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from the Author
10.
NOTICE

OF

AN UNPUBLISHED MANUSCRIPT

OF

HARVEY.



BY

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N O T I C E
OF
AN UNPUBLISHED MANUSCRIPT
OF
WILLIAM HARVEY.

IN the Sloane-Collection of MSS. at the British Museum is a 12mo. Volume on which is written in Sir H. Sloane's hand, "*Gulielmus Harveius de Musculis, motu locali, &c.*" It is numbered 486 in Ayscough's Catalogue.

The genuineness of this MS. was until lately considered by the best judges as at least doubtful, and the extreme rarity of Harvey's handwriting had prevented the application of any test that could furnish a satisfactory solution of the doubt. Very recently, however, a scrap of his writing was found at Cambridge, preserved in the Library of Sidney College. Facsimile copies of this were taken in lithograph; and one of them having been presented to Dr Paris, the President of the College of Physicians, was placed by him in the hands of Mr Holmes of the British Museum, with a view to its comparison with the MSS. in the Museum-Library. The result was that Mr Holmes identified the writing of the letter and the MS., and determined the latter to be entirely in Harvey's own hand. If the comparison had left any doubt, this would have been speedily removed by the discovery of Harvey's initials W.H.* written in a peculiar manner in many parts of the MS.

* Pointed out to me by Sir F. Madden, to whom I am under further obligations for his ready assistance in decyphering some of the passages which I was unable to read.

The scrap of Harvey's writing which has served to identify this MS. is a short hasty letter in reply to one from Dr Ward, the learned Divine and stout-hearted Royalist, who was Master of Sidney College from 1609 to 1643.

Dr Ward's letter is as follows :

SIR,

I receyved y^r lett^r by w^{ch} I understand his Ma^{ty}s pleasure that I should send up the petrifyed Scull, w^{ch} wee have in o^r Colledg library, w^{ch} accordingly I have done, wth thee case wherein we keep it. And I send in this Lett^r both thee key of the case and a note w^{ch} we have recorded of the Donour & whence he had it. And so with my affectionate prayers & best devotions for the long life of his sacred Ma^{ty} & my service to y^r self I rest

At y^{ur} command

SAMUEL WARD.

Sidney Coll. Junii X.
Die Solstitiali.

The address is

To his much honoured
frend D^{tor} Harvey one of
his Majestys Physitians
att his howse in the
Black-fryars be this drd.

The following is Harvey's reply :

*Mr Doctor Ward I have showed to his M^{ty}
this scull incrustated wth stone, w^{ch} I receyved
from you, & his M^{ty} wondered att it & look'd content
to see soe rare a thinge. I doe now wth thanks
retorne to you & you^r Colledg the same wth the key of
the case & the memoriall you sent me inclosed
hearein thinking it a kinde of sacriledg not
to have retorned it to that place where it may
for the instruction of men heare after be conserved.*

The letters and skull have been preserved in a small ancient cabinet of carved oak, which stands in the Library of Sidney College. The skull is very curious. It is that of a young person, and is incrusted with carbonate of lime, which is very hard and compact, and is spread over the bone in such a manner as to resemble a petrification of the soft parts. The "note of the Donour" states that he was Capt. William Stevens of Rotherhithe, one of the Elder Brethren of the Trinity, and that he brought the skull in 1627 from Crete, where it was discovered about ten yards (*circiter passus decem*) below the surface of the ground, in digging a well near the town of Candia.

This is the only English letter of Harvey's that has ever yet been published. Of his handwriting but little remains. The only known specimens, besides the MS. and letter here described, are

1. A letter in the possession of Mr Dawson Turner.
2. A note of money due out of the Exchequer for his pension, April 21, 1642. This is preserved in the College of Physicians.
3. His Signature in the *Liber Computorum* of Merton College, 1645. Of this Mr Pettigrew has given a facsimile in his Medical Portrait Gallery.
4. His Signature to the Court-Apothecary's bill, preserved in a private Collection of Autographs.

It seems not unreasonable to expect the discovery of other MSS. of Harvey. We know that in 1766, when the College-Edition of his works was published, there was in the British Museum another MS.*, which, like the one we have been considering, consisted of notes for a course of

* See Harvey's Life in that edition, p. iii. and xxxi.

lectures. The subject was *Anatomia Universa*, and the value and interest of the MS. were enhanced by its containing the chief propositions respecting the circulation of the blood, and (in the index) the date April 1616, *i. e.* twelve years prior to the first publication of the great work *De Motu Cordis et Sanguinis*. This MS. has of late years been sought for in vain, but doubtless it still exists, and will, sooner or later, be found.

We might even hope for the discovery of other works of Harvey. We know that he was rather averse from publishing; and we know that his investigations were pursued through the greater part of a very long life, and extended to many departments of Physiology. In the Life prefixed to the College-Edition of his works we are informed that he had written

Observationes de usu lienis.

Observationes de motu locali.

Tractatum Physiologicum.

Observationes Medicinales.

De Amore, Libidine et Coitu animalium.

In the same place it is stated that all these writings, together with observations on the generation of insects, perished when his house was plundered by parliamentary soldiers in the civil war. No authority is given for this statement; and its correctness may justly be disputed. In regard to more than one of the writings it is almost certainly erroneous.

Aubrey, who had from Harvey himself the fact that he had thus lost some very valuable papers, tells the story as follows: "He had made dissections of frogs, toads, " and a number of other animals, and had curious obser-

“vations on them, which papers, together with his goods, “in his lodgings at Whitehall, were plundered at the beginning of the Rebellion; he being for the King and with him at Oxon*.” From this account we should infer that the papers that were lost were not on any of the five subjects above mentioned, but rather on Comparative Anatomy or Natural History.

Besides, let us consider the time of the occurrence. The “beginning of the Rebellion” fixes the date probably in 1642. In that year Charles I. left London; in August he raised his standard at Nottingham, and the civil war commenced. In October of the same year was fought the battle of Edge-hill, at which Harvey was present. Soon after this he retired with the King to Oxford, where he remained until 1646, when he returned to London and began to live with his brothers. It is therefore certain that this loss of his papers at Whitehall could not have occurred subsequently to 1646.

Now the *Observationes Medicinales* are referred to, and their future publication promised, in works that were written by Harvey long subsequently to 1646. They are thus referred to in his second Exercise addressed to Riolan. *Ex. gr.* “*De quibus omnibus, in observationibus meis medicinalibus, admiratione digna tradam*” (Coll. Ed. p. 129). and “*Inter Medicinales Observationes, et in pathologia, ea tradere potero, quæ nunquam hactenus a quovis observata comperio*” (*Ib.* p. 141). This Exercise was first published at Cambridge in 1649, and was in answer to part of a work of Riolan’s which had been published in the same year. It is manifest, therefore, that the *Observationes Medicinales* could not have been lost at Whitehall, but were in Harvey’s own possession in 1649.

* Aubrey’s Letters and Lives.

For similar reasons, it is most probable, that what he had written "*De Amore, Libidine et Coitu Animalium*" was in existence in 1650, the year in which his Treatise on Generation was published. (See the end of the 6th Chapter.)

There are indications in Harvey's published works of his having made other researches besides all those which have been enumerated. Thus, in his letter to Slegel (1651) he mentions that he had been preparing an answer to Riolan's more recent arguments. Again, in Chap. vi. of the Treatise on the Circulation is a passage which shows that he had assiduously investigated the physiology of the lungs; and that his researches had not been unattended with success may be inferred not only from the terms in which he mentions them (*multa quamplurimis observationibus a me deprehensa*), but also from the remarkable passage in his Chapter on Parturition, which indicates that he had obtained a glimpse, at least, of one of the true uses of air in respiration.

If any further argument be needed to prove that many writings of Harvey's must have existed and been in his own possession subsequently to the plundering of Whitehall, we may be satisfied by the following extract from his will. "Touching my bookes & household stufte Pictures
 "& apparell of which I have not already disposed, I give
 "to the Colledg of Physicians all my bookes & *papers* &
 "my best Persia long Carpet & my blue Sattin imbroye-
 "dyed Cushion one paire of brasse Andirons with fire-
 "shovell & tongues of brasse for the ornament of the
 "meeting-roome I have erected for that purpose Item I
 "give my velvet gowne to my lo friend M^r Doctor Scar-
 "brough desiring him & my lo friend M^r Doctor Ent to
 "looke over those scattered remnant of my poore Librarie

" & what bookes, *papers* or rare Collections they shall
 " thinke fit to present to the Colledge & the rest to be
 " sold & with the money buy better*."

It is therefore certain

1. That Harvey wrote much more than has yet been published.
2. That many of his writings which are supposed to have been lost or destroyed at the plundering of Whitehall did not so perish, but were in Harvey's own possession long subsequently to that occurrence.

And it is probable

That some of his unpublished papers passed after his death into the hands of Drs Scarbrough and Ent, and from them to the College of Physicians. It is at least presumable that these papers were valuable, and it is surprising that they were never published, the more so when we consider the estimation in which Harvey was held. His dissection of Thomas Parr, the MS. of which was in private hands, was published in 1669, *i. e.* twelve years after his death; and some Anatomical notes attributed to him were read at a meeting of the Royal Society in 1687, and published in their proceedings. Yet of his papers bequeathed to the College of Physicians we know nothing, except that they cannot now be discovered, and have probably been out of the possession of the College for a very long time. It may be conjectured that they perished in the great fire of London, when, as we know, the College of Physicians was destroyed; but this is merely a conjecture, and is somewhat weakened by the fact that the Annals of the College, written by Dr Caius, the second

* Harvey's Works, edited by Dr Willis, for the Sydenham Society.

President, have been preserved to the present day. "*Omnia periere,*" says Dr Walter Charlton, referring to the conflagration of the College, in his Harveian Oration for the year 1680; but he does not specially mention manuscripts among the valuables that were destroyed.

These prefatory remarks have been extended somewhat further than was intended, but are, nevertheless, published under the hope that they may possibly induce a search, and that the search may end in the discovery of additional MSS. of Harvey.

It remains to give an account of the one which has recently been identified in the British Museum.

No one at all acquainted with the progress of Anatomy and Physiology could expect that any substantial addition to our knowledge of these sciences would be derivable from writings more than two centuries old. It could not reasonably be expected even from a work of the great discoverer of the Circulation. The lamp which was kindled by his genius has been burning long and brightly, and with the aid of its light many a page in the book of nature has been examined and decyphered. Moreover, this MS. of Harvey's is not an elaborate work; it consists, indeed, only of rough notes. Nevertheless, there may be some persons by whom any production of so great a mind will be regarded with interest; and to a Fellow of the two Colleges and pupil of the Hospital, that love to claim a connexion with William Harvey, it has seemed a natural duty to give some account of what is at all events a genuine relic.

The MS. consists of a hundred and twenty-one leaves, nearly all of which are written on both sides. Its contents are rough and concise notes, forming a syllabus of a

course of Lectures on the Muscles of the human body. The language is Latin, interspersed here and there with English words or phrases. The writing, besides being antiquated in style, is for the most part surprisingly bad; it can be decyphered only with great difficulty, and many words are wholly illegible. Any extracts that can be given must on this account be imperfect. Those persons who have seen the MS. will excuse the imperfection. Those who have not, may call to mind that two of Harvey's contemporaries and friends particularly mention the badness of his writing, and make a merit of being able to read it. Aubrey in his "Letters and Lives," says, "He wrote a very bad hand, which with use I could pretty well read:" and Ent, in his Dedication to the Treatise on Generation, says, "*cum auctor noster ita pingere soleat ut vix quisquam, nisi assuetus, facile legendo sit; sedulo operam dedi, ut ne hanc ob causam multum a typographo peccaretur.*"

The MS. shows, moreover, that a hasty mode of writing was the chief cause of its badness; for some words in the more important parts—such as the principal divisions of the subject—are written well enough. The haste is equally shown by frequent omissions of letters, imperfectly formed words, and some solecisms in grammar. There are interpolations in a darker ink than that which is used in the body of the MS.; and some words are roughly underlined with red chalk.

Harvey's initials, W. H., are placed against many passages, and occur thrice in the first page. They are written in a peculiar manner with the two letters united, thus *WH*. The frequency of their occurrence, and the trivial nature of some of the passages to which they are prefixed, indicate great care on Harvey's part to dis-

tinguish his own ideas from those which he had acquired at other sources. The following is an example—

“ *Serratus Major*

W Great Jagged Muscle.

O. *Scapulæ Basi interior coraco*

W Δ *Shoulder of Mutton.*”

The last line shows another mark Δ , which occurs in some parts of the MS., but less frequently than W.

On two pages is the date 1627, *i. e.* twelve years after his appointment to be Professor of Anatomy and Surgery at the College of Physicians, and the year before the first publication of his great work *De motu Cordis et Sanguinis*.

The first sixty-eight pages are occupied with anatomical descriptions of the muscles, beginning with the Pectoral, thus—

“ *Pectoralis a situ mammillaris*

pentagonus a fig^a 5 linearis et clypeiformis
&c. &c.”

The following is a specimen of Harvey's mode of describing a muscle:

“ *Serratus Minor à forma*

W Lesser Jagged Muscle

Brawn (?) muscle of a fowle.

Substratus pectorali

figura triangular.

O. a costis	{	2	}	<i>paulo antequam fiant</i>	
		3			<i>chartilaginei</i>
		4			
		5			
		6 raro (?)		<i>Carneus digitatim.</i>	

*sursum obliq. versus articulum angustior reditus fibrarum
vario ductu et plures.*

*D. Scapulæ juxta coracoid. intern.
Tendine partim nervoso carnos.*

*Usus. Varie scapulam adducit
et pectus elevat
unde Tabidis et magnis respir.
sursum Humeris elevatis
unde alii **"

The muscle here described is obviously that which is now called the Pectoralis Minor. The extract is sufficient to show how completely the mode of describing a muscle by its origin, insertion, and use, had been established in Harvey's time.

To some of the muscles he gives quaint names. Thus to the *Pedis Tibialis posticus*, he adds "*W* Tiptoe muscle."

In addition to the muscles of the arm and leg, he describes also the veins, arteries and nerves of those parts. It was doubtless his practice so to demonstrate them to his audience, in the course of his lectures on the muscles. To his description of the vessels and nerves of the arm, he adds :

"N.B. *W*. *Hæc omnia maxime incerta et varia et difficil. propter incertitudinem in diversis corporibus propter tenuitatem et quia per commixtionem et separationem incertam et dubiam et confusam progress via credenda differentia.*"

* The incompleteness of this and other extracts is owing to the badness of the hand-writing.

On leaf 64 comes an enumeration of all the muscles of the body. They are grouped by regions, and their number is made to amount to 450. In a few pages after this, the descriptive anatomy ends with short comparisons of the muscles with one another, in respect to their *Situs, Figura, Magnitudo*, and *Partes differentes*, i. e. proportions of Flesh and Tendon.

On leaf 69 commences what may be called the Physiology, which is thus arranged under eight heads:

1. *De motu locali animalium.*
2. *Species motus localis animalium.*
3. *Motus localis secundum totum, vel Itio.*
4. *Movens in animalibus.*
5. *Moventium differentia.*
6. *Artus.*
7. *Manens.*
8. *De musculis cognoscenda.*

These divisions of the subject are considered separately and seriatim. The *Moventium differentia* are distinguished into five classes, as follows:

1. *Natura. Forma. Anima.*
- | | | |
|---------------------|---|--|
| | { | <i>Cogitatio, memoria.</i> |
| <i>Sensus</i> | { | <i>Intellectus, Opinio, scientia, ars.</i> |
| 2. <i>Appetitus</i> | { | <i>Electio, voluntas</i> |
| <i>et</i> | { | <i>Ira, timor, spes, amor</i> |
| | { | <i>Passio</i> { <i>odium, misericordia</i> |
| | { | <i>Invidia, verecundia</i> |
| | { | <i>Gratia</i> |
| | { | <i>Dolor, voluptas.</i> |

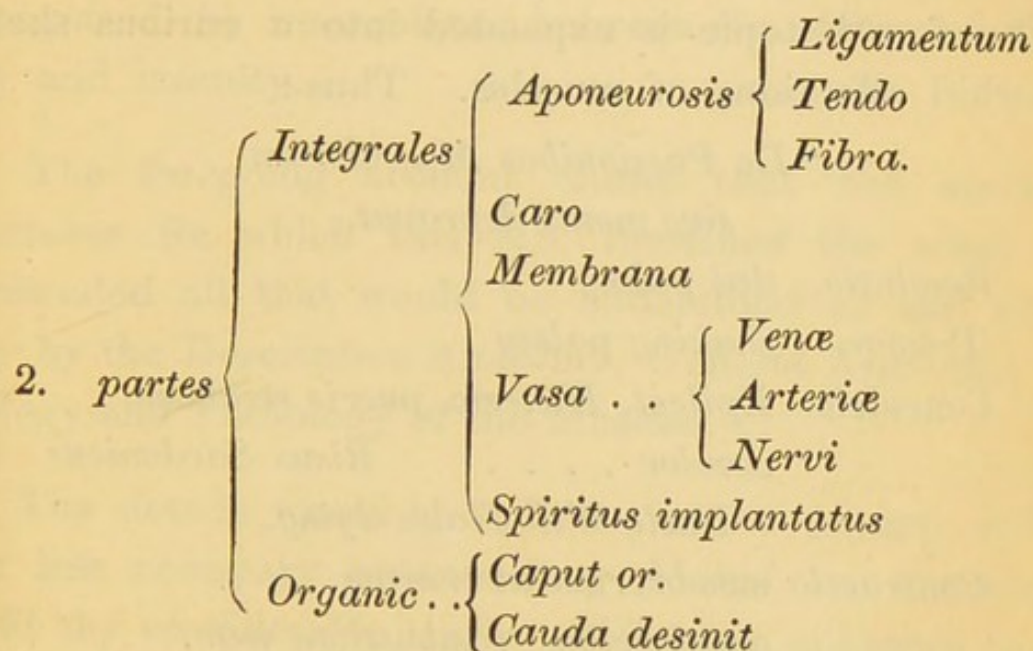
The other three classes include Physical Causes—heat, cold, &c.

The eighth of the chief divisions of the subject comprehends a variety of topics, having relation not only to the Anatomy and Physiology, but also to the Pathology of muscles. Thus

“*De Musculis Cognoscenda.*”

1. *Nomen, definitio, Natura.*

Arist. cognovisse.



3. *Actio.*

4. *Passiones muscul.*

5. *Utilitates.*”

The above reference to Aristotle, implying that he was acquainted with muscles—an opinion which would certainly be very difficult to maintain—may remind us of the remarkable saying of Harvey reported by Bishop Pearson, “*nihil fere unquam in ipsis naturæ penetralibus invenisse se, quia cum Aristotelem suum pensiculatus evolveret, idem ab illo aut explicatum aut saltem cognitum reperiret**.” Many references to Aristotle occur in the course of the MS. The only other author referred to is Riolan, in a description of the little psoas muscle.

* Dedication of Bishop Pearson’s edition of Diogenes Laertius.

Each of the topics of these *cognoscenda* is considered in its turn. Thus :

De Carne

WY Caro	{	<i>parenchyma</i>	{	<i>colis</i>
		<i>glandulosa</i>		<i>pudendi</i>
		<i>propria</i>		<i>uteri</i>
		<i>Musculorum.</i>		<i>intestinorum</i>
				<i>digitorum</i>

The fourth topic is expanded into a curious sketch of morbid affections of muscles. Thus :

“De Passionibus Musculorum

sive motus depravat.

- | | | |
|---|-----|--|
| { | 1. | <i>Resolutio. ded palsey</i> |
| { | 2. | <i>Tremor. shaking palsey</i> |
| { | 3. | <i>Convulsio. Epilept. Histeric. pueris strabism.</i> |
| | | <i>occulor Risus Sardonicus</i> |
| | | <i>Uncle Will Halse dying.</i> |
| { | 4. | <i>Contractio membrorum ut crurum . . .</i> |
| | | <i>a vulneribus, combustione item.</i> |
| | | <i>opisthotonos, emprosthotonos, tetanos</i> |
| { | 5. | <i>Cramp. flatulenta convulsio Δ planta pedis digit.</i> |
| | | <i>à superpurgatione</i> |
| { | 6. | <i>Twinges. Palpitatio convulsiva. Twitches cum levi</i> |
| | | <i>dolore et vel cum nullo Δ WY Mr.</i> |
| | | <i>Rant's ex.</i> |
| { | 7. | <i>Pulsus. Palpitatio flatulenta cum vel cutis vel</i> |
| | | <i>musculi attolluntur et deprimuntur ut</i> |
| | | <i>ebullitione, vel motu undoso.</i> |
| | 8. | <i>Pigrities. cum nullo dolore sed impotentia . . .</i> |
| | 9. | <i>Lassitudo cum levi dolore in aliquo membro vel toto</i> |
| | | <i>corpore cum tentant aliquid agere, movere.</i> |
| | 10. | <i>Crick. cum tentat movere—sed differt a lassitudine</i> |
| | | <i>quia differt a cramp quia non</i> |
| | | <i>nisi cum aggrediat. motu.</i> |

11. *Pandiculatio. oscilatio.*
12. *Horror, Rigor. differt a Tremore quia*
13. *Inquietudo*
obambulatio somno. decubitus vitiosus. mania.
Vitæ saltus."

The grouping together of mania and somnambulism is interesting. It seems to indicate that Harvey had recognised the resemblance between the states of dreaming and insanity.

The foregoing account shows that the course of Lectures for which this MS. furnished the notes comprehended all that would be understood at the present day by the Descriptive Anatomy, General Anatomy, Physiology and Pathology of the Muscles.

The details would be tedious to the reader, and are the less necessary because they do not on examination yield any considerable truths which were unknown to Harvey's contemporaries. One or two of his remarks may, however, be quoted. Thus, on the orderly movement of muscles, he cites, as from Aristotle, the apothegm "*Civitas bene instituta ubi nullus civis inutilis,*" and adds his own reflexion, "*Sic nullus musculus.*"

In the last few pages under the heading "*Similitudo*" are a number of queries, some of which are very quaint and curious. Thus

"An Cerebrum Rex circa utilia
Nervi Magistratus
Ramuli Nervorum officiales
Musculi Cives populus

*An Cerebrum Master : Spina his Mate.
Nervi Boteswayne
Musculi Saylor's"*

And similar Comparisons of the Brain with a Military Commander, the Leader of an Orchestra, an Architect, and the *Prius Motor*, and of the Nerves and Muscles with the respective subordinate officers.

On the opposite page we find

*"An Wy potius
Cor Imperator Rex
Cerebrum Judex, Serjeant Major, præpositi
Nervi duces Magistrat.
Ramuli decuriones Constables
Musculi milites

An Cor Captayne . factor . Owner.
Cerebrum Master of the Ship
Nervi Master's mates, boys, officers
Musculi nautæ"*

We may smile at Harvey's giving the predominance to his favourite organ, the heart; but we must not criticise the quaint style of his notes, remembering what they really are,—nothing but short notes intended for the eye of the lecturer alone, to serve as hints on which he might expatiate.

Another of his queries is the following :

*"An musculi in contortis (?) in actu motus
est dum majores et minores fiunt
vicissim, et sic relaxatio pars actionis
ut cordis systole diastole."*

Harvey's great work *De Motu Cordis et Sanguinis* has often and justly been cited as an admirable example of genuine inductive reasoning, and the more remarkable because probably composed before the publication of the *Novum Organon*. On the contrary, in his *Treatise on Generation* he rests more on authority and reasoning. So it is in these notes on the *Physiology of the Muscles*. They indicate that he was not wholly emancipated from the trammels of that system, which sought the advancement of knowledge by reasoning from dogmatical principles rather than by a direct appeal to observation. Thus, in one place, he proceeds to draw physiological inferences from the axiom "*boni causâ omnia a Natura;*" and in another he begins to treat of "*Species motus loc. animal.*" after this fashion: "*In omni motu est movens et mobile distinct. et nil seipsum movere potest et moveri secundum idem.*" It is not a little interesting to find Harvey adopting a dogma, which, thus applied to animal motion, so long entangled men's minds, and prevented them from grasping the juster theory of Glisson until it was demonstrated and completed by the direct experiments of Haller. That Harvey knew the right path in the pursuit of physical science is abundantly manifested in his works. "*Hoc est,*" he says in his 2nd epistle to Riolan, "*quod enarrare et patefacere, per observationes et experimenta, conabar: non ex causis et principiis probabilibus demonstrare, sed per sensum et experientiam confirmatum reddere, anatomico more, tanquam majori auctoritate, volui.*" Of the method of mere reasoning he has elsewhere said: "*Speciosum illud iter, quod solo argumentorum nitore oculorum aciem perstringit, plerumque ad avia deducit, et probabilem solum, atque ut plurimum sophisticam de rebus conjecturam exhibet.*"

There are some reasons for believing that this MS. is imperfect in its commencement. It begins abruptly without any heading. The first muscle described is the Pectoral. The Abdominal Muscles are nowhere described, although in the *enumeration* of all the muscles they are placed first, *i. e.* immediately before the Pectoral. Moreover, on leaf 7 is the following paragraph: "*Huc usque de Musculis in Corpore sitis parte anteriori. restat de musculis parte exteriori, &c.*" The inference seems to be that the MS. originally commenced with a description of the abdominal muscles, and that the first few leaves have been lost. It has, however, no appearance of having been damaged, and seems in good preservation.