 62 = KRATEUAS T 1 Wellmann; PLINY, *Naturalis historia*, XXV, 127.

⁴¹ PLINY, *Naturalis historia*, XXIII, 149; XXV, 3–7; APPIEN, *Histoire romaine*, XVI, 111, vol. VII, *Livre XII. La guerre de Mithridate*, ed. P. GOUKOWSKY, Paris 2001 but also DION CASSIUS, *Histoire romaine. Livres 36–37*, XXXVII, 13, ed. G. LACHENAUD, Paris 2018; cf. J.P. GRIFFIN, *Mithridates VI of Pontus, the First Experimental Toxicologist*, ADRAPR 14, 1995, p. 1–6; G. SQUILLACE, *I balsami di Afrodite. Medici, malattie e farmaci nel mondo antico*, Sansepolcro 2015, p. 161–164. On the ingredients of *Mithridatium*/*Mithridation*: PLINY, *Naturalis historia*, XXIX, 24–25; A. *Cornelii Celsi quae supersunt*, V, 23.3, rec. F. MARX, Leipzig–Berlin 1915 [= CMLat, 1]; *Scribonii Largi Compositiones*, 170, ed. S. SCONOCCHIA, Berlin 2020 [= CMLat, 2.1] (cetera: SCRIBONIUS LARGUS, *Compositiones*); *Galeni de antidotis libri II*, II, 1 (XIV, 107–109 Kühn); II, 2 (XIV, 115–119 Kühn), [in:] *Claudi Galeni Opera Omnia*, vol. XIV, ed. C.G. KÜHN, Lipsiae 1827 (cetera: GALEN, *De antidotis*); cf. G.W. CORNER, *Mithridatium and Theriac*, JHHB 26, 1915, p. 222–226; G. WATSON, *Theriac and Mithridatium. A Study in Therapeutics*, London 1966; L. CILLIERS, F.P. RETIEF, *Poisons, Poisoning and the Drug Trade in Ancient Rome*, Akro 45, 2000, p. 88–100; L. TOTELIN, *Mithradates' Antidote – A Pharmacological Ghost*, ESM 9, 2004, p. 1–19; S. NORTON, *The Pharmacology of Mithridatum: a 2000-Year-Old Remedy*, Moll 6, 2006, p. 60–66; S. PAIN, *From Poison to Plague: Mithridates's Marvelous Medicine*, NewS (January 26), 2008, p. 52–53; A. MAYOR, *The Poison King...*, p. 239–246, but also 70, 101–102; G. SQUILLACE, *I balsami di Afrodite...*, p. 163–165.

⁴² GALEN, *De antidotis*, II, 7 (XIV, 150 Kühn), but also SCRIBONIUS LARGUS, *Compositiones*, 169. On this physician: G. MARASCO, s.v. *Zopyros v. Alexandria*, [in:] *Antike Medizin. Ein Lexikon...*, p. 938–939; F. STOK, s.v. *Zopuros of Alexandria*, [in:] *The Encyclopedia of Ancient Natural Scientists...*, p. 851.

to invite to his court, sent to him some writings, because he stayed at Rome⁴³. Considering these contacts, we cannot exclude that Krateuas too, personally or through his king, could have been in touch with these physicians and benefited from their studies.

C. Krateuas in the West

We have to consider also the arrival of Krateuas' writing in the West, i.e. to Rome.

We do not know the exact chronology of the physician; scholars generically date him under the reign of Mithridates (120–63 BC)⁴⁴ or, more precisely, between 100 and 70 or 60 BC⁴⁵. Pliny the Elder gives an important notice: Pompey, after defeating Mithridates in 63 BC, would have taken possession of the king's treasures, among which there were some royal notebooks. Mithridates, who displayed a peculiar aptitude for enquiring into medical arts, used to note down on them the results which upon experiment had been produced. Pompey gave these diaries to his freedman, the grammarian Lenaeus, and charged him to translate them into Latin⁴⁶. If Pliny clearly attests the arrival to Rome of these notebooks, in which the king has assembled all his medical and botanical knowledge (learned at least in part

⁴³ PLINY, *Naturalis historia*, XXV, 6, but also VII, 124. On Asclepiades of Prusa: E. RAWSON, *The Life and Death of Asclepiades of Bithynia*, CQ 32, 1982, p. 358–370 (= EADEM, *Roman Culture and Society: Collected Papers*, Oxford 1991, p. 427–443); S. IHM, s.v. *Asklepiades v. Bithynien*, [in:] *Antike Medizin. Ein Lexikon*..., p. 108; J. SCARBOROUGH, s.v. *Asklepiades of Buthinia*, [in:] *The Encyclopedia of Ancient Natural Scientists*..., p. 170–171.

⁴⁴ S. IHM, s.v. *Krateuas*..., col. 537; J. SCARBOROUGH, s.v. *Krateuas*..., p. 391; M.E. IRWIN, *Greek and Roman Botany*..., p. 271.

⁴⁵ É. SAMAMA, *Thaumapoioi pharmakopôlai. La singulière image des préparateurs et vendeurs de remèdes dans les textes grecs*, [in:] *Pharmacopoles et apothicaires. Les «pharmaciens» de l'Antiquité au Grand Siècle*, ed. F. COLLARD, É. SAMAMA, Paris 2006, p. 7–27, part. p. 10, note 12; J.M. JACQUES, s.v. *Krateuas*..., p. 491. V. NUTTON, *Ancient Medicine*..., p. 144, dated Krateuas' floruit around 90 BC.

⁴⁶ PLINY, *Naturalis historia*, XXV, 5–7: (5) *Antea condiderat solus apud nos, quod equidem inveniam, Pompeius Lenaei Magni libertus, quo primum tempore hanc scientiam ad nostros pervenisse animo adverto. Namque Mithridates, maximus sua aetate regum, quem debellavit Pompeius, omnium ante se genitorum diligentissimus vita fuisse argumentis, praeterquam fama, intellegitur. (6) Uni ei excogitatum cotidie venenum bibere praesumptis remediis, ut consuetudine ipsa innoxium fieret; primo inventa genera antidoti, ex quibus unum etiam nomen eius retinet; illius inventum, sanguinem anatum Ponticarum miscere antidotis, quoniam veneno viverent; ad illum Asclepiadis medendi arte clari volumina composita extant, cum sollicitatus ex urbe Roma praecepta pro se mitteret; illum solum mortalium certum est XXII linguis locutum, nec e subiectis gentibus ullum hominem per interpretem appellatum ab eo annis LVI, quibus regnavit. (7) Is ergo in reliqua ingeni magnitudine medicinae peculiariter curiosus et ab omnibus subiectis, qui fuere magna pars terrarum, singula exquirens scrinium commentationum harum et exemplaria effectusque in arcanis suis reliquit, Pompeius autem omni praeda regia potitus transferre ea sermone nostro libertum suum Lenaeum grammaticae artis iussit vitaeque ita profuit non minus quam republicae victoria illa. On Lenaeus cf. also: C. SUETONIUS TRANQUILLUS, *De Grammaticis et Rhetoribus*, 15, ed. R.A. KASTER, London 1995. Cf.: L. FEZZI, *Pompeo. Conquistatore del mondo, difensore della res publica, eroe tragico*, Roma 2019, p. 75.*

from famous physicians like Asclepiades, Zopyros, and, of course, Krateuas), a passage of Memnon of Heraclea gives supplementary information. According to him, Clearchos, the violent and egocentric tyrant of Heraclea Pontica, between 364 and 352 BC had founded a library that made famous his tyranny⁴⁷. Under Mithridates the library of Heraclea became the Royal Library, and it was accessible to court intellectuals like the rhetorician Metrodoros of Scepsis and the philosopher and rhetorician Diodoros of Adramyttion⁴⁸. In 73–70 BC Heraclea was conquered by Lucullus together with Amisos, Sinope, Kabeira, Pharnacia, and the entire Pontus, and the library fell into the hands of the Roman general, although a late source like Isidorus says generically that *Romae primus librorum copiam advexit Aemilius Paulus, Perse Macedonum rege devicto; deinde Lucullus e Pontica praeda*⁴⁹. In 66, Lucullus was replaced by Pompey in the war against Mithridates and returned to Rome to celebrate his triumph. In a magnificent parade, he showed what he had taken to the enemy: prisoners, precious weapons, a golden statue of Mithridates, money⁵⁰. The Royal Library was likely part of the booty, even if we are not able to know how many documents and books from Heraclea – and generally from the cities of Pontus – were brought into Lucullus' Great Library, that, according to the sources, Greek intellectuals and the same Cicero were able to read⁵¹.

⁴⁷ MEMNON, *FGrHist* 434, F 1.2 = *BNJ* 434, F 1.2 and commentary by A. KEAVENEY, J.A. MADDEN, *Memnon* (434), [in:] *Brill's New Jacoby*, ed. I. WORTHINGTON, Leiden–Boston 2011 (online); cf. also: S. GALLOTTA, *Appunti su Memnone di Eraclea*, *E–L* 2, 2012, p. 65–77; EADEM, *Dall'ideale di un monarca illuminato al più crudele dei tiranni: Clearco di Eraclea Pontica*, *MN* 10, 2019–2020, p. 55–60, part. p. 56. On the significance and aim of the library: S.M. BURSTEIN, *Outpost of Hellenism. The Emergence of Heraclea on the Black Sea*, Berkeley 1974, p. 61; A. BITTNER, *Gesellschaft und Wirtschaft in Kerakleia Pontike. Eine Polis zwischen Tyrannis und Selbstverwaltung*, Bonn 1998, p. 30–31.

⁴⁸ *Strabons Geographika*, XIII, 1.55 (Metrodoros); XIII, 1.66 (Diodoros of Adramyttion), vol. I–X, ed. S. RADT, Göttingen 2002–2011. Cf.: L. CANFORA, *Per una storia delle biblioteche*, Roma 2017, p. 45, but also A. MAYOR, *The Poison King...*, p. 279–287.

⁴⁹ *Isidori Hispalensis Episcopi Etymologiarum sive Originum Libri XX*, VI, 5.1, vol. I–II, ed. W.M. LINDSAY, Oxford 1911 [= SCBO] (cetera: ISIDORUS, *Etymologiae*).

⁵⁰ PLUTARQUE, *Lucullus*, 37, [in:] PLUTARQUE, *Vies*, vol. VII, *Cimon-Lucullus. Nicias-Crassus*, ed. E. CHAMBRY, R. FLACELIÈRE, Paris 1972 (cetera: PLUTARCH, *Lucullus*).

⁵¹ PLUTARCH, *Lucullus*, 42.1–2; ISIDORUS, *Etymologiae*, VI, 5.1; and, above all, CICÉRON, *Des Termes extrêmes des biens et des maux*, III, 2.7, vol. I–II, ed. C. LÉVY, C. RAMBAUX, J. MARTHA, Paris 1928–1930: *Nam in Tusculano cum essem vellemque e bibliotheca pueri Luculli quibusdam libris uti, veni in eius villam, ut eos ipse, ut solebam, depromerem. quo cum venissem, M. Catonem, quem ibi esse nescieram, vidi in bibliotheca sedentem multis circumfusum Stoicorum libris. Erat enim, ut scis, in eo aviditas legendi, nec satiari poterat, quippe qui ne reprehensionem quidem vulgi inanem reformidans in ipsa curia soleret legere saepe, dum senatus cogeretur, nihil operae rei publicae detrahens. quo magis tum in summo otio maximaque copia quasi helluari libris, si hoc verbo in tam clara re utendum est, videbatur*. Cf.: A. KEAVENEY, *Lucullus. A Life*, London–New York 1992, p. 10, 146; L. CASSON, *Libraries in the Ancient World*, New Haven 2001, p. 69–74; F. PESANDO, *Libri e biblioteche*, Roma 1994 [repr. 2010], p. 54; Y.L. TOO, *The Idea of the Library in the Ancient World*, Oxford 2010, p. 42.

Before concluding, I would like quickly to mention the use of pictures to illustrate, along with the text, the plants: an innovation ascribed by Pliny to Krateuas and to the contemporary physicians Dionysios of Utica and Metrodoros⁵². Ancient scholars had illustrated verbally what they did not know. For instance, Theophrastus described some exotic plants, like incense and myrrh, comparing them with similar Mediterranean trees⁵³, and Pliny did the same⁵⁴. Although this was the most followed method⁵⁵, nevertheless we have cases in which picture visibly represents the unknown or accompanies the writing. If Egyptians already from the second millennium BC used to picture papyrus scrolls, Greeks (and later Romans) from the 5th century onwards *illustrated literary works, such as Homer, and diagrammed scientific works, such as a mathematical treatise by Hippocrates of Chios*⁵⁶. Furthermore, according to Düring, Aristotle also accompanied some of his zoological works with images. In particular, it seems that his *Anatomai* in 7 books were provided with plates⁵⁷. If it is likely that Dioscorides, in some passages of his botanical work, accompanied the plants with pictures⁵⁸, Pliny, describing the plant called *dracontium*, reports that he had seen three different species from three different representations, thus attesting the use at his time of combining text and image, and the circulation of illustrated botanical works⁵⁹.

Conclusion

Because this research has just started and I am dealing with collecting and translating the texts, I have been able to present some preliminary conclusions and many hypothesis on Krateuas. First, I want once again underline the originality and the

⁵² PLINY, *Naturalis historia*, XXV, 8 = KRATEUAS T 2 Wellmann. On Dionysios of Utica and Metrodoros: P. THIBODEAU, s.v. *Dionusios of Utica, Cassius*, [in:] *The Encyclopedia of Ancient Natural Scientists...*, p. 265; G. IRBY MASSIE, s.v. *Metrodoros*, [in:] *ibidem*, p. 553.

⁵³ G. SQUILLACE, *Nuove terre per nuove ricerche: i paradisi delle spezie negli studi di botanica di Teofrasto*, *Hor* 10, 2018, p. 419–443.

⁵⁴ PLINY, *Naturalis historia*, book XII.

⁵⁵ P. LI CAUSI, *Cognitive Applicability. The Natural History of the Unicorn from Ctesias to TV News*, *AOFL* 7.2, 2012, p. 12–30; IDEM, *From Descriptions to Acts. The Paradoxical Animals of the Ancients from a Cognitive Perspective*, [in:] *Knowledge, Text and Practice in Ancient Technical Writing*, ed. M. FORMISANO, P. VAN DER EIJK, Cambridge 2017, p. 252–268.

⁵⁶ J.M. RIDDLE, *Dioscorides on Pharmacy and...*, p. 176. On the illustrated herbals in the antiquity cf. also: D. FAUSTI, *Erbari illustrati su papiro e tradizione iconografica botanica*, [in:] *Testi medici su papiro. Atti del Seminario di Studio (Firenze, 3–4 giugno 2002)*, ed. I. ANDORLINI, Firenze 2004, p. 131–150; M.-H. MARGANNE, *Le livre médical dans le monde gréco-romain*, Liège 2004, p. 37–42; G. HARDY, L. TOTELIN, *Ancient Botany...*, p. 113–124.

⁵⁷ I. DÜRING, *Aristotele*, Heidelberg 1966 (It. trans. Milano 1976), p. 63–64, 578.

⁵⁸ J.M. RIDDLE, *Dioscorides on Pharmacy and...*, p. 177.

⁵⁹ PLINY, *Naturalis historia*, XXIV, 150. Pliny used the illustrated botanical work of Antonius Castor: PLINY, *Naturalis historia*, XX, 174; XXV, 9. On Antonius Castor (10–75 AD): P. KEYSER, s.v. *Antonius Castor*, [in:] *The Encyclopedia of Ancient Natural Scientists...*, p. 100.

cultural depth of this physician. If the title of his writing – *Rhizotomikon* – is probably modelled on the work of Diokles of Karystos (4th–3rd century BC)⁶⁰, the choice to depict the plants to complement the text and to show their morphology⁶¹ seems fully new⁶². Rightly Singer called Krateuas “the father of plant illustration”, who exercised great influence not only on the subsequent development of the herbal, but also on the course of scientific botany⁶³.

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⁶⁰ On the F from this work: DIOCLES FF 204; 206a; 206b, P. VAN DER EIJK; cf. J. SCARBOROUGH, *Theophrastus on Herbs and Herbal Remedies*, JHB 11, 1978, p. 353–385, part. p. 354–356; DIOCLES OF CARYSTUS, vol. I, ed. P. VAN DER EIJK, p. XXXIV. On authors of *Rhizothomika*, cf. M. WELLMANN, *Krateuas...*, p. 4, note 4; but also IDEM, *Das älteste Kräuterbuch der Griechen...*, p. 1–31; G. SQUILLACE, *Tracce del Rhizotomikon di Eumaco di Corcira? Nota ad Ateneo 15.681e*, [in:] *Sulla rotta per la Sicilia. L'Epiro, Corcira e l'Occidente*, ed. G. DE SENSI SESTITO, M. INTRIERI, Pisa 2011, p. 311–322, part. p. 316–317.

⁶¹ PLINY, *Naturalis historia*, XXV, 8 = KRATEUAS T 2 Wellmann.

⁶² M. WELLMANN, *Krateuas...*, p. 20.

⁶³ C. SINGER, *The Herbal in Antiquity...*, p. 5.

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