BOOKS OF 'MATERIA MEDICA' IN TORONTO LIBRARIES:[1]

Herbals, Books of Simples and Compounds, Formularies, Pharmacopoeias, Etc. 300 B.C. to 1800 A.D.

by Roberta Styran & Andrew Watson

The vast and ancient literature of medical remedies is of interest to scholars from a wide range of disciplines for the light it throws on many obscure areas. It is of primary concern, of course, to historians of medicine and pharmacy who may find here a large part of the story of therapeutics. But it is also of more than passing interest to many other scholars: to historians of science in general, who may trace in the growing number of cures man's expanding knowledge of all three Kingdoms of the natural world; to the historian of botany in particular, who for most periods of history will find here the main source of information about the plants that were known, the diffusion of plants, and scientists' deepening understanding of plant morphology; to economic historians, for the extensive information which can be gleaned about the spread of medical crops, as well as about the traffic in materia medica; to historians of labour, who will find here much of the story of the uneasy alliance that existed from the earliest times between the related professions of doctor and pharmacist, and the stages by which the modern professions evolved; to the historian of disease, who can learn from such writings much about what diseases afflicted our ancestors or what these diseases were imagined to be; to the historian of art, who will find many of the works in this literature copiously illustrated — indeed for a few periods herbals offer one of the principal surviving examples of the art of an age; to historians of magic, witchcraft, superstition, and folklore; and finally to historians of philology, lexicography, and calligraphy, for whom certain parts of this literature are fundamental.

Although there is no single collection of this literature in Toronto which is outstanding, the combined resources of Toronto libraries include all the principal works, and for certain periods the amount of research material available is impressive. This article will survey the holdings of Toronto libraries of this literature from its beginnings until the later part of the eighteenth century. Such a long sweep seemed necessary since so many of the publications of the Renaissance in this field were editions, translations, or adaptations of ancient and mediaeval works, or were in the same vein. It was only towards the end of the Renaissance, as will be seen, that a break with tradition occurred.

1. The Ancient World

Few of the works of classical antiquity on medical botany have survived — only six of note — but these were of such quality that they established a

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[1] The following symbols are used to show the location of books: UT (University of Toronto, Main Library); UTRB (University of Toronto, Rare Books Department); UTPh (University of Toronto, Faculty of Pharmacy Library); AM (Academy of Medicine); PIMS (Library of the Pontifical Institute of Mediaeval Studies); TPL (Toronto Public Library); ROM (Library of the Royal Ontario Museum). X indicates book which is on order; NAT a book which is not available in Toronto.

tradition followed in both Europe and the Arab world through the Middle Ages and into modern times. The earliest writer in this field, Theophrastus of Eresos (c. 372-c. 288 B.C.), was a pupil of both Plato and Aristotle, succeeded Aristotle as head of the Lyceum, and inherited his library and garden. In the best edition of his Opera omnia, ed. Fr. Wimmer (Paris: Didot, 1886) (UTX, reprint), is to be found a critical edition of his Historia plantarum and his De causis plantarum based on all existing manuscripts, as well as a new Latin translation of these works and an index of the botanical names of plants mentioned. Wimmer's Greek text is reproduced with an English translation in an edition by Sir Arthur Hort (London: Heinemann, 1916) (UT, TPL). Theophrastus mentions some 400 plants (a present-day Flora of Greece lists about 3,000 but includes many which were not found in ancient Greece). Most of these plants were known in Greece or the Levant; but a number of Asian plants are described, such as cotton, the banyan tree, banana trees, the mangrove, and the Indian fig tree, all of which had probably become known to the Greeks through the voyage of Admiral Nearchos into the Persian Gulf in the year 325 B.C.[1] In describing and classifying these plants, Theophrastus set high standards which those who came after him seldom attained. His account of the medical properties of plants, however, seems based largely on folklore of the time.

Following Theophrastus, the next important compiler of materia medica was Pedanios Dioscorides of Anazarbos (fl. mid-1st cent. A.D.). Primarily a botanist rather than a physician, Dioscorides describes about 600 plants and a smaller number of animal and mineral substances, all of which were believed to have medical properties and a considerable number of which were not to be found in his native region of Cilicia. His work is the high point of ancient medical botany and was the principal reference for most mediaeval writers in both the Christian and Arab worlds. The best edition of the Greek text is De materia medica libri quinque, ed. M. Wellmann (Berlin: Weidmann, 1907-14) (UT reprint). Latin translations, apart from those of the Renaissance (q.v. infra), are found in De materia medica ..., ed. K. Sprengel (Leipzig: Cnobloch, 1829-30) (UT) and De materia medica ..., ed. M. Wellmann (Berlin: Weidmann, 1958) (UT), of which the latter is superior.

Two contemporaries of Dioscorides, both Latins, also made important contributions to this literature: Celsus (fl. early-1st cent. A.D.) and Pliny the Elder or Gaius Plinius Secundus (23-79 A.D.). The De medicina of Celsus, whose works on other subjects have perished, contains much information about materia medica, which is conveniently collected in the second volume of the edition and English translation by W. G. Spencer (London: Heinemann, 1960-1) (UT, PIMS). Mediaeval scholars, however, were not familiar with this work, which was rediscovered only in the fifteenth century. Pliny's enormous Naturalis historia, though lacking in originality and often uncritical, is the greatest ancient compendium of knowledge and beliefs about the natural world. Books XX to XXXIV contain his accounts of the properties of drugs of animal, mineral and vegetable origin, and list more materia medica than is to be found in any other ancient work. There are many editions of this work available in Toronto, including early-modern editions (q.v. infra).

A more rigorous framework to the writings on medical remedies was given by Galen of Pergamum (129-199 A.D.), "the greatest physician of antiquity after Hippocrates." Galen developed the Hippocratic idea of the four humours into a rigid system which dominated pathology and therapy for over 1,500 years. According to this theory, illness was caused by an imbalance of

[1] H. Bretzl, Botanische Forschungen des Alexanderzuges, Leipzig, 1903.

the humours of the body, which took the form of excessive dryness or moisture, heat or cold. This could be rectified by the application of medicines with the opposite qualities: herbs known to be essentially cool, for instance, like nenufar, could be used to counteract fevers, provided the potency of the drug was commensurate with the disease. As virtually all plants and many other substances could be shown to be dry or wet, hot or cold, medical uses could be found for an enormous range of materials from the animal, vegetable and mineral kingdoms. It was the work of later centuries to identify all the possible applications of the materials found in the natural world, as well as of combinations of these materials concocted by man. Galen's Opera omnia are available in an edition by C. G. Kühn (Leipzig: Cnobloch, 1821-33) 20 vols. in 22 (UT, AM), as well as in various volumes of the Corpus medicorum Graecorum (Leipzig: Teubner, 1908-) (UT).

Finally, two late-classical authors had an important influence on the medical lore of the Middle Ages: Apuleius Platonicus or Barbarus (Pseudo-Apuleius) (prob. fl. 5th cent.) and Marcellus Empiricus (fl. c. 410). The Herbarium of Apuleius, based on Dioscorides and Pliny, was one of the principal herbals of the Middle Ages. A facsimile edition of the Vienna manuscript of this work is being prepared and will appear under the title Antike Medizin (Codex Vindobonensis 93) (Graz: ADV, 1970) (UTX). This manuscript, apparently a copy of a sixth-century Italian manuscript, has many illustrations which are reproduced in colour; it is also of interest because it contains several other ancient works on medicine and Dioscorides' treatise on female plants. In the De medicina of Marcellus Empiricus, who was born in Bordeaux, is to be found an extraordinary mixture of traditional medicine and popular, probably Celtic, lore; a very large number of plants is mentioned. This work is available in an edition by Pieter Burmann (Leyden: C. Wishoff & D. Goedval, 1731) (UTRB).

2. The Arab World to 1300

Arab pharmaceutical literature may be said to begin with the translation into Arabic of the works of Dioscorides and Galen, which established the tradition that was followed by all later Arab writers. The greater part of the Materia medica of Dioscorides was translated into Syriac and Arabic by the Nestorians Ḥunain ben Isḥāq and Isṭifān ibn Basīl after the middle of the ninth century, though the exact role of the two scholars is difficult to determine. This translation appears to have been revised by a Persian scholar in 985 and became perhaps the principal authority for Arabic pharmacy. This Arabic text is given in La 'Materia médica' de Dioscorides, ed. Cesar Dubler & Elias Terès (Barcelona: Tip. Emporium, 1952-7), Vol. 2 (UTX). Another Arabic translation was made in Spain after the middle of the tenth century, from a magnificent manuscript of the work sent by the Byzantine Emperor Constantine VII as a gift to the Caliph 'Abd al-Raḥmān III of Spain. As Spanish scholars were unable to understand the Greek text, the Emperor was asked to send a scholar who could explain it. A monk, Nicholas, was soon dispatched, and with his help another Arabic translation was at last produced by Ḥasdai ibn Shaprut, physician to the Caliph.

Many of the works of Galen were translated into Syriac and Arabic in the later part of the ninth century by Hubaish ibn al Ḥasan, son-in-law and pupil of Ḥunain ben Isḥāq, the translator of Dioscorides. Some of the Arabic text of Galen's works is available with an English translation in Galen on Medical Experience, ed. & tr. R. Walzer (London: Oxford UP, 1944) (UT).

Like nearly all the other great scholars of the early centuries of Islam, the early Arab authors of works on medical remedies were natives of the eastern reaches of the Arab world — of Syria, Iraq, and Persia. The founder of Arabic medical botany, for instance, was a Persian contemporary of Ḥunain ibn Isḥāq, by the name of Abu Ḥanīfa al-Dīnawārī (d. c. 895). He was concerned to a large extent with philological problems, especially with the meaning of the names of plants used by Greek and pre-Islamic Arabic authors, as well as those mentioned in the Koran; he was only secondarily interested in the plants themselves. In spite of its narrow scope, the work was quoted by virtually all Arabic philologists, lexicographers, agronomes, pharmacists and botanists until the eighteenth century. The complete text of the Kitāb al-Nabāt has been lost, but an attempt to reconstruct it may be seen in B. Silberberg, "Das Pflanzenbuch des Abū Ḥanīfa al-Dīnawārī", Zeitschrift für Assyriologie, XXIV-XXV (1910-1911) (UT). More recently, however, two fragments of the text were discovered, one in Medina and one in Istanbul; and other parts of the work seem to have turned up in the libraries of Yale University and the Arab League. The text of the Istanbul manuscript is published in The Book of Plants of Abū Ḥanīfa ad-Dīnawārī, ed. B. Lewin (Uppsala: Lundequistska, 1953) (NAT). This fragment comprises about one-third of the alphabetical listing of plants.

Al-Rāzi (c. 865-c. 932), or Rhazes, as he was known in Europe, has been described as "the greatest clinician of the Middle Ages." His enormous encyclopedia of medicine, Kitāb al-ḥawī fīl ṭibb, known as the "Continens" in Europe, has been edited from the Escorial manuscript (Hyderabad/Deccan: Osmania, 1955-64), 17 vols. (UT). It is also available in several early Latin translations (v. infra).

Another encyclopedic work, which was to have still greater influence in both East and West, was Al-qānūn fī al-ṭibb of Ibn Sīna or Avicenna (980 ?-1037). There were several early-modern editions of this work in Latin (v. infra). The Canon of Medicine of Avicenna, ed. O. C. Gruner, (London: Luzac, 1930) (UT) gives an English translation of Book I of this work, while the text is found in Kanon varchebnoĭ nauki (Tashkent: Uzbek Academy of Sciences, 1954-60) 5 vols. (UT). In spite of its impressive scope and its undoubted influence, however, the section on materia medica is considered to make little in the way of a new contribution, being derived largely from other authors.

With the death of one other great scholar of the Eastern reaches of the Arabic world, Al-Bīrūnī (973 ?-1048) (whose important work on pharmacy, Al-saidanah fī al-ṭibb, does not appear to have been published), the great flowering of Arabic medicine in the East was over, and only one other Eastern work need be mentioned, The Medical Formulary of Al-Samarqandī (d. 1222), tr. M. Levey and Noury al-Khaledy (Philadelphia: University of Pennsylvania, 1967) (UT). By the eleventh century, the leadership in medicine, as in most fields of scholarship, was passing to Muslim Spain. The first important Spanish writer on medical botany was Ibn Wafid or Abenguefit (c. 997-1074), who spent twenty years writing his book of simples, which was translated into Latin in the twelfth century and into Catalan in the fourteenth century. The Catalan version has been published as El "libre de les medicines particulars" Versión catalana del texto árabe, ed. L. Faraudo de Saint Germain (Barcelona: Diputación, 1943) (NAT). The Book of Plants and Trees of Al-Bekri (d. 1094), a great naturalist and geographer, has unfortunately been lost, but part of the treatise on pharmacology of another Maghrebi naturalist-geographer, Al-Idrīsī (1100-66), has recently been discovered in Istanbul. Al-Idrīsī, who flourished at the Norman court in Sicily, describes 610 plants mostly from personal observation; his account of the medical properties of the plants, however, is

thought to be based entirely on other authors. Al-Kulliyāt of Ibn Rushd, or Averroes, (d. 1199) has been edited from the unique manuscript (Larache, Morocco: Bosca, 1939) (NAT) and is also to be had in an early Latin translation (v. infra). Another Spanish doctor of great fame, Mūsā ben Maimūn, or Maimonides (1135-1204), left Spain while still very young, after the Almohad conquerors began persecuting the Jews, and finally settled in Cairo, where he became physician to Saladin. His Glossaire de matière médicale, ed. & tr. Max Meyerhof (Cairo: Institut Français, 1940) (UT), one of eleven books he wrote on medicine, is considered to be highly original. An abridgement of the book of simples of Al-Ghāfiqī (d. 1165) made by Gregorius Abū al-Faraj (or Barhebraeus) was partly edited and translated from the Cairo manuscript in The Abridged Version of the "Book of Simple Drugs", ed. Max Meyerhof and G. P. Sobhy (Cairo: Egyptian University, 1932) (UT). Publication was discontinued, however, when two manuscripts of the first half of the complete work were discovered, one of them in the library which Sir William Osler bequeathed to McGill University; this manuscript, beautifully written and illustrated, was probably made in Baghdad towards the middle of the thirteenth century. Finally, the culmination of Hispano-Arab botany was reached with Ibn al-Baiṭār of Malaga (c. 1147-1248), who became chief botanist to the Sultan in Cairo. His Traité de simples, ed. & tr. L. Leclerc (Paris: Imp. Nat., 1877-1883) 3 vols. (NAT) deals with about 1400 simple medicines, of which about 300 were new. Ibn al-Baiṭār's book was written too late for the great period of translation of Arab works into Latin and other European languages, and hence remained almost unknown in the West until the nineteenth century. The book must be regarded, however, as the summa of Arab pharmaceutical literature.

3. Mediaeval Europe

A. Mediaeval Manuscripts of Classical Works

In Europe, as in the Arab world, the influence of the authors of antiquity remained strong through the Middle Ages. Although independent approaches to medical botany based on folk medicine can occasionally be glimpsed in the literature, classical works remained the ultimate authorities.

Many mediaeval manuscripts of ancient works about materia medica have survived, but few have been published. One of these, a Byzantine manuscript of Dioscorides' Materia medica, made c. 512 for a lady of high rank, has been reproduced twice in facsimile: Codex Aniciae Julianae picturis illustratus nunc Vindobonensis Med. Gr. I, ed. J. de Karabacek (Leyden: Sijthoff, 1906) (UTRB) and Der Wiener Dioskurides (Graz: ADV, 1965) (UTX). Formerly located in Vienna and now in St. Mark's in Venice, this manuscript is of great importance to historians of Byzantine art on account of its 87 illustrations. The earlier edition contains important introductions on the paleography and illustrations of the manuscript, but reproduces the illuminations in black and white; the second edition, made after a restoration of the manuscript, is entirely in colour.

Several Anglo-Saxon medical manuscripts have also survived, a good number of which are translations of the works of classical authors. The text of one of these, which appears to have been made c. 1050, has been published with a translation into English in Leechdoms, Wortcunning and Starcraft of Early England, ed. O. Cockayne (London: Longman, 1864) vol. 1 (UT). This

manuscript includes the Herbarium of Apuleius and a continuation of excerpts from Dioscorides.

B. Mediaeval Encyclopedic Works

The medical lore of the Middle Ages is also to be found in encyclopedic works which covered a great many different branches of knowledge. Although their authors could not be expected to carry out original investigations in many of the areas upon which they wrote, and were perhaps not inclined to do so, these works are not merely compilations from classical works. In the later ones at least can be found new ideas, almost all erroneous, about the medical uses of plants and minerals, some of which must have derived from popular medicine. These later works also show a greater interest in the plants which were available in Northern and Western Europe; there is less emphasis on exotic drugs which, until the revival of trade with the East, were hard to come by.

The first of these mediaeval encyclopedias was the Etymologiarum sive originum of Isidore of Seville, probably written between 622 and 633, which served as a model for later similar works. The best text of this work is to be found in his Opera omnia, ed. F. Arevala (Rome, 1797-1803) (PIMS), which is reprinted in Patrologiae cursus completus. Series latina LXXXI-LXXXIV (UT, PIMS). A number of other translations and editions are also available (UT, PIMS). Chapter 4 of his encyclopedia, on medicine, and Chapter 17, on agricultural plants, contain what little pharmaceutical knowledge St. Isidore had to offer; compared to what can be found in the writings of the ancients, it is meagre indeed. An English translation of the medical writings is also available in Isidore of Seville, the Medical Writings, tr. W. Sharpe (Philadelphia: American Philosophical Society, 1964) (PIMS).

Two thirteenth-century authors of encyclopedic works also devote important sections to materia medica — Albertus Magnus (1193?-1280) and Vincent de Beauvais (d.c. 1264). The medical and botanical writings of Albertus are found scattered through a number of sections of different works, all collected in his Opera omnia, 38 vols. (Paris: L. Vives, 1890-99) (PIMS). In the Speculum maius of Vincent de Beauvais [1], whose purpose was to reflect "all things of all times", the section on natural history contains 32 books divided into 3,718 chapters, dealing with nearly every aspect of the natural world as it was then understood. Although the book contains little or nothing that was original, and was in many respects out of touch with the more advanced learning of the time, it is a good reflection of the knowledge that was available in well stocked libraries. This encyclopedia is published in Vincent's Opera (Venice: H. Leichtenstein, 1494) (PIMS) and in Speculum quadruplex 4 vols. (Graz: ADV, 1964-5) (PIMS), which is a reprint of the edition of 1624.

C. Mediaeval Leachbooks, Herbals, Etc.

With the decline of surgical knowledge, the application of simples, supplemented by magic and witchcraft, became the main method of treatment of illness, and the information available in general works was by no means sufficient for medical practitioners or even for people wishing to treat

[1] I am grateful to Father J. A. Weisheipl for drawing my attention to this work. — A.W.

themselves. Quite early, therefore, there appeared specialized works containing detailed information about these uses of large numbers of specifics, most of which were available locally. These works drew partly on classical tradition and partly on folk medicine, though about the latter little is known.

Two of the earliest of these were Anglo-Saxon: Bald's Leechbook and the Lacnunga. The manuscript of the Leechbook, which dates from the middle of the 10th century, is reproduced in Early English Manuscripts in Facsimile V (Copenhagen: Rosenkilde & Bagger, 1955) (UT) and the text and a translation are found in Leechdoms, Wortcunning ... op cit. II (UT). The text and a translation of the Lacnunga, taken from an eleventh-century manuscript, have been published twice: in Leechdoms, Wortcunning ..., op. cit. III (UT), and more recently in J. H. G. Grattan & Charles Singer, Anglo-Saxon Magic and Medicine (London: OUP, 1952) (UT). Leechdoms, Wortcunning ..., op. cit., also contains the texts and translations of a number of shorter Anglo-Saxon medical works.

The Macer floridus, attributed to Odo of Meung (fl. late-11th cent.), is one of the earliest continental herbals and was one of the main sources for nearly all subsequent mediaeval herbals. It is written in the form of a poem which describes in 2,269 hexameters the medical properties of 77 herbs and roots. In it may be seen some influence of Arabic work, which was becoming known through the translations of Constantine the African. A mediaeval translation into English of the Macer floridus available in A Middle-English translation of Macer Floridus 'De viribus herbarium', ed. Gösta Frisk (Uppsala: Almqvist & Wiksell, 1949) (UT). Only slightly later than the Macer Floridus are the works of St. Hildegard of Bingen (1098 ?-1178), "the earliest medical writer of Germany and one of the most original personalities of mediaeval times." St. Hildegard was familiar with both classical and popular medicine, and gives the names of hundreds of medical plants in the German vernacular. Her medical work is available in translation in Heilkunde, das Buch von dem Grund und Wesen der Heilkunde der Krankheiten, tr. H. Schipperges (Salzburg: O. Müller, 1957) (PIMS).

Of the later mediaeval herbals there is a good representation in Toronto. The principal of these are the thirteenth-century Italian Herbal of Rufinus, ed. F. Benjamin and Lynn Thorndike (Chicago: Univ. of Chicago, 1946) (UT), which shows, perhaps in reflection of growing Italian trade with the Arabs, a greater knowledge of eastern drugs than any other mediaeval herbal; L'herbier de Moudon. Un recueil de recettes médicinales de la fin du 14e siècle, ed. P. Aebischer & E. Olivier (Aarau: Société Suisse d'Histoire de la Médecine, 1938) (UT); Konrad von Megenberg, Das Buch der Natur (Hildesheim: Olms, 1962) (UT), which is a translation into German made in 1349-50 from the De natura rerum of Thomas de Cantimpré (written c. 1230-44) and is the first work on natural history in the German language; Boec van Medicinen in Dietsche. Een middelnederlandse Compilatie van medisch-farmaceutische Literatur, ed. W. F. Daens (Leyden: Brill, 1967) (UT); Aus mittelenglischen Medizintexten, ed. Gottfried Müller (Leipzig: B. Tauchnitz, 1929) (UT), which is a mediaeval compilation found in Stockholm Misc. Codex X90; Das Asanger Aderlass-und Rezeptbüchlein, ed. G. Eis and W. Schmitt (Stuttgart: Wissenschaftliche Verlagsgesellschaft, 1967) (UT), a Bohemian herbal from the late-fifteenth century, which gives a good picture of medical practice of the time; Recettes médicales, alchimiques et astrologiques du XVe siècle en langue vulgaire des Pyrénées, ed. C. Brunel (Toulouse: Privat, 1956) (UT), which contains six small medical works in Gascon, Catalan, and Pyrenean, all found in a single manuscript; Ein Stockholmer mittelniederdeutsches Arzneibuch, ed.

A. Lindgren (Stockholm: Almqvist & Wicksell, 1967) (UT); A Leechbook, or Collection of Medical Recipes of the Fifteenth Century, ed. W. R. Dawson (London: MacMillan, 1934) (UT); Ein Mittelenglisches Medizinbuch, ed. F. Heinrich (Halle a. S: Niemeyer, 1896) (UT), which is a compilation from various late-mediaeval manuscripts; and Liber de diversis medicinis, ed. M. S. Ogden (London: Oxford U.P., 1938) (UT), which is the text of a manuscript probably made between 1422 and 1454, written mostly in Middle English but with occasional passages in Latin.

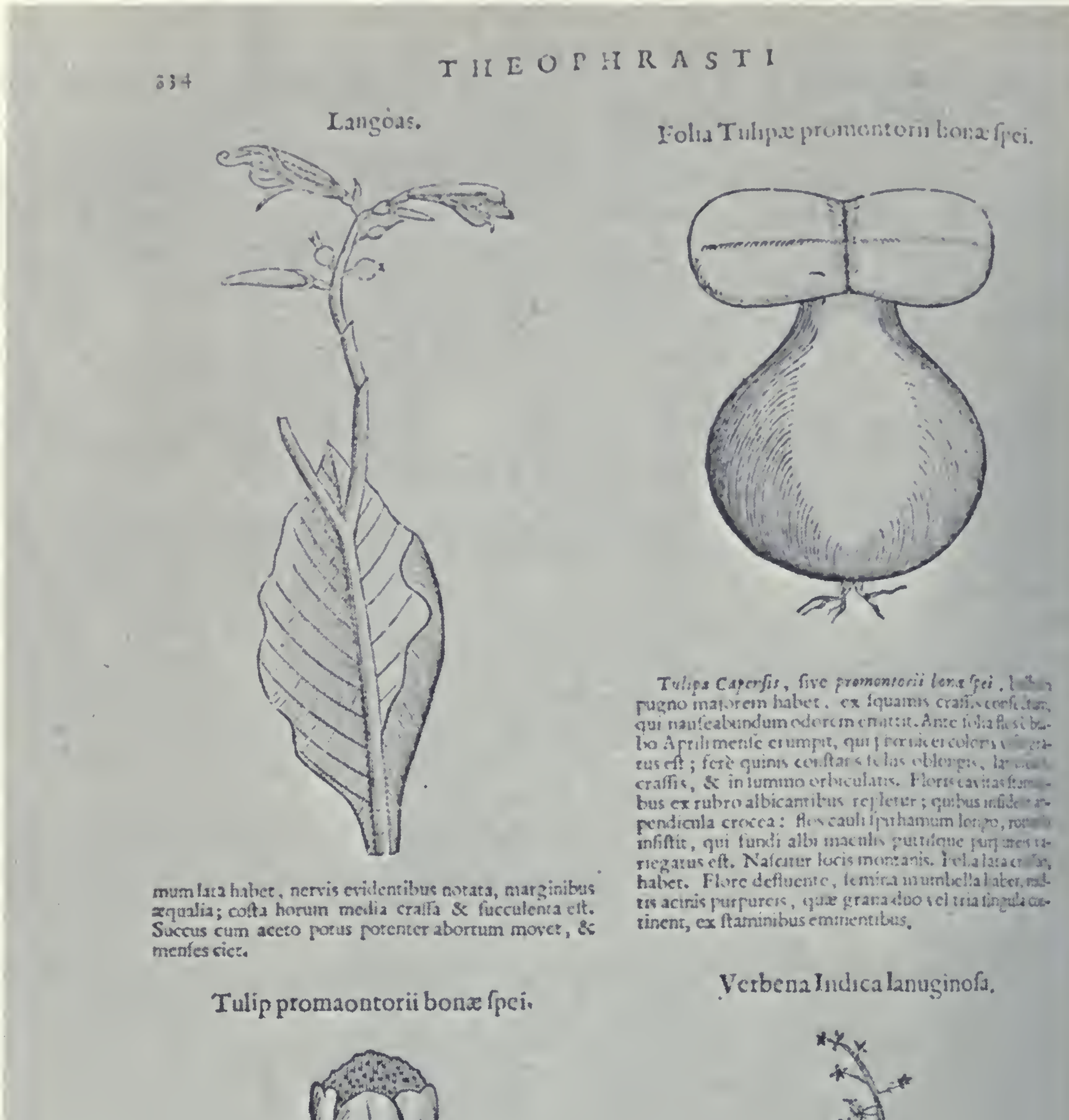
4. The Renaissance: Publications of a Traditional Character

With the invention of the printing press came a flood of publications of 'materia medica': editions of classical and mediaeval authors in the original or in translation, versions of Arabic authors, and new works in a traditional vein, all of which will be discussed in this Section. Almost at the same time, however, there began to appear works which adopted a more critical approach to the problem of medication, attempting to eliminate from formularies medicines which could not be demonstrated to be effective. This literature — some of it officially sponsored by cities and states and some written by leading scientists — will be described in the following section.

A. Editions of the Works of Classical Writers

Of the early-modern editions of Theophrastus, the Latin translation of Theodore Gaza of 1483, first printed in 1495-8, is of special interest since it was made from a manuscript different from any now known. We have a later edition of this translation: Habentur hoc volumine haec Theodoro Gaza interprete Theophrasti De historia plantarum libri ix, ... (Leyden: B. de B. de Gabiano, 1505?) (UTRB). There is also a Greek edition with Latin translation edited by Joannes Badeus à Staple, De historia plantarum libri decem, graecè & latinè, ... (Amsterdam: H. Laurentius, 1644) (UTRB), which has the distinction of being called by Schneider "editio omnium pessima."

The editio princeps of Dioscorides was published in 1478 in Latin and was followed by several other editions and translations, including De medicinale materia libri sex, Joanne Ruellio suessionensi interprete, ... (Frankfurt: C. Egenolphus, 1543) (AM); and idem (Lyons: J. & F. Frellonius, 1546) (AM). The best of the early-modern editions, however, is Pedacii Dioscoridis Anzarbius opera que extant omnia ex nova interpretatione Jani-Antonii Saraceni, ... (Lyons: heirs of A. Wechel et al., 1598) (UTRB). Two early translations into vernacular languages are also available: that of Andrés de Laguna into Castillian, first published in 1555, is reprinted in a facsimile of the Salamanca edition of 1570, with a textual concordance to seven other early-modern editions of this translation, in La 'materia médica' de Dioscorides: transmision medieval y renacentista, ed. C. Dubler, III (Barcelona: Tip. emporium, 1955) (UT); and the English translation of John Goodyer which was made in 1655 but remained unpublished until the edition of John Gunther, The Greek Herbal of Dioscorides (New York: Hafner, 1933). There is also the revised and annotated edition of Dioscorides made by Pietro Andrea Mattioli (1501-77), who was botanist to the Emperor Maximilian II and responsible for a great revival of interest in the ancient author. The Latin editions of this work include Commentarii secundo aucti in libros sex Pedacii Dioscoridis, ... (Venice: Ex officina Erasmiana, 1558) (UTRB); another from Lyons of 1562 (UTRB); and an



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Langoas.

Folia Tulipæ promontorii bonæ fpei.

mum lata habet, nervis evidentibus notata, marginibus æqualia; cofta horum media craffa & fucculenta eft. Succus cum aceto potus potenter abortum movet, & menfes ciet.

Tulipa Caperfis, five promontorii bonæ fpei, [illegible] pugno majorem habet, ex fquamis craffis confectum, qui naufeabundum odorem emittit. Ante folia flos è bulbo Aprili menfe erumpit, qui [illegible] coloris [illegible]tus eft; ferè quinis conftans folias oblongis, [illegible] craffis, & in fummo orbiculatis. Floris cavitas [illegible]bus ex rubro albicantibus repletur; quibus infide[illegible] pendicula crocea: flos cauli fpithamum longo, [illegible] infiftit, qui fundi albi maculis guttifque purpureis variegatus eft. Nafcitur locis montanis. Folia lata craffa habet. Flore defluente, femina in umbella habet, [illegible]tis acinis purpureis, quæ grana duo vel tria fingula continent, ex ftaminibus eminentibus.

Tulip promaontorii bonæ fpei.

Verbena Indica lanuginofa.

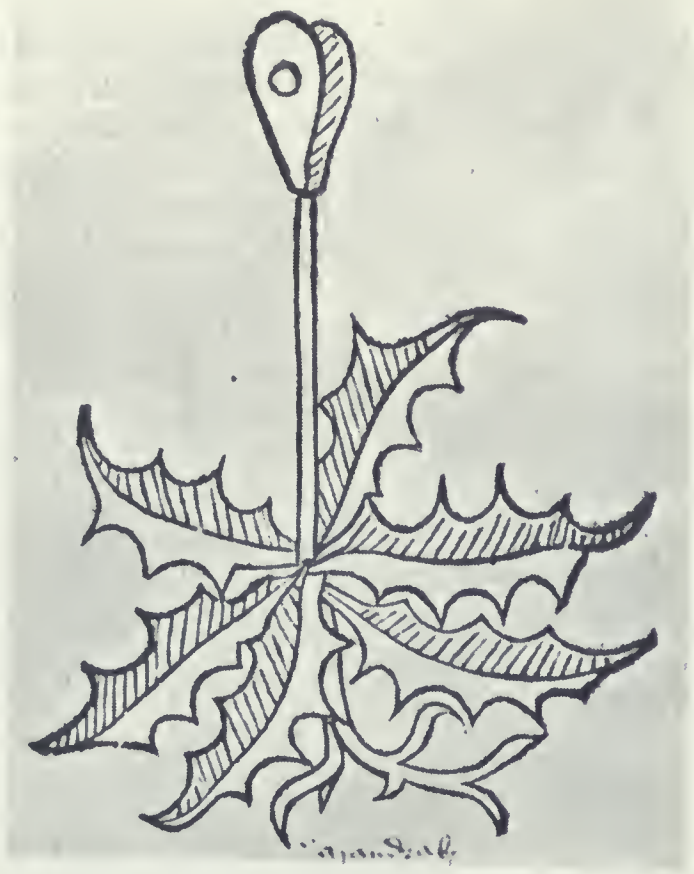
Theophrastus, <u>De historia plantarum</u>, Amsterdam, 1644.

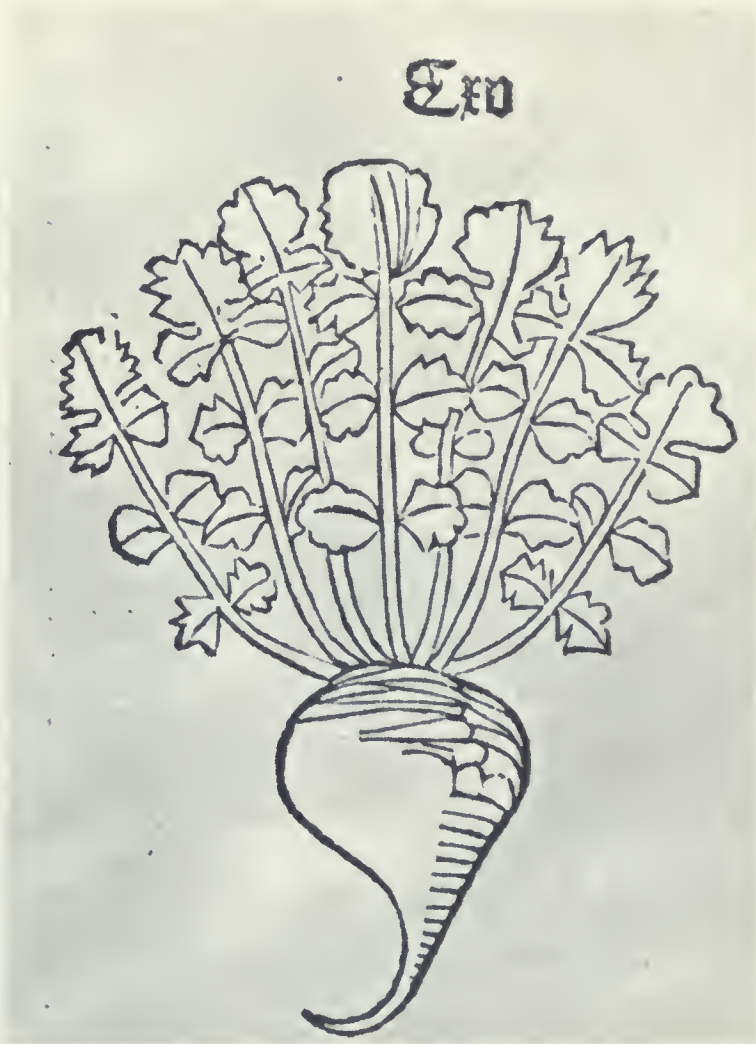
edition from Venice of 1565 (UTRB). There is also an Italian translation of this work published in 1557 (UTRB).

There are also a number of early-modern editions of other classical writers on medical botany: an edition lacking the title page but probably published in 1493 of Celsus's De medicina libri VIII (AM), the text of which was lost during the Middle Ages and discovered only in the fifteenth century; other editions of the same work of 1551, 1657, 1665, and 1750 (AM); Galen's De simplicium medicamentorium facultatibus libri undecim, Theodrico Gerardo Gaudano interprete (Paris: S. Colin, 1530) (AM); Galen's Opera Omnia (Venice: Iuntae, 1556-77), 9 vols. (AM); Galen's Opera ex sexta juntarum editione, 5 vols. (Venice: Iuntae, 1586) (UTRB); Historia naturale di C. P. [Caio Plinio] Secondo (Venice: Vercelli, 1501) (AM); Pliny's Historia mundi libri XXXVII, ... (Lyons: B. Honoré, 1587) (UTRB); Pliny's Historia naturale, tr. Geronimo de Huerta (Madrid: L. Sanchez, 1624-9) (UTRB); The Historie of the World, Commonly Called the Natural Historie of C. Plinius Secundus (London: A. Islip, 1635) (AM), as well as many other early-modern editions of Pliny (UTRB); and a number of editions of the works of Paulus Aegineta (fl. c. 640), the last of the Greek writers on medicine (who remained in Alexandria after the Arab conquest and had a great influence on Arab medicine), including Pauli Aeginetae medici insignis opus divinum (Basel, 1532) (AM) and Pauli Aeginetae medici praestantissimi de medica materia libri septe (Venice, 1532) (AM).

B. Renaissance Editions of Arabic Works in Translation

The medical achievements of the Arabs were still sufficiently respected in the sixteenth and seventeenth centuries for a great many Arabic works to be published in European translations. Many of these had been made during the great period of translation of the twelfth century, while some — but by no means all which make the claim — were translated by scholars of the Renaissance. The medical writings of Avicenna, for instance, were published in many editions: Liber canonis (Venice, 1507) (UT, PIMS reprint); Avicene perhypatetici philosophi ac medicorum facile primi, opera, ... (Venice, 1508) (UT reprint); Joannis Hercolani expositio in primam seu quarti Canonis Avicenne (Venice: P. Pincia, 1512) (AM); Avicennae medicorum arabum principis Liber Canonis de medicinis cordialibus et cantica (Basel: J. Hervagius, 1556) (AM); and Avicennae arabum medicorum principis, Canon Medicinae (Venice: Iuntae, 1608) (AM). The work of Ibn Zuhr or Avenzoar (d. 1162) was published as Abhomeron Abynzobar: collegit Averroys (Venice: Barbadico, 1496) (AM), which apparently contains the Taiṣir and Antidotarium of Ibn Zuhr followed by the Collegit of Ibn Rushd or Averroes; a later edition of this work, published in 1514, is also available (AM). Another early publication of an Arabic work in translation was Haly filius Abbas ('Ali ibn 'Abbās al-Majūsī), Liber totius medicinae necessariae ... (Lyons, 1523) (AM), which is the encyclopedia of this great physician of the Eastern Caliphate. The works of Al-Rāzi or Rhazes appeared as Almansoris liber nonus cum expositione Sillani (Venice: O. Scotus, 1490) (AM); Praxis in nonum Almansoris (Leyden: J. Moylin, 1527) (AM); and Continens Rasis ... (Venice, 1529) (AM). Finally, there were various early-modern editions of the mysterious Johannes Mesue, who was probably Māsawaih al-Mārdīnī (d. 1015): De re medica, libri tres (Paris: C. Wechelus, 1542) (AM); Mesuae medici clarissimi opera ... (Venice: Iuntae, 1570) (AM); and I libri Digio. [di Giovanni] Mesue dei semplici purgativi e delle medicine composte (Venice: Alessandro de' Vecchi, 1621) (AM).





Herbarius latinus, Louvain (?), 1484-85 (?)

C. Editions of Mediaeval Works

Probably the first printed work to contain a section devoted exclusively to medical botany was the encyclopedia of Bartholomaeus Anglicus, an English Franciscan who flourished towards the middle of the thirteenth century. Although much of this work presents scientific views which had already been superseded at the time of writing, the section on trees and herbs is more advanced and suggests that the author based this part of his book on personal observation. First published in 1470, this work is available in three editions: Liber de proprietatibus rerum (Strasbourg, 1505) (PIMS); Opus de proprietatibus rerum (Nürnberg: F. Pepsus, 1519) (PIMS); and De proprietatibus rerum (London: T. Bertheletus, 1535) (UTRB), which is an English translation.

One of the earliest printed herbals was the Herbarius latinus, first published in Mainz in 1484. An anonymous work, the Herbarius is based on a wide variety of ancient and mediaeval sources (though, curiously, Apuleius is not mentioned) and was probably compiled towards the middle of the fourteenth century. As it lists only plants which were common in Germany, it seems to have been intended to give German people cheap and accessible remedies. Our edition of the Herbarius latinus (Louvain?: Jan Veldener?, 1484-5?) (UTRB) gives the names of plants in Dutch as well as Latin.

One other mediaeval book of remedies and rules of health was also published frequently during the Renaissance: the Regimen sanitas of the ancient School of Medicine in Salerno. This book, given to patients who came from all over the world, was immensely popular for centuries and parts of it still live today in the proverbs of many European languages. It is available in various editions, including Regimen sanitatis salernita, ... (Frankfurt: Haered. Chr. Egenolphus, 1557) (AM); ibid. (Venice: J. M. Lenus, 1573) (AM) and other editions of 1612? and 1711 (AM); and in an English translation made by Sir John Harrington in 1607, The School of Salernum. Regimen sanitas Salerni (Salerno: Ente Prov., 1966) (AM).

D. Early-Modern Works in a Traditional Vein

Of the new books of remedies written after the invention of printing, many are available in Toronto: a facsimile of the 1515 edition of Quiricus de Augustis, Dlicht d'apotekers (Nieuwkoop: de Graaf, 1967) (UT), which is a translation into Dutch of the Lumen Apothecarium of 1492, written by a doctor of Tortona who was personal physician to the daughter of Charles of Bourbon; a facsimile of the 1561 edition of Hieronymus von Braunschweig, A Most Excellent Homish Apothecarye (Amsterdam, New York: De Capo, 1968) (UT), which is a translation into English of the Liber de arte distilleni de simplicibus of 1500; a facsimile of the 1525 edition and version in modern English of Richard Banckes's An Herbal (1525), ed. S. Larkey & T. Pyles (New York: Scholars' Facsimiles and Reprints, 1941) (UT, UTPh), the first book exclusively on herbs to be printed in the English language; Charles Estienne, De re hortensi libellus, vulgaria herbarium, florum, ac fruticum (Lyons: S. Gryphius, 1539) (UTRB); and J. Sylvius, De medicamentorum simplicium (Venice: Erasmiana, 1543) (AM).

One of the most impressive and scholarly of early modern works was the Latin herbal of Leonhard Fuchs, Professor of Medicine at the Universities of Ingolstadt and Tübingen, whose masterpiece was first published in 1542. The book deals with some 400 plants native to Germany and about 100 foreign plants,

many of which are illustrated with very beautiful woodcuts. This work is available as Primi de stirpium historia commentariorum, ... (Basle, 1549) (AM); De historia stirpium commentarii insignes, ... (Lyons: B. Arnollet, 1549) (AM); and a facsimile of New Kreüterbuch (Basle: M. Isingrin, 1543) (UT), which was a German translation made from the first Latin edition and includes all the original illustrations. This great work gave rise to much imitation, piracy and plagiarism. A Lowland botanist, Robert Dodoens, Professor of Medicine at the University of Leyden, and physician to the Emperors Maximilian II and Rudolph II, took Fuchs as his model and used many of his illustrations in his herbal first published in 1552. This is available in an English translation, A new herball or historie of plants, ... (London: E. Bollifant, 1595) (UTRB). At the same time, another translation was made into English by a certain Dr. Priest, whose efforts were pirated by John Gerard and published in 1597 as an original work. There were many later editions, including The Herball; or General Historie of Plants, ... (London: A. Islip et al., 1633) (TPL; UTRB) and ibid., (London: A. Islip et al., 1636) (AM). Indeed, in spite of its inglorious ancestry and the many errors it contained, this work was to become perhaps the most popular of all English herbals.

Of the books of materia medica published in the second half of the sixteenth century and after, a good selection is available in Toronto, including Antonius Musa, De medicamentibus tam simplicibus quam compositis (Zurich: Gessner, 1555) (AM); a facsimile of the London edition of 1559 of the work of a great Swiss botanist, Conrad Gessner, Treasure of Evonymus (Amsterdam, New York: da Capo, 1969) (UT); a work of the justly famous, if argumentative, Venetian, Petro Andrea Mattioli, De plantis epitome utilissima (Frankfurt am Main, 1586) (UTRB); Antonio Mizauld, Historia hortensium quator opusculis methodicis contexta, ... (Cologne: J. Gymnicus, 1577) (UTRB); Giovanni Battista della Porta, Phytognomonica, ... (Rouen: I. Berthelin, 1650) (TPL), a book first published in 1588 in Naples, in which the author develops the theory of signatures of Paracelsus, according to which the medical properties of plants can be detected from the external characteristics, e.g. a plant which lives a long time will be conducive to longevity, and so forth; Charles de l'Ecluse (Carolus Clusius), Rariorum plantarum historia (Antwerp: J. Moret, 1601) (AM), which is a first edition of this work of the famous Professor at Leyden, in which he presented his findings from expeditions to Spain, Austria and Hungary, adding approximately 600 plants to those already known; by the same author, Exoticorum libri decem, quibus animalium, plantarum, aromatum ... describuntur (Antwerp: Raphelengius, 1605) (AM); Simon Paulli, Quadripartitum botanicum de simplicium medicamentorum (Strasbourg: by the author, 1667) (UTRB); John Parkinson, Theatrum botanicum... or, an Universall and Compleat Herball (London: T. Cotes, 1640) (ROM); Robert Lovell, Enchiridion botanicum or Compleat Herball (Oxford: W. H. for R. Davis, 1665) (UTRB); St. Hilaire, Les remèdes des maladies du corps humain (Paris: J. Couterot & L. Guérin, 1685) (AM); J. B. van Helmont, Ortus medicinae (Leyden: Deunet, 1655) (AM); and Freywillig ausgesprungener Granat-Apfel des Christlichen Samariters. Oder: aus Christlicher Liebe des Nächsten, ... (Nürnberg: Trautner & Schmidt, 1731) (UTRB), a work which, appearances to the contrary, is mainly on the preparation of medicines from plants.

E. Works on Exotic Drugs

Another small group of early-modern works shows the expanding geographical horizons of European man, who, on new continents, found new drugs and new uses for drugs, some of which were to have a lasting influence

on medical practice. One of these was composed in 1552 by an Aztec physician, Martín de la Cruz, and translated into Latin by another Indian, Juan Badianus. The best edition, The Badianus Manuscript (Codex Barberini, Latin 241) Vatican Library, ed. E. Emmart (Baltimore: Johns Hopkins, 1940) (UT), gives a colour facsimile of the manuscript, the Latin text and an English translation.[1] There is also available the Latin text and a Spanish translation in Martín de la Cruz, Libellus de medicinalibus Indorum herbis (Mexico D. F.: Vargas Rea y el Diario Español, 1952) (UTPh) and the Spanish translation in ibid. (Mexico D.F.: Inst. Mex. de Seguro Social, 1964) (TPL). At the same time, Europeans' knowledge of Eastern plants was growing through the travel of European botanists, such as Prosper Alpino (1553-1617), Professor of Medicine at the University of Padua and director of the city's botanical garden, who spent three years botanizing in Greece and Egypt and wrote Historiae Aegypti naturalis pars prima [et secunda] (Leyden: G. Polvliet, 1731) (UT; AM has two copies of the 1640 edition of Vol. 2, which describes Egyptian plants). Indian materia medica was described for Europeans by the Spanish naturalist and doctor, Garcia de Orta, who settled in Goa in 1534 and published there in 1563 his Coloquios dos simples e drogas da India (Lisbon: Imprensa Nacional, 1891-5) 2 vols. (UT). This work is also available in an Italian translation (Venice: Herede di Girolano Scot, 1605) (UTRB); a French translation (Lyons: J. Pillehotte, 1619) (UTRB); and a Latin translation (made by Clusius) reproduced in a facsimile of the 1567 edition (Nieuwkoop: B. de Graaf, 1963) (UT). Another work informing Europeans about Indian drugs was N. Monardis, De simplicibus medicamentis ex occidentali India delatis (Antwerp: C. Plantin, 1574) (AM).

5. Pharmaceutical Literature in a New Vein

The profusion of books of remedies that appeared in early-modern times soon gave rise to a concern on the part of authorities to protect the public from the wilder excesses of the authors of these books. Accordingly, a new type of literature began to appear which ultimately nearly — but not completely — displaced the older type. The new works were of two kinds. The first were "official" formularies, usually in Latin, compiled by mandate from civic or state authorities or from colleges of physicians. The second were pharmaceutical collections in the vernacular, often sponsored by kings and princes or universities, and usually embodying the results of recent research as well as age-old remedies.

A. Official Pharmacopoeias

The first pharmaceutical formulary with any possible claim to being official is the Nuovo receptario published in Florence in 1499 (NAT), a work that was strongly influenced by Arabic ideas on therapy. It was followed half a century later by a second work which has perhaps a stronger claim, the Dispensatorium pharmacopolarum of Valerius Cordus, published in 1546 on mandate of the civil authorities of Nürnberg (NAT). This collection of recipes selected from works of respected ancient authors was legally binding on all practitioners in the Nürnberg area.

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[1] I am indebted to Mrs. John Langdon for drawing my attention to this work. — A.W.

Despite the considerable number of similar collections authorized by Italian city guilds from 1559 on (Mantua, followed by Bologna in 1574, Bergamo in 1580, Rome in 1583, Venice in 1618, et al.), and a flourishing pharmaceutical literature produced in France by physicians in the sixteenth century, and by pharmacists from the mid-seventeenth century onwards, it was left to Germany, where governmental control of the pharmaceutical profession had appeared at an early date (the Hohenstaufen Emperor Frederick II had issued regulations for the physicians and pharmacists in the Kingdom of the Two Sicilies before the middle of the thirteenth century), to take the lead in the production of "official" pharmacopoeias.[1] In 1564 the imperial city of Augsburg authorized the Pharmacopoeia Augustana, a more comprehensive work than that of Cordus, and one which was to serve as a standard for the next 150 years and on which many "national" pharmacopoeias were to be modelled. There were several subsequent editions, and in 1618 it was made the official standard for Vienna and the Austrian provinces. A facsimile is available of the first Pharmacopoeia Augustana (Madison: State Historical Society of Wisconsin, 1927) (UTPh). There are also available three later editions, all in Latin, edited by Johann Zwelfer, a German pharmacist-turned-physician: Pharmacopoeia Augustana reformata (Nürnberg: Endteros, 1657) (UTRB); ibid. (Gouda: W. Verhoeven, 1653) (UTRB); and ibid. (Rotterdam: A. Leers, 1653) (UTRB). These editions also contain Zwelfer's Pharmacopoeia regia, which is also available in separate editions: (Nürnberg: Endteros, 1668) (UTRB); (Nürnberg: Endteros, 1675) (UTRB); and Nürnberg: Endteros, 1693) (UTRB).

The first "national" pharmacopoeia was the Pharmacopoeia Londinensis of 1618, published by the Royal College of Physicians, intended to apply to the whole country; this is available in facsimile (Madison: State Historical Society of Wisconsin, 1944) (UTPh, AM). The history of the publication of this work is of considerable interest, for there were actually two "first editions" in 1618. As early as 1585 the College began to debate the usefulness and wisdom of producing a standard for the use of all apothecaries; by 1589 it was decided to proceed, and a committee of physicians was named to supervise the work. No apothecaries were included in the committee, nor was their advice sought on the preparations to be included — although it appears that some of the most experienced were consulted about methods of preparation and dosage. The work proceeded slowly, and in May of 1618 the Pharmacopoeia finally appeared, only to be replaced in December by a "corrected" and henceforth "official" edition. No reason for the change was given, except that the May version was "incomplete." A comparison of the two suggests that the "modern" viewpoint had gone too far in the earlier edition in eliminating many of the centuries-old nostrums, both "simples" and "compounds": the May edition had 680 simples and 712 compounds, while the December edition had 1190 simples and 963 compounds (many of the latter including 10-30 ingredients, several more than 50, and one antidote against the plague more than 130!). Another indication of a new approach was the inclusion in both versions of many of the newer "chemical" preparations, perhaps owing to the influence of Sir Theodore Mayerne, a medical graduate of Montpellier, one-time royal physician in Paris, since 1611 physician to James I and his Queen, and Fellow of the College of Physicians.

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[1] The term "pharmacopoeia" was first used by the French physician, Jacques de Bois (Sylvius), in the title of a private work, Pharmocopoeiae libri tres (Paris, 1548) (NAT). Several of his other works are available: Methodus medicamenta componendi (Paris: C. Wechelus, 1541) (AM); and De medicamentorum simplicum delectu, praeparationibus, mistionis modo, libri tres (Paris: J. Grasellus, 1542) (AM); and ibid. (Venice: V. Vaugris, 1543) (AM).

Subsequent editions of the Pharmacopoeia Londinensis appeared at intervals of about thirty years. The second edition, of 1650, added salts of mercury to the chemicals; the third, published in 1677 and dedicated to Charles II, was given a new title, Pharmacopoeia Collegii Regalis Londini. A later printing of this is available (London: Basset et al., 1682) (UTRB). In the fourth edition, of 1721, more chemicals were included and the botanical descriptions were improved, probably through the influence of Dr. Hans Sloane. The fifth edition, that of 1746, incorporated many innovations as the result of the influence of another English scientist, Dr. Henry Gresham, Professor of Physics and an outstanding chemist. This is available in two later printings: Pharmacopoeia Collegii Regalis Medicorum Londinensis (London: T. Longman et al., 1747) (UTRB) and ibid. (London: J. Nourse, et al., 1771) (UTRB). The two texts seem identical, although the printing of 1771 has been reset. By the sixth edition, (London: J. Johnson, 1788) (UTPh, UTRB), the "grand compositions" of yore were well on their way to disappearing, and many more chemical preparations and new drugs were included. In the seventh edition (London: G. Woodfall, 1809) (UTRB) a number of preparations from the Edinburgh and Dublin pharmacopoeias are incorporated; this edition is the first to employ the chemical nomenclature of Lavoisier. This pharmacopoeia was also published in several French editions: Pharmacopée du Collège Royal des Médecins de Londres (Paris: Didot, 1771) (UTRB), which is a French translation of the second English edition; and ibid. (Paris: Ballière, 1837) (UTRB), which has parallel Latin and French texts.

Only in 1699 did the Royal College of Physicians in Edinburgh publish its first Pharmacopoeia Edinburgensis, of which subsequent editions appeared every ten to twelve years. An English translation of the third edition is available (London: W. Innys, 1740) (AM), as well as four Latin editions: the sixth edition (Edinburgh: W. Sands et al., 1744) (UTRB), which eliminated much that was outdated; a revision (Edinburgh: Hamilton et al., 1756) (UTRB), which is bound with the third edition of the Pharmacopoeia pauperum, the first edition of which had appeared in 1746, five years after the establishment of the Edinburgh Royal Infirmary for the treatment of the poor; a Dutch edition (Rotterdam: H. Beman et al., 1775) (UTRB), which was a sign of the popularity of this work on the continent; and another continental edition, Pharmocopoeia Edinburgensis ... additamentis aucta ... (Bremen: Görster, 1776) (UTRB).

France received its first national pharmacopoeia only in 1818, when the rules of the first edition of the Codex medicamentarius seu pharmacopoeia Gallica (NAT) became obligatory for the whole of the country. From the early 17th century, regulation of the pharmacists was in local hands, and there was a series of civic formularies, beginning with that of Lyons in 1628. Although we have not been able to verify the title, it is possible that the Oeuvres pharmaceutiques of François Rauchin, "conseiller, médecin et professeur du Roy, Chancelier de l'Université de Médecine à Montpellier," (Lyons: P. Ravard, 1628) (UTRB) is that formulary. The third of the local collections to appear was the Codex medicamentarius seu pharmacopoeia Parisiensis, available in a later edition (Paris: P. Cavelier, 1758) (UTRB).

While the 17th century in Germany saw civic sponsorship, the 18th century brought official support from the states, beginning in 1698 with the Dispensatorium Brandenburgicum (NAT), the forerunner of a long line of state pharmacopoeias, of which a few are available in Toronto. In 1741 appeared the Pharmacopoeia Wirtembergica, highly esteemed and widely used even beyond Germany, one of the most comprehensive collections to date. Two editions are available, both revised and amended: the third edition (Stuttgart: J. Erhard,

1754) (UTRB); and a later edition (Lausanne: J. Pott, 1785) (UTRB). There is also a Pharmacopoeia Austriaco-provincialis emendata, (Vienna: Wappler, 1794) (UTRB), which is the last Latin edition of this work first published in 1774, (its name signifying that Austria was but one of the many provinces of the Empire). We have two editions of the Pharmacopoeia Borussica, first published in 1799, which was one of the first official pharmaceutical formularies to be based on the new chemical theories and the first such compilation in Germany to be prepared primarily by pharmacists and not by physicians; these are the fifth edition (Berlin: C. Plahn, 1829) (UTRB) and the sixth edition (Berlin: R. Decker, 1846) (UTRB).

From other parts of Europe, there are available the following official pharmacopoeias: Pharmacopoeia Batava (Amsterdam: J. Allart, 1805) (UTRB) and its Dutch translation, Bataafsche Apotheek (Amsterdam: J. Allart, 1807) (UTRB); Pharmacopoeia Belgica (The Hague: Typographia Regia, 1823) (UTRB) and its translation into Dutch, Nederlansche Apotheek ('s Gravenhage: Algemeene Landsdrukkerij, 1826) (UTRB); Pharmacopoeia Slesvico-Holsatica (Kiel: Libraria Universitatis, 1831) (UTRB); Pharmacopoeia Norvegica .. (Oslo: Brögger et al., 1854) (UTRB); and Pharmacopoeia Hispana (Madrid: M. Repulles, 1817) (UTRB).

The preference for Latin as the official language of the pharmacists followed the profession to the New World, where, however, after many vicissitudes, the Pharmacopoeia of the United States of America (Boston: Wells & Lilly, 1820) (UTRB) finally appeared with both Latin and English texts.

B. Sponsored Works in the Vernacular

As books in Latin were becoming increasingly inaccessible to the public, and sometimes even to pharmacists, there soon appeared formularies in the vernacular; these were often sponsored by royalty or by universities and sometimes had a quasi-official status. The earliest of these works is Oswald Gabelhouer's The Boocke of Physicke (Dordrecht: I. Caen, 1599) (UTRB), which, as the title page explains, was written "through the commaundement of the most Illustrious, & renouned Duke & Lorde, Lorde of Lodewijcke, Duke of Wirtenberghe, & of Teck, Earle of Mompelgart, etc....faithfully translated out of High-duche by the right Worshipful Mr. Doctour Charls Battus...now nuelye translated out of Low-duche into Englishe by A. M." This English edition is dedicated by the publisher to Queen Elizabeth, and contains a representative collection of late 16th century remedies for all manner of ills, including "an excellent foot-bath for the head-ache."

About sixty years later, Nicolas LeFevre, French chemist, apothecary and professor of botany and chemistry at the Jardin du Roi, published his Traité de chymie théorique et pratique, which was to go to several editions. In 1660, at the request of Charles II, he came to England, to become "Royal Professor in Chymistry to his Majestry of England, & Apothecary in Ordinary to His Honorable Household"; and four years later appeared an English version of his Traité entitled A Compleat Body of Chymistry, (London: T. Ratcliffe, 1664) (UTRB), dedicated to Charles II, for "the use of all Apothecaries etc." Despite LeFevre's undoubted contributions to chemistry, including the discovery of mercuric acetate and the introduction of the thermometer, he still conceived of his science as a collection of secrets and mysteries. Another indication of the influence of French pharmacist-chemists on English practice is the Pharmacopée royale, Galenique et chymique of Moyse Charas, "Dr. en

médecine, ci-devant démonstrateur de l'une et de l'autre pharmacie au Jardin Royal des Plantes.." First published in the 1670's it went through many editions, including (Paris: L'auteur, 1681) (AM) and (Lyons: Anisson et al., 1704) (UTPh).

Another French pharmacist whose works were widely translated was Nicholas Leméry, whose Cours de chymie (NAT), published in 1675, superseded that of LeFevre. He also wrote a Pharmacopée universelle, first printed in 1697, in which he attempted a synthesis of all existing manuals (with his own additions) but rejected conflicting and useless ingredients in many compounds. The second edition is available (Paris: d'Houry, 1716) (UTRB); this was revised, corrected and amended, published "avec approbations et privilège du Roy" and dedicated to M. Guy Crescent Fagon, "conseiller d'état ordinaire et Premier Médecin du Roy."

The Collectanea chymica Leydensia ... Maetsiana, Margraviana, Le Mortiana (Leyden: H. Drummond, 1684) (UTRB) has been attributed to Christopher Love Morley. This was apparently published from notes of de Maets, Margrav and Le Mort, three professors at Leyden, and was attacked in the same year by de Maets on the grounds that it was published without the consent and knowledge of either Morley or himself. It contains definitions, descriptions of equipment, methods, etc., and represents the trend away from fantastic preparations (some dating back to antiquity) and toward a careful evaluation of the worth of both the traditional remedies and the products of the New World. There is also available a later edition, (Antwerp, 1702) (UTRB), which contains additional experiments by Theodor Muykens, a disciple of de Maets.

Two works which are available by the English scientist, Robert Boyle, one of the founders of the Royal Society, have medical implications and should be mentioned here. The first of these is Of the Reconcileableness of Specifick Medicines to the Corpuscular Philosophy to which is annexed a discussion about the advantages of the use of simple medicines. (London: S. Smith, 1685) (UTRB). The second work is entitled Medicinal Experiments: or, a Collection of Choice and Safe Remedies (London: S. Smith et al., 1696) (UTRB).

6. Do-it-yourself Manuals

As the works considered above were written mainly for scientists, physicians or pharmacists, it was perhaps inevitable that another kind of literature would spring up intended for the common man who wished to minister to his own ailments and those of his family. The earliest of these works which is available is a later edition of a book that first appeared in 1555 or 1557: The Secrets of Alexis [Alessio of Piedmont] (London: W. Stausby, 1615) (UTRB). Whether the author was Alessio or Girolamo Rucelli of Viterbo cannot be determined. In any case it was popular indeed, going through 56 editions by 1600. Our copy was translated from a French edition and the Italian original, and describes the "maner to make distillations, parfumes, confitures, dyings, colours, fusions and meltings", including one "to cleare & make cleane the face from all manner of spots."

Next in time, and high in entertainment value, is the Pharmacopoeia Londinensis: or, the London Dispensatory of Nicholas Culpeper, "Gent. Student

in Physik and Astrology." First published in 1649, this unauthorized translation of the official pharmacopoeia of 1618 is available in the sixth edition (London: P. Cole, 1659) (AM). The work was "further adorned by the Studies and Collections of the Fellows, now living of the said Colledg." Culpeper provided in English accurate lists of effective simples, along with directions for their use — spiced with many a snide remark at the expense of the College, their pharmacopoeia, and their supposed learning. The following observation, concerning the value of Raparum folia, is typical: "If they do not mean Turnep-leaves, I know not what they mean, nor it may be themselves neither, the greatest part of them having as much knowledge in Simples, as a Horse hath in Hebrew."

Another popularizer of the Pharmacopoeia Londinensis was William Salmon, "Prof. of Physick" and one of the most outstanding "quacks" of the day. Salmon had no formal training in medicine or pharmacy, but by immersing himself in the literature of the time he became a widely read and progressive "practitioner" of medicine. In the late 1670's he published his first edition of the Pharmacopoeia Londoninensis or the New London Dispensatory, of which we have a copy of the third edition (London: T. Dawks et al., 1685) (UTRB). The work went through eight editions by 1716.

Salmon was also involved with another popular vernacular collection of remedies, that of George Bate, who had been physician-in-ordinary to Charles I and II, and to the Lord Protector Cromwell. Bate's formulae were so highly regarded that in 1688, nineteen years after his death, they were published in Latin by the London apothecary James Shipton. His work, known as the Pharmacopoeia Bateana: or Bate's Dispensatory, proved popular all over Europe. Salmon's English translation from the 2nd Latin ed., was dedicated in 1693 to William III and published in London in 1694. In it Salmon makes no bones about identifying his own contribution: that of Bate appears small in comparison! Two copies in English of this work are available: Pharmacopoeia Bateana (London: S. Smith et al., 1694) (UTRB) and another copy from which the title page is missing which appears to be an edition of 1699 (UTPh). There are also available two Latin editions from the same year, (London: G. & J. Innys, 1719) (UTRB) and (Amsterdam: Wetstenios, 1719) (UTRB), as well as a later edition from the Lowlands (Louvain: van Overbeke, 1752) (UTRB).

Thomas Fuller, one-time editor of the Pharmacopoeia Bateana, was the author of several books and pamphlets, of which his Pharmacopoeia extemporanea proved very popular and went through many editions. There are available two editions of 1714 (UTPh, UTRB), two editions of 1731 (UTRB), and editions of 1734, 1752, and 1785 (UTRB), four of which were published on the continent. Fuller is also represented by his Exanthematologia: or an attempt to give a rational account of eruptive fevers, especially of the measles & small pox, in two parts .. to which is added an Appendix concerning Inoculation (London: C. Rivington et al., 1730) (AM).

Another English physician who presented his favourite remedies to the public was John Radcliffe, author of Pharmacopoeia Radcliffeana (London: C. Rivington, 1716) (UTRB). Radcliffe's fees are said to have amounted to at least £4,000 per year. Still another English apothecary-turned-physician and author on medical and pharmaceutical subjects was John Quincy, whose Pharmacopoeia officinalis & extemporanea: or, A Complete English Dispensatory reached its sixth edition (London: J. Osborn et al., 1726) (AM), "much enlarged and corrected, to which is added an account of the common adulterations both of simples and compounds, with some mark to detect them by."

A copy entitled A Complete English Dispensatory, which is lacking the title page but was probably printed in London after 1732, is also available (UTRB).

An interesting treatise by William Withering, M.D., Physician to the General Hospital at Birmingham, made an important contribution to medicine. First published for Scottish medical friends in 1775, An Account of the Foxglove, & Some of its Medical Uses (Birmingham: M. Swinney, 1785) (AM), led to the re-admission of digitalis to the 1783 edition of the Pharmacopoeia Edinburgensis.

There are also available some vernacular formularies from the Continent, the earliest of which is the Recueil de receptes, choisies, experimentées & approuvées of Marie Fouquet, (Montaubin: Dubois, 1676) (UTRB). From Italy comes the Teatro farmacéutico dogmatico, e spagirico of Dr. Guiseppe Donzelli with additions by his son, Tomaso (Venice: Bertoli, 1704) (UTRB). In Spanish, several works are available. The earliest of these is Don Felix Palacio's Palestra pharmaceutica chymico-Galenica (Madrid: de Sierra, 1725) (UTRB), which includes four drawings of chemical equipment; this work was dedicated to Sr. Doctor Don Juan Higgins, among whose titles were President of the Royal Society of "Medico-Chymica" of Seville, and Chief Doctor to Philip V; there is also N. R. Cuelho and J. A. da Costa, Pharmacopea Tubalense, chimico-Galenica (Rome: Geredini, 1760) (UTRB), with text in Spanish, dedication in Portuguese, and an interesting assortment of necessary licenses from the Holy Office, the Pope, etc., dated 1533 and 1535. Finally, there is the Filosofía farmaceutica, o la farmacía reducida a sus verdaderos principios (Madrid: Imprenta Real, 1804) (UTRB) by Gregorio Bañares, "Boticario de Camera" of their Majesties.

Editor's note. See also "A Survey of Early Biological Books in Toronto, 1450-1700" by F. D. Hoeniger and Joel Kaplan, in R & R, III, No. 3 (March 1967), pp. 2-11.

Appendix: The Dispute Between Physicians and Apothecaries

Our last category of material is the product of sporadic scuffling between the Royal College of Physicians and the Apothecaries of London which, beginning in the 1630's, developed into a raging pamphlet war shortly after the Plague of 1665. From 1669-1671 the London presses poured out countless pages of vitriolic charge and counter-charge. The Physicians claimed that Apothecaries charged outrageous prices for their wares, that they were generally incompetent and guilty of frauds innumerable, and that they usurped the Physicians' right to "practise" medicine. The Apothecaries retorted that the Physicians' fees were exorbitant, that book-learning was not necessarily a mark of ability to practise, and that the Physicians had run away from the Plague and left the Apothecaries to do their best for the City. Two pamphlets from this round are available, both written by Christopher Merrett, "Doctor in Physik, Fellow of the Colledg of Physicians and of the Royal Society": A Short View of the Frauds and Abuses Committed by the Apothecaries (London: J. Allestry, 1660) (UTRB); and A Short Reply to the Postscript etc. of H. S. Showing his many Falsities in Matters of Fact, ... (London: T. R., 1670) (UTRB). The furor died down in 1671, perhaps because the pamphleteers had become repetitive and needed more material before another all-out battle could ensue.

In 1695 the College resurrected a proposal to set up a dispensary to provide free medical advice for the poor, an idea first suggested in 1675 but scarcely greeted with enthusiasm by the Apothecaries. Various attempts to achieve co-operation failed, although not all the Apothecaries were opposed (nor all the Physicians in favour). In the end, the dispensary was opened by the College. Once again the London presses poured out invective, and the public treated to another round of charge and counter-charge: A Pill to Purge the Dispensary Doctors (London: The Author, 1702) (UTRB); The Necessity and Usefulness of the Dispensaries Lately Set Up (London, 1702) (UTRB); R. Pitt, The Craft and Fraud of Physic Expos'd (London: T. Childe, 1703) (AM), which is the third edition "with a new Preface explaining to the meanest Capacities, the Controversy between the Physicians of the Dispensary, and the Quacks supported by their Physicians, and Others who serve under them." Meanwhile, the whole affair had been immortalized by Doctor (later Sir) Samuel Garth, who in 1696 had written The Dispensary, a six-canto poem in mock heroics in which the antagonists, individually and collectively, were effectively caricatured, and the issues subjected to the acid of his wit. Three impressions of the poem were published within a few months, testifying to its popularity. The poem is available in The Poetical Works of Sir Samuel Garth (Edinburgh: Apollo, 1779) (UTRB).