

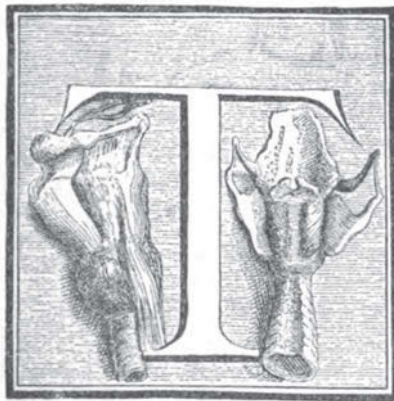
HISTORICAL AND BIBLIOGRAPHICAL NOTES.

A SERIES OF SKETCHES OF THE LIVES, TIMES AND WORKS OF THE OLD  
MASTERS OF ANATOMY AND SURGERY.

By GEORGE JACKSON FISHER, M.D.

XIX. ABŪ ALI EL-HOSEIN IBN-ABDALLAH IBN  
SINA COMMONLY CALLED AVICENNA.

980—1037.



THE *Canon* of Avicenna was to the medical world, the book of books, the Koran of the healing art, the rule and confession of faith of all physicians throughout Persia, Syria, Arabia, and the continent of Europe, for a period of well nigh six hundred years.

The works of Hippocrates, the voluminous commentaries of Galen, and the writings of Avicenna have exercised a greater influence, and have maintained their sway over the minds of medical men for a longer time than any and all other authorities the world has ever produced. The works of this immortal triumvirate were not only the great store-houses of facts and observations, but they have been the judicial authorities in

medicine, the decisions of the final court of appeals, beyond which no case could be carried. The reign of Avicenna was in the darkest and most gloomy period of the intellectual history of man. The pall that settled over Europe was so intensely and impenetrably dark that men groped with uncertain steps, even when aided by the glimmering light afforded by the few and far-between beacons that sent their rays down through the ages.

Like that of Rhazes, and those of other Arabic medical writers, the name of Avicenna is found written in a great variety of forms; thus we find it, Ali Houssaim Abu Ali Ebn Ali Ebn (or Ibn) Sina; which in English is, Hason, father of Ali, son of Ali, son of Sina; or Houssaim, father of Hali, son of Abdalla, grandson of Sina. His particular name is sometimes written Hason Ebinsema; De Assema; Aboali Abinsiemi; Abinscenas; Ebn Cinna; Avycen; and Avicenna. "The Mussulmen called him Ebn-sina; the Arabian Jews, Abensina or Aboli-Abiscene." (Meryon, *History of Medicine*, v. i., p. 136.)

By way of honorary distinction, so celebrated was his reputation, he was surnamed Scheikh-Al-Reis, (or Scheikh-Reyes,) Prince of Physicians.

After having very pleasantly spent much time in reading everything that I could find relating to the personal history of Avicenna, with a view to the composition of a sketch of his life, I came to the conclusion that the neat and concise little biography of him, which is contained in the ninth edition of the Encyclopædia Britannica, now in course of publication, embraces all that is said elsewhere, and hence, though reluctantly deviating from my intended course, I have determined to make a piratical quotation of nearly three columns, being the principal part of that article, omitting what is said of his philosophical and metaphysical writings, and supplementing the sketch with a brief analysis

of his medical and surgical opinions, concerning which the writer of the article Avicenna in the Encyclopædia has not undertaken to treat. To all of which I shall append, according to the plan carried out in all my sketches of the old masters, a bibliography, as exhaustive as it is possible to make it with quite ample resources at my command. The amiable reader will please excuse this course in the present case, as my intention is to compile instructive sketches rather than aim at mere literary excellence and originality.

Avicenna was born about the year 980 A. D., at Afshena, one of the many hamlets in the district of Bokhara. His mother was a native of the place; his father, a Persian from Balkh, filled the post of tax-collector in the neighboring town of Harmaitin, under Nûh ibn Mansir, the Samanide emir of Bokhara. On the birth of Avicenna's younger brother the family migrated to the capital, then one of the chief cities of the Moslem world, and famous for a culture which was older than its conquest by the Saracens. Avicenna was put in charge of a tutor, and his precocity soon made him the marvel of his neighbors,—as a boy of ten who knew by rote the Koran and much Arabic poetry besides. From a greengrocer he learnt arithmetic; and higher branches were begun under one of those wandering scholars, who gained a livelihood by cures for the sick and lessons for the young. Under him Avicenna read the *Isagogue* of Porphyry, and the first propositions of Euclid. But the pupil soon found his teacher to be but a charlatan, and betook himself, aided by commentaries, to master logic, geometry, and the *Almagest*. Before he was sixteen he not merely knew medical theory, but by gratuitous attendance on the sick had, according to his own account, discovered new modes of treatment. For the next year and a half he worked at the higher philosophy, in which he encountered greater obstacles. In such moments of baffled inquiry he

would leave his books, perform the requisite ablutions, then hie to the mosque, and continue in prayer till light broke on his difficulties. Deep into the night he would continue his studies, stimulating his senses by occasional cups of wine, and even in his dreams problems would pursue him and work out their solution.

Forty times, it is said, he read through the metaphysics of Aristotle, till the words were imprinted on his memory; but their meaning was hopelessly obscure, until one day they found illumination from the little commentary by Alfarabius, which he bought at a bookstall for the small sum of three drachmæ. So great was his joy at the discovery, thus made by help of a work from which he had expected only mystery, that he hastened to return thanks to God, and bestowed an alms upon the poor. Thus, by the end of his seventeenth year, he had gone the round of the learning of his time; his apprenticeship of study was concluded, and he went forth a master to find a market for his accomplishments.

His first appointment was that of physician of the emir, whom the fame of the youthful prodigy had reached, and who owed him his recovery from a dangerous illness. Avicenna's chief reward for this service was access to the royal library, contained in several rooms, each with its chests of manuscripts in some branch of learning. The Samanides were well-known patrons of scholarship and scholars, and stood conspicuous amid the fashion of the period, which made a library and a learned retinue an indispensable accompaniment of an emir, even in the days of campaign. In such a library Avicenna could inspect works of great rarity, and study the progress of science. When the library was destroyed by fire not long thereafter the enemies of Avicenna accused him of burning it in order forever to conceal the sources of his knowledge. Meanwhile, he assisted his



father in his financial labors, but still found time to write some of his earliest works for two wealthy patrons, whose absolute property they became. Among them was the *Collectio*, one of those short synopses of knowledge which an author threw off for different patrons.

At the age of twenty-two Avicenna lost his father. The Samanide dynasty, which for ten years had been hard pressed between the Turkish Khan of Kashgar on the north and the rulers of Ghazni on the south, came to its end in December, 1004. Avicenna seems to have declined the offers of Mahomed the Ghaznevide (who, like his compeers, was rapidly gathering a brilliant cortege of savants, including the astronomer Albiruni), and proceeded westwards to the city of Urdjensh, in the modern district of Khiva, where the vizier, regarded as a friend of scholars, gave him a small monthly stipend. But the pay was small, and Avicenna wandered from place to place, through the districts of Nishapur and Mero, to the borders of Khorasan, seeking an opening for his talents. In the restless change which threw the several cities of Iran from hand to hand among those feudal emirs of the Buide family, who disputed the fragments of the caliphate, the interests of letters and science were not likely to be regarded. Shems al-Maâli Kabûs, a generous ruler of Deilem, himself a poet and a scholar, with whom he had expected to find an asylum, was about that date (1013) starved to death by his own revolted soldiery. Avicenna himself was at this season stricken down by a severe illness. Finally, at Jorjân, near the Caspian, he met with a friend, who bought near his own house a dwelling in which Avicenna lectured on logic and astronomy. For this patron several of his treatises were written; and the commencement of his *Canon of Medicine* also dates from his stay in Hyrcania.

He subsequently settled in Rai, in the vicinity of the

modern Teheran, where a son of the last emir, Medj Addaula, was nominal ruler, under the regency of his mother. At Rai about thirty of his shorter works are said to have been composed. But the constant feuds which raged between the regent and her second son, Shems Addaula, compelled the scholar to quit the place, and after a brief sojourn at Kassoïn, he passed southwards to Hamadân, where the prince had established himself. At first he entered into the service of a high-born lady ; but ere long the emir, hearing of his arrival called him in as medical attendant, and sent him back with presents to his dwelling. Avicenna was even raised to the office of vizier ; but the turbulent soldiery, composed of Koors and Turks, mutinied against their nominal sovereign, and demanded that the new vizier should be put to death. Shems Addaula consented that he should be banished from the country. Avicenna, however, remained hidden for forty days in a sheikh's house till a fresh attack of illness induced the emir to restore him to his post. Even during this perturbed time he prosecuted his studies and teaching. Every evening extracts from his great works, the *Canon* and the *Sanatio*, were dictated and explained to his pupils ; among whom, when the lesson was over, he spent the rest of the night in festive enjoyment with a band of singers and players.

On the death of the emir Avicenna ceased to be vizier, and hid himself in the house of an apothecary, where, with intense assiduity, he continued the composition of his works. Meanwhile, he had written to Abu Jaafar, the prefect of Ispahan, offering his services ; but the new emir of Hamadân, getting to hear of this correspondence, and discovering the place of Avicenna's concealment, incarcerated him in a fortress. War meanwhile continued between the rulers of Ispahan and Hamadân ; in 1024 the former captured Hamadân and its towns, and expelled the Turkish mercenaries. When

the storm had passed, Avicenna returned with the emir to Hamadân, and carried on his literary labours; but at length, accompanied by his brother, a favorite pupil, and two slaves, made his escape out of the city in the dress of a Sufite ascetic. After a perilous journey they reached Ispahan, and received an honorable welcome from the prince. The remaining ten or twelve years of Avicenna's life were spent in the service of Abu Jaafar Ala Addaula, whom he had accompanied as physician and general literary and scientific adviser, even in his numerous campaigns. During these years he began to study literary matters and philology, instigated, it is asserted, by criticisms on his style. But amid his restless study Avicenna never forgot his love of enjoyment. Unusual bodily vigor enabled him to combine severe devotion to work with facile indulgence in sensual pleasures. His passion for wine and women was almost as well known as his learning. With much gayety of heart and great powers of understanding, he showed at the same time the spirit of an Aristippus more than that of an Aristotle at the courts of the wealthy. Versatile, light-hearted, boastful, and pleasure-loving, he contrasts with the nobler and more intellectual character of Averroes. His bouts of pleasure gradually weakened his constitution; a severe colic, which seized him on the march of the army against Hamadân, was checked by remedies so violent that Avicenna could scarcely stand. On a similar occasion the disease returned; with difficulty he reached Hamadân, where, finding the disease gaining ground, he refused to keep up the regimen imposed, and resigned himself to his fate. On his death-bed remorse seized him; he bestowed his goods on the poor, restored unjust gains, freed his slaves, and every third day till his death listened to the reading of the Koran. He died in June, 1037, in his fifty-eighth year, and was buried among the palm trees by the Kiblah of Hamadân.

[To be Continued.]



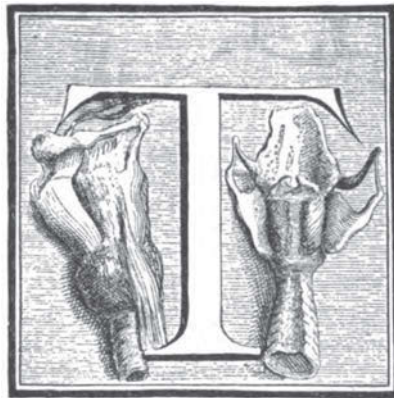
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### XIX. ABŪ ALI EL-HOSEIN IBN-ABDALLAH IBN SINA COMMONLY CALLED AVICENNA (CONTINUED).

980—1037.



THE causes are not well understood nor susceptible of a very satisfactory explanation which determined the extraordinary popularity of the medical and surgical writings of Avicenna, particularly from the twelfth to the seventeenth century, during which long period they were the guide of medical study in the European universities, and well nigh eclipsed the names of Rhazes, Hally Abbas and Avenzoar. His work is not essentially different from that of his predecessors—Rhazes and Hally Abbas. All present the doctrine of Galen, and through Galen the doctrine of Hippocrates, modified by the system of Aristotle. But the *Canon* of Avicenna is distinguished from the *El-Hawi* (*Continens*) or *Summary* of Rhazes by its

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greater method, due perhaps to the logical studies of the former, and entitling him to his surname of Prince of the Physicians. His work has been variously appreciated in subsequent ages, some regarding it as a treasury of wisdom and others, like Avenzoar, holding it useful only as waste paper. In modern times it has been more criticised than read. The vice of the book is excessive classification of bodily faculties, and over subtlety in the discrimination of diseases. It includes five books; of which the first and second treat of physiology, pathology and hygiene, the third and fourth deal with the methods of treating disease, and the fifth describes the composition and preparation of remedies. This last part contains some contingent of personal observation. He is, like all his countrymen, ample in the enumeration of symptoms, and is said to be inferior to Hally in practical medicine and surgery. He introduced into medical theory the four causes of the Peripatetic system. Of natural history and botany he pretends to no special knowledge. Up to the year 1650, or thereabouts, the *Canon* was still used as a text-book in the universities of Louvain and Montpellier.

The remaining portion of this sketch will be devoted to a brief notice of some of the most important surgical opinions and operations which are contained in the works of Avicenna. By far, the most complete works of this author are his treatises on diseases and the *Materia Medica*; in fact, he treats much more fully of everything else connected with medicine than he does of surgery—and what he writes on surgery is chiefly derived from Paulus Ægineta, Rhazes, and, more directly, in his account of fractures and dislocations, from Hippocrates and his great commentator Galen.

Avicenna, in common with all of the Arabian surgeons, was very partial to the use of the actual cautery, and employed it for ophthalmia, dyspnœa, elephantiasis, and hydrocephalus.

Arteriotomy was practiced by Avicenna in vertigo and chronic defluxions of the eyes. (*Cantic. iv.*)

In Trichiasis, or Distichiasis, Avicenna gives directions for the cure by the use of the cautery, that is, burning the roots of the hairs with a red-hot needle; by agglutinative applications, or by excision of a portion of skin of the eyelid.

In cases of Lagophthalmus or Hare-eye, that is, when the eyelids are drawn upwards as a result of burns or wounds, he directs the Celsian plan of making a lunated incision below the eyebrows, the horns of the incision being turned upwards. The gap thus made is kept open by a pledget of lint which prevents the edges from uniting.

Avicenna describes the operation for the removal of Pterygia of the eye, which, he says, is to be done by raising the pterygium with a hook or needle and cutting it away with scissors. Some of the ancients used the scalpel.

The operation for Cataract, as described by Avicenna, is evidently copied from Paulus, which is much the same as that given by Celsus, being that by depression or couching. Avicenna mentions that some surgeons open the lower part of the cornea and extract the lens through it. He, however, does not approve of this procedure.

The surgical treatment of *Fistula Lachrymalis*, recommended by Avicenna, is the same as that of *Albucasis*. When the disease does not yield to medicines, he directs us to open the abscess freely, so as to make an outlet for the pus, and expose the bone. If it is found to be diseased, he advises us to scrape it with an iron instrument, and then to apply styptic and desiccative medicines to it. When this treatment does not succeed, he directs us to perforate the bone with a triangular instrument of iron. When air issues from the nose by the opening, we know, he says, that the operation is completed. Avicenna used the actual cautery in some cases. He also speaks of introducing a thread into the lachrymal passages, and of using injections.

In imperforate meatus auditorius, Avicenna mostly borrows his account from Paulus. When the obstruction is occasioned by a fleshy excrescence, he directs it to be burnt down with arsenic or some other escharotic. He also approves of perforating the membrane (iii., 4, 1, 17.) He removed foreign substances from the ear, by shaking the head, by an earpick, a hook, or tweezers; which were the ordinary means used by all the ancients.

In polypus of the nose, when large and dense, he removed them by incision, and the process of sawing out the tumor. His methods were not original.

All the Arabians used forceps for the extraction of teeth.

In tongue-tie, Avicenna recommends an operation, of one of the old authors, viz.: that of passing a needle armed with a thread, through the frænum, the thread to be tightened from time to time so as to divide the intermediate parts. This method is preferred where the adhesion is extensive, in order to avoid dangerous hæmorrhage, which would result from a direct incision.

Laryngotomy is among the most ancient surgical operations of which we have any account.

The first account of Laryngotomy which we find is that of Antyllus, who lived in the third or fourth century after Christ. Avicenna and the other Arabian surgical writers, express themselves quite favorably of the operation in urgent cases of cynanche, by which name it is believed the ancients meant the *croup*. It does not appear certain that Avicenna or Albucasis ever performed this operation, or ever saw it done, as their account of it is copied entirely from Paulus Ægineta.

Avicenna and most of the Arabian authorities recommend the removal of scrofulous glands and tumors by incision, and direct that the arteries which may be severed shall be ligated.





Avicenna does not describe or even mention an operation for the treatment for aneurism.

Avicenna wrote a very exhaustive chapter on venesection, in which he collected, with his usual accuracy, everything of importance which had previously been written on the subject. He was unable, however, to add anything to this stock of ancient information. He was a strong advocate of the value of bleeding after any accident, a practice which was still in vogue when I was a student of medicine. It would be tedious to enumerate all his rules and directions for bleeding. He practised not only phlebotomy, but also cupping.

Cancer of the breast was operated for and removed by the following methods in ancient times. By corrosive applications, by burning irons, and excision with the scalpel. Avicenna mentions that after excision of a cancerous part, the actual cautery may be required. He cautions against its use as dangerous, whenever the affected part is near any vital organ. The intention of its use was first to arrest the hæmorrhage, and last to eradicate the disease. There are, doubtless, very strong reasons for the belief that this heroic treatment was much more useful than the present simple but ineffectual method of healing by first intention after excision of the mamma. It was the opinion of Celsus that "medicines are of no avail, burning only exasperates the disease, and excision only removes the part affected, for the disease immediately returns."

Avicenna describes the mode of performing paracentesis in dropsies, which is the same as that of Paulus. An incision is first made with a lancet or a sharp-pointed knife, through the textures, after which a copper tube, or canula, having an opening like those of writing-pens, is introduced into the opening, and the fluid is thus drawn off, with many cautions as to strength of patient, &c. In some cases only

a portion of the fluid was removed at one time, and other portions during successive days, thus avoiding the apprehended danger from a too sudden evacuation. On the whole, Avicenna was not much in favor of the operation. He says it ought never to be attempted until every other remedy has proved ineffectual, and unless the strength of the patient be good, and he can endure exercise, abstinence from drink, and a restricted diet.

Avicenna mentions the operations of catheterism and injection of the bladder. These operations had been practiced long antecedent to his time.

Lithotomy is fairly described by Avicenna, but not as minutely as by Albucasis. He directs, in case the calculus is large, that no attempt be made to have the incision correspondingly large, but, instead, that it is to be grasped in a forceps and broken into pieces; the bladder to be washed out with injections. The practice of lithotomy appears to have been regarded a disreputable operation by many of the Arabians. Avenzoar speaks of it as being so contemptible that an upright and respectable man would not deign to witness, far less perform it.

Avicenna treated hydrocele by free incision of the scrotum and tunica vaginalis, and the application of strong medicines or the cautery to the membranes.

Difficult parturition is treated of by Avicenna in a very exhaustive manner. In some cases of difficult delivery—owing to the size of the child—he directs us to apply a fillet around the child's head and endeavor to extract it. When this fails the *forceps* are to be applied, and the child extracted by them. If this cannot be accomplished, the child is to be extracted by incision, as in the case of a dead fœtus. This passage furnishes unmistakable proof that the Arabians were acquainted with the method of extracting the child alive by the *obstetric forceps*. All the forceps men-

tioned by Albucasis and figured in his *Chirurgia* have teeth, and were only intended for the delivery of the fœtus when dead.

In cases of retained placenta, Avicenna repeats the directions of Paulus and Aëtius, but looks upon the introduction of the hand into the uterus as a painful and, in general, a needless performance.

Fistula in ano was treated, from the earliest times, by ligature and also by incision. Avicenna prefers twisted hairs or bristles of a hog, in place of thread, for tying the parts to be involved in the ligature, as they will not rot or putrefy.

Fractures and dislocations of the bones are treated of in a systematic and in quite an ample manner by Avicenna, but nearly everything which we find in his works on this subject has been copied almost literally from the works of Paulus Ægineta. He particularly recommends that bandages shall be applied slack. He quite agrees with Celsus in speaking favorably of re-fracturing bones which have united with much deformity.

To the reader who has hitherto bestowed little or no attention to the state of medical and surgical knowledge which existed among the Arabians in mediæval times, the above brief summary of the opinions of Avicenna, on so many important subjects pertaining to surgery, may afford a more exalted notion of the advancement in the science and art of healing, the fertility and amplitude of their resources, and the real value of their practical methods than he had conceived it possible for them to have attained to in the remote age in which this celebrated writer flourished, well-nigh nine centuries ago.

Avicenna was a very voluminous writer—nearly one hundred treatises on various subjects, and ranging from a few pages to several volumes in extent—have been ascribed to him. His great work, by which his European reputation



was established and by which he is best known, is the *Canon of Medicine*, which was translated from the original Arabic into Latin by Gerard, of Cremona. This version has been reprinted not less than thirty times, as will be seen in the following list of editions of Avicenna's works. In 1491 the *Canon* was printed in Hebrew, and in 1593 it was published at Rome in Arabic. That dear eccentric old gentleman, Mr. Atkinson, says, "Avicenna's canons accompanied the armies of the crusaders into Europe, and have probably killed more than all their other canons."

His *Medicamenta Cordialia*, *Canticum de Medicina*, and *Tractatus de Syrupo Acetoso*, were also translated into Latin and several times printed. *The Cantica*, which was one of his shorter essays on medicine, and his treatise on *Logic*, were written in poetic metre, as the name of the former suggests.

The great number of editions of Avicenna's medical works which were printed during the fifteenth, sixteenth and seventeenth centuries, and even extending into the eighteenth, attest the immense popularity of his writings until within quite recent times. Some of these editions are beautiful examples of early printing; those which issued from the celebrated presses of the Juntas of Venice are extremely handsome. My copy of the super-grand folio edition of Johannes Trechsel of Lyons (Lugduni), 1498, is exquisite and very sumptuous.

There are still in existence many genuine and quite ancient Oriental MSS. of several of Avicenna's works, as well as some which have evidently been written in modern times. Some of these are to be seen in the library of Leyden, and others in the Bodleian Library at Oxford. Those who may have the curiosity to know what these MSS. are, will find lists of them in Atkinson, Fabricus, and Haller's bibliographies.

For a life of Avicenna, see Ibn Khallikan's *Biographical Dictionary*, London, 1842; Wüstenfeld's *Geschichte der Arabischen Aertze und Naturforscher*, Göttingen, 1840; and Abul-Pharagius, *Historia Dynastiarum*. For an account of his medicine, see Sprengel's *Histoire de la Médecine*. The best account of Avicenna which I have found in English is the article above referred to, in the *Encyclopædia Britannica*, ninth edition, Vol. III., pp. 152-155. See also Moir, *Outlines of the Ancient Hist. of Med.*, Sec. III., Chap. III., 1831.

The following is a carefully prepared bibliography of all the medical and surgical works of Avicenna. The bibliographies of Haller, Eloy, Kestner, Jourdan, Dezeimeris, Choulant, and Atkinson, have been collated in its preparation.

Editions in the fifteenth century.

*Liber Canonis Medicinæ. Mediolani, fol. 1478.* This is the first complete edition of his works. *Patavii, fol. 1476. Patav., fol. 1478, 3 vols., in folio maximo. Patav., fol. 1479. Venet., fol. 1482. Bonon., fol. 1482. Venet., fol. 1483. Papiæ, fol. 1483-4. Venet., fol. 1484. Opera Omnia, vel Cantica. Bonon., fol. 1485. Venet., 4°, 1486. Venet., fol. 1486; Venet., 4°. 1488, Canon solus. Ferrariæ, fol. 1489. Venet., fol. 1489. Venet., fol. 1490, die 24 Mart. Venet., fol. 1490, die 10 Septembr. Venet., fol. 1491, Canon cum lib. de viribus Cordis ac Compend. artis Med. versibus convertum. Venet., fol. 1492, 4 vols. (see Eloy). Neapoli, fol. 1492, Canon ex Arabica in Hebraicum, et Canticum. [Choulant has this Hebrew edition printed in 1491, Atkinson in 1492.] Papiæ, fol. 1493. Venet., fol. 1494. Mediolan., fol. 1494. Venet., fol. 1495 [by two publishers, B. Venitum, and J. B. de Tortis]. Venet., fol. 1496, and twice in 1498. Lugdunum, fol. 1498, 3 vols. Op. Med.*

Editions in the sixteenth century.

*Venet., 4°, 1500; 1502; fol. 1503. Romæ, 1503, [“ Opera,*

in the original Arabic—*Rees's Encyc.*—I have this, but cannot read it," so says Atkinson, *Med. Bibliography*, A. and B., p. 53. In no other place do I find mention made of an edition in Arabic, except that of Rome, 1593, to be cited below. It is possible that Atkinson may have been unable to read the date correctly.] *Venet.*, 4°, 1507. *Romae*, 4°, 1507. *Rom.*, 8°, 1507, De Corde. *Papiac.*, fol. 1510, two editions, *ibid.* 1511. *Venet.*, fol. 1513: 8°, 1514, fol. 1514: 1515. *Parisiis*, 12°, 1516, Campegii, Annot. in Galeni, Avicennæ, et Concil. opera. *Lugd.* 4°, 1517. *Venet.*, fol. 1518, two editions. *Lugd.*, fol. 1518. *Papiac.*, fol. 1518, Lib. primus, Canon. *Venet.*, fol. 1520. *Papiac.*, fol. 1521. *Lugd.*, 4°, 1522. *Venet.*, 4°, 1522, fol. 1523. *Lugd.* 1522, Cantica. *Venet.*, fol. 1523, five vols. cum variorum Comment, G. D. de Camponerius: also fol. 1523, Hugo, Bencii, Comm. *Venet.*, fol. 1527. *Ethelingoe*, 12°, 1531. *Paris*, 8°, 1532. *Hagenati*, 1532. *Antwerp*, 8°, 1533. *Basil*, fol. 1536, 1540. *Lugd.* 4°, 1541. *Venet.*, fol. 1544. *Patav.*, 4°, 1546. *Ticini*, fol. 1547. *Venet. et Ticini*, fol. 1547. *Papiac.*, fol. 1547. *Venet.*, fol. 1547. *Paris*, 8°, 1549, De Febribus. *Francof.*, 4°, 1550, De Tinctura Metallorum. *Venet.*, 1550, Cantica. *Venet.*, fol. 1552. *Venet.*, 8°, 1554. *Venet.*, fol. 1555. *Basil.*, fol. 1556. *Lyons*, 8°, 1557-9, De Corde. *Venet.*, fol. 1560. *Witel*, 8°, 1562, Cantica. *Venet.*, fol. 1562, *ibid.*, fol. 1564. *Geneva*, fol. 1567, with medicis principes. *Paris*, 8°, 1570. *Basil*, 8°, 1572, De Med. Cordialibus. *Paris*, 8°, 1572. *Venet.*, 4°, 1576; *Ibid.*, 4°, 1580. *Basil*, 8°, 1582, Ars Chymica. *Venet.*, fol. 1582. *Ibid.*, fol. 1584, Canon, with Palamede's Index. *Antwerp*, 12°, 1584. *Venet.*, fol. 1584. Index in Avicen., J. Palamedis. *Romae*, fol. 1593. [This is the edition printed in Arabic. Atkinson says, "this is the most beautiful edition of all his works."] *Venet.*, fol. 1594. *Ibid.*, fol. 1594-5, 2 vols., one of the best editions. *Ibid.*, fol. 1595, 2 vols. *Romae*, fol. 1595, in Arabic (see Atkinson). *Ibid.*, fol. 1596. *Lugd.*, fol. 1598, 4 vols.



Editions in the seventh century.

*Patav.*, 1606, *Compfuti*, fol. 1607. *Venet.* fol. 1607, fol. 1608, two editions, two publishers. *Patav.*, fol. 1608. *Breslau*, fol. 1609. *Patav.*, 4°, 1612. *Compfuti*, fol. 1612, 1617. *Burdigalac*, fol. 1628. *Lugd. Bat.* 8°, De Animalibus. *Patav.*, 12°, 1636, Feu prima. *Venet.*, 4°, 1646. Canon in primam feu. *Venet.*, fol., 1653. *Groningen*, fol. 1649, cum Mesuœi, *Ibid.*, 12°, 1649, Canticum, &c. *Venet.*, fol. 1658. *Patav.*, 12°, 1659, Quarto can. feu prim, de Febribus. *Paris*, 8°, 1659. Tract de Morb. Mentis. *Paris*, 8°, 1660, L'Hymne, du Chasine, etc. *Lovanii*, fol. 1669, Opera Med. *Patav.*, 4°, 1678.

In the eighteenth century.

*Leipzig*, 1777, by Franzl. Clarendon Press, Oxford. 18 .  
On separate subjects.

[To be Continued.]