5. Now have all these things taken place in the breasts and uteri because the instruments themselves knew by a certain power of reason what they had to do? But if so, would they not cease to be instruments at all and become reasoning animals instead, understanding the proper time and duration of motion? And if, on the other hand, you add to their structure a certain natural necessity that leads to these motions, will they not be kept instruments and parts of the animal, and will they not show forth the wonderful skill of the Creator? For just as there are those who imitate the revolutions of the wandering stars [the planets] with models which by means of certain instruments they endow with the principle of motion and who go away themselves while the instruments [continue to] act as if their creator were present and always controlling them, so in the same way, I suppose, each of the bodily parts by a certain consecution and succession of motion always from the very beginning acts without needing a supervisor. As for us, even if we cannot set forth clearly all the works of Nature (for they are exceedingly hard to explain), we must at least make an attempt to comprehend them all. [. . . .]

[W]e should seek to explain the nature of the male and of the female; for to me, at least, [the answer to] this problem seems to be like a source and fount for the explanation of the others. Well, then, Aristotle was right in thinking the female less perfect than the male; he certainly did not, however, follow out his argument to its conclusion, but, as it seems to me, left out the main head of it, so to speak, which I shall now attempt to add, making the demonstrations correctly given by Aristotle and still

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earlier by Hippocrates the bases of my discussion and working out myself whatever is lacking to complete it.

6. The female is less perfect than the male for one, principal reason—because she is colder; for if among animals the warm one is the more active, a colder animal would be less perfect than a warmer. A second reason is one that appears in dissecting. This is the particular matter which I just now hinted would be hard for me to explain, but since opportunity calls, I must essay it, and you who are reading these writings must not pass judgment on the whole truth of it unless you have first observed for yourself the things that I have described; for I well know that the sight of the parts will add what the argument lacks.

All the parts, then, that men have, women have too, the difference between them lying in only one thing, which must be kept in mind throughout the discussion, namely, that in women the parts are within [the body], whereas in men they are outside, in the region called the perineum. Consider first whichever ones you please, turn outward the woman’s, turn inward, so to speak, and fold double the man's, and you will find them the same in both in every respect. Then think first, please, of the man’s turned in and extending inward between the rectum and the bladder. If this should happen, the scrotum would necessarily take the place of the uteri, with the testes lying outside, next to it on either side; the penis of the male would become the neck of the cavity that had been formed; and the skin at the end of the penis, now called the prepuce, would become the female pudendum [the vagina] itself. Think too, please, of the converse, the uterus turned outward and projecting. Would not the testes [the ovaries] then necessarily be inside it? Would it not contain them like a scrotum? Would not the neck [the cervix], hitherto concealed inside the perineum but now pendent, be made into the male member? And would not the female pudendum, being a skin-like growth upon this neck, be changed into the part called the prepuce? It is also clear that in consequence the position of the arteries, veins, and spermatic vessels [i.e., the ductus deferentipes and Fallopian tubes] would be changed too. In fact, you could not find a single male part left
over that had not simply changed its position; for the parts that are inside in woman are outside in man. [. . . ]

Now animals differ widely in their natures, as Aristotle has shown at great length. First there are some that are [not far] removed from the plants, and these are the most imperfect, having only the sense of touch; such are most of the testacea, which have not only no sensory instrument but also no well-formed member or viscus and lack little of being plants. Farther removed are those that are able to taste, farther still those that have an instrument for smell, and much farther even than these are the ones that have an instrument for hearing. Animals that have both these instruments and also one for sight are close to being perfect, and such are the fish, though they have neither hands nor feet. The lion and dog, however, have not only feet, but, in a manner of speaking, hands too, and this is true to an even greater degree of bears and apes. But only mankind has a hand actually perfected and the reasoning power to use it as well, a power than which there is nothing more godlike in mortal animals.

Now just as mankind is the most perfect of all animals, so within mankind the man is more perfect than the woman, and the reason for his perfection is his excess of heat, for heat is Nature’s primary instrument. Hence in those animals that have less of it, her workmanship is necessarily more imperfect, and so it is no wonder that the female is less perfect than the male by as much as she is colder than he. In fact, just as the mole has imperfect eyes, though certainly not so imperfect as they are in those animals that do not have any trace of them at all, so too the woman is less perfect than the man in respect to the generative parts. For the parts were formed within her when she was still a fetus, but could not because of the defect in the heat emerge and project on the outside, and this, though making the animal itself that was being formed less perfect than one that is complete in all respects, provided no small advantage for the race; for there needs must be a female. Indeed, you ought not to think that our Creator would purposely make half the whole race imperfect and, as it were, mutilated, unless
there was to be some great advantage in such a mutilation. [. . .]

Forthwith, of course, the female must have smaller, less perfect testes, and the semen generated in them must be scantier, colder, and wetter (for these things too follow of necessity from the deficient heat). Certainly such semen would be incapable of generating an animal, and, since it too has not been made in vain, I shall explain in the course of my discussion what its use is. The testes of the male are as much larger as he is the warmer animal. The semen generated in them, having received the peak of concoction, becomes the efficient principle of the animal. Thus, from one principle devised by the Creator in his wisdom, that principle in accordance with which the female has been made less perfect than the male, have stemmed all these things useful for the generation of the animal: that the parts of the female cannot escape to the outside; that she accumulates an excess of useful nutriment and has imperfect semen and a hollow instrument to receive the perfect semen; that since everything in the male is the opposite [of what it is in the female], the male member has been elongated to be most suitable for coitus and the excretion of semen; and that his semen itself has been made thick, abundant, and warm. [. . .]

The [female semen], then, clearly stands absolutely in need of the male and if so, is necessarily mixed with it, and one motion results from the two combined; for it is impossible for one semen to move in one way and the other in another, and still contribute to the generation of a single animal. In short, to think that there is one path and order of motion for the female semen and another for the male is the mark of men untrained in logical reasoning about natural things. For whether it is the female semen or the blood descending into the uterus that brings with it a principle of motion, this will doubtless govern exactly the same motion as that in which the male semen shares. [. . .]

Hence it is better to suppose that the male semen represents the principle of motion and that the female contributes something to it toward the generation of the animal. How great this something is which she contributes I shall tell a little later on, as
soon as I have finished all the present discussion. [. . . ]

Well, then, where the vena cava first arises from the liver and still suspended, bends down along the spine, it has the right kidney lying to the right of it and next, a little lower down, the left kidney lies on its left. There is an outgrowth of a very large venous vessel \(v.\ renales\) from it into each kidney, and there is also to be seen below these another couple of vessels \(aa.\ renales\) just as large, issuing from the largest artery \(the\ aorta\), that lies along the spine, and, like the veins, these are inserted into the kidneys. But inasmuch as the right kidney lies near the liver and the left lower down, the vessels inserted into them are the only ones to be allotted one special characteristic not to be found in any other vessels arising either from the vena cava or from the great artery. For all the others grow out as pairs from the same sites in each of the vessels \(the\ vena\ cava\ and\ aorta\), but the veins and arteries to the kidneys do not make their exits from the great vessels at the same sites; the exit of the vessels for the right kidney is as much higher than that of the vessels for the other one as the right kidney is higher than the other. Next after these vessels a pair of arteries and a pair of veins pass to the generative parts, and these ought to start from the same sites; for no longer does one pair reach an elevated instrument and the other a low one, the left uterus having the same position as the right, and both testes being similarly placed. Of the vessels that pass to the generative parts, however, the ones \(a.\ and\ v.\ ovarica, a.\ and\ v.\ spermatica\ interna\) going to the right uterus and right testis start from the great vessels themselves that are along the spine, the vein from the vena cava and the artery from the great artery, but those that reach the left testis in the male or the uterus on that side in the female (and there are two of these vessels, one artery and one vein) do not start from the great vessels themselves, but from the vessels passing to the kidneys.

Hence it is clear that the left testis in the male and the left uterus in the female receive blood still uncleansed, full of residues, watery and serous, and so it happens that the temperaments of the instruments themselves that receive [the blood] become different. For just as pure blood is warmer than blood full of residues, so too the
instruments on the right side, nourished with pure blood, become warmer than those on the left. And further, these parts had the advantage in position from the very beginning; for I have demonstrated many times the correctness of Hippocrates’ statement that parts lying in a straight line necessarily get greater benefit from one another. So do not be surprised any more if the right uterus and the testis lying on that side are very much warmer than those on the left, because they not only are nourished differently, but have also been placed in a straight line with the liver. Moreover, if this has been demonstrated and it has been granted that the male is warmer than the female, it is no longer at all unreasonable to say that the parts on the right produce males and those on the left, females. In fact, that is what Hippocrates meant when he said, “At puberty, whichever testis appears on the outside, the right, a male, the left, a female.” That is to say, when the generative parts first swell out and the voice becomes rougher and deeper—for this is what puberty is—Hippocrates bids us observe which of the parts is the stronger; for of course, those that swell out first and have a greater growth are the stronger.