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MEDICAL LATIN IN THE ROMAN EMPIRE



D. R. LANGSLOW

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D. R. LANGSLOW

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Illustration: Detail from Trajan's Column (113AD), showing medical
orderlies tending the wounded behind the battle-line in one of the
Dacian wars. Courtesy of the German Archaeological Institute.
(Photograph: Faraglia).

for my teachers past and present

PREFACE

This book presents a linguistic profile of Latin medical terminology in the Roman Empire, with special reference to A. Cornelius Celsus, Scribonius Largus, Theodorus Priscianus, and Cassius Felix. Its principal concern is with patterns of vocabulary and forms of expression in Latin medical texts of the first five centuries AD, but, in characterizing medical language with reference to both literary and non-literary, elite and sub-elite, varieties of Latin, it ranges quite widely over the Latin language in its various styles and registers during this period. While it touches on many points which have more to do with medical or social and cultural history than with language and (socio)linguistics, it is intended primarily as a contribution to the history and the description of the Latin language in antiquity.

The present work represents a substantial revision of my thesis, which offered a systematic account and comparison of the terminology of two of the surviving Latin medical writers, Celsus (1st cent. AD) and Cassius Felix (5th cent. AD). To the study of these two authors I have added here, on the basis of research done since 1991, large amounts of data on the language of other medical writers, notably two near-contemporaries of Celsus and Cassius Felix, namely Scribonius Largus (1st cent., slightly after Celsus) and Theodorus Priscianus (4th–5th cent., slightly before Cassius).

In recent decades, and especially since the early 1980s, the history of the texts, ideas, practices, and artefacts of ancient healing has attracted considerable interest, within classical studies and elsewhere. There is still, however, no systematic treatment of the language of the associated texts. On the face of it, this is perhaps surprising, given that, in the absence of external evidence, the language of a medical text (or any text at all, for that matter) is the most precious source for answering the fundamental historical questions about the text and its background and context (who? where? when? why?), and in view of the fact that comparison of technical and non-technical texts has much to teach us about the corresponding registers of the language. On the other hand, the size and nature of the extant corpus of Greek and Latin medical texts should temper our amazement that full socio-historical accounts of ‘medical Greek’ and ‘medical Latin’ are still outstanding. The present work does not pretend to supply this missing full account—it must stand to some extent as a pilot study—but it does characterize in some detail the ‘medical Latin’ of four long and

important texts, which shed light in different ways on aspects both of the history of the Latin language and of the healing profession at the beginning and end of the Empire. Moreover, the descriptive framework developed and applied here will, it is hoped, lend itself to the study of other texts, medical or not, both in Latin and in other languages.

In accord with modern practice (cf. e.g. Wüster (1966: 255) and Fluck (1980: 16)), three principal lexical fields of medicine are distinguished and investigated in this study, namely anatomy and physiology, pathology, and therapeutics. From the last the terminologies of botany, mineralogy, and food and drink are excluded from formal systematic study (although included frequently in more informal remarks), partly on grounds of space, partly because they are marginal as specifically medical subjects, and partly because they are already treated in accessible works of reference (respectively André (1956*b*) and (1985*b*) on botany, André (1961) on food and drink, Goltz (1972) on mineralogy). That is to say, the focus throughout is on what Innocenzo Mazzini has called (1991*a*: 178) ‘*medicismi diretti*’, words naming or describing objects directly and essentially related to medicine.

Of the six chapters that follow, *Chapter 1* sets out the aims and background of the whole. It suggests why the field of technical language in general—and of medical language in particular—may be of interest and importance for general linguists, philologists, and historians alike. With reference to the modern world, it considers the nature and characteristics of technical language—including the similarities, differences, and problems to be encountered in studying technical terminology in a corpus language—and addresses the questions of defining and drawing the limits of the medical terminology to be considered in the body of the book. With reference to the ancient world, it reviews the notion of ‘medical Latin’, especially arguments for and against the existence of such a variety of Latin. Chapter 1 concludes with a fuller introduction to the four texts which constitute the focus of this monograph and a brief catalogue of surviving Latin medical literature to the end of the sixth century AD.

Chapters 2–5 deal each in some detail with aspects of a particular type of ‘term-formation’ that is of evident importance in the terminology of our medical authors. (My term ‘term-formation’ differs in content from the superficially parallel ‘word-formation’ in embracing all linguistic processes that lead to the creation of new terms in Latin.) From the available literature (notably Fluck (1980: 47–55), Sager, Dungworth, and McDonald (1980: 251–87), and Untermann (1978)), it emerges that just seven means of term-formation will account for all modern technical terms. These are:

- (1) borrowing;
- (2) the use of proper names;
- (3) semantic extension, esp. of non-technical words in technical usage;
- (4) compounding and suffixal derivation;
- (5) the formation of lexicalized phrases;
- (6) Greek- and Latin-based neologisms;
- (7) the use of abbreviations and formulae.

Each of these linguistic means of term-formation, with the probable exception of those numbered (6) and (7), plays a part in the formation of Latin medical terms. (Derivatives made to a Latin stem with a Greek suffix (e.g. *iecoriticus* ‘a sufferer from a disease of the liver’, *uaporizare* ‘to apply, treat with, steam’) are, I think, the closest our texts have to offer to (6); as for (7), there are, of course, abbreviations in the manuscripts but none that we have reason to believe were vocalized.)

Of the listed types of term-formation, *borrowing*, and especially the status of foreign words within the medical terminology, is the concern of *Chapter 2*, which has an appendix on the use of *proper names* as medical terms. *Chapter 3* discusses prominent types of *semantic extension*, or the use of familiar words in an unfamiliar sense, especially specialization or extension of sense, abstract and concrete senses, and metaphor. *Chapter 4* deals with the formation of *lexicalized phrases* (here called ‘phrasal terms’), paying particular attention to the problem of word-order within the noun phrase in classical Latin generally. *Chapter 5* considers the very small part played in Latin medical terminology by *compounding*, the conversely central role played by *suffixal derivation*, and in particular the apparent favouring of particular suffixes in well-defined lexical or semantic fields. *Chapter 6*, finally, moves beyond morphology and the lexicon to address some features of syntax and style that arise in connection with the choice of medical referring-expressions. It depicts certain aspects of prose-style relevant to medical writing as constituting a scale or continuum running between two poles, the one (here called ‘diffuse’) relatively long-winded and varied in its syntactic structure and based on verbs and adjectives as much as on nouns, the other (‘compact’) more compressed, much less variable, and dominated by nouns and nominalizations. By way of conclusion and summary, several striking parallels and one or two contrasts are drawn between ancient Latin and modern English medical prose, with regard to nominalization and syntax in the ‘nominal’ style, the prevalence of nouns and nominalized forms in the terminology, and other formal, semantic, and distributional properties of ancient medical terms which have emerged in earlier chapters.

Whatever its remaining shortcomings, which are entirely my responsi-

bility, this book would have been much inferior without the learned guidance and constructive criticism of various colleagues and friends over the past seven years, and it is a pleasure to record my deep gratitude in particular to my supervisor, Anna Morpurgo Davies, to my examiners, Bob Coleman and Jürgen Untermann, and also to Jim Adams and Klaus-Dietrich Fischer. Cloudy Fischer has been of enormous assistance throughout with medical bibliography, ancient and modern (including many unpublished articles of his own), and he suggested numerous improvements to the catalogue of Latin medical texts (I. 4. 5), in particular. Jim Adams very generously read a near-final version of Chapters 1–5 and improved them greatly with numerous and penetrating comments and questions. I owe a further immense debt of gratitude to the Alexander von Humboldt Foundation for the research award which allowed me to do the groundwork for the thesis in Cologne in 1986/7, under the stimulating guidance of Jürgen Untermann, and, appropriately enough, to correct the present work in Mainz in 1998 while launching, with the generous and learned assistance of Cloudy Fischer, a new project on medical Latin arising directly from this monograph (cf. Adams and Langslow, forthcoming). I am indebted and grateful also to the British Academy and the Fonds National Suisse de la Recherche Scientifique for funding, between 1992 and 1998, a total of four visits to the Fondation Hardt in Vandœuvres, Geneva, each of which enabled further progress to be made on the monograph, and to the permanent staff and my accidental fellow-guests at the Fondation for making so enjoyable those intense but peaceful periods of study. My thanks go also to the President and Fellows of Wolfson College, Oxford, and to successive Boards of the Faculty of Literae Humaniores for granting me terms of sabbatical leave in 1992, 1996, and 1998, which allowed periods of sustained work on the revision of the thesis. The final version of the book has benefited greatly in the course of production from the friendly and cheerful encouragement and high professional competence of Hilary O'Shea and Georga Godwin at OUP and of Angela Blackburn and Andrea Purvis at Invisible Ink Publishing Services. There are other debts, too, of course, ranging from the more or less academic-related to the purely personal. These I feel very keenly indeed, but they are impossible to acknowledge adequately in words. I must simply ask my wife, children, parents, and families, my friends, my teachers, my colleagues, and my students, all past and all present, to believe that I am constantly aware of, enriched by, and profoundly thankful for all that you have given and taught me and give and teach me still.

DRL

Oxford, June 1999

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ABBREVIATIONS, SIGNS, AND CONVENTIONS

References to Scribonius Largus (Scrib.), Theodorus Priscianus (Theod.), and Cassius Felix (Cass.) are to *page. line* of the editions of respectively Sconocchia (1983), Rose (1894), and Rose (1879); in these authors ‘t.’ before the reference means ‘in a title’; in Scribonius ‘ind.’ before the reference means ‘in the index’. References to all other Latin texts are abbreviated as in the *OLD*, or, for the later period, the *ThLL*, or more explicitly. Greek authors and works are cited according to the conventions of *LSJ*.

The titles of periodicals and journals are abbreviated after the manner of *L’Année philologique* (Paris 1928–). In addition the following abbreviations are used:

<i>ANRW</i>	H. Temporini and W. Haase (eds.), <i>Aufstieg und Niedergang der römischen Welt</i> (Berlin and New York, 1972–).
<i>CIL</i>	<i>Corpus Inscriptionum Latinarum</i> (Berlin, 1863–).
<i>CMG</i>	<i>Corpus Medicorum Graecorum</i> (Leipzig and Berlin, 1923–).
<i>CML</i>	<i>Corpus Medicorum Latinorum</i> (Leipzig and Berlin, 1915–).
Du Cange	Ch. Du Fresne dom. Du Cange, <i>Glossarium ad scriptores mediae et infimae latinitatis</i> (revised by L. Favre) (Niort, 1883–7).
Ernout–Meillet	A. Ernout and A. Meillet, <i>Dictionnaire étymologique de la langue latine: Histoire des mots</i> (4th edn., revised by J. André) (Paris, 1985).
Forcellini	Ae. Forcellini, <i>Totius latinitatis lexicon</i> (Prati, 1858–70).
Georges	K. E. Georges, <i>Ausführliches lateinisch–deutsches Handwörterbuch</i> (8th edn., revised by H. Georges) (Hanover, 1913–19).
<i>HLL</i>	R. Herzog and P. L. Schmidt (eds.), <i>Handbuch der lateinischen Literatur der Antike</i> , vol. 4: <i>Die Literatur des Umbruchs von der römischen zur christlichen Literatur, 117 bis 284 n.Chr.</i> , ed. K. Sallmann (Munich, 1997); vol. 5: <i>Restauration und Erneuerung. Die lateinische Literatur</i>

	<i>von 284 bis 374 n. Chr.</i> , ed. R. Herzog (Munich, 1989); vol. 6: <i>Das Zeitalter des Theodosius, 374 bis 430 n. Chr.</i> , ed. J. Fontaine (Munich, 2000). References to vol. 6, with ‘§’, are to numbered paragraphs.
ILS	H. Dessau (ed.), <i>Inscriptiones Latinae selectae</i> (Berlin, 1892–1916).
LexMA	<i>Lexicon des Mittelalters</i> , 9 vols. (vols. 1–6 Munich and Zürich, 1980–93; vols. 7–9 Munich, 1995–).
LSJ	H. G. Liddell, R. Scott, and H. S. Jones, <i>A Greek–English Lexicon</i> (9th edn.) (Oxford, 1940, with the Revised Supplement edited by P. G. W. Glare, 1996).
OLD	P. G. W. Glare (ed.), <i>Oxford Latin Dictionary</i> (Oxford, 1968–82).
PL	J.-P. Migne and others (eds.), <i>Patrologiae cursus completus: Series Latina</i> (Paris, 1844–1900).
PWRE	A. Pauly, G. Wissowa, and W. Kroll, <i>Real-Encyclopädie der classischen Altertumswissenschaft</i> (Stuttgart, 1893–).
REW	W. Meyer-Lübke, <i>Romanisches etymologisches Wörterbuch</i> (3rd edn.) (Heidelberg, 1935).
Tab. Vind.	A. K. Bowman and J. D. Thomas, <i>The Vindolanda Writing-Tablets (Tabulae Vindolandenses II)</i> (London, 1994).
ThLL	<i>Thesaurus Linguae Latinae</i> (Leipzig, 1900–).
Walde-Hofmann	A. Walde and J. B. Hofmann, <i>Lateinisches etymologisches Wörterbuch</i> (5th edn.) (Heidelberg, 1982).

‘Anat.’, ‘Path.’, and ‘Ther.’ refer to the lexical fields of respectively anatomy and physiology, pathology, and therapeutics.

+ after an author’s name in square brackets (e.g. [Cels.+]) means ‘attested first in’ (e.g. Celsus).

< between linguistic forms means ‘by regular sound-change from’.

> between linguistic forms means ‘by regular sound-change becoming’.

← means in Chapter 3 ‘by semantic extension from’, in Chapter 6 ‘by nominalization from’.

→ means in Chapter 3 ‘by semantic extension becoming’, in Chapter 6 ‘by nominalization becoming’.

|| means ‘with a semantic parallel in’.

Greek words are normally transliterated and Latinized if they occur in a discussion of their use in a Latin medical text. In quotations from Latin texts, they appear in the form used in the edition of the text. They are listed in Latin form and in Latin alphabetical order in the Index & Glossary of Greek words.

In Latin quotations, [] enclose Latin or English material *in italics* if it is supplied from the context in order to clarify the quotation, in roman if it is bracketed by the editor or if it is information supplied from the apparatus criticus.

In references to Cels. 4. 27. 1D, 'Tol. xx' refers to *line(s)* of the edition of the new material from Toledo by Capitani (1974: 170–2).

I

‘Medical Latin’

I. I Background and Aims of the Present Work

In 1931 the great French Latinist Jules Marouzeau observed (1931: 32) that one of the least-studied aspects of Latin vocabulary was that of technical language, ‘la langue technique’.¹ Technical authors had even then long been recognized as being of great importance for the study of the later Latin language, but they had been, and were still, treated chiefly as evidence for popular, or ‘vulgar’, Latin; to be sure, this tradition was not without excellent results, which continue to emerge.² Neglect of the technical languages per se had been based on the implicit, sometimes explicit, assumptions that it was impossible to separate ‘technical’ Latin from ‘Vulgar’ Latin and that the ‘Fachsprache’, or ‘Sondersprache’, consisted of nothing more than a number of ‘Fachausdrücke’,³ so that until recently the possibility was not explored of characterizing the language of Latin technical writers as other than popular or vulgar. Among the medical writers, those not noted for their popular language had been especially neglected. While the popular elements in texts such as Marcellus and the Latin versions of Oribasius had attracted some attention, writers of a more classical form of Latin, such as Celsus, Scribonius Largus, or the Africans Theodorus Priscianus, Caelius Aurelianus, and Cassius Felix had been earlier by and large ignored.⁴

¹ Marouzeau was writing under the heading ‘Suggestions de travaux’ (part IV of the annual ‘Chronique’ in *REL*); he refers to Stéphanidès (1925), who is still worth consulting. On defining and characterizing technical language, see I. 2 below.

² From the earlier part of this century note e.g. Ahlquist (1909); Niedermann (1912); Grevander (1926); Mørland (1932); Svennung (1932), and cf. Svennung (1935: viii–x). Among more recent work I would draw attention, by way of example, to Adams (1991) reporting from the language of the grammarian Pompeius important new evidence for the late Latin antecedents of the Romance synthetic future.

³ For these assumptions made explicit, see Brandt (1927: 17) and Svennung (1935: ix with n. 1), and much more recently André (1986: 9).

⁴ See on Chiron, Marcellus, Anthimus, the Latin Oribasius, and the Latin Dioscorides: Niedermann (1912), (1923); on Marcellus: Liechtenhan (1917); on the Latin Oribasius: Mørland (1932) and Svennung (1932). Early studies of the language of Celsus, such as Brölen (1872) and Jones (1929), focused on its departures from the standards of the orators. Wölfflin

Since 1931, progress in philological studies of Latin technical writers in general and of the medical writers in particular has been considerable and at times rapid and intense. Important work has appeared in the form of investigations of the vocabulary of particular special or technical subjects;⁵ textual and grammatical studies of individual authors or texts;⁶ surveys of, including conferences on, the range of Latin technical languages.⁷ In the field of medicine, the 1930s saw a good deal of work (e.g. by Mørland, Svennung, Sundelin, Junel) building on the pioneering critical editions of the late nineteenth and early twentieth centuries, including those of the *Corpus Medicorum Latinorum*.⁸ Basic philological work continued sporadically over the next four decades and then both intensified and diversified from the beginning of the 1980s, as Graeco-Roman medicine began suddenly to attract interest among classicists in almost every field, from archaeology and social history to philosophy and women's studies, and rapidly became first a growth and then a boom industry.⁹ Since 1984 there exists a regular (biennial or triennial) international conference devoted to Latin medical texts, and also of special note are the collaborative studies pursued and published under the auspices of the Centre Jean Palerne in Saint-Étienne, under the direction of Guy Sabbah.¹⁰ For a while, then, the Latin medical writers have been read not mainly as sources of Vulgar Latin

(1880) considers Cassius Felix not for his technical language but for his *Africitas*. Junel regards Cassius Felix as of interest chiefly as a writer of Vulgar Latin (cf. Junel 1936: 24, 35, 36); on Cassius Felix, see Sabbah (1985: 305–6).

⁵ Above all by Marouzeau's greatest pupil, Jacques André, on botany (1956*b*) and (1985*b*), on food and its preparation (1961), on birds (1967), on anatomy (1991). Note also (e.g.) Bruno (1969) and Andrei (1981) on agriculture, Calibat (1974) on hydraulics, and now Adams (1995) on veterinary medicine.

⁶ Such as Önnersfors (1956) and Leitner (1972) on Pliny the Elder, Bendz (1964) on Caelius Aurelianus, Till (1935) and Boscherini (1970) on Cato the Elder, Adams (1995) on Pelagonius.

⁷ Especially Cousin (1943), de Saint-Denis (1943), De Meo (1986), André (1986). Among interdisciplinary conferences notice Radici Colace and Caccamo Caltabiano (1991), Sconocchia and Toneatto (1993), Nicolet (1996), his introduction and that whole volume on Roman technical literature (Fondation Hardt, Entretiens sur l'antiquité classique, 42).

⁸ *CML* 1 Celsus (Marx 1915); *CML* 3 *Medicina Plinii* (Önnersfors 1964); *CML* 4 Antonius Musa, Pseudo-Apuleius, Sextus Placitus, etc. (Howald and Sigerist 1927); *CML* 5 Marcellus (Niedermann and Liechtenhan 1968); *CML* 6. 1 Caelius Aurelianus (Bendz 1990–3); *CML* 8. 1 Anthimus (Liechtenhan 1963). On the *CML* and the *CMG* (*Corpus Medicorum Graecorum*), see Kollesch (1989).

⁹ Witness the size and range of interests of papers of the 1992 Leiden Congress, 'Ancient Medicine in its Socio-cultural Context', published in two volumes by van der Eijk, Horstmannshoff and Schrijvers (1995). Notice also *Médecine et morale dans l'antiquité* (Fondation Hardt, Entretiens sur l'antiquité classique, 43), for which see Mudry (1997).

¹⁰ See Sabbah (1982), (1984*b*), (1988), (1991); Sabbah, Corsetti, and Fischer (1987); Sabbah and Mudry (1994); Debru and Sabbah (1998), the last containing a bibliography of work on Latin vocabulary relating to disease (Gourevitch 1998).

but as medical texts of interest in their own right, as evidence for social, cultural, and intellectual history, and even as literary texts.¹¹ There is as yet nothing approaching a systematic account of the language of the Latin medical texts, although large-scale lexicographical projects are under way,¹² and Öennerfors' massive article in *ANRW* 2.37.1 (Öennerfors 1993) provides an extremely useful survey and collection of bibliography and material, together with countless detailed observations, on grammar and style as well as vocabulary. To do for the language of human medicine in Latin what J. N. Adams (1995) has accomplished for veterinary medicine is a large—perhaps impossibly large—undertaking,¹³ of which the present work is only a beginning.¹⁴

While significant progress has been and continues to be made in the philological study of the Latin technical writers, more general linguistic questions concerning technical languages in Latin have remained unanswered because they are largely unasked.¹⁵ This neglect reflects a wider reluctance to take technical languages into account in other areas of linguistics. There is a substantial literature devoted to technical languages in isolation, especially to the practical problems of communication in technical contexts, of teaching, translating, and standardizing technical languages, but coherent treatment of technical words and technical languages in the context of the lexicon or the language as a whole is almost entirely lacking in the standard works on word-formation and semantics,¹⁶

¹¹ Note (e.g.) Römer (1987), Parroni (1989). The last (6th) conference on Latin medical texts (Nantes, September 1998) took as its theme 'Les textes médicaux comme littérature'.

¹² Note especially those announced in Sconocchia's intervention in Radici Colace and Caccamo Caltabiano (1991: 311 ff.), and in Debru and Sabbah (1998). These have occasioned the recent welter of computer-generated concordances to Latin medical and veterinary texts, including Marcellus, the *Medicina Plinii*, the *Mulomedicina Chironis*, Mustio, Pelagonius, Pliny the Elder, Scribonius Largus, Q. Serenus, Soranus, Pseudo-Soranus, and Vegetius (all published by Olms-Weidmann, Hildesheim, in the Alpha-Omega, A series). On the new wave of linguistic interest in all these writers, see De Meo (1986), André (1986), Mazzini (1991a) and (1991c).

¹³ Even Adams (1995) gives a systematic account of only one veterinary text (that of Pelagonius), together with the veterinary sections of Columella, partly because of the state of the text of Chiron and Vegetius.

¹⁴ Fischer (1994b) gives a useful overview of recent work on medical Latin. For further bibliography relating to Latin medical texts, see the beginning of 1. 4. 5 below.

¹⁵ Cf. Mazzini (1978: 543) speaking of 'una . . . grave lacuna nel campo della linguistica latina, cioè la pressoché totale assenza di studi complessivi tendenti ad individuare e definire i caratteri delle lingue tecniche e scientifiche'.

¹⁶ One looks in vain for any account of technical languages in e.g. Stern (1931), Kronasser (1952), Ullmann (1962), V. Adams (1973), Brekle (1974), Lyons (1977), Kastovsky (1982), Bauer (1983). Bloomfield (1939) was misunderstood and had very little impact (cf. Hockett 1970: 363; Sager, Dungworth, and McDonald 1980: xv). Bloomfield destroyed a 300-page manuscript entitled 'The Language of Science' (cf. Hockett 1970: 333–8). No school of linguistics has considered technical languages (cf. Sager, Dungworth, and McDonald 1980:

and, perhaps more surprisingly, in sociolinguistic studies of languages in contact and bilingualism.¹⁷

In view of this general neglect, it is perhaps worthwhile first to make clear what one can hope to gain from a study of technical languages in general, at the same time highlighting the specific case of Latin.

First, there is a broad linguistic question to be posed: do technical languages have any general, even universal, features which need to be taken into account in any linguistic description? Of course, an answer to this can come only from a multitude of descriptive studies. But it deserves to be stressed that such studies should include well-attested ancient languages, such as Latin and Greek, or the languages of ancient India and Iran,¹⁸ which can show us also the beginnings and the development of traditions of technical writing.

Secondly, there is a question concerned with the theory of historical linguistics. It has been accepted ever since the appearance of Antoine Meillet's '*Comment les mots changent de sens*'¹⁹ that the so-called '*langues spéciales*' play an important part in language change, and especially in semantic change. Technical languages offer perhaps our best—from the ancient world our only well-documented—examples of '*special languages*' and it is likely that a study of the technical varieties of a language will yield insights into the live productive forces at work within the language as a whole in the formation of words and in the determination of their meaning.

This applies with equal if not greater force to Latin, as a well-attested ancient language which has, as far as we can tell, at least in the earliest phase of our evidence, no fully formed technical language. For, especially xxxiii). Good introductions to the study of technical languages in the context of applied linguistics are Sager, Dungworth, and McDonald (1980) and Fluck (1980), both with extensive bibliographies. Note also the collection of articles and select bibliography for the years 1970–8 in von Hahn (1981). It is in eastern Europe that technical languages have been most fully explored, esp. in German, Czech, and Russian. This is reflected in the fact that in Schippan (1984), for example, a textbook on lexicology from (what was) the GDR, a whole chapter (ch. 6) is devoted to special and technical vocabularies. Note, however, the chiefly practical, pedagogical, concerns of much of the literature, including Reinhardt (1964); Beneš (1966); Drozd (1966); Sager, Dungworth, and McDonald (1980: xiii–xxii).

¹⁷ See e.g. Mackey (1972), Bratt Paulston (1988), Milroy and Muysken (1995).

¹⁸ For an orientation on Sanskrit medical texts, terminology, and bibliography, see Meulenfeld (1974), esp. the introduction and appendices 2 and 3. For Avestan and Middle Persian medical literature and language, see e.g. Brandenburg (1969) and Sohn (1996). Note also Goltz (1974).

¹⁹ In *L'Année sociologique* 1905–6, reprinted in Meillet (1921: 230–71). Note esp. pp. 243–57, and the conclusion on p. 257: '*Il apparaît donc que le principe essentiel du changement de sens est dans l'existence de groupements sociaux à l'intérieur du milieu où une langue est parlée, c'est-à-dire dans un fait de structure sociale.*' I owe this reference to Professor Morpurgo Davies.

at the beginning of a tradition of writing on special subjects, technical languages offer an ideal arena in which to study the linguistic responses of Latin writers to the need to expand the lexicon in order to provide names for new objects, practices, techniques, and ideas. On the one side is the subject matter, on the other, the Latin language, the writers' knowledge of the Latin language, their implicit knowledge of the resources of Latin for labelling and talking about new things. How will they use the Latin that they know to name and discuss technical matters?

Thirdly, there is the straightforward requirement for all linguists to produce a description—synchronic or diachronic—of their language that is as complete as sources and resources permit. Technical languages may be seen as *varieties* of a language,²⁰ with their own history and areas of overlap with non-technical varieties which may have influenced them and have been influenced by them. Beside geographically based dialectal variation within a language, we recognize sociolinguistic variation along several parameters, including age, class, sex, level of education, and so forth. Another such parameter is surely *occupation*, each occupation or profession bringing with it its own technical language and influencing the general speech-habits of its practitioners to a greater or lesser extent.

Like an age-, sex-, or class-related variety, a technical language will be limited in use not only to certain interlocutors but also to fixed topics, namely the relevant technical matters. Like other sociolinguistic varieties, or sociolects, a technical language may have considerable overlap with the standard language. It will have, typically, non-standard features at all levels of the grammar, including even pronunciation and spelling (Sager, Dungworth, and McDonald 1980: 301–13). But the speaker/writer of the technical variety will be also a speaker/writer of at least one other variety of the language, thus belonging simultaneously to at least two linguistic groups, each of which may be reasonably expected to influence the other(s).

Fourthly—a point related to the last—the study of technical languages may be indispensable for a more banal but no less essential purpose: that of understanding what is said or written in the language. When this language is known only through written documents—as is the case for Latin—our aim, which must be in the first instance to understand the transmitted texts, is served best by a specialized study of those varieties of the language which are otherwise not immediately accessible. Only on this basis, furthermore, is it possible to identify and evaluate accurately the use of technical language in non-technical writings.²¹

Reverting to the Roman world, then, we can say that the Latin *artium*

²⁰ On technical languages as varieties of a language, see esp. Möhn (1968) and Sager, Dungworth, and McDonald (1980: 63–5).

²¹ On this last point, see Stéphanidès (1925: 477), de Saint-Denis (1943: 65–6), and note now the work of Mazzini (1988b), (1990), (1991b), (1992c), and Migliorini (1988), (1997).

scriptores merit the attention of philologists and (socio)linguists for at least the following purposes: as part of a complete account of what we call 'Latin'; for interpreting and evaluating the use of technical language and terminology in non-technical writings; as case studies of the possible and the preferred means of expanding the Latin lexicon in response to the need to name a multitude of new objects; to discover whether Latin technical languages have formal or semantic characteristics of their own, distinguishing them from the general language, and to identify mutual influences between the technical and general language or between different technical varieties;²² and to compare Latin with other languages, with a view to identifying cross-linguistic similarities, conceivably even universals,²³ of technical languages and terminologies. All this is quite apart from the obvious contributions that such study may make to the history of science and technology, both in detail and at the most general level.

So much by way of introduction to the relevance and potential interest of this field within (Latin) philology and linguistics, on the one hand, and within classical studies quite generally, on the other. I turn now to introduce our objects of study themselves. I begin with technical language, focusing first (1.2) on the more formal side, in particular on the definition and characteristics of technical terminology, and secondly (1.3) on the sociolinguistic background and on the notion of technical (especially medical) language in both modern and ancient times: special attention is paid in this latter part to the problematic notion of 'medical Latin' in the Roman world.

1. 2 On Defining and Characterizing Technical Language

1. 2. 1 TECHNICAL LANGUAGE AND TECHNICAL VOCABULARY

I have spoken thus far of technical *language*, and deliberately so. Some linguists have emphasized that, if we are to use the label 'technical language' sensibly, we should characterize a technical variety at all levels of the grammar, and not just as a special lexicon.²⁴

The fact remains, however, that the lexicon is much the most prominent and best-documented aspect of technical languages.²⁵ While it is, of course,

²² See e.g. on the influence of the Christian language on medical Latin, Mazzini (1991*d*).

²³ On this point one must, of course, remain sensitive to potentially relevant differences between the cultural settings in which technical languages arise.

²⁴ On Latin, Cousin (1943) is a good example. Cf. more recently Fischer (1994*b*: 154 with nn.).

²⁵ On the prominence of the lexicon of technical languages, see Bloomfield (1935: 516–17), Vendryes (1939: 296), Jumpelt (1961: 3), Reinhardt (1964: 452–3), Drozd (1966: 441–3), Porzig (1971: 259), Fluck (1980: 47), André (1986: 9); cf. p. 377 below.

of great interest and importance to characterize a technical language in point of inflection, syntax, and stylistics, as well as word-formation and vocabulary, it is in the lexicon that technical varieties—indeed, all special languages—differ most obviously from other, non-technical varieties. This is because the essence of a technical discipline is a structured set of objects and methods, some of which—in the modern world nearly all of which—are unfamiliar to the layman. These acquire names whose correct use depends on sharing at least part of the specialist's knowledge of the discipline. Because it names things which are not named in the language of every day, the lexicon of a technical language must be peculiar, but there is no corresponding functional need for the technical language to develop non-standard features in spelling, pronunciation, inflection, syntax, or style. Such features do occur, and, although strictly incidental to the functioning of the technical language, are of great interest from a stylistic and sociolinguistic point of view: in Chapter 6, I consider some aspects of the syntax and style of medical language.²⁶ In the meantime, however, this study is concerned mainly with derivational morphology and lexicology, and accordingly for the remainder of section 1. 2, I shall confine my remarks to technical terms and terminology (as opposed to technical languages).

1. 2. 2 THE NATURE OF TECHNICAL TERMINOLOGY

In acknowledging that the essence of a technical language lies in its vocabulary we are closer to understanding the concepts 'term' and 'terminology'.²⁷ Technical terms—and their collectivity, terminology—are referring expressions which label the objects of a classification within the relevant *techne*. They are not in themselves abnormally precise expressions,²⁸ but the items that they label are more precisely defined and classified than is usual in everyday language. The language supplies not the classification but merely the nomenclature for the things classified. The elements of this nomenclature are technical terms and their sum is the technical terminology.²⁹ The boundaries implied by the names 'term' and 'terminology' (Latin *termen* 'a boundary-stone') are features not of the

²⁶ On syntax and style in special languages, see e.g. Beneš (1966); Gopnik (1972); Möslin (1974); Sager, Dungworth, and McDonald (1980: 182–228); Fluck (1980: 55–6, with bibl., 200–1, 227); Hoffmann (1986); Reinhardt and Köhler (1986).

²⁷ In what follows the examples are drawn almost exclusively from a branch of medicine. This is my particular starting-point but it may be inferred from the general literature on technical languages, to which reference is made in the text and notes, that the broad observations made in this chapter apply more generally than to the language of medicine alone.

²⁸ The 'Genauigkeit' ascribed by e.g. Schippan (1984: 246) to a *Terminus* is a property of the classification, rather than of its labels.

²⁹ Cf. Kocourek (1968: 131); Untermann (1978).

linguistic forms but of their references, which have been established by those investigating and classifying the technical phenomena. An essential feature of the classification is the drawing of clear and firmly fixed lines so as to divide the phenomena into classes and subclasses of ever-decreasing size until every discrete item has its own label and defined position within the set.

Consider, by way of illustration, the following medical classification drawn from Read, Barritt, and Langton Hewer (1984). The chapter is entitled 'Diseases of the Skin'; top-level headings within the chapter include *bacterial skin infections*, *viral skin infections*, and *fungal skin infections*. *Bacterial skin infections* is divided into sections on *staphylococcal infections*, *streptococcal infections*, and *other bacterial infections*. *Staphylococcal infections* includes sections on *impetigo* and *furuncles*; *streptococcal infections* embraces treatments of *erysipelas* and *cellulitis*; *other bacterial infections* includes *syphilis*, *tuberculosis*, and *leprosy*.

The one essential function of a technical term is to refer unambiguously to a class, a subclass, or an individual item in the technical classification. To take a case from the example of skin-diseases, the modern term *impetigo* stands effectively as a label for the following: 'When staphylococcal infection involves the surface of the skin it gives rise to blisters which last 1 or 2 days and then dry up, leaving a crust' (Read, Barritt, and Langton Hewer 1984: 167), together with an accompanying photograph of a child with a bad case of impetigo. The description of the cause, location, symptoms, duration, and after-effects of the infection, which looks like this (the photograph is a means of deixis), is altogether a single item, one of the class called *staphylococcal infections*, which is one of three types of *bacterial infections*, which constitute one of a number of different types of *diseases of the skin*. The term *impetigo* provides a short and handy means of referring to this item and to its place within the classification of *diseases*.³⁰

While the form of a technical term is, in principle, a matter of little or no consequence to the functioning of the terminology³¹—in particular there is no need for it to be short and handy (but see 1. 2. 6 and 1. 2. 7 below)—one further standard requirement of a linguistic form as technical term is monosemy, that is, that it should occur only once in the terminology, or at least in each well-defined branch of the terminology (Sager, Dungworth, and McDonald 1980: 67). That is to say, a terminology should not include any instances of polysemy. It would lead to disabling ambiguity among skin-specialists if, say, *impetigo* were the term also for a species of viral

³⁰ On the functioning of technical terms in this way, see Sager, Dungworth, and McDonald (1980), 75 (on words and terms); 76–7 (on the process of designation); 79–80 (on the creation of terminological systems).

³¹ Any word of the general language can be terminologized; cf. Fluck (1980: 50).

skin infection, since its contexts would be so similar to those of *impetigo* the bacterial infection.

An ideal technical terminology, then, may be said to consist of a set of referring expressions, each occurring once only, each labelling an item or class of items that has a well-defined place within a classification of the set of objects of study of the technical discipline. An account of such a terminology, in addition to listing and defining the terms, would also indicate the semantic connections that link them.³²

Such an account is straightforward in the abstract. Can it be applied in practice to technical terminologies in corpus languages? Let us take the case of Latin. Here we must expect to face, apart from the familiar problems of interpretation which beset attempts to write any part of the grammar of a corpus language, also problems peculiar to technical terminology in a corpus language.

An obvious concern is that our knowledge of Latin medical terminology is incomplete. It is clear, for example, that we lack many of the anatomical and surgical terms of Scribonius, Theodorus, and Cassius Felix, since they give no systematic account of these areas. Even the terminology of Celsus, which is much fuller on both these subjects, may not be assumed to be complete; no amount of importation of terms from near-contemporary authors will render it complete. We must reckon in principle also with the converse danger that some Latin words which a contemporary would have taken to be technical medical terms may now not be identifiable as such, especially if they are not explicitly linked to Greek terms. Then there is the problem of establishing for many words their status within the terminology. This applies especially to words which occur just once in an author's work, or, worse, once only in extant Latin. In Cassius Felix, for instance, there are a few cases, such as *fossula* or *rotula*,³³ which are made to translate Greek terms (respectively *bothrium*, a type of ulcer, and *trochiscus*, a round tablet), but which occur as medical terms nowhere else in Latin and give rise to the suspicion that they are nonce-formations, rather than Latin terms of any currency.

Let us take it, though, that such problems are not unduly disabling of our purpose; there is, after all, a great deal of technical material to be described and accounted for. On the positive side, we can observe straightaway that the presence of certain general features is assured in ancient terminology, however incomplete it may be.

To begin with, it is clear that there was widespread concern in the

³² One could add that individual terms tend, much more strongly than ordinary words, to stylistic neutrality, to avoidance of connotative features; cf. Schippan (1984: 246). On the 'objective' nature of 'scientific discourse', see Bloomfield (1935: 501-3), (1939: 42-3).

³³ See 3. 6. 2. *Id* below.

ancient world to tie a technical terminology to a systematic classification of the technical subject.³⁴ Let me illustrate this again with reference to skin-diseases (as in the modern example above), drawing on the arrangement of Celsus. Celsus uses a quite different system of classification, but one that is no less clear and structured. At the beginning of 5. 26, Celsus sets out five classes of disease with which he will deal in turn in subsequent chapters:

5. 26. 1A genera in quibus noxa corpori est proponam.

These classes are:

- (1) cum quid extrinsecus laesit, ut in uulneribus (wounds occupy the rest of 5. 26, animal-bites the whole of 5. 27);
- (2) cum quid intra se ipsum corruptum est, ut in cancro (skin-diseases thought to arise from internal corruption are discussed in 5. 28);
- (3) cum quid innatum est, ut in uesica calculus;
- (4) cum quid increuit, ut uena quae intumescens in uaricem conuertitur;
- (5) cum quid deest, ut cum curta pars aliqua.

He divides each class into those diseases which call for treatment by medicaments (which he will discuss now), and those which require surgical treatment (which he postpones to book 7). He makes one further high-level division:

5. 26. 1B diuidam autem hanc quoque curandi partem sicut priorem et ante dicam de iis quae in quamlibet partem corporis incidunt, tum de iis quae certas partes infestant.

At the opening of 5. 28, he passes from class (1) to class (2) with the words:

5. 28. 1A ab his quae extrinsecus incidunt ad ea ueniendum est quae interius, corrupta aliqua corporum parte, nascuntur.

In 5. 28, he devotes one section to each of eighteen different members of this class, to some of which he ascribes more than one species. Section 17 is a case in point. It concerns something called *impetigo* (cf. the modern terminology above) and begins with the words:

5. 28. 17A impetiginis uero species sunt quattuor.

Each of the four types is described carefully in turn, in ascending order of seriousness. The first, and mildest, is compared with and distinguished from *scabies*. The second resembles *papula* but is again carefully dis-

³⁴ It is a central concern at Cic. *Acad.* 1. 5, with reference to rhetoric and logic. (Varro is speaking about the desirability of leaving writing on philosophy to the Greeks.)

tinguished. The third is even more serious, being thicker and harder and accompanied by greater swelling. The fourth, untreatable, receives a description which I quote in full, in order to exemplify the sort of detail that Celsus devotes to the 'ultimate constituents' of his terminology:

5. 28. 17C quantum genus est, quod curationem omnino non recipit, distans colore: nam subalbidum est et recenti cicatrici simile; squamulasque habet pallidas, quasdam subalbidas, quasdam lenticulae similes, quibus demptis nonnumquam profluit sanguis. alioqui ueroumor eius albidus est, cutis dura atque fissa est; proceditque latius.

Again, as we saw in the modern terminology of skin-diseases, a term is defined not only by the physical characteristics of the object it names but also by its place within the 'matrix' of the classification. This was exemplified above with English *impetigo*; the same applies, *mutatis mutandis*, to Celsus' term *impetigo*: it is one of the class of diseases which arise as a result of corruption within the body, and which require treatment by medicaments (as opposed to surgery or dietetics), and which affect any part of the body (as opposed to one particular part).

There is, however, an important difference that we note at this point in our comparison of English and Latin terminology: unlike English *impetigo*, Latin *impetigo* in Celsus names four distinct conditions, of which, though each has its own characteristic features, only two ([*impetigo*] *rubrica* and [*impetigo*] *nigra*) have shorthand labels. This is perhaps the most striking superficial difference between the modern terminology and that of Celsus: there are items defined by Celsus which are not named with a usable term. Of the four types of *impetigo*, Celsus mentions that the second and third are called respectively *rubrica* and *nigra*; the first and the last (the latter quoted above) receive a full description but no short, usable name that we could call a technical term. Such unnamed items do not occur in the modern terminology.³⁵

There may be another important difference between Celsus and modern medical texts, concerning polysemy within the terminology. While polysemy is conspicuously absent from modern technical terminology, there is a striking case of it in Celsus, involving the word *fistula*. Celsus uses *fistula* to denote: (1) (in anatomy) the urethra (in full, *fistula urinae*); (2) (in pathology) a sort of ulcer; (3) (in therapeutics) a tube or pipe put to various medical uses. Normally, these meanings are in complementary distribution, so to speak, and the risk of ambiguity does not arise. On two occasions, however, two of the three meanings occur in the same context:

³⁵ Another striking example is Celsus' lack of a term for hysteria described at 4. 27. 1A. Cf. his observations of the failure of Latin terminology to distinguish species of *cancer* (5. 26. 31B) and *hirnea* (7. 18. 3, 7).

first when a pipe is used as a catheter and inserted into the urethra (7. 26. 1B–C); secondly when, in the surgical removal of a bladder-stone by way of the urethra, there is fear of a *fistula* (the ulcer) arising in that place (7. 26. 2I). This instance of polysemy in Celsus is of interest from a historical point of view both because it would not (I guess) be tolerated today and because, to judge from their texts, it was eliminated by two later Latin technical authors.³⁶ It raises important questions about the status as technical terms in Latin medical terminology generally of *fistula* (1), (2), and (3). Is any of them more a technical term than the others, and if so why? Should one or more be excluded from our account of the terminology and, if so, on what grounds? For example, is *fistula* 'pipe' less of a technical term because it is an everyday word with an everyday meaning? Is *fistula* 'ulcer' more of a technical term because of its meaning and widespread attestation (from Cato *Agr.* to Rufinus)? No matter the details of this small example, it obliges us to confront a general and very important question of principle: in the lexicography of a corpus language, how is one to maximize the chances of collecting all and only the technical terms from a text? To be sure, one will have intuitions about many words, that some are technical and others not, but intuition will not do: for one thing there will inevitably be a host of uncertain cases; for another, our 'experiments' here, although outside the exact sciences, will be infinitely more valuable if they are defined so as to be repeatable by other scholars working on other texts or languages: in writing on terms the very least I can do is to define my terms! How, then, are we to distinguish systematically between a technical term and a non-technical word?

1. 2. 3 ON DRAWING THE LIMITS OF A TECHNICAL TERMINOLOGY

A technical terminology forms a part of the whole lexicon of the language. Different types of relation may exist between different parts of the whole. Several parameters have been proposed against which to plot the position, so to speak, of a given word, technical or non-technical, within the lexicon as a whole. These have been helpfully reviewed by Heller (1970).³⁷ Three stand out as being of potential use for our purposes:

³⁶ According to the *ThLL*, s.v., these three meanings of *fistula* are found together in only four Latin texts, namely Celsus, Pliny, Chiron, and Vegetius; polysemy is avoided by those late medical writers who use the word, Caelius Aurelianus (only 'pipe') and Cassius Felix (only 'ulcer'). I return to the question of polysemy in more general terms at the end of 3. 7 below.

³⁷ See also Drozd (1966: 441–3); Dubois (1966); Fluck (1980: 16–23); Schippan (1984: 243–4); Wichter (1994).

- (1) the extent to which a word is generally understood in the linguistic community as a whole ('Allgemeinverständlichkeit');
- (2) the extent to which a word is related to a particular specialist or technical discipline ('Fachbezogenheit');
- (3) the extent to which a word is normalized or standardized in its usage ('Normung').

These are reported by Heller as parameters, but they could of course be used as candidate criteria for identifying technical terms. They could be rewritten to serve as criteria as follows: a word is counted as a technical term if:

- (1) it is not generally understood in the linguistic community as a whole;
- (2) it is proper to a given specialist or technical discipline;
- (3) it is normalized or standardized in its usage in the discipline.

Let us, in a rather informal manner,³⁸ see if these criteria give intuitively satisfactory results when tested against words taken from some examples of technical and non-technical modern English medical texts.

There follow two pairs of extracts from two different versions of the same two medical cases, the first in each pair from the *British Medical Journal* (an example of a scientific periodical produced by specialists for specialists in technical medical English), the second in each from the 'Health' page of the *Independent* (an example of a high-quality daily newspaper), this page intended for educated readers who may have no more than the most casual interest in medicine and who are certainly not assumed to have any medical knowledge.

(1a) Anaphylactic reaction after eating a mango

A 32 year old fruiterer presented with periorbital oedema, facial erythema, widespread urticaria, and dyspnoea 20 minutes after eating a fresh mango On examination he had considerable periorbital oedema, a swollen tongue, an urticarial rash over the arms and trunk, and tachypnoea Anaphylaxis was diagnosed; he . . . made an uneventful recovery over the next few hours. (*BMJ*, 297 (24–31 Dec. 1988), 1634)

(1b) Forbidding fruit

A fruiterer in Plymouth had a nasty shock when he ate a mango recently Within 20 minutes his face puffed up, his skin became red and blotchy and he found it difficult to breathe. When he was examined in hospital his tongue had swollen and his body was covered with an itchy rash. An acute allergic reaction was

³⁸ Obviously, if we wish to 'score' words against these criteria otherwise than in a binary (+/–) fashion, we must agree scales and limits.

diagnosed but he made a complete recovery over the following three days. (*Independent*, 2 Jan. 1989, 11)

(2a) We report a case of recurrent bilateral periareolar abscesses. (*BMJ*, 297 (24–31 Dec. 1988), 1641)

(2b) A hairdresser suddenly began to suffer from abscesses on her nipples. . . . She suffered from frequent abscesses affecting both breasts. (*Independent*, 2 Jan. 1989, 11)

When we apply our candidate criteria in binary fashion to these passages, we find easily words that count as technical by all three. Take *dyspnoea* as an example: it is not generally understood (the *Independent* version uses a paraphrase in order to make the meaning clear to the layman: 'he found it difficult to breathe'); it is proper to pathology, a branch of medicine; it is invariant in form. (Other examples include *anaphylaxis*, *erythema*, *oedema*, *periareolar*, *periorbital*, *tachypnoea*.)

Criterion (1), however, would exclude some other words which one feels a priori should be counted as part of English medical terminology. Examples are *abscess*, *recovery*, *tongue*, and perhaps *eat* as well. These words occur in both passages and are used and understood by layman and specialist in the same way. This introduces a general feature of technical terminologies—modern no less than ancient: they merge gradually with the generally known, everyday vocabulary of the language (cf. Sager, Dungworth, and McDonald 1980: 68). Evidently, this tends to occur at a high level in the lexical hierarchy, where the named phenomena are broad, obvious, and familiar enough, and are denoted by everyday words which are used and understood by lay folk (approximately) as by the specialists in the technical area. Other examples from English medical terminology would include *disease*, *surgery*, *kidney*, *nurse*, *amputate*, *intravenous*, and a host of names for symptoms, diseases, body-parts, and types of treatment that have a place in the vocabulary of the average native speaker of English.

The fact that a word is familiar to even the whole linguistic community is surely not a reason for excluding it from an account of a technical terminology.³⁹ It may appear to be of limited interest as a linguistic item, serving merely to label a large class of more obviously technical terms; but even this impression may be deceptive,⁴⁰ and gives in any case no grounds

³⁹ Alinei (1991: 40ff.) has some good remarks along these lines. *The McGraw-Hill Dictionary of Scientific and Technical Terms* (1989 (4th edn.)), a single-volume reference work which covers all technical fields, includes entries for the following: *hand*, *head*, *liver* (anatomy); *common cold*, *cough*, *disease* (pathology); *drug* (pharmacology); *cat*, *dog*, *mouse* (zoology); *steam* (physics); *flower* (botany); *cotton*, *wool* (textiles).

⁴⁰ I am thinking of the fact that in Latin, at least, the suffix used for forming sets of rare and specialized hyponyms may be the same as that seen in the common and generally understood superordinate term or headword (e.g. *sensus* 'a sense, sensation', *usus* 'a physiological

for depriving a class of its headword. The range of general comprehensibility ('Allgemeinverständlichkeit') of technical terms in a linguistic community, from a tiny fraction of one per cent to 100 per cent of the population, should be permitted to run within any technical terminology, and not be made arbitrarily to intersect with a line dividing technical from non-technical. Any terminology will include a small number of terms that a large number of speakers use and understand, and an increasingly large number of terms that a correspondingly decreasing number of speakers have mastered.⁴¹ I would, then, not hesitate to list *thumb* and *liver* among 'anatomical terms', although I would certainly not infer from their appearance in a text that the author who used these words had had any medical training.⁴²

Criterion (1) having been rejected, it follows that in order to capture as many Latin medical terms as possible, we do need to observe criterion (2) ('Fachbezogenheit') and to include in our study all those words that are related to predetermined branches of the field of medicine. This is in accord with, for example, Seibicke's definition (1959: 42) of a technical vocabulary as 'alles Wortgut, das in einem Fachgebiet gebraucht wird', and this is the primary operative criterion for the inclusion or exclusion of a word in this study. Words are considered to belong to the Latin medical terminology simply if they name (or relate closely to) objects or ideas of ancient medicine.⁴³ This definition may appear broad and loose but it is not clear that one can in a non-arbitrary fashion constrain more tightly the definition of a technical terminology. In the framework of a recent classification of the language as a whole of medical writers (Mazzini 1991a: 178 ff.), this definition corresponds to 'direct lexical medicalisms' ('medicismi diretti lessicali'), whether exclusive to medical texts ('integrali') or found also in other types of text ('parziali'). Mazzini's classification is borrowed from Joseph Schrijnen's famous categorization of the language of Christian writers.⁴⁴ Our terminology, then, will comprise function', *dolor* '(a) pain', *laborans* 'the patient', *aegritudo* 'a disease', *adiutorium* 'a remedy'): see § 5 below.

⁴¹ The latter is probably a universal feature of technical terminologies and so, conversely, Goltz (1969: 242 n. 29) uses the existence of a large number of not generally understood medical words as an argument for recognizing the existence of a medical 'Fachsprache' in ancient Greek.

⁴² I allude here to Dover's salutary warning (1997: 115).

⁴³ More needs to be said about identifying phrasal terms, since I do not recognize every combination of noun + adjective, noun + genitive, or noun + prepositional phrase as a technical referring expression: on this see 2. 7. 3 and esp. 4. 2 below.

⁴⁴ Schrijnen (1932); cf. Mohrmann (1939) and (1961), *passim* (see the index, under 'Christianismes'). Also worthy of note is Dover's recent perceptive partition of 'technical terms' (1997: 114–15), which I quote here for convenience, as I shall have cause to refer to it elsewhere: 'In this field four categories of phenomena need to be distinguished: 1. Lexemes

all and only those referring expressions which are ‘directly medical’, or in Mohrmann’s words (1961: 11) *mutatis mutandis*, ‘welche spezifisch [medizinische] Begriffe andeuten’. I do not pretend that the terms ‘direct’ and ‘spezifisch’ are not themselves fuzzy-edged. One may be obliged, in the last resort, to take arbitrary decisions about certain words.

I. 2. 4 VARIATION AND SYNONYMY IN TECHNICAL TERMINOLOGY

I have suggested that we should reject criterion (1) (‘Allgemeinverständlichkeit’), accept criterion (2) (‘Fachbezogenheit’), and I move now to consider whether we should wish to retain criterion (3) (‘Normung’) as a sort of filter of ‘fachbezogene Wörter’, in other words, to include those terms which are standardized and to exclude those which are not. For a first example, I return to our modern English passages: both the *BMJ* and the *Independent* use the word *eat*. This word is an item of the core vocabulary of the language, but, as we determined, this cannot be a ground on which to exclude it from the technical lexicon. One case for its relevance to the field of medicine—its ‘Fachbezogenheit’—can be made on the grounds that it is central both to nutrition, an essential function of any living organism, and to dietetics, a branch of therapeutics in both ancient and modern medicine. Another case for including *eat* in our account of the medical terminology would be based on its alternation, especially in medical language, with the verb *ingest* (cf. Dover 1997: 114, type 2; n. 44 above). In many contexts (including in ‘after —ing a mango’), *eat* and *ingest* are synonymous and may be used interchangeably in medical texts for the same process. We have here a ‘lay’, or non-technical, expression (*eat*) and a technical expression (*ingest*), both with identical meaning and both occurring in medical texts. Before deciding what implications this has for the constitution of the terminology, let us consider some more examples of such variation.

Many common diseases have in modern English both a lay designation and a medical name (in the following examples, numbers refer to pages of Davies 1985): *measles* = *morbilli* (49), *whooping cough* = *pertussis* (49), *chicken pox* = *varicella* (50), *mumps* = *epidemic parotitis* (50), (ear) *boil* = *meatal furuncle* (299), *a cold* = *coryza* (88), *heat spots* = *papular urticaria* (232). Note also from the terminology of mental disease: *attempted suicide* = *para-suicide* = *non-fatal deliberate self-harm* = *DSH* (Read, Barritt, and Langton

which have no reference at all outside a specialized field, e.g. “palimpsest”, “neutrino” . . . 2. Lexemes which do have synonyms, e.g. “tibia” = “shin-bone”, “uterus” = “womb” . . . 3. Lexemes which have different denotations in majority usage and in one or more specialized areas, e.g. “induce” in ordinary language . . . or in obstetrics . . . 4. Lexemes which become recognizable as technical because of the consistency with which they are used. The medical profession usually speaks of ‘severe pain’ rather than of “ghastly” or “***** awful” pain’.

Hewer 1984: 524). Davies (1985) occasionally says expressly that certain expressions are popular, as in the following, for instance: 'multiple inflammatory skin lesions, referred to in lay parlance as spots, which form a rash (synonyms: eruption, exanthem)' (Davies 1985: 48); 'capillary angioma . . . popularly called a birthmark or port-wine stain' (Davies 1985: 231). Some instances of variation in the terminology are said to exist in the interests of *variatio sermonis*; Davies provides a good example in the introduction to his book *Medical Terminology*:

Of necessity, the term *disease* occurs frequently in medical speech and writing, but an endeavour may be made to avoid undue repetition by employing other words which, when used in the right context, are its synonyms (i.e. words with similar meanings), e.g. *disorder, illness, sickness, morbidity, malady, pathological condition, morbid condition, ailment*. (Davies 1985: 12)

Some but not all of these synonyms occur with varying frequency also outside medical speech and writing. Rarely, a single expression names different phenomena in lay and medical parlance. For example, 'lay' *abortion* = 'medical' *termination of pregnancy*; 'medical' *abortion* = 'lay' *miscarriage*.⁴⁵

In all these examples, the reference of the 'medical' expression is no different from that of the 'lay' equivalent. To reinforce this with further modern examples, the *dorsum* of the hand is no different from the *back* of the hand; the *innominate* bone is the *hip* bone, pure and simple; a *neonate* is neither more nor less than a *baby*. The choice by the medical specialist of the ordinary or the technical word reflects, presumably, a choice of style or register and the comprehension of the person addressed. Medicine occupies an interesting position linguistically among technical disciplines in that a crucial requirement of the clinical side of the field, at any rate, is that the specialist is able to communicate effectively with non-specialists.⁴⁶ This fact will contribute to the prevalence of popular equivalents in modern medical terminology.

The examples considered so far name phenomena familiar to non-specialists; in each case the lay expression is used and understood by non-medics in much the same way as both lay and medical expressions are used by the medical specialist. It is perhaps more surprising (to a layman, at least) to find equally abundant examples of specialists' equivalents, expressions naming phenomena which few non-medics encounter (numbers refer to pages of Read, Barritt, and Langton Hewer 1984): *partial deletion of the short arm of 5 = cri du chat syndrome* (129), *hereditary haemorrhagic telangiectasia = Rendu-Osler-Weber disease* (460), *paroxysmal nocturnal*

⁴⁵ Cf. category (3) in Dover's partition of technical terms (n. 44 above).

⁴⁶ On the less-than-satisfactory meeting of this requirement in modern medical contexts, see Fluck (1980: 97) with examples and references.

haemoglobinuria (PNH) = *Marchiafava–Micheli syndrome* (436); *angiitis* = *vasculitis* (Davies 1985: 84); and compare *post-viral fatigue syndrome* = *Royal Free disease* = *myalgic encephalitis* (ME).⁴⁷ The synonym has been said to be 'the deadly enemy of technical terminology' (Korn 1958: 117). Yet here we find in a thriving modern technical terminology that synonymy is not merely present but even prevalent!⁴⁸

No less than the disabling polysemy in Celsus' use of *fistula* (above), these modern examples of synonymy within the specialist terminology should give us pause. Are they really fully synonymous? Are they all technical terms of equal status, or is one more of a standard than the others? Are we to include all of them in our technical terminology? Presumably we should do further research to discover which, if any, of the synonyms is the recognized standard term. Perhaps some of the variants are confined to certain parts of the country; to certain hospitals; to specialists over a certain age? After all, geographical and sociolinguistic variation need not be foreign to technical languages. If we can determine that such factors do underlie cases of synonymy, then we may exclude or include variants as we please, provided that we do it in an explicit and principled fashion. This is straightforward on one view—what we might call the 'strong' definition (cf. I. 3. 2 below)—of technical languages as varieties (minority languages, in Dover's words, 1997: 114) that belong to those who are specialized in the technical area. If we operate with this definition, then there is one simple, necessary, and sufficient condition on the inclusion of one or more synonymous terms, namely that they are used and recognized by our 'community of specialists' (however defined). Just as a dialectologist will regard the reports or imitations of an Englishman as evidence of low value for a study of Scots English, just as a sociolinguist will not accept even hypercorrect utterances from a member of a low socio-economic class as material contribution to a study of upper-class speech habits, just so the student of the technical terminology of medicine will treat with caution lay usages which are not confirmed by the use of the specialist.

The chances are high of inaccuracy in lay usage, in one of two ways: either a word that is used as a term by specialists is misapplied or mis-

⁴⁷ Arguably, the last has recently made its way into lay parlance; cf. Dover's prediction (1997: 114) regarding technical terms of his type 2 (n. 44 above).

⁴⁸ This obtains in modern scientific terminologies in spite of the publication of official nomenclatures, such as the *Nomina Anatomica* (originating chiefly at the Sixth International Congress of Anatomists, Paris 1955, revised 1960; cf. Kopsch and Knese 1957). On the standard (mainly Latin) nomenclatures of anatomy, medicine, botany, and zoology, see Ahrens (1988: 211, 260–1, 266). On standardization of technical terminology, see Wüster (1966: esp. 123–77); Fluck (1980), 93 (on medicine) and 110–30 (in general on 'fachsprachliche Normung'); Sager, Dungworth, and McDonald (1980: 76, 293, 329–43). On the 'terminological anarchy' in the ancient Greek science of anatomy before the standardizing influence of Galen, see below and also Lloyd (1983: 160–7), (1987: 207).

reported, or a word that is not current in the terminology is substituted for the proper term(s). An imaginary example of the first type of misuse might involve the use of, say, the word *eczema* to refer to a condition which, let us suppose, a doctor would diagnose as a type of impetigo. The patient establishes 'eczema' as the conventional label for his skin-complaint among his family, friends, colleagues, including it eventually in his autobiography, along with a description of the symptoms. The historian of medical terminology would normally not think of including *eczema* as a lay synonym of *impetigo*, except in the unhappy event that this autobiography was the only surviving document from its century.

A real example of the second type concerns the field of building. The regular indentation in the top of a brick is called the *frog*. In 1990, while cleaning dozens of old, used bricks, I was making reference to this part by using various everyday words (*dip*, *depression*, *hole*, *hollow*, *indentation*, *recess*), until a builder arrived and told me, 'We call it the *frog*.' In this instance, of course, while makeshift terms can serve communication between non-specialists, the word *frog* alone merits inclusion in a study of building terms.⁴⁹ Again, *sortation* is a current term of the sorting industry, meaning the process, especially automated, of sorting (letters, parcels, etc.).⁵⁰ It is the specialist—or rather, the consent or network of specialists—that makes and sanctions the terminology of the special field or activity. *Frog* and *sortation* hold a status as technical terms equal to the medical *neonate* (baby), *dorsum* (of the hand), and all medical expressions which have lay synonyms, all belonging unquestionably to a descriptive account of the relevant terminology.

The accumulation of synonyms in modern technical terminologies can be understood, in part at least, as a result of the age of their technical traditions and the consequent range of possible cultural-scientific and linguistic sources of terminology. It is striking, though, to find the same phenomena in ancient Latin medical terminology, almost at the beginning of a technical tradition, with a single scientific model (Greek medicine) and only two linguistic sources (Greek and Latin).⁵¹ Yet here, too, we find synonym-pairs involving both popular and specialist terms and two or more specialist terms, including Greek and Latin words. Note, for example, the following passages where Cassius Felix gives the popular (Latin) equivalent of Latin and/or Greek technical terms:

⁴⁹ I am grateful for this example to R. Pottle.

⁵⁰ I am grateful for this example to M. Edge. Cf. Langslow (1994b: 232) and n. 70 in 5. 3. 1 below.

⁵¹ André refers (1986: 12, 16) the accumulation of synonyms in Latin technical vocabulary to successive and independent translations of Greek terms. This may or may not be relevant to cases of synonymy within a single text or to 'lay' and 'specialist' equivalents.

19. 3 impetigines, quas Graeci *lichenas* uocant, Latini uulgo *zernas* appellant;
 42. 12 genus herpetis, quem Graeci *cenchrias* uocant . . . quam Latini uulgo
araneam uerrinam uocant.⁵²

Examples of specialist synonym-pairs in our four authors include the following: in Celsus, the urethra is *fistula urinae* or *iter urinae*; jaundice is *morbis arcuatus* or *morbis regius* (*arcuatus* or *aurigo* in Scribonius); major epilepsy is *morbis maior* or *morbis comitialis*; a kind of abscess is referred to by either its Greek or its Latin name, *phygetrum* or *panus*, respectively. In Cassius Felix, plethoric is *abundabilis* or *plenus multitudine suci*; remission (of a fever) is *determinatio* or *discussio* (*febris*). In twenty-five instances Cassius uses repeatedly either the Greek or the Latin term for the same phenomenon, for example, *colpus* = *pendigo* = *sinus* for a type of abscess.⁵³

Again, of course, we face the problem of not knowing the relative status (or social meaning) of these synonyms. Is, for example, the relationship between Latin *impetigines* and *zernae* roughly analogous to that between English *morbilli* and *measles*, or quite different? Was Greek *colpus* in current use among Latin-speaking doctors and, if so, was it stylistically marked?

For the purposes of defining a technical terminology, we are concluding in favour of retaining criteria (2) and (3), that is, to include as technical terms all and only the words which both have denotations of direct relevance to the *techne* and are current in the specialist community. In the context of a corpus language, it can be difficult to establish with what sort of authority a writer is using specialist terminology. The professional status and medical 'qualifications' of one of our authors—Celsus—is open to some doubt (see 1. 4. 1 below); but even for our other three authors, all most likely fully fledged members of the specialist community, the question remains whether they were using the terminology of their profession in full array or making concessions to their lay readers by sparing them some technical terms and using paraphrases instead (including on-the-spot translations from the technical register, whether Greek or Latin). As long as such historical questions remain open, it is more than usually important to refer terms closely to their sources. Nevertheless, in the face of all these uncertainties, as in all cases when we deal with incomplete material, it is permissible to generalize from it, while remembering that such generalizations may count only as hypotheses.

⁵² Cf. *turiones* 'the heads or tips' (of brambles) (123. 3); *mappa* 'the peritoneum' (131. 7); *gelela* 'the flesh of a gourd' (176. 17).

⁵³ See 2. 4. 4. 3 below (also 2. 4. 4. 1), and cf. Langslow (1989: 41–9); on synonymy (*uariatio*) in Theodorus Priscianus, see Migliorini (1982).

I. 2. 5 ABSOLUTE SYNONYMY AND TOTAL TRANSLATABILITY

The phenomenon of synonymy within a terminology offers one of very few general differences between technical and non-technical vocabulary, and, by way of a corollary, it provides in certain circumstances a way of identifying some referring expressions as technical terms.

While the synonyms of everyday language are normally partial synonyms, those within a terminology are typically absolute synonyms. This absolute synonymy arises from the very nature of the terminology as a structured set of labels for items of a fixed classification.⁵⁴

Two words are said to be absolute synonyms if they are synonymous in all their meanings *and* in all their contexts of occurrence *and* on all relevant dimensions of meaning. Otherwise, they are partial synonyms. So, while *big* and *large*, for example, are synonymous in the meaning exemplified by:

They live in a big/large house,

big has a meaning that *large* does not have in:

I'll tell my big sister
(cf. I'll tell my large sister).

Again, there are certain contexts where *large* may not replace *big* without violating its collocational restrictions. An example is:

You're making a big mistake
(cf. ?You're making a large mistake),

although *big* appears to have here the same meaning as it does in *a big house*, where it may be replaced by *large*. *Big* and *large* may, however, be taken to be synonymous on the dimensions of descriptive (propositional) and expressive meaning, insofar as it is possible to determine objectively difference and identity with respect to the latter. They are descriptively synonymous in that one cannot without contradiction simultaneously assert that someone lives in a big house and deny that he lives in a large house. They are expressively synonymous in that *very big* and *very large* do not differ in their expression of their user's feelings or attitude in the way that *massive*, *colossal*, *ginormous*, *gross*, *obese*, *not petite* may do, although each of the latter group may be said to be descriptively synonymous with *very big* and *very large*.

In the language of the medical specialist, however, every example of synonymy given in I. 2. 4 above involves absolute synonymy. *Morbilli* and *measles*, for example, are synonymous in all their meanings (they have only one); in all their linguistic contexts of occurrence; and on both descriptive

⁵⁴ The terminology and examples in this and the next paragraph are from Lyons (1981b: 50-5).

and expressive dimensions of meaning. They differ with respect to style, or, one might say, they are not synonymous in their social meaning (cf. Lyons 1981a: 143), in that *morbilli* is reserved normally for formal specialist circles (and would sound odd in an informal report of the form 'He's got the —'), whereas *measles* would be used, say, between doctor and patient and among doctors in an informal style. But even with this qualification, they are by definition synonymous to an extent that non-technical words typically are not.

A standard example of absolute synonymy (cited e.g. by Lyons 1981a: 148) is *typhlitis* = *caecitis* (inflammation of the blind gut; cf. Davies 1985: 125), to which one could add the very similar *angiitis* = *vasculitis* (inflammation of the arteries, veins, and capillaries; cf. Davies 1985: 84). In each pair we have the 'inflammatory' suffix *-itis* added to the stem of the Greek and Latin equivalents for the part affected by the inflammation. The different source-languages of the stems serve as a reminder of a corollary to the existence of absolute synonymy within a terminology in language A, namely that any term of language A is totally translatable into language B, provided that speakers of language B recognize precisely the classification that underlies the terminology of language A.⁵⁵ Between the ordinary vocabularies of the two languages such total translatability does not normally occur.⁵⁶

The observation that two words in different texts in the same language are absolutely synonymous will follow, rather than precede, the recognition that both words are technical terms. Within a single text, however, absolute synonymy and especially total translatability can be used as means of identifying technical terms, above all in a language that is copying the science and therefore mirroring the terminology of another language.⁵⁷ This is especially useful in the study of corpus languages, and, for the purposes of this study in particular, the explicit equation of Latin expressions with Greek medical terms helps to identify a large number of Latin words and phrases as Latin medical terms.⁵⁸

I. 2. 6 FORMAL CHARACTERISTICS OF TECHNICAL TERMS

To this point I have been characterizing technical terminology and technical terms with reference to essentially semantic and sociolinguistic

⁵⁵ Cf. Bloomfield (1935: 517), (1939: 47).

⁵⁶ See, for a simple but telling example, Lyons's discussion (1981a: 325–6) of the different ranges of meaning of modern English *wisdom* and Greek σοφία.

⁵⁷ On the other hand, beware the so-called *faux-amis*, which bedevil the study of technical terminology, that is, words in different languages which have the same or similar forms but quite different meanings (e.g. Latin *cancer* and English *cancer*); on this phenomenon see Gourevitch (1982a).

⁵⁸ See 2. 3 and 4. 2 below, and cf. Langslow (1989: esp. 41–2.)

criteria: how do terminologies work? what do their terms mean? who uses them? But, given the possibility of using the quasi-semantic feature of total translatability as a means of identifying technical terms, it is natural to inquire also into the morphology of technical terms and to ask if there are not formal features, too, that set them apart from other words. It is perhaps surprising to discover that, when one considers the formation of even modern technical terms, very few morphological peculiarities emerge to distinguish the technical from the non-technical. Still, two characteristics are worthy of mention.

The first involves morphology and syntax and style: it concerns the relative frequency of the word-classes to which technical terms belong. If the essence of a technical language is its terminology (see 1. 2. 1 above), the essential part of most terminologies are their nouns (cf. Fluck 1980: 48–9). The first impression that one receives from reading a modern technical (medical) work is constantly confirmed: the vast majority of the technical terms are nouns. Adjectives are common, especially in determining function, though many of these are denominative; verbs are rare, and most of those that occur, apart from the auxiliaries and 'core' verbs (such as *come, go, cause, occur*), are denominatives, too. In keeping with the very strong bias in favour of nouns, nominalizations of verbs are very common.

These general impressions receive good illustration in the passages quoted above (1. 2. 3) from the *British Medical Journal*,⁵⁹ and examples are readily multiplied from modern English medical prose. Here are two further examples from different contributors to Read, Barritt, and Langton Hewer (1984):

[Oedema] occurs [in beriberi] because there is extreme vasodilatation and capillary leakage caused by the high tissue levels of pyruvate and acetate. (115)

Aplastic anaemia is caused by reduction in the number of, or the disorderly function of, the haemopoietic stem cells, in the absence of marrow infiltration and in the presence of all of the essential factors required for normal haemopoiesis. (428)

Striking in both passages is the small number of verbs and the large number of nominalizations:

vasodilatation	(the blood-vessels dilate)
capillary leakage	(the capillaries leak)
tissue levels	(levels in the tissue)
in the absence	(when . . . are absent)
in the presence	(when . . . are present)

⁵⁹ I return to these in 6. 4 below, after reviewing analogous phenomena in Latin medical prose.

In the last two examples it is notable also that the option to nominalize is taken even in non-technical expressions. The extent to which these preferences manifest themselves will presumably vary, perhaps considerably, between specialist writers on medicine and between technical disciplines. That they exist in modern technical writing is undeniable. Why they exist and whether they serve a particular purpose of the technical discipline are questions which must be reserved for future study.

A second general formal feature concerns the derivational morphology of modern technical terminology. It may be that today a small number of suffixes have become the exclusive preserve of one or more technical subjects. In medicine one thinks, for instance, of the English suffix *-itis* which is confined to the field of pathology in being used always and only to name inflammatory conditions, for example, *appendicitis*, *bronchitis*, *enteritis*, *sinusitis* (cf. Davies 1985: 47). But such formations, exclusive to a single technical terminology, mark only a small percentage of the specialist vocabulary and remain extremely marginal as indicators of technical terms.

On the other hand, there is good reason to believe that all technical terminologies show strong preferences for certain formations, including certain models of derivational morphology, each technical or special language exploiting them in different ways. This is apparent in modern medical terminology in, for example, the predominance until well into the second half of this century of Graeco-Latin stems (cf. Fluck 1980: 91–2) (e.g. *dysphagia* 'difficulty with swallowing', *hyperbilirubinaemia* 'retention of bile-pigments in the blood'); the frequent naming of diseases after their discoverers (*Crohn's disease*, *Wilms's tumour*); the common use of 'lexicalized' abbreviations (*ECG* for *electrocardiography*, *MCV* for *mean cell volume*); the prevalence of certain suffixes with well-defined functions, such as *-osis* of a degenerative condition (*thrombosis*, *toxoplasmosis*), *-ism* of a disease (*hyperparathyroidism*, *Parkinsonism*), and adjectival *-al* (*petechial*, *postictal*, *puerperal*), *-ic* (*subhepatic*, *septicaemic*), *-ous* (*scirrhous*, *endogenous*) (cf. Sager, Dungworth, and McDonald 1980: 257–64, esp. 263–4).

When we turn, once again, to Latin, seeking to make another superficial comparison, it is again similarity, not difference, that strikes us. To take the second point—on derivational morphology—first, it can be shown that already in the first century AD, and increasingly thereafter, certain suffixes were similarly favoured by Latin medical terminology for forming words in well-defined semantic fields. (Most of Chapter 5 is devoted to this theme.)⁶⁰ But we find also that the preferences of modern technical prose—for nominalizing verbs, for making noun phrases out of verb phrases and adjectives out of prepositional phrases or relative clauses—are well repre-

⁶⁰ Cf. on ancient Greek Goltz (1969: 242 n. 29), who sees 'Krankheitsnamen mit gleichlautenden Endungen' as an indicator of the beginnings of a technical language of medicine.

sented, although to varying degrees, in Latin medical texts. (Some types and aspects of this complex phenomenon are discussed in Chapter 6.) In any attempt to identify universals of technical language, this feature must be a very strong candidate.

I. 2. 7 TECHNICAL TERMINOLOGY: SUMMARY AND CONCLUSION

A definition of 'technical term' that has emerged from the above discussion may be stated as:

a referring expression which is recognized and used in a standard conventional way by the relevant community of specialists and which unambiguously (and often uniquely) names an object or a concept of the discipline, and therefore, because of this attachment, lends itself to absolute synonymy and total translation.

The essential difference in constitution between a technical terminology and a given field of everyday vocabulary lies in the exhaustive listing, the systematic (often hierarchical) structuring, and the fixed and absolute definition of the denotata of the terminology. Given a defined set of items and classes for labelling, the form of the linguistic expression for each is unimportant; it may, in principle, be a letter, a number, a single word, a whole sentence. It may be claimed that conciseness is essential to a technical term.⁶¹ In practice, long noun phrases are common, in medicine at any rate, representing the results of nominalizing long descriptive verb phrases or even complete sentences (e.g. *partial deletion of the short arm of 5*). In many instances, conciseness in modern terminology is achieved only by drastic abbreviation, whether to vocalized letter-names (*ECG* for *electrocardiography*) or acronyms (*AIDS* for *acquired immune deficiency syndrome*).⁶²

The discussion in this section has focused on certain general linguistic features of technical terminology and has been based purely on the existing literature, together with one or two superficial case studies. In comparing at several points ancient Latin with modern English technical language, I have hinted at the possibility of studying Latin vocabulary also from this point of view. First impressions suggest that, with regard to formal features (grammatical, lexical, and semantic), it is the similarities rather than the differences between ancient and modern technical terminology that deserve emphasis. But this is a preliminary, impressionistic assessment. The real work of analysis remains to be done for Latin and this is the task

⁶¹ This is one of the principles behind the Parisian *Nomina Anatomica*, for example, quoted in Fluck (1980: 92). On the principles of official standard nomenclatures, see also Sager, Dungworth, and McDonald (1980: 293).

⁶² On abbreviations and acronyms, see Fluck (1980: 54–5) and Sager, Dungworth, and McDonald (1980: 277–80).

that the following chapters address. It should by now be clear that a detailed study of a technical terminology *in the making* can contribute significantly to the general field of technical terminology.

From the formal (micro-linguistic) side of technical terminology, the heart of technical language, I turn now to the sociolinguistics of technical languages, to their speakers and contexts of use.

1. 3 Ancient Technical Languages and 'Medical Latin'

1. 3. 1 THE NOTION OF TECHNICAL LANGUAGE IN THE ANCIENT WORLD

At various points in this chapter so far, I have talked blithely of 'technical languages' with reference to both the ancient and the modern world, implying that their existence and their definition may be taken pretty much for granted. While this may be so today, it would be premature and misleading to proceed to an account of the language of the Latin medical writers without first reflecting on the notion of technical language in the ancient world and, in particular, on the status as a linguistic entity of 'medical Latin' and its relation to medical practice, medical education, and the writers of medical treatises, who were not necessarily doctors.

In the modern world, terms such as 'dialect', 'sociolect', and 'technical language' are conventional labels for abstractions from the linguistic behaviour of groups of people variously defined in geographical or social space who are said to use the language or dialect. The users of a technical language will belong to a group—a minority—within the wider linguistic community, that practises a particular art, science, profession, or occupation,⁶³ so that a definition of a technical language will have two parts, a social part and a contextual part. It is the language used to talk and write about a given activity by a group of people who share technical expertise in or knowledge of this activity. The social part of the definition would be based on the membership of that group or network of individuals who are agreed by certain criteria to be specialists in that area of knowledge.⁶⁴

⁶³ The *OED*'s definition of 'technical' applied to words or language is as follows: 'belonging or relating to an art or arts; appropriate or peculiar to, or characteristic of, a particular art, science, profession or occupation' (*OED* (2nd edn.), s.v. 'technical', A. 3). Dover (1997: 114) extends the terms 'technical language' and 'technical term' to cover all special languages used by minorities. I have suggested elsewhere (Langslow 1999: 190) a distinction between technical terms, special words (e.g. in soldiers' language), and other (more or less isolated) exotic words for items of foreign culture.

⁶⁴ For this criterion of shared specialist knowledge, cf. Sager, Dungworth, and McDonald (1980: 68): 'We are in the presence of special language when both the production and the reception of messages are part of a specialist role, and require special knowledge.'

Hence today, for utterances or texts in a given technical language, the philologist turns to samples of the speech and writing on the technical subject in question produced by individuals belonging to the relevant expert group. So, for example, one might define medical language as the utterances, spoken and written, of a defined group or groups of medical practitioners on topics related to medicine. It would normally include neither language about medicine produced by someone outside the group(s) (although outsiders may imitate it more or less accurately), nor language produced by someone inside the group in a non-medical context.

In modern times such a technical language is typically homogeneous and standardized to some degree, at least, between the many groups within the technical field (in different laboratories, hospitals, universities, etc., in different cities and countries of the world). Standardization may be more or less explicit and have broader or narrower geographical scope. On the one hand, attempts may be made to standardize a terminology by very explicit means, such as conferences and journals devoted exclusively to nomenclature, which aim to set international norms. On the other hand, at a national or more local level, broader linguistic homogeneity may be encouraged less explicitly but probably more effectively by an institutionalized pattern of instruction and training through which all must pass who wish to enter the group of practising specialists.⁶⁵

Both parts of the proposed definition of a technical language are relatively straightforward with reference to the modern world. Above all, specialist groups—the users of technical languages—are readily identified and may even be studied as communities by anthropologists or, in principle, linguists.⁶⁶ In the Roman world, however, the social side of the definition is much more difficult. In the case of regional or social varieties of Latin in the late Republic and early Empire, we have a firm *a priori* belief in their existence but at best fragmentary evidence, often amounting to no more than occurrences or reports of isolated words or features deviating from classical norms. When it comes to Latin used for special and technical purposes—for philosophy, architecture, medicine—we are blessed with

⁶⁵ In fact outsiders seem to exaggerate the homogeneity of modern technical languages, at least in subjects relating to medicine: I have been told repeatedly by medical people, anatomists and physicians, both clinical and laboratory-based, that standardization (even at a sub-national level) is increasingly problematic, and does not lend itself as an obvious point of contrast with the ancient situation.

⁶⁶ For an anthropological study of a group of scientists, see Charlesworth *et al.* (1989). On the language of this group, note the remark (p. 3): 'The group of research scientists . . . has its own distinctive set of shared beliefs and attitudes and practices and assumptions and expectations; it has its own way of going about things; it has its own language, its special in-words and shop-talk and gossip.' Of course, the 'special in-words and shop-talk and gossip' may or may not be technical. I know of no primarily linguistic study of a modern scientific community.

complete texts and some explicit discussion of the relevant terminology—in Cicero, Vitruvius, Celsus, Scribonius—and we are fortunate to find that contemporary witnesses, notably Cicero, write expressly, if not of technical languages, at least of technical terminologies of occupational groups of the day.⁶⁷ But in these cases at least we have the sense of being at the very beginning of serious writing on these subjects in Latin and, given their Greek background, there is real doubt as to the existence at any social level of homogeneous Latin-speaking groups of specialists.⁶⁸ Although some generalizations may be made, and are made, between disciplines, each technical subject calls for separate consideration and so I confine myself in what follows to medicine.⁶⁹

I. 3. 2 'MEDICAL LATIN' AND THE LANGUAGES OF HEALERS IN THE ROMAN EMPIRE

In recent discussions of the language of Latin medical texts, it is not hard to find allusion to and illustration of 'medical Latin' ('le latin médical', 'il latino medico', 'medizinisches Latein', etc.). The reference of this expression requires more attention than it has yet received. 'Medical Latin', it seems to me, may have either a stronger or a weaker sense. In its stronger sense it denotes a variety of Latin (a 'Fachsprache') used by those with special medical knowledge in speaking and writing of medicine among themselves, a variety distinct both in vocabulary and at other levels of the grammar from the common language. In its weaker sense, 'medical Latin' is simply the sum of Latin texts devoted to medicine. In the former case, 'medical Latin' is the special language of a group or groups; in the latter, it is merely a set of texts or parts of texts.

Scholars have used 'medical Latin' in both senses, generally without discussion of the meaning of the phrase.⁷⁰ Yet the very use or rejection of the

⁶⁷ Note esp. Cic. *Fin.* 3. 3–4 in omni arte, cuius usus uulgaris communisque non sit, multam nouitatem nominum esse, cum constituentur earum rerum uocabula quae in quaque arte uersentur . . . (4) . . . ne opifices quidem tueri sua artificia possent nisi uoculis uterentur nobis incognitis, usitatis sibi. quin etiam agri cultura . . .; Riposati (1981: 26). For the earliest allusions to technical language in Greek (including, for medicine, Thuc. 2. 49. 3), see Dover (1997: 114).

⁶⁸ For the Greek world, on the other hand, Dover (1997: 116) confidently supposes that 'there must have been as many special languages as there were specialized fields of practical and theoretical activity (not forgetting philosophy)'.

⁶⁹ On philosophy, see Puelma (1986); on architecture, Callebaut (1982), (1990).

⁷⁰ The existence of 'medical Latin' in the stronger sense of the term has been either assumed or baldly postulated without discussion—by e.g. Baader (1970: 6), Jocelyn (1985: 312, 314, 330 n. 126), Mazzini (1991a: 175–6) and (1991d: 183–5 & n. 3)—or, in effect, denied, notably by André (1986: 9): 'les langues techniques latines sont des langues réduites au lexique'.

phrase presupposes a view on an important historical question, to which we must now turn: did there exist groups of Latin-speaking *medici* who wrote and spoke in a characteristic variety or varieties of Latin? If so, one might add, to what extent is their language reflected in each of our surviving Latin medical texts? The principal question calls for an assessment of the various sorts of evidence bearing on language-use in the context of healing in the Roman world, the second, for details on the author and intended readership of individual texts (on the latter see 1. 4 below).

On the face of it, the chances of there having been groups of Latin-speaking *medici* with their own characteristic Latin medical idiom appear—at least in the period of the late Republic and early Empire—very slight indeed. We might begin by noting in Cicero and other sources the silence on *medici* as a group *cum uerbis suis*: is this merely the accidental omission of a group that could perfectly well have been given as an instance of users of a special variety of Latin, or was it perhaps far from obvious to Cicero that there was such a thing as 'medical Latin'? But we have more than silence as evidence against the existence of medical Latin in the strong sense. Pliny (*Nat.* 29. 17) is quite explicit on this subject: Romans had never practised medicine, and the very few who had done so, had immediately deserted to the Greeks; and a medical treatise in a language other than Greek commanded no respect, even among those who didn't know Greek!⁷¹ Whether or not Pliny intended these obviously extreme statements to be taken seriously, the view that medicine remained, under the Empire, an exclusively Greek science, practised and written about almost exclusively by Greeks in Greek, appears still to be common among prominent historians and philologists alike,⁷² although this could be seen as, in Nutton's words (1993: 52), 'the equation of Roman medicine [i.e. medicine in the Roman Empire] with what is described by three eminently-hostile witnesses' (Cato, Pliny, and Galen).⁷³ Nutton himself sidesteps the whole issue of language-use in ancient healing by redefining 'Roman medicine' as (1993: 70) 'the system (or systems) of healing practised in areas under Roman control or influence'. This is arguably a gain for the historian of medicine, since 'by setting Roman, or perhaps better Latin, medicine within a continuous process of assimilation, it need no longer be seen just as a degenerate form of Greek medicine but rather as a development of Greek

⁷¹ Plin. *Nat.* 29. 17 *solam hanc artium Graecarum nondum exercet Romana grauitas, in tanto fructu paucissimi Quiritium attigere et ipsi statim ad Graecos transfugae, immo uero auctoritas aliter quam Graece eam tractantibus etiam apud inperitos expertesque linguae non est, ac minus credunt quae ad salutem suam pertinent, si intellegant.*

⁷² Note e.g. Rawson (1989: 476) 'medicine was not naturalized'; Griffin (1994: 705) 'medicine, theoretical and practical, returned to the hands of the Greeks' (after Varro); André (1985b: xiii); Mazzini (1988a: 1323).

⁷³ On Pliny's attitude to contemporary medicine and its practitioners, see Nutton (1986).

ideas that is as valid as that which was taking place in contemporary Greek medicine.' For, in Nutton's view, 'within Hellenisation, the linguistic difference becomes irrelevant when seeking to determine quality or efficacy, and in the absence of emphasis on their language of composition, one may more easily compare various types of medical literature' (Nutton 1993: 61–2). Clearly this approach has merit and interest for medical doxography, although the social history of the subject may not so lightly dispense with the issue of language-use. Even if it is true, as Nutton suggests (1993: 62), that the division between Greek and Latin loses all meaning when applied to Scribonius Largus—whom Nutton takes to be from a bilingual area of south Italy or Sicily and equally at home in either language (cf. 1. 4. 2 below)—this loss of meaning concerns only the content of his medical discourse, not the form, the linguistic status, and the social meaning of his medical Latin, topics which are of course central to our purposes here.

Curiously, one hears and reads in modern discussions less of 'medical Greek' than of 'medical Latin'. This silence may be accidental; or it may be symptomatic of the general lack of attention paid (at least until recently) to the social linguistics of the Greek-speaking world;⁷⁴ or it may be more significant, reflecting what Geoffrey Lloyd, writing of Greek medical vocabulary in the age before Galen, has called 'a situation bordering on terminological anarchy' (1983: 163). This situation obtained, Lloyd continues (1983: 166), because the development of a standard technical vocabulary 'depended on the forging of some degree of consensus among practitioners who were usually, for obvious sociological reasons, highly individualistic and competitive'.⁷⁵ This appears to be a standard view: that variety, individualism, and competition marked the terminology and, presumably, the language generally of Greek doctors in the Roman Empire, many of whom will have been subject to the linguistic stamp of an institutional medical education in Greek. Lloyd adds (1983: 149 ff.) that this was true of all the life sciences, and Rawson (1985: 182) infers that 'this fact will have made things yet more difficult for the Romans'. And, while this picture of anarchy in Greek medical terminology may be overdrawn,⁷⁶ and

⁷⁴ For some bibliography, see Meier-Brügger (1992: i. 83 ff.) and, on Greek 'scientific discourse', Thesleff (1966) and especially van der Eijk (1997).

⁷⁵ There is fine illustration of this state of affairs in Galen's work *De nominibus medicis*, which survives only in an Arabic translation (see Meyerhof and Schacht 1931). There are signs of variation, although more moderate, in Latin medical texts, too (e.g. Scrib. ind. 10. 33–4 *ad auriginem*, *quod uitium quidam arquatium quidam regium uocant*, and at least 16 similar instances with *quidam uocant/appellant* in Scrib.: cf. 18. 12, 24. 7, 80. 19, 91. 20, etc.). See, however, the remarks on the normality of synonymy and variation in technical terminologies in 1. 2. 4 above.

⁷⁶ Sextus Empiricus, for instance, *Aduersus grammaticos* 232 ff., uses medical language as an uncomplicated example of a technical variety. There is even a possible implication here that

although Celsus at least, against Rawson's expectation, appears to have thrived on variation in Greek usage,⁷⁷ it is simply the case that the bulk of the relevant evidence shows us Greek doctors practising and writing in Greek.

There remain, however, several hints, chiefly in Latin literary sources, that we should—notwithstanding the arguments of the last paragraph—retain a belief in medical Latin in the strong sense of the term, at least in the later Empire, but probably under the late Republic and early Empire, too—and I am not referring to the spoken Latin which we must suppose Greek doctors to have used with patients who knew no Greek! There is of course a great deal of medical vocabulary, Greek and Latin, in (non-medical) Latin literary texts, both prose and verse, of all periods, whether used *sensu proprio* or metaphorically.⁷⁸ I have suggested elsewhere (Langslow 1999; and cf. below) how the language of metaphor in particular may be used to support a case for medical Latin in the strong sense, and I suspect there may be much fruitful work still to be done in this area, especially perhaps in the works of Lucilius, Cicero, and Vitruvius. For present purposes, however, we need arguments of a different order than the accumulation of medical vocabulary in non-medical texts. I begin with Plautus.

In the first place, it was possible for Plautus already, around 200 BC, to parody doctors' language in Latin.⁷⁹ The prime example of this is at *Mercator* 139–40:

CHARINVS: resinam *ex* melle Aegyptiam uorato: *saluom feceris*.

ACANTHIO: at edepol tu calidam picem bibito: *aegritudo apscesserit*,

where Charinus parodies doctors' Latin and Acanthio parodies the parody. The linguistic features italicized—*ex* 'dipped in', the future imperative in *-to*, the future-tense prediction of successful cure after the prescription—are among those characteristic of a style of written recipe which is well attested two generations later in Cato's *De agricultura* and which is found in very similar form throughout the Empire to the end of antiquity and into the Middle Ages.⁸⁰ The parody in Plautus suggests that this style was familiar already in the third century BC, and its occurrence in dialogue raises the interesting question whether it was then part of doctors' spoken

technical varieties of Greek, unlike 'the plain untechnical usage of ordinary folk' (in R. G. Bury's Loeb translation), do not differ from one state or nation to another.

⁷⁷ See n. 97 below.

⁷⁸ On medical language and subject matter in Latin literature, I refer especially to the recent work of Mazzini and Migliorini listed in n. 21 above.

⁷⁹ In Greek cf. Menander, *Aspis* 439–64.

⁸⁰ On these and other features of the medical recipe-style, see Adams (1995: 636–8); cf. Langslow (1999: 214–15).

Latin or whether it presupposes a literate audience who would have recognized an allusion to written medical *commentarii*: perhaps Plautus did not expect all his spectators to understand the allusion in Charinus' line and so added the obvious send-up in Acanthio's words, which presuppose no extra-linguistic knowledge for their humorous effect. At all events, there is good independent evidence for these Latin *commentarii* in the period of the Republic (see Adams 1995: 72–8). Note, for example, Varro, *Res Rusticae* 2. 10. 10:

quae ad ualeitudinem pertinent hominum ac pecoris et sine medico curari possunt, magistrum scripta habere oportet. is enim sine litteris idoneus non est, quod rationes dominicas pecuarias conficere nequiquam recte potest.

This passage is of interest also for combining human and animal medicine and for distinguishing *medicina domestica*, within the *familia*, from cases which called for a *medicus*;⁸¹ we shall return to this distinction below. The literate herdsman, *magister pecoris*,⁸² leads to a further point that is relevant to our present concern. We have quite a bit of evidence, both Greek and Latin, for high levels of literacy in the context of healing, even in the lower orders of the medical profession.⁸³ We have also a strongly worded converse claim, that most physicians actually could not even read (cf. Pliny's statement that there had been no Roman doctors before his day (*Nat.* 29. 17, above)), this time from Galen (19. 9), but again we should probably regard this as an extreme view and prefer the less tendentious testimony of Varro (above) and, later, of Theodorus and Mustio on the literacy of midwives;⁸⁴ of tomb-reliefs showing doctors reading;⁸⁵ of references—in the works of Galen among others—to the flourishing trade in medical books in Rome;⁸⁶ and of Galen's (10. 560–1) more sober rating of book-learning above travel and attendance at medical centres as a preparation for medical practice.⁸⁷ This is not to question or to diminish the role played in

⁸¹ Varro is more explicit on the latter point at *Rust.* 2. 1. 21: 'There are two divisions of such [medical] knowledge, as there are in the treatment of human beings: in the one case the physician should be called in, while in the other even an attentive herdsman is competent to give the treatment.' Cf. *Vitr.* 1. 1. 15.

⁸² Cf. the literate shepherd at 2. 7. 16 *de medicina* uel plurima sunt in equis *et signa morborum et genera curationum, quae pastorem scripta habere oportet.*

⁸³ Cf. in general Harris (1989: 82, 275).

⁸⁴ For Soranus (*Gyn.* 1. 3) one of the first requirements in a good midwife is literacy. Cf. Scarborough (1993: 47). Note the prefaces of Mustio and of Theodorus' *Gynaecia*: Mustio has never known a midwife who knew Greek but both he and Theodorus take it that reading Latin will present no problem, provided the language is simple. Compare the implication in Vegetius (*Mulom.* 4. pr. 2) that *bubulci* may understand his book on veterinary medicine; see Adams (1995: 96).

⁸⁵ See Jackson (1988: 58 f.) and (1993: 82 with notes).

⁸⁶ Cf. e.g. Polybius 12. 25c. 4, Aulus Gellius 18. 10. 8, Galen 8. 148.

⁸⁷ See Kollesch (1973: 14), Nutton (1990: 248). On books and medical training in general, see Kollesch (1966) and (1979) and Baader (1972).

medical training by direct oral instruction,⁸⁸ but merely to reassert the presence and importance of reading and writing through a broad social spectrum, and the tendency of written treatises to standardize linguistic behaviour.

In what we have seen so far, one might object that in a Latin recipe-style and in literate Latin-speaking midwives there is nothing that is inconsistent with an exclusively Greek-speaking profession of 'high' medicine. Is there any evidence of 'medical Latin' at a higher social and intellectual level?

Of course, the very use of the word 'profession' in connection with medicine has been condemned as an anachronistic misnomer, most eloquently by Nutton (1993: 55–6): 'In short, despite the presence in certain writers of phrases such as *ars medicinae* or *professio medici*, there was in Antiquity no medical profession in the strong modern sense of the word, which implies a coherent body of practitioners with agreed educational, practical and ethical standards.' Healers and healing practices were undoubtedly very diverse, and if we leave all the various strands clumped together, Nutton's point is easy and unanswerable.⁸⁹ It is, however, probably both legitimate and profitable to disaggregate the whole and to draw distinctions—social, scientific, and linguistic—between high and low medicine.⁹⁰ It is the highest social levels that concern us here, since, to judge from their language and from other, internal and external, evidence, our four authors all belonged to the social—and medical—upper classes. One of them, moreover, in a memorable sentence, which deserves to be quoted in full, explicitly distinguishes between 'senior, influential doctors' and other 'humble and otherwise unknown healers' who are 'far removed from medical teaching and not even close to its *professio*':

Scrib. I. 4–10 animaduertimus itaque saepe inter deliberationes contentionesque medicorum auctoritate praecellentium, dum quaereretur, quidnam faciendum aut qua ratione succurrendum sit aegro, quosdam humiles quidem et alioquin ignotos, usu uero peritiores, uel (quod fateri pudet) longe summos a disciplina medicinae ac ne adfines quidem eius professioni, medicamento efficaci dato protinus uelut praesenti numine omni dolore periculoque liberasse aegrum.

These are the words of a contemporary 'insider', a professional doctor who moves among the social elite and who plainly believes not only in different

⁸⁸ See van der Eijk (1997: 95 ff.), with references to, among others, Galen (6. 480, II. 797, 12. 894) and Aristotle (*Nic.* 1181b2–6) on oral teaching vs. textbooks.

⁸⁹ Indeed, the linguistic variety (particularly in register and in command of the classical languages) in the surviving corpus as a whole of medical writings provides supporting evidence for the picture of the very non-institutional and heterogeneous nature of 'the medical profession' in the Greek and Roman worlds alike, which is also suggested by the evidence of inscriptions, archaeology, and ancient anecdotal accounts.

⁹⁰ On 'high' and 'low' medicine cf. Riddle (1993). For this distinction in veterinary medicine, see Adams (1995: 53 ff.).

'levels' of practitioners of the healing arts but also in a *disciplina* and a *professio*, something involving medical instruction and practice that you can be in or out of, close to or removed from. Whether or not 'profession' is held to be an appropriate translation of *professio* in this context, the social configuration suggested by Scribonius for this part of ancient healing would seem likely to promote linguistic homogeneity and to be conducive to the development of a technical language in the strong sense. I return to my question: is there evidence of 'medical Latin' at a higher social and intellectual level than recipes and midwives?

I have argued in a recent article (Langslow 1999) that the language used by Lucretius in medical images and metaphors (which shows important agreements with the medical vocabulary of Celsus, Scribonius, and other 'high' Latin medical authors) was intended to echo a contemporary or earlier Latin medical idiom, whether spoken or written. Given Pliny's statement (*Nat.* 25. 5) that between Cato the Elder and C. Valgius Rufus (cos. 12 BC) only Pompeius Lenaeus (Pompey's freedman) had written on a medical subject in Latin, I floated the possibility that it was Pompeius' medical Latin that Lucretius' audience was meant to hear in (for example) the image of love as a disease (at 4. 1068 ff.). Still, while Pompeius' work is the only one explicitly attested which could reasonably have been written before Lucretius' poem, it is likely on general grounds that, if Lucretius is alluding to some recognizable Latin medical idiom, the allusion is to more than a single work by a single author. Here, then, there may be an echo of 'high' medical Latin (in the strong sense) spoken or written in or before the 50s BC.

For our present purpose of assessing traces of the use of Latin in medical contexts, the work on architecture by Vitruvius Pollio (from the Augustan period) provides important circumstantial evidence for the use of Latin in medical education. Most relevant to our present concern is the fact that medicine evidently formed part of the general practical education (*encycliōs disciplina*), for which Vitruvius thanks his parents (6. pr. 4; cf. 1. 1. 12), and from which derive presumably his considerable knowledge (which he regards as important for the architect: cf. 1. 1. 3, 10, 13) of aspects of medical theory and practice⁹¹ and his use of medical terminology, including Latin expressions.⁹²

From the first century AD, the Elder Pliny's lists of his sources are of potential interest and importance, although they have in fact been used to

⁹¹ Note e.g. Vitr. 1. 1. 15 (on the pulse), 1. 4. 10 (a herb for treating *lienosi*), 1. 6. 3 (diseases requiring *adiectioes* 'strengthening remedies' as opposed to *detractioes* 'purgings'; cf. Cels. 2. 9. 2).

⁹² Note e.g. 1. 6. 3 *grauitudo arteriace, tussis, pleuritis, pthisis, sanguinis eiectio et cetera quae non detractioibus sed adiectionibus curantur*. Further research is needed on these questions regarding practical education (in Vitruvius and other writers).

support opposing points of view. André (1985*b*: xiii) exploits them to illustrate his contention that medicine was an exclusively Greek and Greek-speaking profession, drawing attention to items such as 'Iulius Bassus, who wrote on medicine in Greek, Sextius Niger, who did the same' (Plin. *Nat.* 1. 12; 1. 20–1; 1. 23–7; 1. 33–4). These lists of sources feature also, however, in Kudlien's monograph (1986) on the social position of doctors in Roman society. The essence of Kudlien's thesis is that Greek medicine, like Greek philosophy, was early naturalized ('eingebürgert') at Rome (*pace* e.g. André 1987*a*: 23 ff., or Rawson 1989: 476), at the latest under the influence of Asclepiades of Prusias in Bithynia (d. 1st cent. BC), and that from an early date freeborn Romans from even the highest social strata were active in this generally well-respected profession.⁹³ This view yields in itself, of course, no argument in favour of 'medical Latin'; but let us proceed. Kudlien warns (1986: 45, 213) that the presence of Greek speakers and the Greek language in Roman medicine is certainly exaggerated both by Pliny's obviously tendentious statement (*Nat.* 29.17, quoted above) and by satirists and moralists, such as Martial and Juvenal (whom André (1985*b*: xiii) seems to take quite seriously): Pliny's silence on Scribonius Largus is particularly striking (see 1. 4. 2 below). Kudlien (1986: 211–12) also urges caution in interpreting statistics from inscriptions bearing the names of doctors, which are overwhelmingly dominated by Greeks.⁹⁴ With regard to Pliny's sources, Kudlien (1986: 21, 25–6) stresses rightly that Pliny also lists *medici* with Roman names without saying that they wrote in Greek,⁹⁵ and mentions in his text (at *Nat.* 29. 7) among 'many very famous doctors' the names Cassius, Calpetanus, Arruntius, and Rubrius. Kudlien observes correctly that there are no grounds other than prejudice for supposing that these doctors were Greek or wrote and practised in Greek. I would add that, if Greek was really so unremarkable and Latin so rare, then it is Pliny's note, 'qui de medicina *graece* scripsit', that calls for comment.

Two other points bearing on 'medical Latin' in the Republic and early Empire deserve mention before we turn to the later period; although neither of them provides anything like proof of the existence of a Latin medical idiom at this period, they merit inclusion in this small dossier of circumstantial evidence. The first is the difference between Cicero and Celsus in the matter of their self-awareness as they come to write in Latin on a 'Greek subject'. In striking contrast with Cicero, who frequently alludes to the linguistic adventure of addressing philosophy in Latin,⁹⁶

⁹³ For criticism of Kudlien's position see Nutton (1993: 56 n. 31).

⁹⁴ Nutton (1986: 37) is careful to draw attention to the inscriptions set up by doctors with fully Roman names.

⁹⁵ For example, sources for book 28 include *Rabirius medicus*, *Ofilius medicus*, *Granius medicus*.

⁹⁶ See Puelma (1980) and (1986), Powell (1995). This is not to deny the comparisons

Celsus says nothing, or next to nothing, about principles, problems, licences, and restrictions on writing in Latin about medicine.⁹⁷ Admittedly, little if any weight may be attached to this silence: it may reflect rather a difference in interests or personality between Celsus and Cicero, or Celsus may have commented on this theme in a lost part of the *Artes*; in any case, he may have felt at home in composing a Latin medical treatise on the strength of just one predecessor, namely Varro in book 8 of his *Disciplinae*,⁹⁸ and I would not wish to claim that two encyclopaedist-compilers amount to 'medical Latin' in the strong sense. The fact remains that Celsus appears quite unselfconscious about writing in Latin on medicine.

The second point to be made is that several items of medical terminology in Latin are ascribed (e.g. by Varro, Cicero, Celsus, Seneca, and Pliny) either explicitly to *medici* or to an unspecified 'they', who can only be doctors.⁹⁹ I have in mind expressions such as the following:

Var. *Disc. apud* Nonius 135. 10M uesperī non uidere, quos appellant *lusciosos*;
Cic. *N.D.* 2. 136 *aspera arteria* (sic enim a medicis appellatur);
Cels. 4. 1. 12 ea [*uuluua*] recta tenuataque ceruice, quem *canalem* uocant, contra mediam aluum orsa [on the interpretation, cf. 2. 2. 2. 3 below];
Cels. 5. 28. 17B alterum genus [*impetiginis*] peius est . . . *rubrica* cognominatur. tertia etiamnum deterior est . . . *nigrae* cognomen est;
Cels. 7. 19. 7 ferramentum quod a similitudine *coruom* uocant;
Plin. *Nat.* 24. 96 [*decoctum radiculae*] urinam ciet, aluum soluit, uuluas purgat, quamobrem *aureum potorium* medici uocant (cf. Plin. *Nat.* 25. 174 nostri herbarii *strumum* eam [*radicem ranunculi*] uocant, quoniam medetur strumis et panis);
Sen. *Epist.* 54. 2 aliud enim, quicquid est, aegrotare est, hoc animam egerere. itaque medici hanc *meditationem mortis* appellant.

In the case of the second example (from Cicero), we know the Greek equivalent (ἡ τραχεία ἀρτηρία): the Latin expression is clearly part translation, part borrowing, but it remains of interest in that the phrasal term *aspera arteria* is clearly established in Latin before the middle of the first century BC.¹⁰⁰ All the other examples are Latin medical expressions with-

made, by Mudry and others, of Celsus with Cicero; and some of Puelma's (1986) conclusions on Cicero's philosophical Latin apply very well to Celsus' medical Latin.

⁹⁷ Celsus sometimes notes that the Greeks make a terminological distinction that is not made in Latin (e.g. 5. 26. 31B; 7. 18. 3, 7), but in places (e.g. 3. 27. 1A, 4. 5. 2, 4. 6. 1, 4. 20. 1) he contrives to imply that an invariant Latin medical term is prior to, and superior to, the variable and unstable Greek terminology; see Langslow (1994a: 300 ff.).

⁹⁸ But note the scepticism with regard to the project of devising a Latin language of philosophy in the Varro portrayed at Cic. *Acad.* 1. 3–8 and *Fin.* 1. 1.

⁹⁹ At Cato, *Agr.* 102 *melanthi acetabulum*, quod medici uocant *zmurnaum*, I take the last word to be Greek (*συμπυαῖον*).

¹⁰⁰ The joke at Lucr. 4. 528–9 ('and a shout, as it comes out, makes the "rough pipes" rougher' (moreover with neut. pl. for fem. sg.)) suggests that this term for the trachea was familiar enough to be played with.

out an attested—or at least without an exact—formal or semantic parallel in Greek. The species of *impetigo* named *rubrica* may be the equivalent of ὑπόπυρροι (λειχήνες), but the form of the Latin tells against an on-the-spot translation; the Greek expression corresponding to *meditatio mortis* (μελέτη θανάτου) is not attested in this transferred sense with reference to asthma.¹⁰¹ The others, *lusciosi*, *canalis*, *aureum patorium*, and *strumus*, have no known Greek parallel. Dover (1997: 115) observes with reference to Greek that 'it is a useful indication of technical status when the writer uses some part of καλεῖν', and it may be that we can take some of these expressions at their face value, that is, as Latin medical terms proper to a group of Latin-speaking (or at least Greek–Latin bilingual) *medici*. We cannot, however, exclude the possibility that they are to be read, in inverted commas, as it were, as literal, on-the-spot translations of the real, Greek technical terms which would have been vocalized in Greek (cf. 2. 4. 4 below).

In this immediate context, finally, I add a tentative note on Celsus' introduction to diseases of the genitals, where he agonizes over how to refer to these body-parts. I quote the passage in full since its interpretation is not straightforward:

Cels. 6. 18. 1 proxima sunt ea quae ad partes obscenas pertinent, quarum apud Graecos uocabula et tolerabilius se habent et accepta iam usu sunt, cum in omni fere medicorum uolumine atque sermone iactentur: apud nos foediora uerba ne consuetudine quidem aliqua uerecundius loquentium commendata sunt, ut difficilior haec explanatio sit simul et pudorem et artis praecepta seruantibus. neque tamen ea res a scribendo me detertere debuit.

The last clause here makes clear that Celsus is going to use *Latin* terms for the genitals: otherwise, surely, his account would present him with no difficulty. His problem lies in the fact that among Latin-speakers these *foediora uerba* are still not *commendata*, even though they have enjoyed some regular use in polite conversation. Now, on the face of it, since 'polite conversation' (in Latin) is in antithesis with 'every medical book and discourse' (in Greek), this passage might even suggest an argument *against* the existence of 'medical Latin'. But in what contexts other than medical is there frequent mention of the genitals in polite conversation?: it seems to me that this may be rather an allusion to conversation on medical topics in Latin among the Roman elite, albeit not widespread enough for Celsus to be sure that all his readers will be totally at ease with the words that he will use.

So much for the Republic and early Empire. If the evidence for medical

¹⁰¹ In the preceding sentence, Seneca refuses to use the Greek term for asthma: satis enim apte dici 'suspirium' potest. This sense of the phrase *meditatio mortis* is noted only in this passage in the *ThLL*, s.v. 'meditatio', 571. 53; for the literal sense, see *ibid.*, 571. 69 ff. On this phrase cf. Pisi (1981).