21 How are new scientific concepts expressed?

§1 In part 2 of this book, it became amply clear that Latin in general and for the most part has not been very open to *nova verba*. This chapter tries to understand how new scientific insights have been expressed in Latin at various times throughout its history. Above (chap. 7), it was found that Democritus, Plato, and Aristotle used rather different approaches toward new words in science and philosophy. Plato in his rhetorically chiselled dialogues does not seem to coin new words at all, but this is an approach that is hardly feasible in positive sciences and is not emulated by Latin writers, who first of all had to stock up (so to speak) on the Greek scientific terms Latin lacked. In stark contrast, Democritus profusely used often poetic-sounding new words, especially compounds. Holding a typical μεσότης (‘middle ground’), Aristotle does coin new terms, but in a well-measured fashion; much more often, he uses already existing common words and gives them new technical meanings. Thus, we can distinguish between what we could tentatively call a ‘Democritean’ and an ‘Aristotelian’ approach to the coining of new terminology – leaving aside Plato’s ‘zero-approach’. To this can be added a ‘modern’ approach, used in many sciences in English today: the use of quite arbitrary *Kunstwörter*, which may contain the discoverer’s name or may just be abbreviations, often acronyms, or complete fantasy coinings. The only rule is that they have to be unambiguous within their field. After some new Latin coinings in the human sciences through the ages are considered, seven medical texts will be studied more deeply from the same perspective. The emphasis will lie on coinings of words (*Wortneuschöpfungen*) rather than of meanings alone (*Bedeutungsneuschöpfungen*), which are much harder to pin down unless the author introduces them *expressis verbis*.

Examples from the human sciences

§2 In Antiquity, Latin scientific authors tended to use already existing words to convey the meaning of Greek scientific terms. A set of four terms – three from Aristotle, one from Plato – illustrates what Latin authors did with them:

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1 An earlier German-language stage of this chapter was presented at the congress ‘Geschichte der Fach- und Wissenschaftssprachen: Identität, Differenz, Transfer’, Würzburg, October 2017.
2 For examples see chap. 7 §5 above.
3 Thielmann (2009: 281) convincingly argues that acronyms are typical for the English scientific way of expression, in contrast to German. In Mediaeval Latin, they are very rare indeed (Stotz 1996–2004: VI, §32 = vol. 2, pp. 269–270).

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• ὕλη, in common language ‘wood for construction’, becomes in Latin silva (Lucretius) or usually materia. Both these words have very similar common meanings to the Greek one (e.g. in Vitruvius).

• ἀπόφανσις, in common language ‘declaration, statement’, is used in Aristotelian logic as ‘predication’. In Latin it is usually rendered as enuntiatio (‘declaration’), also becoming a technical term, for instance in Quintilian, Institutio oratoria VII.3.2, IX.1.23, ed. Rahn, vol. 2, pp. 58, 258.

• ἐνέργεια, one of the coinings of Aristotle (see chap. 7 §5 above). Latin writers struggled with a translation; actus or actio were tried, but both can stand for several other Aristotelian concepts as well. Eriugena tried operatio, Erasmus efficacia (in his translation of the New Testament). Modern Latin physicists just used the Greek word as energia (267 times in CC, as of April 2019).

• εἶδος and ἰδέα, the two words Plato uses for his ‘idea’, are derived from ἰδεῖν (‘to spot’); both were in use already before Plato and meant ‘form, shape, outward appearance’. Cicero translates with species, which means the same things. Only later Latin also uses idea in order to be more precise (eight times in Seneca, then often in the Church Fathers).\(^4\)

Latin seems to behave similarly in fields that do not go back so decidedly to Greek models, as the juridical term curator (‘legal guardian’, non-technically just ‘someone who takes care of’; Varro) suggests. Thus, an ‘Aristotelian’ approach to new coinings in Classical Latin times can be made out.

In contrast, scholastic Latin (see chap. 11 §2 above) seems to use a more ‘Democritean’ approach (although the words do look less poetic than in Democritus). Some examples of scholastic coinings: aseitas (‘existing out of itself’), compos-sibilis (‘possible at the same time with something’), or mundialis (‘pertaining to the world’).\(^5\) There is an entire dictionary of such terminology specifically for Aquinas (by Schütz); some more special scholastic vocabulary will be listed below (chap. 24 §8).

Early modern times are possibly again somewhat more classicist in forming new words, but they still proceed similarly, for instance when speaking of a stemma codicum, a ‘genealogical tree of the manuscripts’ in textual criticism of the nineteenth century. Only in post-Latin times do tendencies change: many new words are derived from proper names (such as ‘Lachmann’s method’, or ‘Bédier-ism’), and in the later twentieth and twenty-first centuries what could be called an

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\(^4\) Some other, similar examples are discussed by Springhetti, Latinitas fontium, pp. 15–20.

\(^5\) First attested already in Tertullian (see chap. 9 §2 above), who seemed to have had such a ‘Democritean’ approach to language. See Wellstein (1999); chap. 9 §2 above.
American approach seems to gain ground: here language games are used that become clear only *a posteriori* if at all; words may also be made up ungrammatically. Some random examples of such words without an etymology in the normal sense from psychology (see *OED* for more information):

- ‘limerence’ = ‘state of falling in love’, since 1978;
- ‘bromance’ = ‘Platonic love between men’, since around 1990;
- ‘alief’ = ‘unconscious belief’, since 2008.

Latin writers never gave up the ‘Democritean’ approach, which has great mnemonic advantages. Jesuit schoolbooks from the twentieth century (see chap. 15 §7) do take over some terms more or less tel-quel from the vernaculars, such as *elementa chromosomatum, conatus vitalis* (‘élan vital’), *positivista,* but often reformulate terms that are not transparent or well formed for a Latinist, such as *determinantia* for ‘genes’, or they speak of *evolutio ontogenetica* to make Darwin’s mere ‘evolution’ clearer.

Of course, counterexamples to the proposed approaches will be found in Latin Antiquity, scholasticism, and beyond, as well as in post-Latin modern science, but the trend does seem clear. In order to find out whether this can be confirmed in a very different science, a closer look is now taken at a small corpus of medical texts.

**Seven medical texts**

§3 In order to study some more systematically gathered data, a small sample of Latin medical writers between Antiquity and the nineteenth century is examined. A priori, one expects that such a practically relevant science may be more pragmatic with new terminology than the human sciences; but on the other hand, it equally goes back to Greek models and was often practised by highly educated Latinate men who – at least in Antiquity and early modern times – were usually also proficient in Greek. Seven texts from different times were chosen and loaded in Corpus Corporum for further study. The main methodological approach will be to identify words that cannot be found in the large dictionary of Classical Latin by

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6 It would not seem to be simply an Anglo-Saxon approach, but specifically a North American one. The people who coined the terms that follow were all Americans.

7 Examples from Carolus Boyer, *Cursus philosophiae.*

8 For the development of medical thought from Antiquity to around 1800, see Grmek (1993–2007).

9 For methodological reasons, direct translations from Greek were excluded.
Georges. Some information about the size of these texts is presented in table 23; numbers in parentheses were obtained by counting only among the first 3,389 words, which is the length of the shortest text.

**Table 23**: Sample of seven medical Latin texts. §4 below discusses the 'unknown' words. The average word length among the seven texts is 5.94 ±0.34, which is very close to the benchmark samples: 5.95 ±0.32.

| Author and work | Time | Number of words, average word length | Types | Lemmata | "Unknown" |
|-----------------|------|--------------------------------------|-------|---------|-----------|
| *Celsus, De medicina*, ed. Marx (1915) | ca. 50 | 103,500 5.69 | 14,725 (1,517) | 4,989 (603) | 42 (0) |
| *Isidore, Etymologiae IV: De medicina*, ed. Lindsay (1911) | ca. 620 | 3,389 5.85 | 1,721 (1,721) | 774 (774) | 21 (21) |
| *Gariopontus, Liber passionarius V.1–15* | ca. 1050 | 5,104 5.65 | 2,079 (1,494) | 1,246 (880) | 46 (23) |
| *Bernardus de Gordonio, De crisi et de diebus creticos*, ed. Guardo (2003) | ca. 1300 | 34,954 5.65 | 5,707 (1,235) | 2,430 (705) | 229 (38) |
| *Andreas Vesalius, De humani corporis fabrica I* (Basileae, 1543) | 1543 | 102,882 6.19 | 14,814 (1,893) | 4,316 (1,258) | ca. 335 (5) |
| *Daniel Sennert, Institutiones medicinae* (Wittebergae, 1628) | 1628 | 568,858 6.00 | 50,553 (1,856) | 9,596 (782) | ca. 905 (9) |
| *Franz von Bene, Elementa medicinae practicae I* (Pestini, 1833–1834) | 1833 | 87,184 6.55 | 16,478 (1,703) | 4,840 (733) | ca. 919 (25) |

10 Georges covers the period up to and including Isidore, so in case of the two oldest writers in the sample, words that are only mentioned for these authors were sought.
11 Automatically counted by Corpus Corporum, without counting 'unknown' words.
12 Lemmata unknown to the Perseus PoS tagger and to the Georges dictionary.
13 As Georges also contains the vocabulary of Celsus and Isidore, values are given for lemmata that are quoted by no other earlier writer.
14 Words mentioned only in entry headings are not included; see below on them.
15 The work is not yet edited. I transcribed most of book V (sections 1 to 15) from the eleventh-century manuscript Wien, ÖNB 2425, online at http://data.onb.ac.at/rep/100199ED. My sample corresponds to some 5% of the entire work.
16 For Vesalius, Sennert, and von Bene, these values are estimated by manually lemmatising all ‘unknown’ entries for the letter A and extrapolating. Sennert: total 7,255, letter A 561, yielding (after manual screening) 70 lemmata; von Bene: total 2,015, letter A 193, yielding 88 lemmata. Vesalius often writes Greek and Hebrew names in their respective alphabets. These were not included in the counting.
The same PoS and other grammatical parameters that were used above (chaps 18–19) were also determined for these medical texts and printed above (tables 17–18). It was found that medical Latin corresponds well to other scientific Latin in some parameters (low: 1st SG, PRON:POSS; high: ADJ, 3rd PAS) but differs quite strongly from other, more theoretical sciences in others (not high: ESSE, PREP, N-SUF, modifiers; not low: ABL ABS, entropy). There were also some differences between early medical writers and later ones (especially up to and including Gordonius, low: PTC, CONJ:S), and sometimes Gordonius exhibited singular values (very low: ABL ABS, entropy; high: PREP) that seemed to point toward a more colloquial type of Latin. Especially the modern physicians exhibited values markedly similar to those of Pliny (in particular, very low: PRON, ESSE; low: CONJ, V, ACC; high: N; very high: PTC, entropy) – a ‘nominal’ type of language. It may be that only after the time of Gordonius was a relatively homogeneous medical Latin, strikingly similar to Pliny’s ‘plain’ approach to language, used. In fact, the medical parts of Pliny’s encyclopaedia were often reused into early modern times. It is, of course, not possible to say based on the data here how far this is convergence and how far Pliny was influential as a rôle model. For the three earlier texts in the sample, circumstances were different: Celsus wrote before Pliny, Gariopontus relied strongly on texts translated from Greek, and Gordonius relied on Arabic medicine. In the summary plot in figure 46 above, the medical texts did not cluster clearly against other scientific texts, Gordonius ended up among scholastic texts, Vesalius close to Pliny, von Bene far off and close to Galileo, the others quite in the centre of the plot (the Isidore sample was too small to be meaningfully plotted).

Before discussing these and other values further, a few words about the seven authors and their way of writing are included. Only the first two have been studied in depth to date; much of what has been found for Celsus will be valid for other medical Latin as well, although later authors create new words more liberally.

Cornelius Celsus, *De medicina* (ca. 25 BC–ca. AD 50): Celsus wrote a large encyclopaedia about the *Artes*, of which only the part about medicine is extant. The other parts apparently treated *De re rustica, bellica, rhetorica, philosophia, de iure civili*,17 thus more practically usable sciences, excluding speculative (such as mathematical) ones whose province was still exclusively Greek. Celsus seems to have been the first Roman to write about medicine in Latin and can thus be com-

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17 According to Schanz & Hosius (1922–1935: 2:722). On this author, see Schanz (1881); Schulze (2001). On his important rôle in the formation of medical Latin, see Langslow (1991). Edition used: Marx.
pared to Cicero, who first wrote about Greek philosophy in Latin (Brolén, *De elocutione*, p. 4). His language is rather classical and concise; as Schanz & Hosius put it: ‘Seine Sprache ist rein und einfach und hält sich von allem Schwulste frei’ (‘his language is pure and simple, completely free from bombast’; 1922–1935: 2:726). Brolén formulated (*De elocutione*, pp. 7, 10):

\[\textit{numquam aut aliis verbis aut pluribus usus esse videatur, quam quibus opus erat ad res dilucide explicandas.}\]

\[\textit{Contra ubi vel existabant latina verba ad res nominandas apta vel facile fingi poterant, a graecis videtur abstinuisse.}\]

‘he never seems to be using other or more words than were necessary to explain things clearly.’

‘On the contrary, where there existed Latin words apt for naming things or that could be easily formed, he seems to abstain from Greek ones.’

Schanz confirms (1881: 373) that this author always uses Latin names if available, for example *veratrum* (13 times), not ἑλλέβορος, for the plant ‘hellebore’. Nonetheless, Celsus is, of course, not able to avoid Greek terminology altogether.\(^{18}\) The word *graecus* (including the adverb *graece*) occurs 177 times in his work; in most of these passages, he is discussing terminology. At the very beginning he divides medicine thus (I, proem. 9, ed. Marx, p. 18):

\[\textit{Primam διαιτητικήν, secundam φαρμακευτικήν, tertiam χειρουργικήν Graeci nominarunt.}\]

‘The Greeks called the first part dietetics, the second pharmacology, the third surgery.’

Often he tells the reader the Greek name and a Latin translation or equivalent. It is interesting to look at how these are formed; some examples:

- φλεγμονή: *inflammatio* (I, proem. 16, ed. Marx, p. 19).
- μελαγχολία: *bilis atra* (II.1.6, p. 46).
- στραγγουρία: *urinae difficilias* (II.1.8, p. 47).
- ἄφθασι: *serpentinia ulcera oris* (II.1.18, p. 49).
- φύμα: *in fistula urinae minutus abscessus* (II.8.20, p. 71).
- καχεξία: *malus corporis habitus* (III.1.22, p. 50).
- δυσεντερία: *intestinorum mala tormenta* (IV.22.1, p. 175).
- ἀγκυλοβλέφαρος: *Interdum inter se palpebrae coalescunt, aperiique non post oculus. Cui malo solet etiam illud accedere, ut palpebra cum albo oculi cohaerescat; scilicet quum in utroque fuit ulcus negligenter curatum* (VII.7.6A,

\(^{18}\) Fögen (2009: section 4.9) treats Greek loanwords in technical Roman writers such as Celsus.
Both these diseases were apparently called ἀγκυλοβλέφαρος in Greek; but that is not found anywhere in the surviving Greek literature.\(^{19}\)

Clearly, Greek compounds, which were much more frequently used in medicine than in Platonic or Aristotelian philosophy and science, often defied a one-word Latin translation. As the brief list shows, the explanatory translation may consist of two or three words, but occasionally even of an entire sentence. Occasionally, Greek terminology is not explained at all; Celsus obviously expects the reader to be familiar with these Greek names:

- is morbus est quem ἐλεφαντίασον Graeci vocant (III.25.1, p. 141),
- morbum hunc χολέραν Graeci nominarunt (IV.18.1, p. 171–172).

In both these cases, we still use the Greek word for these diseases in modern languages such as English. Very rarely, Celsus apparently tries to coin a new term himself, as for the zygomatic bone (VIII.1.7, p. 364; English uses the Greek term!):

> os [...] iugale appellari potest, ab eadem similitudine, a qua id Graeci zygodes appellant.

‘it could be called the “yoke bone” by the same similarity as the Greeks call it zygomatic.’

Listing the Georges entries which quote Celsus but none of the authors before him and of his century\(^{20}\) yields some 119 lemmata. Many of them are diminutives (18, e.g. cicatricula), which were typical for the spoken language,\(^{21}\) but even more (57 in total) are formed with prefixes: ad- (2), circum- (4), co(n)- (5), de- (1), ex- (3), in- (6), in- privativum (5), per- (6), pra(e)- (1), sub- (11), subter- (1), super- (12). There are also quite a lot of derived adjectives (16, e.g. auricularius), and especially many denoting nuances of colours. Rather less common are nouns formed with suffixes (-tio (5), -mentum (2), -or (2)) and derived verbs (febrio, -ire; hebetesco, -ere; teneresco, -ere). Only very few more specifically medical terms remain: agrimonia (‘agrimony (a medicinal plant)’), delirium (‘madness, delirium’), gibbus (‘hunched, humped’), hernia (‘rupture, hernia’), scrotum (‘scrotum’), simila (‘the finest wheat flour’). A list of the 42 lemmata Georges mentions exclusively for Celsus (underlined ones contain Greek parts) will give an impression of the rarer words not picked up by other writers:

- agrimonia N; cicatricula N; circumaperio, -ire V; coaestimo, -are V; excisorius ADJ; exspumo, -are V; extorreo, -ere V; febrio, -ire V; felinus ADJ; frictio, -onis N; gibbus ADJ; inalbesco, -ere

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19 As checked in in the online TLG (12 December 2018) and LSJ.
20 For the first century AD, I removed entries quoting Columella, Lucan, Quintilian, both Sene- cas, Suetonius, and Pliny the Elder.
21 See Hofmann (1978: 139–141).
Unexpectedly, adjectives (18) and verbs (14) are more common than nouns (10). There are no uninflected words in the list. Most of these few words will not be new coinings but rather happen not to be preserved in earlier texts; it would seem that Celsus hardly, or not at all, coined new words.22 Practising Latin physicians in Antiquity will have used Greek terms when no Latin ones were at hand. Patients who knew no Greek may even have been impressed by the educated doctor. Commonly used words in special, technical meanings are, of course, not so easily extracted automatically from a text, but they seem to be more common: for instance, Celsus uses ductio (‘purging’) or acutus (‘acute (disease)’).

Isidore of Seville (ca. 560–636) has already been treated as an encyclopaedist above (chap. 9 §7).23 Although book IV of his Etymologiae, entitled De medicina, is not strictly speaking a medical work, as it is interested primarily in the formation of the words used in medicine, it may still be usable as an indicator of medical Latin vocabulary in his time. He explains the following 101 medical terms, which provide good examples of rare terms in the text (in brackets in classical orthography, again underlined are words with Greek parts):

aforismus [aphorismus], alopicia, apoplexia, apostoma, artriticus, atrofia, branchos, cacexia, cancer, carbunculus, cardiaica, cataplasma, catapotia, cauculus [calculus], cephaelea [cephalae], chronia, cicatrix, clistere, colica, comitialis, coryza, cotica, cretics, diarra [diarrhoea], dictum, dinamidia [dynamidia], disinteria [dysenteria], electuarium [electarium], elefanticus [elephantacus], enchiridion, enpiis [empy], epilepsia [epilepsia], erisipela [erysipelas], febris, fleumon [phlegmon], frenesis [phrenesis], frenusculi, furunculus, haemoptois, hepaticus, hicteris [icteris], hydropis, ileos, incensum, inpetigo, lentigo, lepra, lionesis, lienteria, mania, medicina, melancholia, mirobalanum [myrobalanum], mortarium, nefresis [nephresis], nyctalmos, odor, [h]ordeolos, oscedo, papula, paralesis [paralysis], parotidiae, peripleumonia, pestilentia, pharmacia, phlebotomum, phlegma, pleurisis, podagra, prognostica, prurigo, pulstula, r[h]agadiae, raucedo, rh[e]uma, sanguis, sanitas, sacra, satiriass [satiyrias], scabies, sciasis [ischias], scothomia [scotoma], serpedo, similaria, spasmus, stac-ten, stranguria, synanchis, syringio, tetanus, thymiama, tisis [phthisis], tussis, ulcus, unguenta, verrucae, óξεα, υδροφοβία.

22 The same conclusion was reached by Broblén, De elocutione, p. 11.
23 Quoted still from the Lindsay edition; vol. 4 has not yet been published in the new Belles Lettres edition.
Only 34 of these are fully Latin words. Besides many medical technical terms, there are also some quite common ones such as odor, sanitas, or sanguis. Exclusively nouns are explained, many of them ending in -a or -is. Looking at the entire text (without the headings), 21 words are found that Georges does not list or mentions only for Isidore (classical spelling in brackets):

arteriasis N; brancialias [branchias] N; cephalaeas [cephalaeas] N; diaeticus ADJ;26 dynamidias N; empiis [empye] N; feliculna (translates χολέρα); frenusculus N; haemoptois, -idis N; inglutio, -ire V; impensatio N; inguinarius ADJ; larvaticus ADJ (varia lectio larvatio N); marciatum [martiatum] N; nyctalmus N; phlegmaticus ADJ; sarcia N; sarnam N; serpido N; squamatio N; subcutaneus ADJ.

These are 15 nouns, 5 adjectives, and 1 verb; one of these words is noted by Isidore as colloquial (sarnam). Not included in the list are words that Isidore invented exclusively for the sake of his etymologies (A quasi B), such as:

Et ulcus, quod olet, quasi olcus.25
‘And ulcer [ulcus], what smells [olet], as if one said olcus.’

In general, Late Antiquity had a freer approach to coining new words than the ‘classical’ period (ca. 100 BC–ca. AD 100).26 In the case of Isidore, there are indeed quite a few, mostly nominal, derivations, but he does not form new genuine compounds.

Gariopontus (d. ca. 1050) has also been mentioned in passing above (chap. 9 §12). He is one of the early authors associated with the medical school at Salerno. His work Passionarius was very successful; there are some sixty-five known manuscripts.27 This author used mediaeval medical texts often ultimately going back to late antique translations from Greek to compile his large work, for instance the texts known as Aurelius and Esculapius (Late Antiquity) and texts by Theodorus Priscianus (fourth century). Besides the manuscripts, there are also several early modern prints showing that the knowledge collected by Gariopontus did not seem to be perceived as outdated even five hundred years later.28 His text is used as an example of early Salerno medicine before the influx of Arabic and

24 Quoting Celsus’ text quoted above, but in Latin letters: Sunt autem omni curationi species tres: primum genus diaeticum, secundum pharmaceuticum, tertium chirurgicum.
25 Similarly: pastulentia, pilimenta, squammies.
26 See chap. 9 above, and further examples from Christian Latin in Blaise (1955: 15–16).
27 Eliza Glaze is preparing an edition. For now, see Glaze (2009) on the text.
28 e.g. the edition Gariopontus, Passionarius (1526). In 1576, the work was still printed in the florilegium De febribus opus sane aureum, non magis utile, quam rei medicæ profitentibus necessarium (Venetiis: apud Gratiosum Perchacinum; https://archive.org/details/bub_gb_mG06v0J9yXgC).
Greek translations. The text is heavily dependent on late antique medical literature; its Latin is strongly influenced by it.

Bernardus de Gordonio (ca. 1258–ca. 1320) was a professor of medicine at the University of Montpellier, which was the leading school for medicine in his time besides Salerno. A text of his is used as an example of scholastic university medical Latin from the late thirteenth century. Very little is known about the author—basically, only what can be extracted from his many works. Chaucer mentions his name in a list of famous physicians (Canterbury Tales, ed. Skeat, line 434). According to Demaitre (1980), ten genuine works of his are known. The Tractatus de crisi et de diebus creticos, of which there is a recent critical edition, is used here. It treats the scientia praedicendi for many different diseases. Its editor, Guardo, notes that the treatise’s language is very similar to that used at the school of Salerno and especially that of Constantinus Africanus (edition, p. 71).29 It will be found that this text contains the most un-classical vocabulary among the sample; the author occasionally also uses Arabic loanwords.

In early modern times, medical writers become more or less influenced by humanist language. Once Greek medicine was fully assimilated, Arabic terms disappear more and more from Latin medical texts (with a few exceptions that often live on in our modern languages: alcohol, camphora, elixir, sirupus,…).30 But in the time of the humanist movement, there were also some physicians who sought to ‘improve’ their style and language more radically and write more classicist Latin. The best known such author is Andreas Vesalius (treated in chap. 13 §4 above). Only book one of his major work De humani corporis fabrica was used in this study, and only Latin words were considered (Vesalius tends to compare Greek and Hebrew names to the Latin ones he actually uses). His style is definitely classicist and his vocabulary richer than usual (most lemmata per sample); the use of words not attested in Georges is rare, but even a classicist cannot always avoid some new words in fields like this one. Sometimes they are Latin names for parts of the body not attested in Antiquity (such as mammillares) or derivations (about which more in the next section), such as arterialis, arteriola; and sometimes words that are now very inconspicuous and common, such as cuneiformis, are found in Vesalius (no other occurrences in Corpus Corporum). Many of these words are nouns. These new terms, however, tend to be constructed in a straightforward Greek or Latin way that might not have surprised, say, Cicero.

29 Unfortunately, Guardo compares this author’s Latin to classical Ciceronian Latin, not to Medieval Latin.
30 On this process, see Hasse (2016).
Daniel Sennert (1572–1637) was a renowned Lutheran physician in Wittenberg, whose speciality was iatrochemistry. His voluminous *Institutiones medicinae* written in 1520 in five volumes is only one of his many works. Sennert’s vocabulary already reminds the reader of modern medical Latin terminology. Although Sennert’s Latin also avoids what was perceived as typically mediaeval (Arabic words, ‘scholastic’ syntax, mediaeval spelling), his Latin is much more pragmatic than Vesalius’. There are hundreds of words not found in the Georges dictionary; many of them are graeca, but here are some purely Latin ones: *alimentalis, alimentaris, alimentosus, cinamomum, circumgyratio, deglutitio, flatulentia, flatulentus, flatuosus, putredinalis, putrescibilis, scorbutum, serositas, serosus*, besides many colour adjectives differentiated with *sub-*(as already in Celsus). A few terms are explicitly described as colloquial: *lancetta, menstrua alba, spelta*. A rare example of a term derived from a vernacular language is *scorbutus* from French, which in turn was derived from Middle Low German *schorbûk* (according to the *OED*). Of course, there are also many names of medicinal plants and substances, such as *equisetum, tormentilla, veronica, zedoaria*. Sometimes adjectives turn into nouns: *caeliaca (passio)* (‘an intestinal disease, coeliac disease’). Many of these terms and suffixes are still in use today in medical science, despite the fact that modern medicine does not use Latin any longer. Sennert’s free use of new terms put together from Greek and Latin constituent parts, especially with the use of suffixes and prefixes, seems to have been the standard approach for early modern physicians. Later physicians such as Francis Home in his *Principia medicinae* (4th ed., Amstelodami, 1775) still use a language similar to the one found in Sennert, although there seem to be rather more new technical terms; barely Latinised Greek compounds (such as *ophistotonus*) are even more common, as are terms

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31 On this author, see online at http://galileo.rice.edu/Catalog/NewFiles/sennert.html.
32 There is an online scan of the book at http://www.uni-mannheim.de/mateo/camenaref/sennert2.html.
33 A lemmatised query in Corpus Corporum with *vulgus* (voco|appello) finds 54 instances.
34 He defines (the term is not in Corpus Corporum before him): *A lienteria saltem secundum magis et minus differt affectio seu passio caeliaca dicta, quae est nimir celer cibi et potus parum mutatorum dejectio, seu excretio alui praeternaturalis, in qua chylus adhuc crudus et imperfecte coctus deicitur* (‘The condition or disease called “coeliac” differs from lientery in quantity, it is a too fast expulsion in hardly changed form of food and drink, or the excretion by an unnatural stomach in which [digestive] liquid is ejected that is still crude and not well digested’; *Institutiones medicinae* III, aphor. 22, p. 302).
35 A few examples from another author, the anatomist Julius Caesar Arantius (1529/1530–1589), *De humano foetu liber* (Lugduni Batavorum, 1664) confirm this: *venarum et arteriarum canaliculi* (p. 17), *uterinum jecor* (i.e. the placenta; p. 19), *sanguificatio* (genesis of blood in the developing embryo; p. 19).
Franz von Bene the Elder (fl. 1818) was a Hungarian medical doctor who worked in Budapest. He was senior at the medical faculty. His five-volume work *Elementa medicinae practicae* (Pest, 1833–1834) was published posthumously by his son of the same name. Von Bene the elder also wrote a short treatise, *Brevis doctrina de vaccina* (Buda, 1818), about the recent technique of vaccination against smallpox using fluid from cowpox pustules (*variolae vaccinae*), which explains the English and Romance name ‘vaccination’ (‘cowing’). Toward the middle of the nineteenth century, it was no longer common in most of Europe to publish medical treatises in Latin. This was only continued in countries in which none of the major emerging vernaculars was in use, such as Hungary. The *Elementa* treat in this order: *Doctrina de febribus*, *De inflammatione generatim*, *Inflammationes in specie* (among which: *encephalitis*, *myelitis*, *otitis*, *glossitis*, *diaphragmitis*), all words absent from Latin dictionaries and Corpus Corporum), *Efflorescentiae cutaneae* (among which: *lupus*, *erysipelas*, *framboesia*), *Excretiones morbosae*, *Retentiones*, *Cachexiae*, *Nevroses* (many diseases ending in *‑algia*, further split into *dolores*, *spasmi*, *debilitates*, *vesaniae*). A glance at the detailed index shows that here for the first time in this survey proper names are in use, for instance *morbus maculosus Werlholfii*, or *methodus Weinholdii* against syphilis. But this was still very much the exception.

In order to provide a more tangible example of this final stage of medical Latin, a random excerpt of this hardly known text is provided here. Linguistically interesting features are highlighted as in chapter 19 §4 above. The quoted text is from *Elementa medicinae practicae*, vol. 1, §205, Pest edition, pp. 267–268; it treats inflammations and their causes.

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36 Callisen (1830–1845: 26:233).
37 Derived from French *framboise* (‘strawberry’).
Periodos inflammationes frequentissimae sunt in aeate iuvenil ac virili, non tamen raeae in aeate infantili, imprimis tempore dentitionis, facile evolvitur meningitis, aetate pueril infesta est tracheitis, aetas iuvenilis prrior est in peripneumonia tracheitidem, in muliere metritis, in ac semen inflammaciones viscerum abdominalum facile evolvuntur. In inflammationem perpessis generatur per eam dispositio ad eandum inflammationem. Causae excitantes inflammationum sunt multiplices inter quas frequentissime accusatur influxus atmosphaerae noxius; subinde calore suo exaltato sive per radios solis, sive per artem, provocat non tantum cutis ambustionem, sed et alias phlegmasias graves. Longe frequentius tamen excitatur inflammation per refrigerium, cujus actione non tantum pernio, sed etiam inflammations diversae internae producuntur, imprimis si corpus antea incaluerit et in sudore constitutum fuerit; ideo inflammations topicae frequentissimae quidem sunt hyeme, sed non raeae etiam aestate et sub zonae torridae, dum per pluvias, aut per ventum frigidum, temperatura aeris notabiliter imminuitur; subinde mutatio partium constitiv varum, accumulatio excessiva oxygenii, praesentia vaporum diversorum irritantium vegetabili aut mineralium, vel constitutio peculiaris atmosphaerae provocat inflammations topicae.

The Latin looks very technical, especially the vocabulary, which is often formed with suffixes (but besides von Bene, only Gordonius uses suffixes profusely in our sample). The plain, unrhetorical syntax resembles that of Pliny: the content looks like a list. As can be seen, the modern Latin-based medical terminology is already very much developed in this text, and many of the technical terms are still identical in medical English today; exceptions, such as terms from humoral pathology, are due to changes in the scientific Denkstil.

§4 In order to achieve a more systematic approach to how novel vocabulary typically looks in these seven authors, a list of lemmata not known to the Perseus PoS tagger or to Georges was generated. In order to use the same amount of text for
all of them, only the first 3,389 words (the length of the shortest text) were used. Lemmata are given in classical orthography, regardless of the edition’s orthographic choices. The PoS is added, including the inflection (if unclear); words with Greek parts are, again, underlined.

Celsus, *De medicina*: (none; also none that Georges mentions only for him).

Isidore:39 *arteriasis* N; *branchias* N; *cephalae* N; *diaeticus* ADJ; *dynamidia* N; *empye* N; *fellicula* N; *frenusculus* N; *haemoptois* -idis N; *inglutio* -ire V; *impensatio* N; *inguinarius* ADJ; *larvaticus* ADJ; *marciatum* N; *nyctalmus* N; *phlegmaticus* ADJ; *sarcia* N; *sarnam* N; *serpedo* N; *squamies* N; *squamatio* N; *subcutaneus* ADJ.

Gariopontus:40 *causis* N; *confatigo* V; *constrictorius* N; *diaquilon* N; *diasampsucum* N; *embrocho* V; *emphraxis* N; *encausis* N; *epilampadium* N; *epiplocen* N; *even-tatio* N; *fenigrecum* N; *lixoperitia* N; *omphacomel* N; *oxyrodinum* N; *paracope* N; *pericausis* N; *pericauson* N; *plethoricus* ADJ; *pungitivus* ADJ; *sarine* N; *sarnam* N; *serpedo* N; *squamies* N; *squamatio* N; *subcutaneus* ADJ.

Bernardus de Gordonio:41 *acrocornis* , -idis N; *alitatio* N; *appodio* V; *armenicus* ADJ; *bor[r]ago* , -inis N; *brodium* N; *camphora* N; *cassiefistula* N; *causo[n]*, -nis N; *colligantia* N; *defoedatio*, -nis N; *diaeto*, -are V; *diabor[r]ago*, -inis N; *diase-* N; *grampa* N; *hiera* N; *lipparia* N; *mollificatio* N; *morphea* N; *nenufare* N; *opilo*, -are V; *hordeatus* ADJ; *paroxysmus* N; *paulatinus* ADJ; *penetrativus* ADJ; *pernecabilis* ADJ; *pungitivus* ADJ; *scrofula* N; *serpigo*, -inis N; *situo*, -are V; *sub-e* N; *subtiliativus* ADJ; *supercalepio* V; *syrupus* N; *tuellus* N; *uritivus* ADJ; *icteritia* N; *zimia* N; *zuccara* N.

Andreas Vesalius: *confarcino* V; *consodalis* N; *curativus* ADJ; *oscitania* N; *praemiolium* N.

Daniel Sennert: *bezoardicus* ADJ; *cagastricus* ADJ; *chymia* N; *chymiatrus* N; *chymica* N; *acetum destillarum* N; *hecticus* ADJ; *iatrochymicus* N; *rebisoleum* ADJ.

Franz von Bene: *asphycticus* ADJ; *bagadensis* ADJ; *catarrhalis* ADJ; *classificatio* N; *contrastimulus* N; *convulsivus* ADJ; *epilogismus* N; *gastricus* ADJ; *homoeopathica* N; *humoralis* ADJ; *icterodes* ADJ; *incitabilitas*, -enis N; *inflammatorius* ADJ; *mesmerismus* N; *nosologicus* ADJ; *nosophia* N; *ophthalmia* N; *pustulantis* ADJ; *pharmacologia* N; *physiologicus* ADJ; *rheumaticus* ADJ; *spachellus* N; *variola* N; *zelosus* ADJ; *zooiatria* N.

39 See this same list already above, with some comments.
40 Quite a few words Gariopontus uses are only known to Georges from Caelius Aurelianus or Theodorus Priscianus, whose texts were among Gariopontus’ sources.
41 More information about most of these words can be found in Guardo’s glossary to the edition.
Arranging the above in a table according to PoS yields table 24.

Table 24: Non-classical words and their PoS in the first 3,389 words of the seven texts studied.

| Author    | Time    | N | ADJ | V | Aptota | Total   | Of which Greek |
|-----------|---------|---|-----|---|--------|---------|----------------|
| Celsus    | ca. 50  | 0 | 0   | 0 | 0      | 0       | 0 (0 %)        |
| Isidore   | ca. 620 | 16| 5   | 1 | 0      | 22      | 10 (45 %)      |
| Gariopontus | ca. 1050 | 18| 2   | 2 | 0      | 22      | 15 (68 %)      |
| Bernardus | ca. 1300 | 26| 8   | 5 | 0      | 39      | 5 (13 %)       |
| Vesalius  | 1543    | 3 | 1   | 1 | 0      | 5       | 0 (0 %)        |
| Sennert   | 1628    | 3 | 6   | 0 | 0      | 9       | 5 (55 %)       |
| von Bene  | 1833    | 12| 13  | 0 | 0      | 25      | 15 (60 %)      |
| Total     |         | 78| 35  | 9 | 0      | 122     | 50 (43 %)      |

The low numbers in Vesalius may be expected, but those in Sennert are surprising; they are not an artefact, although he speaks at the beginning of his work about the nature of medicine, which may be expected to use a different register (dedications and praefationes were not included in our counts). The table shows that Bernardus uses non-classical words most commonly; Vesalius and Sennert in early modern times the least; Isidore, Gariopontus, von Bene quite a lot. Only Bernardus uses words that are not derived from Greek or Latin, namely Arabic ones (nenufare, subet, syrupus, zuccara). All in all, it would seem that the tendency to use new words in medicine continued to rise, despite a little dip due to humanist classicism. The more lasting influence from this movement may lie in the fact that non-Graeco-Latin words (‘barbaric’ ones, according to humanists) were henceforth shunned and that classical rules for forming new words were more strictly followed. An unexpected observation is that modern authors use more unusual adjectives than nouns. No new uninflected words were found in the sample, which would seem to be a normal feature of many languages of science (see chap. 18 §4).

42 The beginning of book III was also counted to rule this possibility out. Only slightly more words were found (11 words): bitus, -us N; carnosus ADJ; dissimilaris ADJ; excrementitus ADJ; in-salubritas N; laeditura N; morbificus ADJ; pathognomonicus ADJ; semioticus ADJ; supervenientia N; vagantia N.
43 The case of Vesalius’ Hebrew words is different: they are just mentioned as translations, not used in the text.
Contemporary post-Latin terminology

§5 In the twentieth and twenty-first centuries, Latin is practically not used for medical publications any more; a science of such practical importance obviously produced vernacular publications early on, and only theoreticians strove to remain a closed circle and write Latin. Nonetheless, most of the vocabulary touched upon here is still very much in use in medicine today. Many diseases, drugs, and methods still bear the traditional Graeco-Latin names in medical English or German. In general, it can be observed that names already in use in the *corpus hippocraticum* have often remained in use (such as *ischias* or *gangraena*). Such Greek terminology is often not explained by the Latin authors, even if the word has a Latin homophone, such as *coma* (Greek ‘coma’, Latin ‘hair’). A look at how new medical phenomena are named today, in the post-Latin age, shows that in general there seems to be more freedom in the choice of names – a postmodern ‘anything goes’ seems to apply, similarly to what was observed above for the human sciences. Correctly formed Graeco-Latin coinings are becoming rarer, but are still occasionally proposed for new phenomena. Some examples, with the year of first use according to the *OED*:

- *encephalomyelitis* (from 1906),
- *endosymbiosis* (from 1932),
- *immunoglobulin* (from 1953).

Proper names (of the discoverer or place of discovery) for new phenomena now seem to be much more common:

- Chagas disease (1909, first described by Dr Carlos Chagas),
- Alzheimer’s disease (from 1911, after Dr Alois Alzheimer),
- Ebola virus (from 1976, after the Ebola river in Congo).

As descriptive names have tended to become longer, abbreviations/acronyms have become common (something not observed in the Latin texts). The abbreviations have often entered routine usage. Besides, there are ‘anything goes’ names with a purely accidental connection to the phenomenon in question:

- ‘Acquired immune deficiency syndrome’ (usually just ‘AIDS’, from 1982).
- ‘Severe acute respiratory syndrome’ (usually just ‘SARS’, from 2003).
- ‘Sin nombre virus’ (from 1993, Spanish for ‘without name’; causes the hantavirus cardiopulmonary syndrome).

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44 Already early on, there were dictionaries for medical terms in the vernacular tongues, e.g. Woyt (1696) for German.
45 Sennert II.3.1.7, p. 313, explains the word; Home, *Principia*, p. 222, does not.
• ‘Midichloria’, a pathogenic, tick-borne bacterium named after a creature in the Star Wars TV series (2004).
• ‘Gene’, a word invented by the Danish botanist Wilhelm Johannsen in 1909, vaguely reminiscent of γένος. Jesuit authors formulated this concept in correct Latin as determinantia (see §2 above).
• ‘Clusters of differentiation’ (usually abbreviated ‘CD’) are cell adhesion molecules in immunology. They are simply numbered sequentially – for humans there are now (2016) 371 numbers – despite their very diverse functions; this makes learning them very unintuitive for students (see fig. 47).
• ‘Toll-like receptors’, a class of proteins important in the immune system, are named after the Drosophila gene ‘toll’; its German discoverer thought it was toll (‘awesome’). Similar cases abound. One more: ‘spaetzle’ is the name of a protein of Drosophila melanogaster (named after the Swabian dish) which, apparently, produces larvae resembling Spätzle. Its precursor is called pro-spaetzle.
• Sometimes new terms can even consist of affixes only, such as ‘polyoma’ (cf. Gottlieb & Villarreal 2001), referring to the ability of viruses to produce multiple (πολύ) tumours (-oma) – a word without a root.

Clearly, this modern proliferation of terminology loses the mnemotechnical advantages the old Graeco-Latin system had. Today, medical students have to learn by heart countless abbreviations and many names without any relation to what is named (‘sin nombre virus’); whereas in the past, after they had mastered some Latin and Greek, much of the terminology became more or less automatically understandable. It is to be hoped that molecular biology terminology will be improved at some point, as happened in organic chemistry through IUPAC in the twentieth century. This modern ‘anything goes’ approach can be traced back in principle at least to the late eighteenth century, for instance the entomologist Johann Christian Fabricius (1745–1808) said (Entomologia systematica, Hafniae, 1792, 1:x):

Nomina valent uti nummi praetio certo, determinato. Optima sunt, quae omnino nil significant.
‘Names have a certain, determined value like money. Those are the best that mean nothing whatsoever.’

His teacher Linnaeus had already held similar views. But in practice such an approach becomes common only in vernacular science in the nineteenth and twentieth centuries.
Nonetheless, some Latin systems of nomenclature are still in use. From early modern times onward (at least since Sennert), the suffix -itis has been used to denote an inflammation of the organ in the head of the compound, such as rhachitis (ῥαχίτης) or hepatitis (ἡπατίτις). Originally, this Greek suffix denoted similarity, so semantically a ‘liver inflammation’ grew out of Greek ‘like the liver’. This suffix is now freely combinable in this function (diaphragmitis, paraphrenitis, ...). Adjective-forming suffixes are also very common. A German online script for medical students explains the following ones (including example words derived from *arteria*; I add English translations in parentheses):  

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46 Home, *Principia*, p. 140, explains the suffix as *inflammatio*.
47 ‘Medizinische Terminologie’ by the Charité Berlin: https://medizingeschichte.charite.de/fileadmin/user_upload/microsites/m_cc01/medizingeschichte/Lehre/Skript_Medizinische_Fachsprache_Modellstudiengang_Charit%C3%A9_Auflage_2_2015.pdf.
• arteria, ae f. = die Schlagader (‘artery’),
• arterialis, is, e (die Schlagader betreffend) (‘concerning the artery’),
• arteriosus, a, um (schlagaderreich) (‘rich in arteries’),
• arteriola, ae f. (die kleine Schlagader) (‘small artery’),
• Arteriosklerose (chronisch degenerative Verhärtung von Schlagadern) (‘chronic, degenerative hardening of arteries’).

In contrast to -itis, the normal Latin functions of the three suffices -alis, -osus, -olus are still in use here. They were already used systematically by Sennert and to some extent Vesalius (despite the fact that the resulting words may not have existed in Classical Antiquity). The last-mentioned example shows another type of new word produced by Greek compounding. There are many ‘frozen’ Greek words primarily used as suffixes in medical language today. Besides -sclerosis (σκλήρωσις, ‘hardening’), we can mention -algia (ἀλγος, ‘pain’; e.g. ‘gastralgy’, ‘neuralgy’) to denote pain, -ectomy (ἐκτομή, ‘cutting away’; as in ‘appendicectomy’, ‘vasectomy’) to denote the surgical removal or cutting of something, or -mania (μανία, ‘madness’; as in ‘nymphomania’, ‘hippomania’) to denote a pathological engagement with something. Thus, a physician does not have to learn how arthralgy differs from arthritis; he only needs to know the Latin medical suffixes. In English today such suffixes are occasionally also used with non-Latin heads: ‘seizurogenic’\(^{48}\) means ‘something that induces seizures’.

Dirckx (1983) offers a survey of modern English medical terminology and its roots which is full of instructive and often amusing examples. On the whole, it is almost exclusively long-known diseases and body parts that bear English names. Discoveries of modern, scientific medicine tend to bear Latin or Greek names, as do parts of the body that are hard to observe and thus did not have a common English non-scientific name. Although many of the recently coined Latin and Greek names are not well formed according to classical rules – such as the Graeco-Latin ‘hyper-tension’ – they have the advantages of being capable of international use and of being unambiguous: exactly the same reasons that kept Latin as a whole alive in the sciences much longer than in many other areas of life. Since knowledge of the classical languages among physicians has almost disappeared, word-material from various languages is now quite freely combined, such as ‘beet-uria’, ‘alkal-osis’, ‘acetyl-choline’, ‘vin-yl’ (Dirckx 1983: 106), but there is still a clear domination of morphemes from Greek and Latin. There is, however, also some danger of misuse due to ‘a craze to attach labels ([…]) cardioselective), an obsession to manufacture jargon (atraumatic normosis), or a weakness for no-

\(^{48}\) Not yet in OED, but quite common according to an online search.
velty (pseudopseudohypoparathyroidism), euphemism (chemical dependence), or circumlocution (erectile dysfunction); besides, ‘[i]gnorance of English has led to the creation of fecundability and obtundation, even though fecundity and obtusion are already in the language’ (Dirckx 1983: 159). Dirckx exhorted his colleagues to use ‘more intelligence and foresight’ in novel coinings, and ‘at least try to preserve established phonetic, semantic, and structural traditions, and above all, exercise a little restraint’ (1983: 195). At a time of strongly reduced Latin teaching at UK schools, this exhortation will likely be of little avail.

In chemistry, such Graeco-Latin nomenclature is much further developed, and much more detached from its Latin roots; Pörksen rightly called it a ‘Musterbeispiel einer internationalen, selbsterklärenden, durchsichtigen Nomenklatur’ (‘prime example of an international, self-explanatory, transparent nomenclature’; 1984–1985: 94). This chapter therefore concludes with a look at an example from chemistry.

Trends in new nomenclature?
§7 In order to return to the question posed at the beginning of this chapter, it may be instructive to have a look at another, related, example that has been studied very thoroughly: the naming of chemical elements. Of course, these elements were only identified as ‘elements’ by post-Lavoisier chemistry; before then they were just ‘substances’, but this matters little for the present purposes. Here some examples grouped by the way of naming and the time of their first naming.

- (i) Elements known since pre-scientific times bear popular, ‘trivial’ names: ferrum, argentum, aurum.
- (ii) Elements discovered in Antiquity tend to bear understandable, transparent (‘Democritean’) names, such as hydrargyrum, auripigmentum (the Latin name for arsenic (ore)).
- (iii) The same holds true for elements discovered in the Middle Ages and early modern times, although sometimes the motive behind the name proved wrong: antimonium, phosphorus (Henning Brand distilled it from urine in 1669 and called it phosphorus igneus), hydrogenium (christened as hydrogène

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49 See the instructive list at https://en.wikipedia.org/wiki/Timeline_of_chemical_element_discoveries.
50 Of course, these two principles do not always fit together. The reader will spot some elements that were not named typically.
51 Cf. Isidore, Etymologiae XIX.17.12, ed. Rodríguez Pantoja, p. 133.
52 Since Constantinus Africanus; the origin is debated, but it is certainly meant to sound Greek.
by Lavoisier in 1783), oxygenium (oxygène, Lavoisier in 1777; mistaken name: acids are characterised by hydrogen ions, not oxygen).

- (iv) From the nineteenth century onward, after the place of discovery: rhenium (1844, Russia), germanium (1886, Germany), francium (1939, France), californium (1950, California), moscovium (2010, Moscow); later (twentieth century) also after famous scientists: curium (1944, Marie Curie), einsteinium (1952, Albert Einstein), rutherfordium (1969, Ernest Rutherford).

- (v) From vernacular languages: cobalt (after German Kobold); bismut (ca. 1660, etymology debated, but certainly not Graeco-Latin); platinum (named by Watson in 1750), from platina, the Spanish diminutive of plata (‘silver’).

Despite these patterns, older methods of naming kept being used later on: lanthanum (1838) is indeed ‘hidden’ by being very rare, helium (1868) really does occur in significant amounts in the Sun, and the radioactive technetium (1937) really was artificially produced.

§8 As the samples studied here are small, we should not draw too far-reaching conclusions about the development of naming in medical Latin at this point, but most of the above results would seem to conform with what we would expect from earlier parts of this book. It can be summarised that medical Latin authors were at all times open to Greek words, especially compounds, but that other non-Latin words had a hard time being taken up in Latin medicine, except in Bernardus de Gordonio, whose time still relied to a large extent on Arabic translations of Greek texts and on Arabic sources. In his time, both Greek and Arabic were very distant languages that hardly anybody in the Latin West knew, and thus stood on near-equal footing. In Antiquity and early modern times, this was very different: educated people were expected to know Greek. Thus, Greek words in Latin texts were in these times seen rather as enrichment than as foreign elements.

The trend in all examples in this chapter was that in Antiquity, Latin authors tended to have what we called an ‘Aristotelian’ approach toward nova verba. In contrast, the Middle Ages and early modern times followed a more ‘Democritean’

53 Vicipaedia explains: Verbum ‘cobaltum’ deductum est a verbo germanico Kobold, quod manem malum significat, ita appellatum a metallicis qui in fodinis laboraverunt, quia veneficium fuit et aerumnas multas fecit in aerem elementorum aliorum effodendo, ut qualitatem eorum diminuit (“The word “cobalt” is deduced from the German word Kobold, which means “evil spirit”; it was called thus by the mineworkers who worked in the mines because it was poisonous and caused much distress in the air when other elements were to be dug up, as it diminished their quality’; https://la.wikipedia.org/wiki/Cobaltum, October 2017).
54 Details in Kopp (1843: 222–226).
The differences between the Middle Ages and modernity lay only in details in the formation of words. A greater change of approach happened exactly at the time when Latin fell out of common use in the sciences and people apparently stopped being held back by Latin stylistic concerns in medical science. But even von Bene in the nineteenth century still hardly uses personal names or other non-transparent coinings. During the entire Latin period, the approach to nomenclature and language in general was very different from that adopted in the twentieth century, as the few post-Latin examples above have shown. The Latin approach can be very well illustrated by Isidore’s explanation of what an *etymologia* is – something quite different from our modern genetic ‘etymologies’ (*Etymologiae* I.29.1–5, ed. Lindsay; Latin text quoted in chap. 1 §9 above):

‘Etymology is the origin of words, as the meaning of a verb or a noun is gathered from its explanation. [...] Its knowledge often has a necessary application in understanding [a word]. For, as you see whence a word stems, you will more easily understand its force. [...] Many [words] are also summoned from the speech of various peoples. Thus also their origin may be hard to discern.’

In the contemporary American approach to naming new medical phenomena, there can be no question of understanding the terms’ ‘semantic force’; they are often purely arbitrary. In fact, it looks as if a new agglutinative technical language could be emerging, using for its constituents more or less anything and allowing free combination, as ‘polyoma’ above showed. But this does still seem to be different in other sciences, for instance in the German human sciences, the *Geisteswissenschaften*, where the importance of abstract concepts that need to be expressed correctly is to this day higher; in German, the usual method is making use of compounds (which Latin, French, or English could hardly imitate),55 whereas English has turned much more definitely to an ‘anything goes’ approach, as the examples in §2 illustrated.

One can look for internal, philosophical, language-normative views behind the differences observed. The rhetorical dislike of *nova verba* in Antiquity that we met above (chap. 8) stood in contrast to (as Stotz characterised scholastic Latin) a desire to have ‘für jedwelches Gedachte einen unmittelbaren sprachlichen Zugriff durch ein Einzelwort’ (‘for any thought, immediate linguistic access through a single word’),56 which would explain the more ‘Democritean’ approach in schol-

55 Good examples can be found in the works of Heidegger, Gadamer, or Luhmann. These authors often do not define their new compounds: they are taken to be understandable simply through their constituent parts and the context of their use – a very different approach than the American one current in the natural sciences.

56 Stotz (1996–2004: VI, §3.11 = vol. 2, p. 236).
asticism and the later Middle Ages. Now, interestingly, this scholastic desire did not seem to fall prey to the humanists, at least in the province of medical science, where authors used less unusual terms for some time but our last authors had no scruples at all. Only after the end of the general knowledge of and heavy training in Latin for all intellectuals did the current predicament, which allows much more freedom in naming novelty, come about – outside the Latin medium. Next, a step back is taken to see how Latin was able to render Greek science in comparison to other traditional languages of science. This will be done with another case study involving texts by Aristotle and Euclid.