

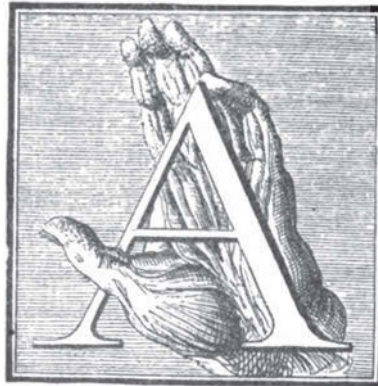
HISTORICAL AND BIBLIOGRAPHICAL NOTES.

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

By GEORGE JACKSON FISHER, M. D.

XXII. ABOU MERWAN BEN ABDEL MELEK  
BEN ZOHR, COMMONLY CALLED AVENZOAR.

1070—1161.



ANDALUSIA, if not the native country, was assuredly the home of Avenzoar. Seville, the magnificent capital of Andalusia, was an ancient city in mediæval times. Andalusia was an extensive region in the south of Spain, and embraced "the four kingdoms," which are now divided into

eight provinces. It was the *Bætica* of Roman days, the *Tarshish* of the Bible, and in very ancient times a famous trading emporium of the Phœnicians, who were the earliest known inhabitants of the country. The name is said to have been derived from the Vandals who overran this part of Spain after the downfall of the Roman Empire, the country being called Vandalusia, and thence through an easy transition to Andalusia; some, however, say that it is but a ringing

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sound upon the Arabic name *Andalosh*, "land of the West." Seville was in the possession of the Arabians from 761 to 1248. During this semi-millennium it was in its glory, having attained a high degree of splendor and a population of three hundred thousand souls. The Guadalquivir still flows on through the fertile and delightful plain where the renowned old city stood, and still stands, and now no less than a hundred thousand Spaniards make their entrance and their exit through the fourteen ancient gates of the original Moorish walls, which still encompass the grand historic city. The six and sixty venerable watch-towers are still standing like sentinels on the walls to guard the denizens from dangers within and without. The modern traveler can feast his eyes upon many surviving examples of elaborate Moorish architecture, among which the Giralda, and the Alcázar, are the most notable, so, too, he can behold an ancient Roman structure known as the *Torre de Oro*, or the Tower of Gold.

This famous city, at the time when the subject of this sketch was pursuing his studies, making his numerous experimental observations, which gave him the cognomen of experimentator, and while practicing his art, was the royal residence of the Mahometan Caliph, who was the patron of this celebrated Saracenic physician, surgeon, and pharmacist, for he combined the three professions, as he himself tells us, quite contrary to the existing custom of the period. Abymeron Avenzoar, is said by some authorities to have been born at Penefflor, in the vicinity of Seville, while others say it was at Seville, about the year 1070, of the Christian era, though upon this point much discrepancy exists amongst the biographers and historians, as also concerning the time of his death. After much perplexing research, I have fixed the above date at the head of this sketch, and that of 1161, for the year of

his demise, which allow him to have lived ninety-two years. Freind, however, and his copyists, say that he attained to the extraordinary age of one hundred and thirty-five years! Our old friend, Atkinson (*Med. Bib.*, p. 65), exclaims "How little interesting must time have been in former ages, when it was not worth recording, at least with precision."

As with the other examples of the names of Arabian physicians, so with this, do we find it written with many variations. I have found it in all of the following forms; Avenzoar, Abenzoar, Abynzoar, Abynzohar. Aynzoar, Albulazor, Aben Zohr, Ebn Zohr, Ibu Zohr, Abymeron Avenzohar, Abymeron abynzohar, Abhumeron Abynzohar, Abhumeron Abynzoar, Aben Zohr Alandalausi, Abu Meron Abenzoar, Abu Merwan Abdalmalec ibu Zohar, Abu Mervan Ben Zohr, Abou Merwan Ebn Zohar, Abou Merwan Ben Abdel Melek Ben Zohr.

It has also been corrupted into Alguazir Albuleizor; Al Wazir Abu Merwan Abdelmelek Ibn Zohr; Al Guazir Abualassar, and Zophar Ben Zohar.

The reader may select his choice among these twenty-two renderings according to his fancy for long or for short names.

It has been said that Avenzoar was the most illustrious physician and surgeon that ever flourished after the renowned Avicenna. His distinguished pupil, Averrhoes, looked upon him as almost a divinity in medicine, and poured upon him unmeasured praise, as will be found in various portions of his works, here calling him his admirable master, and there speaking of him as the glorious, the treasury of all medical knowledge, the supreme of physicians from the days of Galen, to his own time (*Averrhoes*, 30, 39, 52, 56, 64).

Avenzoar almost inherited his medical knowledge and skill. His father and grandfather were physicians of very



great celebrity in their day. In turn he transmitted the science and art of medicine to his son, of whom I shall have occasion to speak a little farther on. It is alleged that he began the study of medicine at a very early age, that his father Abd-el Melek began to teach him his profession at the extremely youthful age of ten years: some authors say at twenty, and in one I find it set down, that he commenced the study at the advanced age of forty years. When his medical instruction was completed at Seville, as is said with great credit, his father required him to take an oath, never to administer poisons. In that day poisoning was no uncommon practice among the Saracens.

He was profoundly imbued with all the learning of the period. He was an accomplished linguist, being a perfect master of the Hebrew, Syriac, and Arabic languages. His reputation extended over the whole land, and he was in constant correspondence with the most renowned physicians of his time, by whom he was regarded as only equalled by Hippocrates, the father of medicine. As late as the fourteenth century, he was honored as a sage. His talent was not entirely devoted to medicine, his poetical compositions were prized no less than his prose.

Avenzoar had the honor of being the physician to Ali ben Temin, king of Seville. He rendered a valuable service to his master by curing his brother, the Count of the royal stables, of a jaundice said to have resulted from intentional poisoning by his own family; and as a recompense for his skill, he was cast into prison, where he continued to languish until released by Joseph ben Tachefyn, prince of Morocco, who drove Ali the king of Seville, and all the other petty tyrants from Spain. (Dunbar's translation of *Carmoly's History of the Jewish Physicians*, p. 43-46.)

I will pause just here to refresh the mind of my

readers with a brief historic note concerning the origin and duration of Arabian dominion in Spain, and for this and much other information relative to Avenzoar and other Saracenic medical characters I am indebted to Freind's "History of Physick," as well as to Eloy, Moir, and many other medical historians, for, aside from the striking sameness of detail, and I might add of language of most of these authors, yet, by long and perplexing research one is repaid for his pains by little incidents and facts scattered in bibliographies, encyclopædias, and the like, by which he can weave a fabric, that may have the merit of freshness of figure if not of newness of material.

About the one hundred and thirty-ninth year of the Mohamedan period (A. D. 761); Abdal Rhaman, the son of Moavie, of the house of Omniah, after the entire destruction of that family by the Abbasidae, fled into Spain, this being in the time of Almanzor, who reigned at Bagdad. Abdalrhaman was accepted and acknowledged as the lawful Caliph of the Arabians in the West. His royal residence was at Corduba, or Cordova as now called, where he built the great Mosque, and founded the Saracenic monarchy of Spain.

Under this government the University was founded, the city of Cordova became the most famous of any in the West for literature and science, and possessed an extraordinary library of a quarter of a million of volumes, carefully preserved, arranged, and duly catalogued. This catalogue consisted of no less than forty-four volumes. As a result, this city produced one hundred and fifty authors of celebrity in the various departments of literature. Nor was all this enlightenment confined to the capital city, at least seventy public libraries existed in various parts of Spain, and flourishing academies were also established at Seville, at Toledo and at Mercia. Hospitals and public schools were also established in various parts of Spain.

The posterity of Abdalrhaman continued to reign in various parts of Spain even after Andalusia had been taken from them, down to the eleventh century, when the prince or king of Morocco dispossessed them, and established Moorish dominion in the place of Arabic rule. It was at this juncture, as above stated, that Joseph ben Tachefyn, the Moore, gave Avenzoar his liberty, took him into his service, and with great generosity loaded him with riches and honors. He was appointed a professor in medicine, and long taught the science with success, and contributed largely to the dissemination of a purer and more rational system of medicine than had hitherto been known to the occidental Arabians. Among his distinguished pupils was Ebn Roschid, better known as Averrhoes, and his own son Alhafid, or the descendant, who succeeded to his honors and rose to eminence in his profession.

Avenzoar was not only ennobled by ancient and splendid descent, but possessed of an ample hereditary fortune which rendered it unnecessary for him to practice his profession for the purpose of pecuniary gain, his chief motives being a genuine love for the science and art of healing, and a desire to benefit the community in which he lived. So, we are told, he bestowed his services gratuitously on persons of small fortune, and ungrudgingly to the poor, not, however, refusing presents from the rich, and thus he was as charitable as he was skillful, as liberal as he was enlightened, at once a benefactor and an ornament to the city of his adoption. The principal work on medicine which was written by Avenzoar, and which time has permitted to survive and come down to our own hands, was entitled by him *Tèissir*, or the *Introduction*. I find great variation in the spelling of this word. Freind has it *Thaisser*; Carmoly uses *Tèissir*; Atkinson, *Theiseir*; Eloy, *Theisir*; the edition of 1490, *Liber theicrisi*; edition of 1497, *Theizir* and *Theyscir*; Jourdan, *Thei-*



*sir*; Sprengel, *Taisyra*; elsewhere, *Taisir*, *Teisir*, *Tayasser*, *Tajessir* and *Theysir*.

This work treats of remedies and regimen for most of the diseases which were known. It also contains several items of personal history. It is here that we learn that Avenzoar had charge of a hospital, and that he was frequently employed by command of the Caliph.

His *Antidotarium* or method of preparing medicines and diet has also been preserved to the present time. Both of these works were translated from the Arabic into the Hebrew in the year 1280, and from thence into the Latin language by Paravicinus, whose version was first printed at Venice in 1490, by "J. de Forlivio et Gregor, fratres," also, in the same city, in 1496, and in 1497, each edition by different printers.

It is said that he wrote two treatises on fevers, and also a supplement to his *Taisir* under the title of *Jame*, or a "Collection." The *Taisir*, was dedicated to his royal master, King Joseph ben Tachefyn; this is found in manuscript in the Royal Library in Paris, and in the Bodleian Library. Another of his works is dedicated to Ibrahim, son of King Joseph. From these dedications it would appear that these books were written after his release from prison by Joseph of Morocco.

I have already stated that his distinguished pupil Averrhoes held his master in the highest esteem. He expresses his appreciation of his works in the following complimentary terms. "In order to arrive at a profound knowledge of medicine, it is necessary to read carefully the works of Ebn Zohar, which are the real treasure of the art. He knew all that is permitted to man to know on these subjects, and we are indebted to his family for the true science of medicine."

It is more than probable that Avenzoar, as well as all of the other Arabic medical writers of Spain, were unac-

quainted with the medical works of the Asiatic Arabic authors. The fact that the writers of the East and West are equally silent and never quote from each other must find its explanation in the implacable hatred which existed between the two factions, which began with the feud that led to their final separation and the Arabic occupation of Spain.

Our author was a decided Galenist, his admiration for this ancient writer was unbounded and led him to ever follow closely in his wake. In sect he belonged rather to the Rational than to the Dogmatic School. He was opposed to quackery, to the pretensions and superstitions of the Astrologers, and gave no ear to the twaddle of the old wives of either sex. Yet there was a trace of superstition in Avenzoar, he believed somewhat in the virtues of amulets. He tells us that he suffered personally with Sciatica and Dysentery, and that he cured the latter by wearing an emerald over his abdomen, and speaks of the use of this gem administered in the form of powder, in doses of six grains, as a valuable medicine in this class of disease. That he felt the responsibility of his profession we find abundant proof in his writings. He lays stress on the maxim "that experience chiefly is the right guide and standard of a warrantable practice, and must absolve or condemn me, and every physician, both in this life and in the next."

He did not believe that the art of healing could be attained by fine, logical distinctions and sophistical subtleties, but only by good judgment and long use of means. For example, he says, "If any one would take it into his head to refine, and nicely distinguish about laxative medicines, and pretend to find out the proportional quantity and quality of any purge, so as to square it exactly to the constitution of the patient, and the nature of the humors to be discharged, and calculate it so as not to



be even a hair under or over ; such speculations in my opinion, contribute very little to form a judgment about any right method of cure."

Freind thinks he refers to *Alkindus*, who wrote a fanciful treatise on the qualities and doses of medicines.

Avenzoar applied himself to the study of medicine, pharmacy, and surgery. He offers an apology for having studied the two latter branches, contrary to the custom of the country, and the example of his own father. Thus it is evident that these were three distinct professions in his day. Surgery and pharmacy were regarded as inferior to medicine. Manual operations, and the preparation of medicines were done by the servants (*Servitores et Ministri*) of the physicians who were the *Medici Honarati and Nobiles*.

Avenzoar thus speaks of his application to pharmacy. "I have taken great delight in studying how to make syrups and electuaries, and I had a strong desire to know the operation of medicines by experience ; the way of extracting the virtues of them and the manner of compounding one with another."

Among the special articles, of which he gives some account, is the famous Bezoar. This is the first mention of this substance by any ancient writer. The Bezoar was held in very high esteem as an antidote of poisons, and as a valuable remedy in numerous diseases, for many centuries after the days of Avenzoar. Pomet, in his History of Drugs, gives an extended account of the source, character, and virtues of the several kinds of Bezoar, animal and mineral. Since this account of Bezoar, by Avenzoar, is the first of which we have any knowledge, it may be interesting to the reader to have it transcribed in his own words. "That is the best, which is found in the East, near the eyes of stags. Great stags, in those countries, eat serpents to

make them strong. And before they have received any hurt from them, run to the streams of water, and go into it so far, 'till it comes up to their heads; this custom they have from natural instinct; and there they continue without tasting the water (for if they should drink it, they would die immediately), 'till their eyes begin to trickle: this liquor, which there oozes out under the eye-lids, thickens and coagulates; and continues running, 'till it increases to the bigness of a chestnut, or a nut. When these stags find the force of the poison spent, they come out of the water, and return to their usual haunts; and this substance, by degrees, growing as hard as a stone, at last, by their frequent rubbing it, falls off. This is the most useful Bezoar of all." Persia and China were the chief places from which it was procured. Serapion tells us that it is so precious and valuable, that a palace of Cordova had been given for one of these stones (*Freind, History of Physic*, v. ii., p. 106).

Avenzoar treats of fractures and dislocations, and in a way that indicates a considerable amount of anatomical knowledge. He tells us: "I took great pains, when I was young, to understand the situation of the bones, and their connection one with another; and not only to be acquainted with but to perform operations with my own hands, and this with a very great eagerness and appetite for the thing itself, as husbandmen and huntsmen are delighted with the exercise as such. I was rather fond of this knowledge, because sometime or other it might be of use to myself or my friends, or to the poor." Freind is disposed to believe that Avenzoar was, to some extent, a practical anatomist, and had, in spite of the Koran, engaged in dissection.

He believed in the lancet in the cure of disease, and informs us that he bled his own son, who was but three years of age, with complete success. His works contain several

valuable observations and interesting cases, to a few of which I will briefly allude. He describes a case of abscess of the kidney, or entire disintegration of that organ, nothing but the capsule remaining, this being so enlarged and distended that it contained no less than fourteen pints of purulent fluid. Did he not make an autopsy in this case, how otherwise could he know the facts?

He gives a detailed account of a rare case of inflammation and abscess of the mediastinum, the membrane, he says, which divides the thorax in the middle. This case occurred in his own person. While on a journey, he says, he felt pain in that place, which increased and was attended with a cough. He found his pulse very hard and his fever very acute. The fourth night he drew a pint of blood. His symptoms were but slightly relieved; however, as he was obliged to travel all day, being much fatigued, he fell asleep at night, and during his sleep, the bandage of the arm came off. Upon awakening he found the bed swimming with blood, and his strength much exhausted. The next day he began to expectorate a sanious matter, and though afterwards he became delirious, he recovered, attributing his restoration to the great evacuation of blood, rather than to the large libations of barley water, which he had previously ordered to be given to himself. He declares it not to have been a pleurisy; that the most characteristic symptom was *a tensive pain lengthways*. This is believed to be the first recorded instance of this disease to be found in the ancient literature of medicine. In an after age both Columbus and Barbette treated mediastinal abscess successfully by trepanning the sternum.

[To be Continued.]



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### XXII. ABU MERWAN BEN ABDEL MELEK BEN ZOHR, COMMONLY CALLED AVENZOAR.

[CONTINUED.]

1070—1161.



AVENZOAR also gave a very clear account of abscess, or purulent collections in the pericardium, and likewise of adhesion of the pericardium, in which case the sac is obliterated—a condition mistaken by Columbus and others, and described as hearts without any pericardium.

In the treatment of consumption he refers to Galen's advice, to use asses' milk, but adds that, as it is unlawful for the Saracens to eat the flesh and to drink the milk of this animal, he has substituted goat's milk in such cases. This is the first mention of goat's milk as a special diet for the sick. In this day of milk treatment it is interesting to trace the early history of its therapeutical uses.

Avenzoar, of all the Arabian surgical writers, speaks approvingly of the operation of bronchotomy. He believed it would be justifiable in desperate cases of quinsy, under

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which term in that day croup and all cases of inflammation of the neck were included. He never performed it, never saw it done, and was too timid to be the first to recommend it to be done. To satisfy himself the better that it is practicable, he made an experiment on a goat, making an incision through the tracheal rings, about the size of a lupin (wolf-bean), dressed the wound every day with honey water, and when it began to incarn (granulate) he applied powder of cypress nuts, and thus he perfected the cure.

The most interesting observations to be found in this excellent author relate to artificial methods of nourishing the body in cases of inability to swallow food. He proposes three methods. The first is by introducing an œsophageal tube, made of silver or of tin, as far down as it will readily pass, and through this pipe to pass milk or other thin nourishment into the stomach. This method is not previously mentioned by any writer. It is the progenitor of the stomach-pump. The second expedient is the employment of nutritious baths, such as milk, etc., depending upon cutaneous absorption. Of this method he speaks slightly, and even ridicules it as frivolous. The third mode, that of rectal alimentation, of which we hear so much now-a-days, he regarded as very useful, notwithstanding that Galen had asserted that fluids could not be made to ascend to the stomach by the use of clysters. Avenzoar argues the point at length, and thinks that an empty condition of the intestines and great bodily need of nourishment quite alters the case and promotes the absorption. Oribasius (*Collect. viii. 34.*) has left us a short chapter on clysters.

Avenzoar describes four modes of treating inversion of the ciliary hairs—trichiasis: 1. By everting the upper eyelid and securing it with agglutinants until the roots of the hairs have been cauterized with a rod of gold. This method he condemns. 2. By extirpating the offending hairs and apply-

ing the blood of a bat to the places from which they were torn. 3. By making an excision of the superfluous skin of the eyelid, and afterward applying sutures. 4. By twisting the skin about small reeds or tubes, in the manner described by Paulus Ægineta and Albucasis.

In treating of adhesion of the eyelids Avenzoar directs us to make the separation by means of a golden rod or probe, and then to apply the white of an egg broken with oil of roses, and oil of almonds. When the eyelid is adherent to the white of the eye he advises to separate the adhesion by the gentle use of a golden spatula, and then to use the same dressing as above mentioned. He adds, however, that it is cured with difficulty.

He treats of cataract very briefly, advising the operation by depression when it proves incurable by remedies. He directs that it be well pressed down but says nothing of tearing it in pieces. In its after-treatment he recommends retirement, abstinence, and rest.

In fistula lachrymalis, Avenzoar resorted to compression and injections, but does not describe any other surgical operation. He says the pus passes into the nose, from which it may be inferred that he was acquainted with the anatomy of the lachrymal duct.

Avenzoar states that trepanning the skull should be resorted to in cases of fracture with depression; but laments that in his time it would be difficult to find a surgeon capable of performing the operation. Averrhoes also intimates that he did not know of a surgeon who could trepan the skull. It is evident that the Arabian surgeons of mediaeval times were timid operators.

The first attempt to diminish the size of a calculus impacted in the urethra is described in the works of Avenzoar (*Theisir, lib. 2, tract. 4, cap. 1.*). After having given directions for extracting a calculus from the urethra, he then



proceeds to teach the manner of breaking, or as is most probable, of grinding it down by an instrument which would appear to be a sort of drill, which he describes as a "thin polished rod, made of gold or silver, and having a pointed adamant enchased in its extremity."

In treating of the best means of relief for persons suffering from stone in the bladder he expresses his utter disgust of the operation of lithotomy, as it is opposed to the principles of his religion which forbids the scrutiny of a part of the body too unclean to be seen with the eyes of the faithful.

He styles this operation filthy and abominable, and unfit for a man of character to perform. He does not hesitate, however, to discourse of this and other operations upon these parts. The fastidiousness of the Arabians of the middle ages is not uniformly consistent, and this remark is equally applicable to some of the so-called Christians of the present period.

#### EBN-ZOHAR, THE SON OF ABENZO HAR.

Abenzohar was happy in having a son who was possessed not only of mental qualities worthy of his sire, but also inheriting the same scientific tastes, the refined sentiments, and the poetical aspirations of his gifted father. He lived as did his father, at the court of the ruler of Moorish Spain, Joseph ben Tachefyn of Morocco, and also enjoyed the confidence and royal favor of that prince.

Ebn-Zohar was the pupil of his distinguished father, as was also the illustrious Averrhoes, to whom the next sketch of this series will be devoted. As one would reasonably expect from such a master, with such an associate pupil, and such royal patronage, the son of Avenzoar made an easy flight to a position of pre-eminence in his profession. He wrote a number of medical treatises, which are enumerated

by Ebn-Abi-Osaiba, in his history of Arabian Physicians. None of these works, which were held in high esteem among the Arabs, have ever been set in type.

Leo Africanus has preserved a very interesting anecdote of the sovereign, Joseph ben Tachefyn, which exhibits the generosity, and the kindly estimation in which he held his favorite physician. "Departing for Africa, he took with him Ebn-Zohar, who was as great a poet as physician. Having entered one day unexpectedly into his cabinet, and not finding him there, Joseph, casting his eyes upon the papers lying on the table, saw some verses, in which his physician expressed his regret at being separated from his family, which remained in Spain. In a very short time the prince, without saying a word to Ebn-Zohar on the subject, sent an order to the governor of Seville, to cause the family of the physician to come with all possible dispatch to Morocco, where they were lodged in a great palace, richly furnished, and which was made a present to them. Ebn-Zohar being sent to this palace, under the pretence of seeing some sick persons, was very agreeably surprised thus to find himself in the midst of his family, which he believed were at so great a distance from him."

After a life of devotion to humanity and science, having shunned the effeminating influences of an opulent court, having chosen the active labor of his profession, and the earnest studies dictated by his training and his tastes, he closed his earthly career at the age of seventy-four, in the year of Christian grace 1216.

Several manuscripts of Avenzoar's works are still extant. In the Bodley Library at Oxford, n. 6234 with the title *Ebn-zohar de Medicina*; Haller cites the following codices: *Abenzoar de regimine sanitatis*, in B. F. Bernard 3630. *Theisir*, *Abn Meron*, in B. Cai. Gonvil, n. 974.

I find it somewhat difficult to determine with precision

just how many editions of the works of Avenzoar have been printed. The bibliographers have all been a little confused, some giving dates which are ignored by others. I have taken a conservative course and only entered those which have at least the authority of two medical bibliographers. Atkinson gives the following not otherwise mentioned, which should be regarded as doubtful—viz. *Lugd.*, 8°, 1561. *Venet.*, fol. 1576. *Ibid.*, fol. 1583, also that which Jourdan gives, *Venet.*, fol. 1549.

All three of the fifteenth century editions are rare.

It is with a sentiment of profound respect, almost amounting to reverence, that I lay my hands upon my fine old Venetian folio copy, with its stamped hog-skin back, its fine brown, highly polished, heavy oaken sides, its brazen clasps, its double-columned pages of Gothic type, published from the press of *Otinum papiensem de luna. Anno domini nostri jesu christi. Mccccxcvij decimo kalendas januaris.* It was printed at the same time and bound with Averrhoes. This copy once graced the rich shelves of that venerable and noted bibliophile, Dr. Davidson of Breslau. Why should I not prize it; how many conservators have treasured it during the three hundred and eighty-six years that have elapsed since it was sent abroad to enlighten the world. When I touch this grand old volume I feel that I have stepped back over more than half the period of time that has intervened since Avenzoar flourished in his beloved city of Seville, and methinks I feel his touch reaching down through the ages to greet one who is endeavoring to perpetuate his name in an age so unmindful and regardless of the labors and opinions, the principles and practice, that prevailed in by-gone ages.

*Venet.* fol. 1490. *Venet.* fol. 1496. *Venet.* fol. 1497. *Venet.* fol. 1514. *Venet.* fol. 1530. *Lugd.* 8°, 1531. *Venet.* fol. 1533, cum Averrhoes, *Venet.* fol. 1553. [Eloy and Haller give *Venet.*, 4°, 1628.]