

Texts and Documents

A MEDIAEVAL GERMAN PULSE TRACT

by

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IN the medical section of Wellcome MS. 49 (formerly 5000, c. 1420) there is a page of advice on how to take the pulse.² This short treatise in Middle High German precedes the so-called *Fünfbilderserie* anatomical illustrations of arteries, veins, bones, nerves, and muscles.³ The pulse text on f. 35^v is accompanied by a blood-vessel figure (Fig. 1) that properly belongs to a fragment of *Fünfbilderserie* text on f. 36.

Fig. 1 can be identified as an artery man by the *nigrum granum* in the heart and the *rete* or *anaphusa* across the forehead. Figs. 2 and 3, on the immediately following folios (36 and 36^v), are also blood-vessel men, but they lack the distinguishing characteristics of the artery man, namely, *nigrum granum* and *rete*. The *nigrum granum* is the source of the arteries, which take their pulse from the *spiritus* in the heart. The text on f. 36 identifies Fig. 1 as an artery man rather than a vein man: 'Haec est historia arteriarum quae procedunt ex corde et haec venae sunt quae pulsant etenim principium processionis eorum a nigro grano quod est intus in corde in quo spiritus habitat. . . .'⁴ The same paragraph contains a reference to the *rete*: 'Et iterum [venae] ascendunt ad cerebrum et texunt se super illud ut rete quod rete custodit et gubernat cerebrum et vocatur anaphuysa.'⁵

Fig. 1 then is clearly an artery man, that is, a figure illustrating blood vessels that pulsate. The words *vena* and *arteria* are misleading since they are used interchangeably throughout the *Fünfbilderserie* text. Only the addition of 'quae pulsant' or occasionally 'non pulsant' tells whether the 'venae' in question are to be taken as modern arteries or veins. Because of this confusion I erroneously labelled the various blood-vessel figures of Wellcome MS. 49 in my earlier article. The following corrections should be noted when referring to that article: Tafel I, Abb. 1 (Fig. 2 of the present article), is not a 'vein man' but a blood-letting figure. To be sure, the blood vessels shown are veins, not arteries, since the illustration concerns phlebotomy. But this is a separate figure and does not belong to the traditional five-picture series. The *Fünfbilderserie* vein man appears in Abb. 2 of Tafel I, erroneously labelled as 'Figure with arteries and internal organs' (Fig. 3 of the present article). This figure can be identified by the concentric circles in the breast, which doubtless represent the diaphragm. The diaphragm is twice mentioned in the paragraph on veins,⁶ whereas the *nigrum granum* and the *rete* are not.

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² The pulse text forms Appendix II of the author's doctoral dissertation, *The Fünfbilderserie and Medieval Anatomy*, under the direction of L. C. MacKinney (University of North Carolina, 1963), pp. 207-17.

³ The Wellcome *Fünfbilderserie* drawings and text have been published by the author in 'Another member of the Sudhoff *Fünfbilderserie*—Wellcome MS 5000', *Sudhoffs Arch. Gesch. Med.*, 1959, 43, 13-19. See also Otto Kurz, 'The medical illustrations of the Wellcome MS', *J. Warburg and Courtauld Institutes*, 1942, 5, 137-42.

⁴ See Boyd H. Hill, Jr., 'Another member of the Sudhoff *Fünfbilderserie*', *Sudhoffs Arch. Gesch. Med.*, 1959, 43, 18, line 3ff.

⁵ *Ibid.*, line 11ff.

⁶ *Ibid.*, p. 17, lines 12 and 21 of f. 36^v.

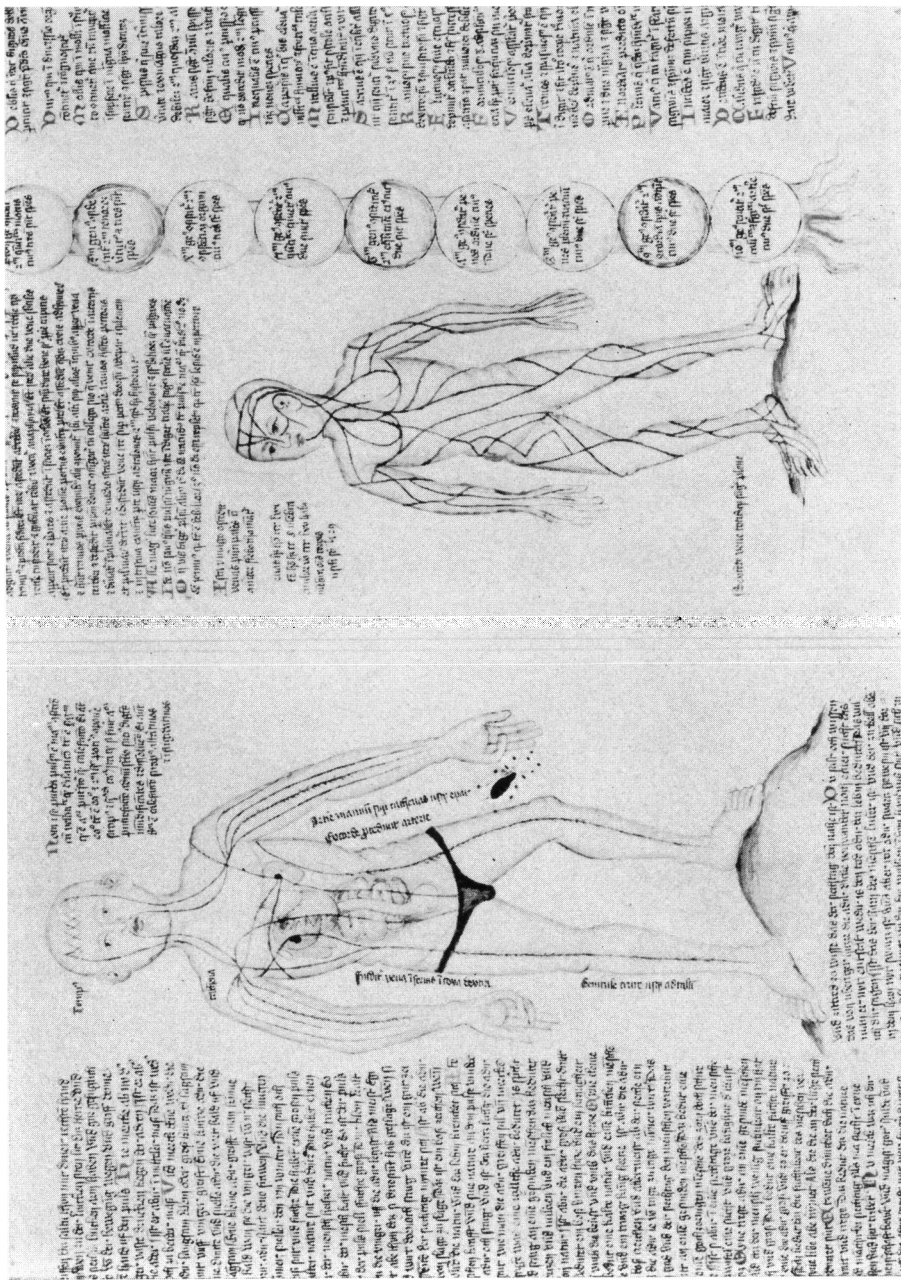


Fig. 1. Wellcome Historical Medical Library MS. 49, f. 35v. *Fünfbilderserie* Artery Man.

Fig. 2. Wellcome Historical Medical Library MS. 49, f. 36. *Blood-letting Figure* (not related to *Fünfbilderserie*).

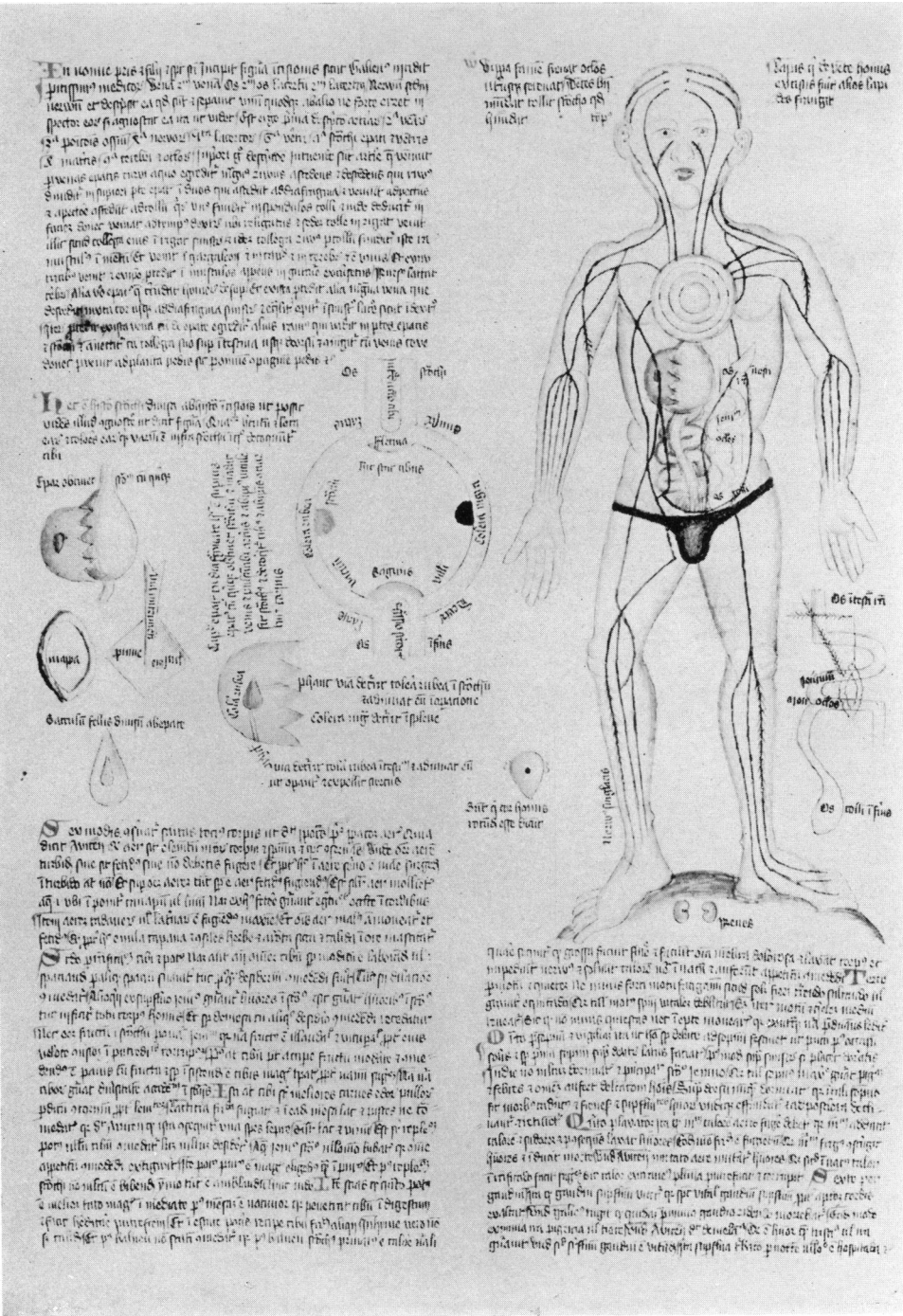


Fig. 3. Wellcome Historical Medical Library MS. 49, f. 36v.
Fünfbilderserie Vein Man.

To sum up the blood-vessel figures in Wellcome MS. 49: Fig. 1 (f. 35^v) has a heart with *nigrum granum* and a *rete* across the head; it is therefore a *Fünfbilderserie* artery man. Fig. 2 (f. 36) is a blood-letting figure, not related to the *Fünfbilderserie*. Fig. 3 (f. 36^v) with concentric circles in the chest (probably the diaphragm) is a *Fünfbilderserie* vein man.⁷ These illustrations resisted identification because of the texts they accompany. Fig. 1 (artery man) appears with a German pulse text; Fig. 2 (blood-letting figure) appears with the *Fünfbilderserie* artery text; Fig. 3 (vein man) appears (correctly) with its *Fünfbilderserie* vein text. The artery text normally follows the vein text; here it has been removed from its usual position and placed on the preceding folio.

The 'Meister Egidius' mentioned in the Wellcome pulse tract (lines (21) and (31), below) is probably Egidius Corboliensis or Gilles de Corbeil, a twelfth-century physician who studied at Salerno and eventually became chief physician to King Philip Augustus (1180–1223).⁸ Among his *Carmina medica* is a *Liber de pulsibus*, the doctrines of which are Galenic and pre-Galenic.⁹

The Middle High German text follows (f. 35^v), together with an English translation:

(1) Wen du wilt den puls greiffen, daz saltu thun mit dyner rechten hand (2) an dem lincken arme des siechin. Wen zu der lincken siten lit daz hertze. Und (3) salt mit dyner lincken hand des siechin lincken arm haben und gar gefuglich (4) das der puls icht geirret werde von der bewegung wegen. Und griff denne (5) mit vunft fingren mit dyner rechten hand uf den puls. Hie mercke ab nu der (6) mensch veist si, so mustu die vinger vaste drucken gegen der adren. Ist er aber (7) mager, zo griff gemechlich uff die ader. Ist er abir in mitteler masz, daz ist weder (8) zu feist noch zo mager, so greiff och zu beider masz. Und merck denne wedir die (9) adir oder der puls dratt snell odir langsam, klein oder grosz, kurtz oder langsam (10) slahe. Eyne lange adir ist die man mit vunft vinger greift, eyne kurtze adir die (11) man mit zweien vingern greift. Eyne dratte und snelle adir, die vert bald uf und (12) nedir, abir eyne trege adir slecht langsam. Eyne kleine adir greift man kume. (13) Eyne grosz ader entphindet man bald wan sie die vinger vast von ir slecht.

(14) Du salt wissen daz die man grozir adir hant denne frawen, und die iungen (15) grozer denn die alten, und in dem summer sneller denn ym winter. Du sach [for salt?] och (16) mercken daz die die von natur heisz sint und fuchte, die habent eynen grosen puls, (17) ein snellen und ein langen. Die kalter nature sint und durr, die habent eynen (18) kleinen puls und och lang. Ist aber der mensch heizzer natur und trucken, so (19) ist der puls kleine und snell. Ist abir der mensch kalt und fucht, so ist der puls (20) trege, kurtz, und grosz. Hitzz macht der puls snell; ffuchte, grosz; dur, klein; kalt, (21) trege.

Du salt mercken daz du die vinger uff die adir legist als Meister Egi- (22) dius spricht und von dem puls nyt abe thun daz si driestunt hab geslagen. Wenn si (23) ist etwan krang von ersten und wirt dornoch starg und daz ist ein gut zei- (24) chen wan die nature stercket sich. Und der siechtg mynret sich. Ist aber die adir (25) des ersten starg und mynret sich von slage

⁷ For other *Fünfbilderserie* vein and artery figures see Karl Sudhoff, *Studien zur Geschichte der Medizin*, vols. 1 and IV, Leipzig, Johann Ambrosius Barth, 1907 and 1908. See also his 'Abermals eine neue Handschrift der anatomischen Fünfbilderserie', *Sudhoffs Arch. Gesch. Med.*, 1910, 3, 353–68. In Tafeln VIII and IX of this article Sudhoff has confused the artery and vein men. See also Ernst Seidel and Karl Sudhoff, 'Drei weitere anatomische Fünfbilderserien aus Abendland und Morgenland', *ibid.*, pp. 165–87. For a blood-letting figure, and one that is almost a line-for-line replica of the Wellcome, see Karl Sudhoff, 'Eine Pariser "Ketham"-Handschrift aus der Zeit König Karls VI (1380–1422)', *ibid.*, 1909, 2, 84–100.

⁸ George Sarton, *Introduction to the History of Science*, vol. II, Baltimore, Williams & Wilkins, 1931, p. 440.
⁹ *Ibid.*, p. 441. See also Rudolf Creutz, 'Der Frühsaleritaner Alfanus und sein bislang unbekannter "Liber de pulsibus"', *Sudhoffs Arch. Gesch. Med.*, 1936, 29, 57–83. The historical background of Alfanus's tract, which precedes that of Egidius by almost 100 years, is discussed on pp. 58–60; Egidius is discussed on pp. 75–6. Alfanus's pulse tract contains sections defining the pulse, describing various kinds of pulse and classifying them. The last section is diagnostic: 'De praesagio vitae vel mortis per pulsum.' The Wellcome pulse text is confined mainly to this last section.

zu slage, daz ist ein bosz zeichen, wenn (26) die sucht nympt ubir sich zuhand und die natur und daz lebin krencket sich. Item (27) du salt mercken das man des menschen krafft und sine nature an dem pulse vindet. (28) Wan ist daz hertz starg, so ist die adir och starg, und ist daz hertz krang, die adir (29) ist och krang.

Nu hab ich gesait wie man die adir greiffen sal und mercken (30) des meschen [*sic*] siechtum. Nu wil ich sagen was eine itzliche adir bedudet. Is spricht (31) Meister Egidius. Die ader grosz und starg an einem gesunden menschen, daz bedudet (32) ein gesunden menschen an dem hertzen und miltzen und ein frolich mensch und (33) daz ym die glidder gesunt sint von natur. Ist abir die adir grosz, und slecht dratt (34) und snell in eynem siechtage, daz bedudet ein bosz unreyn hitze und ein krangheit (35) aller glider und grosz ungemach umb die brust und umb das hertze. Eyne cleine (36) adir an einen gesunden menschen bedut eine kalte natur und einen krancken menschen (37) und eine abnemunge an dem libe und ein triwiger krang hertze. Ist abir die adir (38) klein in einem siechtagen, daz ist ein bosz tzeichen und allermeist ab der sieche eyn (39) bosz unrein hitz an ym hat und die adir ie von tage zu tage mynner wirt. Das (40) bedut daz des menschen lebin hen gad und der siechtag den menschen verterbit.

(41) Slecht die adir snell und dratt an einem gesunden menschen, daz bedut eine (42) hitze und dur der natur und einen gochzornigen menschen, des zorn doch schire (43) hen ist, also daz die adir klein sie. Ist si abir in einem siechtage und der mensche (44) vil hitztze [*sic*] hat, daz bedut ane zwifel eine sucht und groze krangheit der brust (45) und des herzen von uberiger hitz. Eyne trege adir an einem gesunden menschen (46) bedut eine kalte durr natur und daz der mensch wendig fuchtikeit an ym hat (47) in allem sinen libe. Ist si abir weich und grosz, daz bedut eine kalte fuchte nature (48) des menschen.

Etzwenne duncket einen die adir grosz, und zo er doruff greiff z: (49) swindet si und sint ynnen leer, daz bedut daz die fuchtikeit des menschen vor- (50) swunden ist und daz lebin an alle synen libe abe nymmet, als die, die an der lungen siech (51) sint und die von uberiger hitz vordurret sint. Etzwenne duncket dich die adir (52) grosz und dornoch klein, etwenn dratt und trege. Daz bedut daz die nature (53) macherhand an vechtung hat und mancherlei siechtage, als man siecht in eynem (54) wasser daz mancherhande winde hen und her tribent.

Nu merck waz ich dir (55) sag von den adren; zo wirt die meisterschaft bewart und magist gotes hulde und (56) der werlde lop erwerbin. Als man uff die adir greift mit vier fingern, slecht si (57) undir allen vieren, daz ist gut. Slecht si abir nicht undir den zweien fingern (58) kegen des siechin hand und slecht kegin dem ellebogin des siechen, und daz be- (59) dut ein end und den tod des menschen sichirlich wen die natur und kraft (60) mag den slag der adir von dem hertzen nicht verre bringen.

Nu mercke (61) och mee. Ist die adir wendig und von tage zu tage, von slage zu slage, zu nympt (62) und grozit, daz bedut ein zu nemend leben. Nymmet si abir ab, und der sieche (63) von tage ze tage krenckir wirt und hitz hat, der mensch ist todlich an allen (64) zwifel. Bessirt sich abir der mensch also daz er wol slaffen mag und daz er (65) kreftiger wirt und sich die hitze mynret und die adir sanfte und gemechlich (66) slecht, daz ist ein gut zeichen wan is bedut daz der strit des siechtagen kegen (67) der natur ist zergangen und daz lebin gesiget hat.

Du salt mercken wenn (68) die adir klein wirt also daz du er kum entphindest und daz si gedratt slet (col. 2, line 1) und zittred, zo wisse das der siechtage denn nahe ist. Du salt och wissen (2) das von uberiger hitze die adir dicke vorswindet, noch einer sucht, das (3) man er nyt entstat wedir is den tod odir daz lebin bedudet, das wil (4) ich dir sagen. Ist das harn des menschen luter ist und der zu keller oben (5) in dem harn nyt swartz ist und aber rot odir swartz gewesin ist und dor- (6) noch och luter wirt und daz die wulken in dem harn wisz sint und sich zu- (7) samen sencket, so wisz sicherlich daz der mensche genesin wil. Zu gli- (8) cher wise enpfindestu der adir nicht an dem menschen der hitz und krangheit (9) und der harn ungestalt ist — swartz odir bleichfar odir grune — der mensche, der (10) stirbet. Ist daz die natur des menschen feist und daz an dem antlitze eyne (11) roti geunschlet ist und doch nyt zo feisti als ym daz antlitz geswullen si und (12) och nyt ze mager und och umb den mund nicht zebleich ist und ym der puls (13) wider zesnell noch zelangsam slecht und der harn wider ze wisz noch ze rot (14) ist noch ze dunne, das bedudet ein gesunden menschen.

(1) If you want to feel the pulse, you should do so with your right hand (2) on the left arm of the sick person, for his heart is on the left side. And (3) with your left hand take the left arm of

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the sick person very carefully (4) so that the pulse is not disturbed. Then feel (5) the pulse with the five fingers of your right hand. If the man (6) is fat, you must press hard against the artery; but if he (7) is lean, grasp the artery gently. If he is of medium weight, that is, neither (8) too fat nor too lean, grasp it in moderation. Then notice whether the (9) artery or the pulse beats rapidly or slowly, weakly or strongly, and whether over a short or long distance.¹⁰ (10) A long artery is one that is grasped with five fingers; a short artery (11) is grasped with two fingers. A rapid artery is one that moves up and down (12) quickly, but a slow artery beats slowly. One can hardly feel a feeble artery. (13) A strong artery is easy to find since it beats hard against the finger.

(14) You should know that men have stronger arteries than women, and that young people (15) have stronger arteries than old people. And in summer (they beat) quicker than in winter. You should also (16) notice that those who are of a hot and moist nature have a strong pulse (17) both rapid and long. Those who are of a cold and dry nature have a (18) weak and slow pulse. If the man is hot and dry, (19) his pulse will be weak and rapid. If the man is cold and moist, the pulse (20) is slow, short, and strong. Heat makes the pulse rapid; moisture makes it strong; dryness makes it weak; cold (21) makes it slow.

You should place the fingers on the artery as Master Egidius (22) says, and do nothing until the pulse has beaten three times.¹¹ If it (23) is weak at first and becomes strong, that is a good sign (24) since nature is being strengthened and the sickness is diminishing. If, however, the artery (25) is strong at the beginning and diminishes from beat to beat, that is a bad sign, for (26) the disease will take over right away, and both nature and life will weaken. Item: (27) note that one finds out men's power and nature in the pulse. (28) When the heart is strong, the artery is also strong, and if the heart is weak, the artery (29) is also weak.

Now I have told how one takes hold of the artery, so as to detect (30) the sickness of men. Now I will tell what every artery means. (31) Master Egidius says: When the artery is strong and vigorous in a healthy man, that means (32) a healthy man in heart and spleen and also a joyous man and (33) one whose members are by nature healthy. But if the artery is strong and beats rapidly (34) in sickness, that means a bad impure fever and a sickness (35) of all members and serious discomfort around the breast and heart. A feeble (36) artery in a healthy man means a cold nature, a sickly man, (37) a loss of weight in the body, and a truly weak heart. But if the artery (38) is weak in sickness, that is a bad sign, especially if the sick man has contracted a (39) bad impure fever and the artery gets weaker every day. That (40) means that the man's life is ebbing and the disease is destroying him.

(41) If the artery beats rapidly in a healthy man, that means a (42) hot and dry nature and an irascible man whose anger is however soon gone (43) so that the artery will clear it up. If it is during illness, however, and the man runs (44) a high temperature, that means without doubt a disease and a serious ailment of the breast and (45) heart from too much fever. A slow artery in a healthy man (46) means a man of cold dry nature with little moisture (47) in his body. But if it is soft and strong, that means a cold moist nature.

(48) Sometimes the artery seems strong; one should take a grip on it. (49) If it shrinks away and feels empty, that means the moisture of the man has (50) disappeared, taking away the life from the body, such as those who are diseased in the lungs (51) and those who are dehydrated from superabundant heat. Sometimes it seems that the artery is (52) strong and then weak; sometimes rapid and slow. That means that the man's nature (53) is highly susceptible to disturbances and to various maladies, as one observes in a (54) lake that variable winds drive here and there.

Now mark what I say to you (55) about the arteries, and thus will your mastery be preserved and you may gain the grace of God and the praise (56) of the world. When one holds the artery with four fingers, and it beats (57) under all four, that is good, but if it does not beat under two fingers (58) held against the sick man's hand but beats against the elbow of the sick man, that (59) surely means an end and the death of the man since his nature and strength (60) cannot bring the beat of the artery far from the heart.

¹⁰ 'Lang' and 'langsam' are used to mean both *slow* (as opposed to 'snell') and *long* (as opposed to 'kurtz', i.e. an artery that is grasped by five fingers rather than two).

¹¹ Line 22: 'three times' doesn't make sense and should undoubtedly be changed to 'three minutes', but I have so far not found any justification in dictionaries for translating 'driestunt' this way.

Now mark (61) also further: if the artery is small and from day to day and from beat to beat gets bigger (62) and increases in size, that means an improving constitution. However, if it shrinks and the sick man weakens (63) from day to day and has fever, the man is fatally ill beyond a (64) doubt. But if the man improves so that he sleeps well and (65) gets stronger, and the fever lessens and the artery beats softly and slowly, (66) that is a good sign. It means that the battle of the disease against (67) nature is over and life has won.

You should note that when (68) the artery gets so weak that you can scarcely feel it and it beats very rapidly (col. 2, line 1) and quivers, sickness is nigh. You should also know (2) that under excessive heat or sickness the artery wastes away so that one cannot (3) determine whether it means life or death; I will (4) tell you how. If the man's urine is clear (5) and not black up in the neck (of the flask) but rather having been red or black later (6) becomes clear, and the clouds in the urine are white and they sink (7) together, then you may be sure that the man will get well. In the (8) same way if you cannot feel the artery of a man who is hot and sick (9) and his urine is dirty—black, pale, or green—this man will (10) die. If a man's nature is fat and (11) his face is flushed and yet not so fat as to be swollen, (12) and neither too thin nor too pale around the mouth, and when the pulse beats (13) neither too fast nor too slow and the urine is neither too white nor too red (14) nor too thin, that indicates a well man.

THE INVENTORY OF JOHN HEXHAM, A FIFTEENTH-CENTURY APOTHECARY

by

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THE inventory transcribed below is believed to be the earliest one relating to an English apothecary and is of importance for the light it throws on English pharmacy at the beginning of the fifteenth century.

Origin and Nature of Document

The existence of the inventory was suspected when an abbreviated transcription was noted in the British Museum.¹ This formed part of a collection of medical abstracts and transcriptions made by Joseph Hunter (1783–1861), when he was a member of the staff of the Public Record Office. On his death these manuscripts were purchased by the British Museum. Following this clue, and with the kind assistance of Mr. R. E. Latham on the present staff of the Public Record Office, the original inventory was located in the Escheator's Files.²

It consists of a single sheet about 28 by 25 cm., containing twenty-nine unbroken lines of abbreviated Latin and English. As reproduced below it has been extended, punctuated, the abbreviations *li.*, *quatr'*, and *unc'* rendered as *lb.*, *qr.* and *oz.*, Roman numerals have been converted into Arabic ones and, except for the first item, the word or abbreviation meaning 'price' (*pretii*) has been omitted. To facilitate discussion each item of the inventory has been given a number.

The inventory was compiled for an inquisition held at London before William Crowmer,³ mayor and escheator, on 30 April 1415, and relates to the goods and chattels of John Exham or Hexham (the document has both spellings), late apothecary of London, who had been hanged for coining false money.

It lists the names of the twelve-man jury who swore to the contents of the inventory and several of these are mentioned in the London Letter Books. John Boner was a