



A  
S Y N O P S I S

OF A

COURSE OF LECTURES

ON

ANATOMY and PHYSIOLOGY.

By BUSICK HARWOOD, M. D. F. R. S. & S. A.

*PROFESSOR OF ANATOMY*

IN THE UNIVERSITY OF CAMBRIDGE.

*THIRD EDITION.*

---

PRINTED BY F. HODSON,

FOR J. AND J. MERRILL, CAMBRIDGE;

T. CADELL IN THE STRAND, B. WHITE AND SON,

FLEET-STREET, AND G. AND T. WILKIE,

ST. PAUL'S CHURCH-YARD, LONDON.

M DCC XCII.

1870  
RICHARD W. WARREN, U.S.D.

OF THE

U.S. DISTRICT COURT

(IN)

THE DISTRICT OF

MASSACHUSETTS

IN

REPLY

AND

FILE

IN

REPLY

FILE

T O  
RICHARD FARMER, D. D.

MASTER OF EMMANUEL COLLEGE

A N D

PRINCIPAL LIBRARIAN

IN THE UNIVERSITY OF CAMBRIDGE,

THE FOLLOWING

S Y N O P S I S

O F A

C O U R S E O F L E C T U R E S

O N

Anatomy and Phyfiology,

IS MOST RESPECTFULLY INSCRIBED,

B Y

HIS MOST OBEDIENT HUMBLE SERVANT,

*BUSICK HARWOOD.*

EMMANUEL COLLEGE,

1<sup>st</sup> Feb. 1792.

1870

1871

1872

1873

1874

1875

1876

1877

1878

1879

1880

1881

1882

1883

1884

1885

1886

1887

1888

1889

1890

1891

1892

1893

1894

1895

1896

1897

1898

1899

1900

1901

1902

1903

1904

1905

1906

1907

1908

1909

1910

1911

1912

1913

1914

1915

1916

1917

1918

1919

1920

1921

1922

1923

1924

1925

1926

1927

1928

1929

1930

1931

1932

1933

1934

1935

1936

1937

1938

1939

1940

1941

1942

1943

1944

1945

1946

1947

1948

1949

1950

1951

1952

1953

1954

1955

1956

1957

1958

1959

1960

1961

1962

1963

1964

1965

1966

1967

1968

1969

1970

1971

1972

1973

1974

1975

1976

1977

1978

1979

1980

1981

1982

1983

1984

1985

1986

1987

1988

1989

1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2024

2025

2026

2027

2028

2029

2030

2031

2032

2033

2034

2035

2036

2037

2038

2039

2040

2041

2042

2043

2044

2045

2046

2047

2048

2049

2050



QM  
21  
H26a  
1792

---

---

## ADVERTISEMENT.

HAVING found that the COMPENDIUM ANATOMICUM made use of by my predecessor, was insufficient to answer all the purposes of the more enlarged plan, which I have ventured to adopt in the delivery of anatomical lectures; I have been led to attempt the composition of a Syllabus, which I hope will convey a more perfect idea of the subjects I intend to enlarge upon in the ensuing course.

With regard to the order, in which I have chosen to arrange the different articles of this Syllabus, I have adhered as nearly to that in which they will be treated of at the lectures,

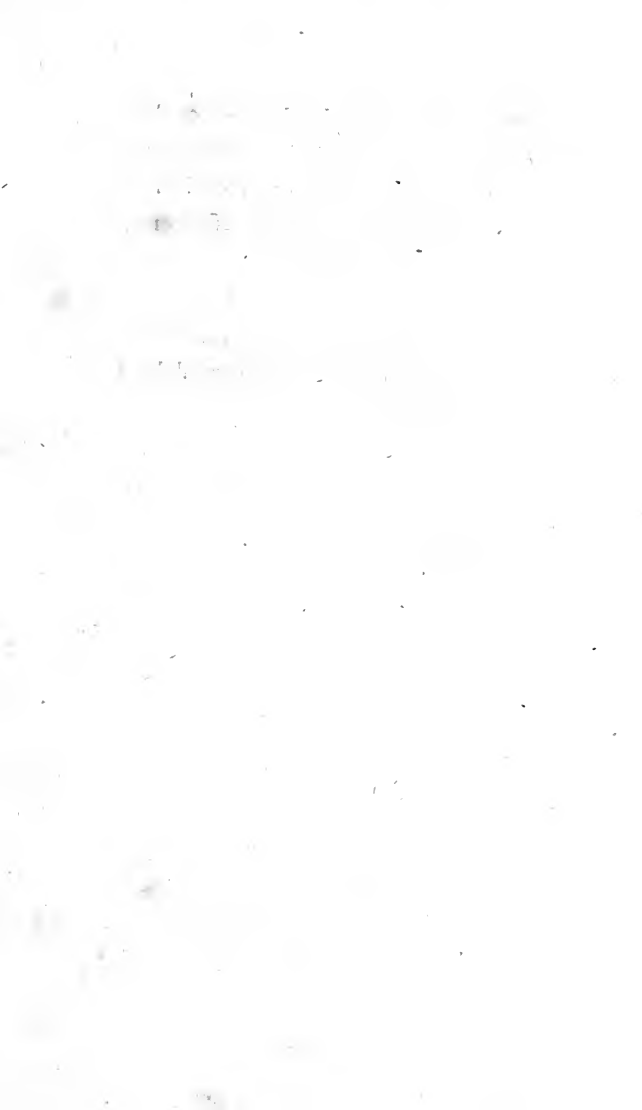
as the nature of the undertaking would admit. And to remedy the inconvenience, which might arise from any occasional breach in this order, I have avoided the division of it into separate lectures, and have prefixed numbers to each article, by which means they may be referred to at pleasure. The number of articles has also been reduced into as small a compass as possible, by omitting the enumeration of the Bones and Muscles, a catalogue of which will be found at the end of the Syllabus.

Besides the more immediate purpose for which the following pages were designed, I am not without hopes that an attempt (which as far as I know is the first,) to collect and arrange the principal facts, and discoveries in Anatomy, may be of use to other Teachers of the art, who may possibly think it worth while to extend and improve the plan which I now offer to the Public.

After the Anatomy of the human body is completed, it is likewise my intention to give  
 some

some separate lectures on the structure of Animals. And in the division of the subject, all those Analogies which assist us in explaining the structure and uses of the Animal Economy, will be particularly pointed out.

The articles which compose this part of the Syllabus, are comprised under the general head of *Comparative Anatomy*.













---

---

# INTRODUCTION.

## *History of Anatomy.*

1. **R**ISE, progress, and present state of the science.  
Of its general utility.
2. Of the various kinds of preparations made use of, in investigating the more obscure parts of the human frame.
3. Explanation of the instruments, and the manner of using them, for the purpose of preparing, and preserving, the different parts of an animal body.
4. Necessary cautions concerning the use of anatomical preparations.

A

5. Explica-

5. Explication of the general terms of Anatomy.

*Of the Nature, and Properties of the*  
B L O O D.

6. Recent blood appears like an homogeneous fluid.  
Of the means employed to discover its composition.

*Of the separate Parts of the Blood.*

SERUM.

7. The properties and use of this fluid.  
Saline particles contained in it.

CRASSAMENTUM.

8. Composed of two parts.  
Separation of these parts by washing in water.

*Particular*

Basin of the: Glom. nerve. Muscle. Tendon Ligament  
Lymphatic vessels.







*Particular Examination of each.*

RED GLOBULES.

9. Supposed cause of their red colour.

Various opinions concerning their nature and formation.

Microscopic observations, &c.

10. Theories of Lewenhoec, Hewson and others.

COAGULABLE LYMPH.

11. Its peculiar properties.

Is the cause of the spontaneous separation of the blood into two parts.

12. Theory of the formation, and regeneration of parts, by means of the *Coagulable Lymph*.

13. Morbid appearances of the blood.

14. Difference between arterial and venous blood.

A 2

15. Priestly's

15. Priestly's doctrine, and experiments.
16. Human blood compared with that of animals.

*History of Transfusion.*

17. Method of performing the operation.
18. Effects of *Transfusion* on various animals.

*General Divisions of the Human Body.*

19. Hippocrates's division into **CONTINENTES, CONTENTÆ & IMPETUM FACIENTES.**

Other divisions of the antients.

**Of ANIMAL FIBRES.**

20. Their structure.  
Infinite divisibility of an animal fibre.

Various











Various kinds of fibres.

Their gradual increase and elongation.

21. Observations on the preternatural growth of giants.

22. Of wounds in general.

23. Cicatrices how formed.

Of MEMBRANES.

24. General idea of their structure and various use.

Their different degrees of sensibility, in a healthy, and in a morbid state.

Of B O N E S.

25. The beginning and progress of *Osification*.

Of the variety of this process in the flat, cylindric, and spherical bones.

26. General structure of bones.

Cancelli how formed.

Remarks

Remarks on the growth of bones.

27. Chemical analysis of bone.

28. Of the varieties in the shape and substance of bones.

Of the comparative strength of bones.

29. Of their nerves and blood-vessels.

Exquisite sensibility of bones in some diseases.

Evident effect of diet on the bones.

Of the bones of animals fed on Madder.

30. External conformation of the bones.

Apophyses, Epiphyses, &c.

Of the PERIOSTEUM.

31. Manner in which it is connected to the bones.

Texture and uses of this membrane.

Of











## Of the MARROW.

32. Its nature and use.

Increase of its sensibility in disease.

33. Of the *pori medullares*.

Remarks on the curious distribution of these pores.

34. Diseases of the bones.

35. General effects of the *Lues Venerea* upon them.

Exhibition of the different appearances produced in them by this disease.

36. Remarks concerning the treatment of simple and compound fractures.

Callus how formed, &c.

37. Use of the bones in general.

## Of CARTILAGES.

38. Their situation and manifold uses.

39. Difference of their structure.

40. Are classed under three general heads.

41. Of

1. Of the Perichondrium, and its use.

### Of LIGAMENTS.

2. Their variety.
3. Of the structure, and use of ligaments in general.
4. Of capsular ligaments in particular.
5. Practical remarks concerning the treatment of wounds of the ligaments, and cartilages.

### Of ARTICULATION.

6. Of the several species of articulation, admitting different degrees of motion.
7. Explanation of each particular species.
8. General account of the synovial glands, and of the fluid secreted by them, for the lubrication of the joints.

49. Practical











49. Practical remarks on the different kinds of luxations, and the modes of reducing them.
50. Of Anchylosis.

## S K E L E T O N.

51. Of the different kinds of Skeletons, and methods of preparing them.
52. General division of the Skeleton.
- \* *Bones of the Head, Trunk, and Extremities, separately considered.*

### Of the CRANIUM.

53. Natural figure, size, and unequal thickness of the skull.
54. Of the tables of the cranium.

### Of the diploë and its uses.

55. The skull composed of several bones.

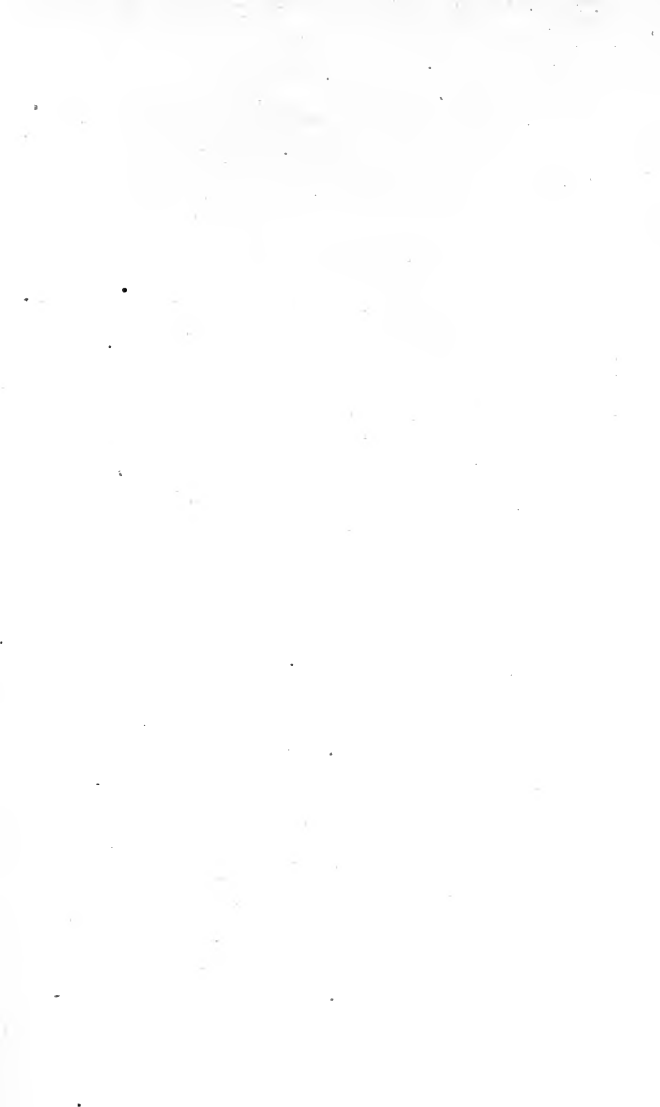
### B 56. \*Particular

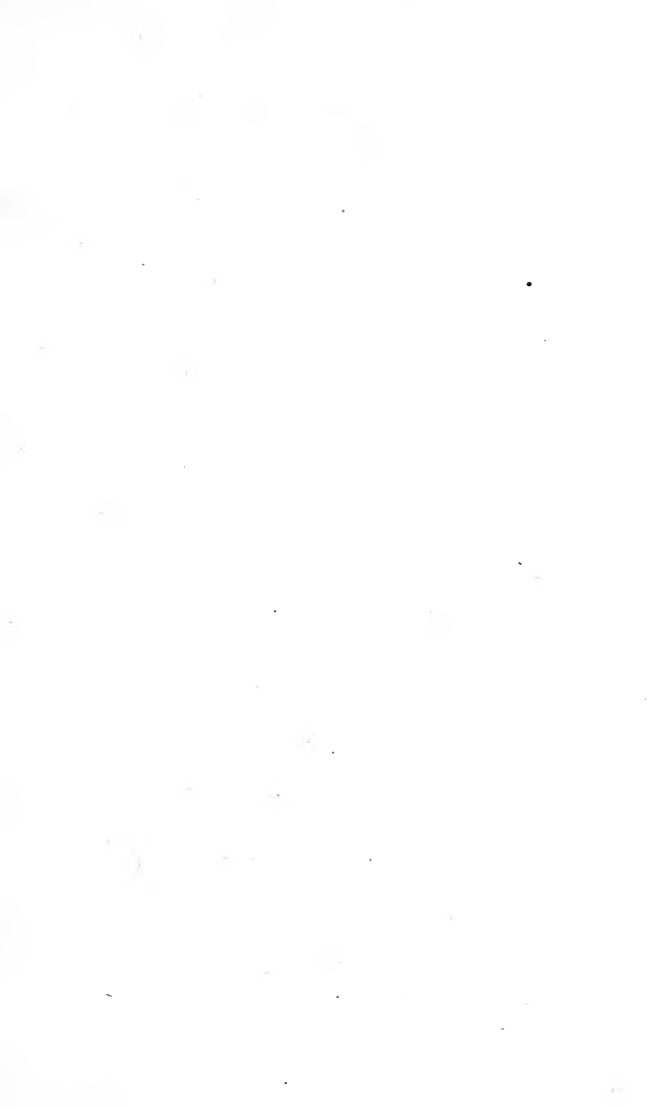
\* See a Catalogue of the bones of the Human Skeleton, at the end of this Syllabus.

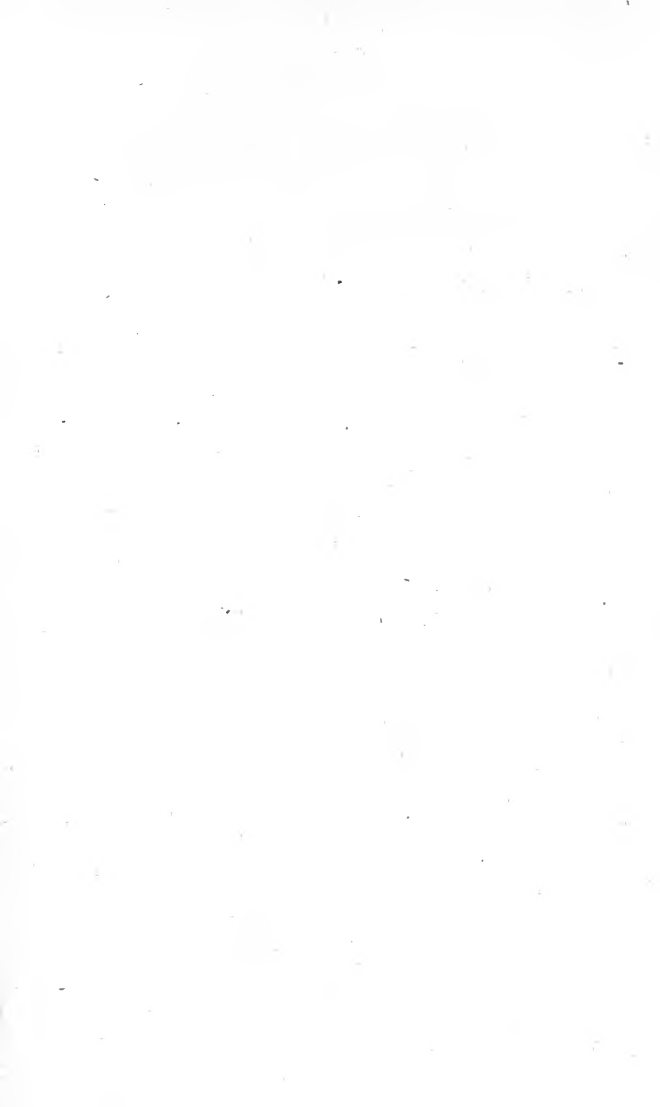
56. \* Particular description of the *Sutures*, by which these bones are connected with each other.
57. Advantages arising from this mode of connexion.  
Sutures often obliterated.  
Of their accidental varieties.  
Of the *Ossa Triquetra*.
58. Observations on the original conformation of the skull.  
View of the external basis of the skull.
59. Of the various *processes* observable in this part of the cranium.  
Their names, situations, and uses.
60. Observations on the general, and particular uses of each process.
61. General view of the internal cavity of the cranium.

62. Of

\* The principal Sutures are SUTURA {  
CORONALIS.  
SAGITTALIS.  
LAMBDOIDALIS,  
SQUAMOSA,









62. Of the various impressions, pits, and furrows in this cavity.

Marks of the longitudinal, and lateral finus's, &c.

63. Division of its internal basis.

64. Description and use of the *Processes*, &c. in the cavity of the skull.

65. Remarks on the attachment of the *Dura Mater*.

66. Of the different *foramina*, for the passage of blood-vessels and nerves.

Observations on the use of each.

67. <sup>a</sup>Remarks on the entrance of the *carotid* and *vertebral* arteries into the skull.

68. Of fractures of the skull.

Of concussions.

Operation of the trepan, when necessary and how performed.

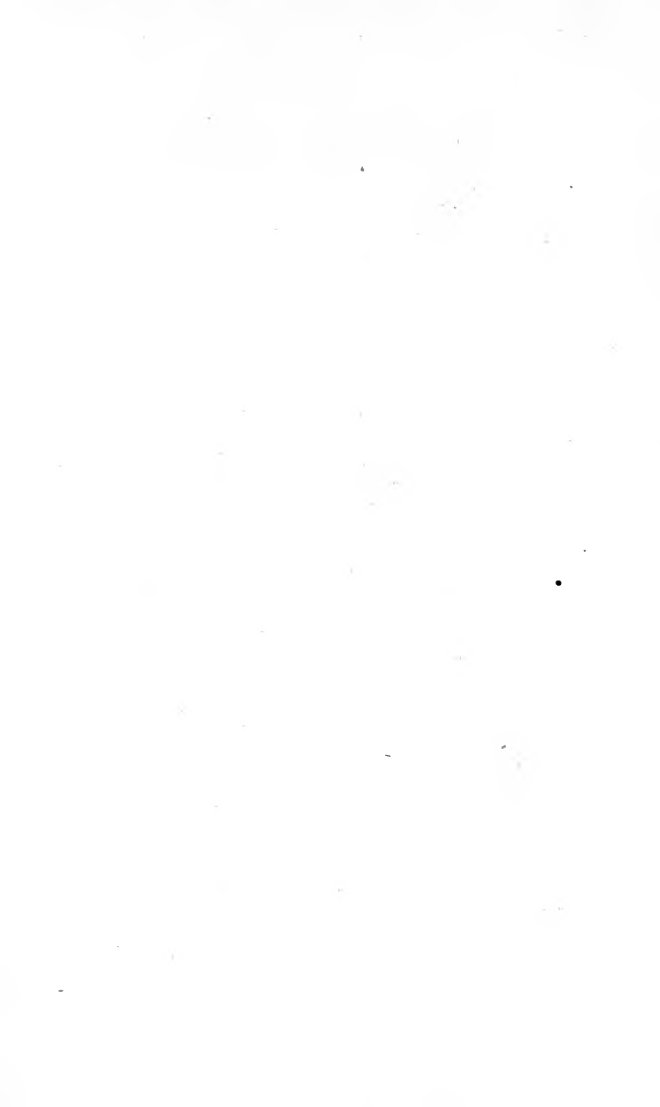
Cautions to the surgeon in performing this operation.

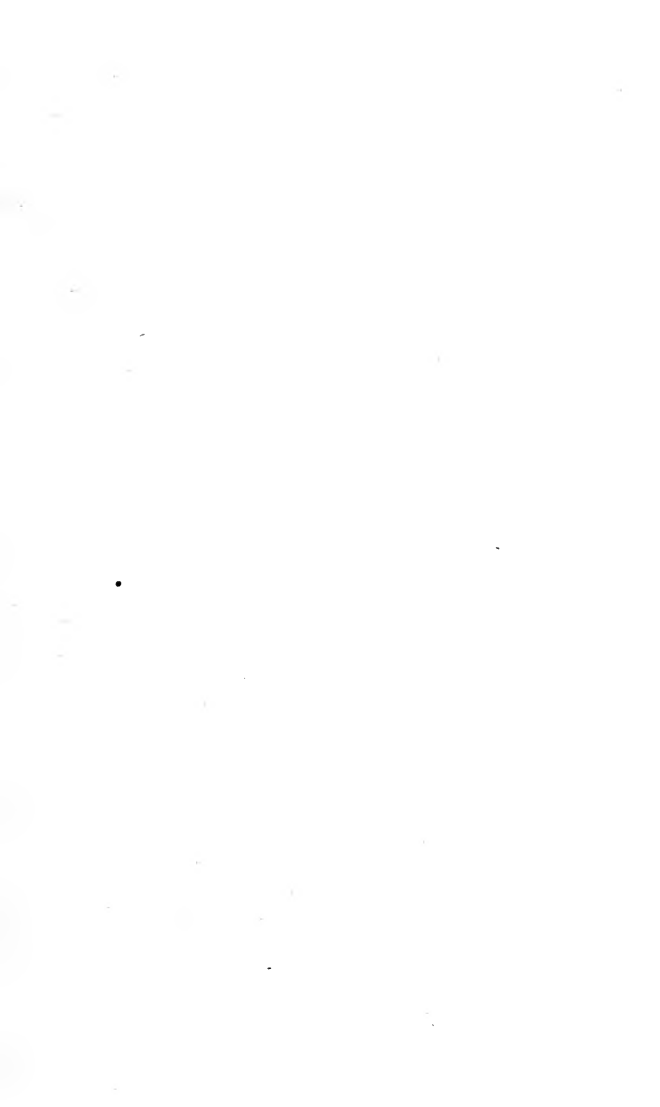
69. Description of the separate bones of the cranium.
70. Observations on the form, structure, and particular use of each.

*Of the bones of the face.*

71. Of their connexion with the proper bones of the skull.
72. A particular description of each of these bones.
73. Of their general, and particular uses.
74. Of the formation and use of the Lachrymal Duct.
75. Remarks on the manner of performing the operation for the *Fistula Lachrymalis*.
76. Of Caries, and other diseases of the bones of the face.
77. Of the lower Jaw.  
Of its Articulation:











Of the alveolar processes.

Of the absorption of these processes in old age.

78. Of the teeth in general.

<sup>b</sup>Of the structure and form of the different classes of teeth.

Of their enamel, and its uses.

79. Observations on the passage of the nerves into the teeth.

Of the original formation of the teeth, &c.

80. Of their diseases.

Remarks on the usual method of drawing teeth.

### Of the S P I N E.

81. Of the vertebræ in general.

Of their structure.

82. Of the processes of the vertebræ and their separate uses.

83. Of the large canal for the transmission of the spinal marrow.

Of

Of the lateral holes for the passage of the nerves.

*Of the Vertebrae of the Neck.*

84. Of the ATLAS and EPISTROPHEUS.  
Observations on their peculiar form, and articulation.
85. Of the perforations of the cervical vertebrae, for the passage of the vertebral artery.

*Of the Dorsal Vertebrae.*

86. Of their substance, size, &c.
87. Of their articulation with the ribs.

*Of the Lumbar Vertebrae.*

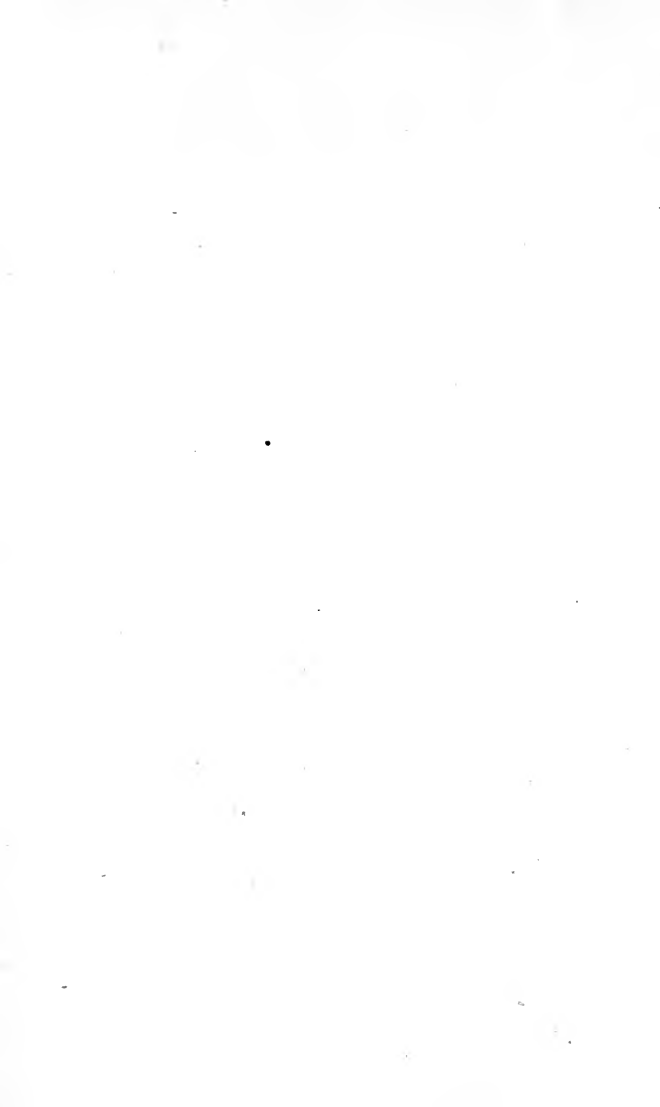
88. Of their situation and strength.
89. Of the peculiarities of the vertebrae of the back and loins.
90. Of the ligaments connecting the vertebrae.
91. Of their intervening cartilages.

92. Of











92. Of the incurvations of the spine.  
93. Of its mechanism and uses.  
94. Deformities of the spine.  
Their causes, and methods of cure.

Of the P E L V I S.

*Of the Os Sacrum.*

95. Of the false vertebræ and holes for the passage of nerves.  
96. Of the Os Coccygis.  
Its structure and use.

*Of the Os Innominatum.*

97. Composed of the *Ilium*, *Ischium*, and *Pubis*.  
98. These bones separately considered.  
99. Acetabulum how formed.  
100. Of the Symphysis Pubis.  
101. Remarks on the structure, and different capacities, of the Pelvis, in the male and female Skeleton.

102. Deformities of the Pelvis considered as the cause of difficult births.

Of the T H O R A X.

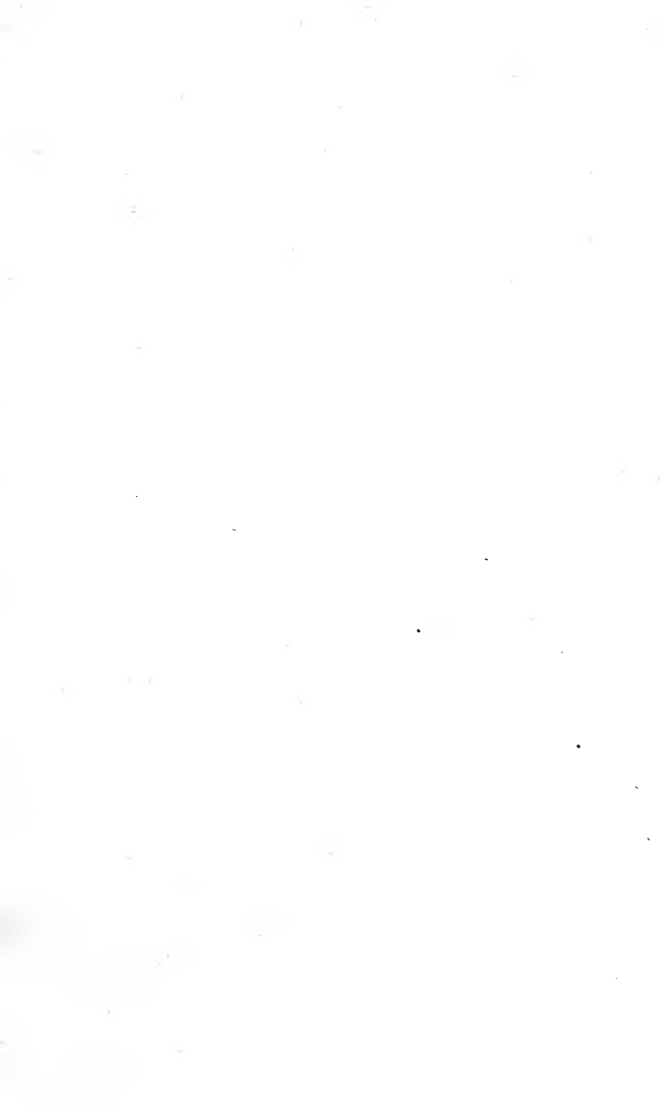
103. Of the Ribs in general.  
Their division into true and false ribs.  
Of their form, situation, &c.
104. Of the cartilages of the ribs.  
Observations on the use of these cartilages.
105. Of the deformities and diseases of the ribs.  
Remarks on the treatment, and consequences of fractured ribs.

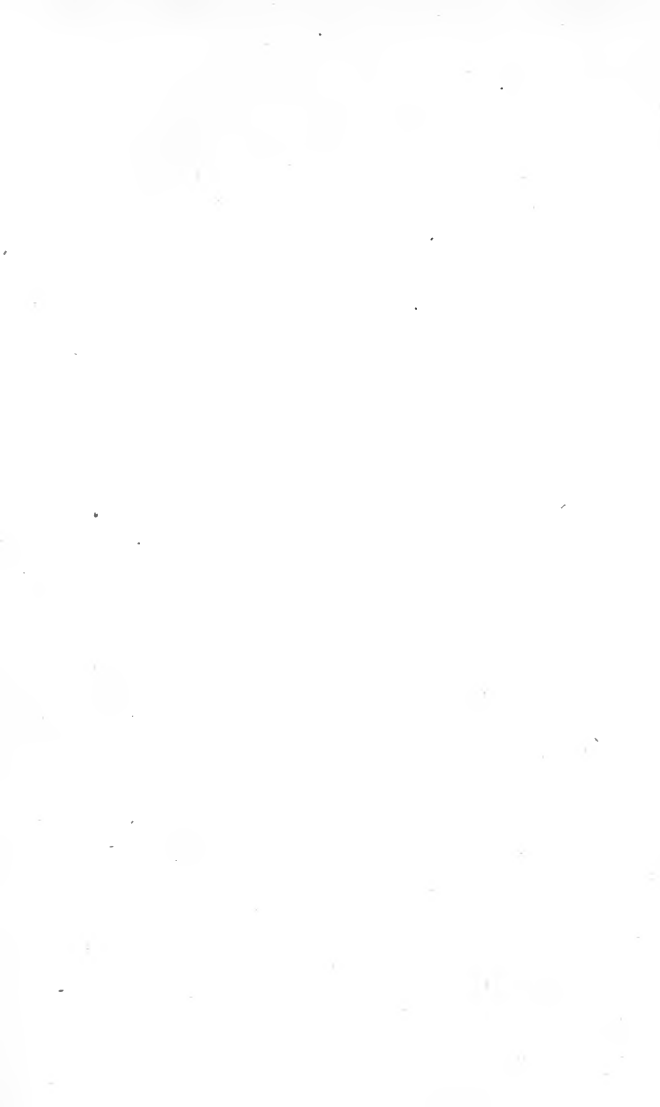
*Of the Sternum.*

106. Of the separate bones of the sternum.  
Of the *xyphoid* cartilage.

107. Remarks











107. Remarks on the general structure, and use of the thorax.
108. Observations on the motion of the ribs, and sternum, in respiration.

*Of the Upper Extremity.*

109. Of the SCAPULA.  
Its structure, shape, processes, &c.  
Of its articulation with the clavicle, and with the humerus.
110. Of the CLAVICLE.  
Its situation, structure and uses.
111. Of the HUMERUS.  
Structure, processes, and articulation of this bone.  
Of the extent of its motion.
112. Of the treatment of fractures, and luxations, of the shoulder, and arm.
113. Of the RADIUS and ULNA.

The structure, &c. of these bones, separately examined.

Of their articulation with each other, with the humerus, and with the carpal bones.

114. Of their particular uses, and the variety of their motions.

115. Of the interosseus ligament, and its uses.

116. Of the **CARPUS**.

Of the eight bones of the carpus, their names, structure, and different shapes.

Of their situation, and connexion with each other.

Of their articulation with the bones of the fore-arm, and metacarpus.

117. Observation on their motion and uses.

118. Of the **METACARPUS**.

The bones of which it is composed, separately considered.

Of









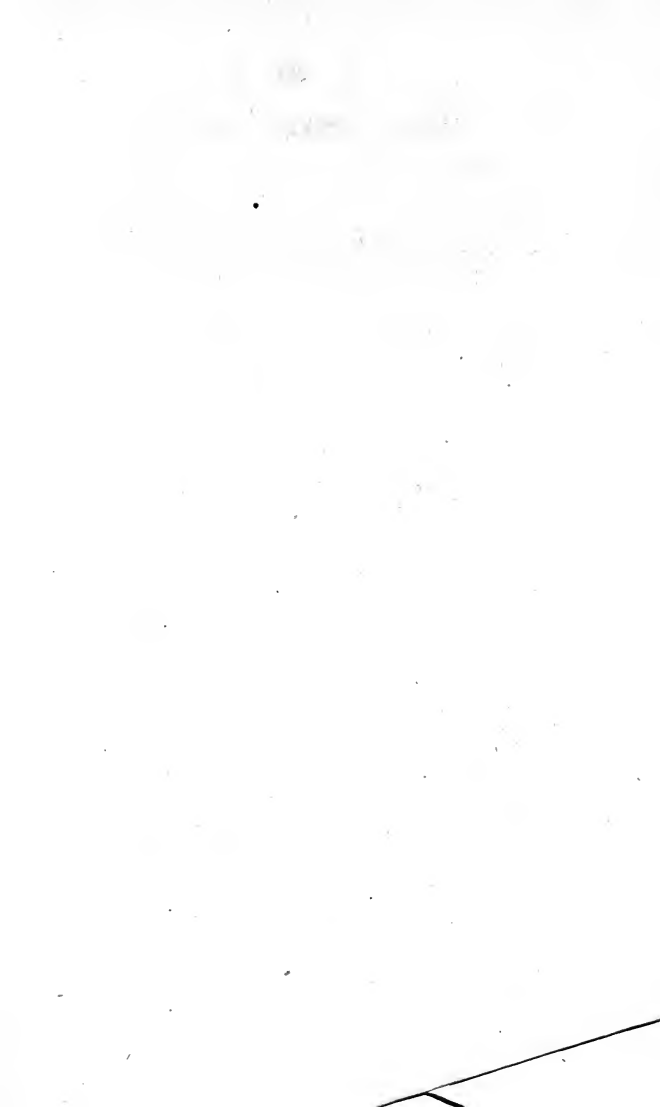
- Of their articulations, &c.
119. Of the Bones of the Fingers and Thumb.  
Of their structure, articulations, &c.
120. Remarks on the number, situation, and uses, of the *Ossa Sessamoidea*.
121. General Observations on the mechanism, and uses, of the bones of the upper extremity.

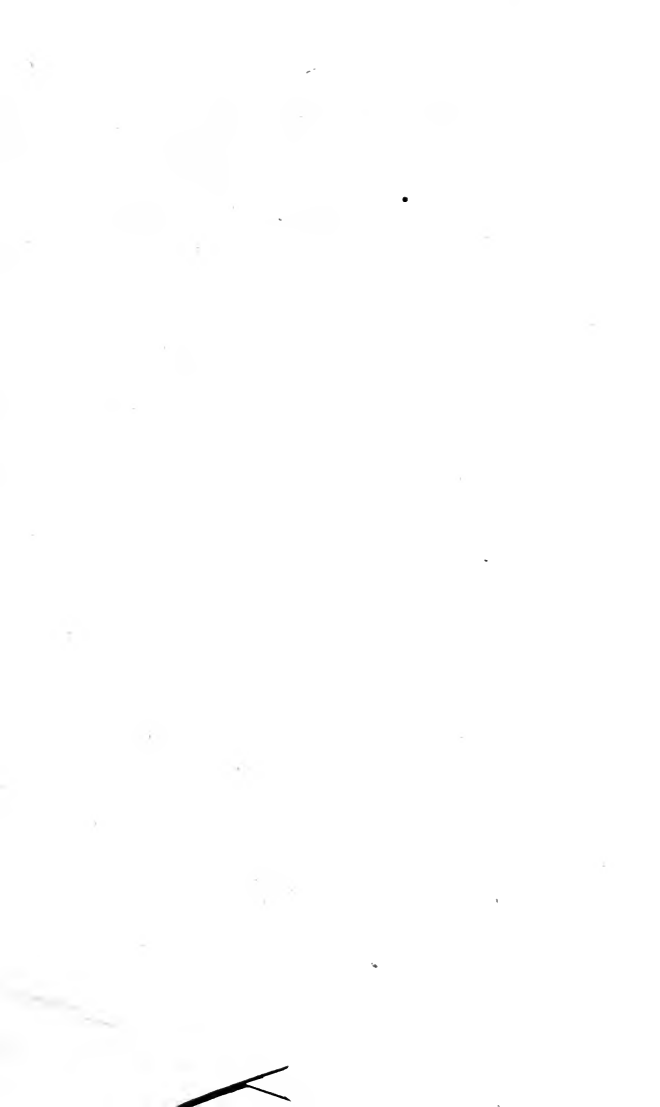
*Of the Lower Extremity.*

122. Of the Os FEMORIS.  
Its form and situation in general.  
Particular description of the structure, and uses, of the *trochanters, condyles*, and other remarkable parts of this bone.  
Of its articulation with the *os innominatum*.

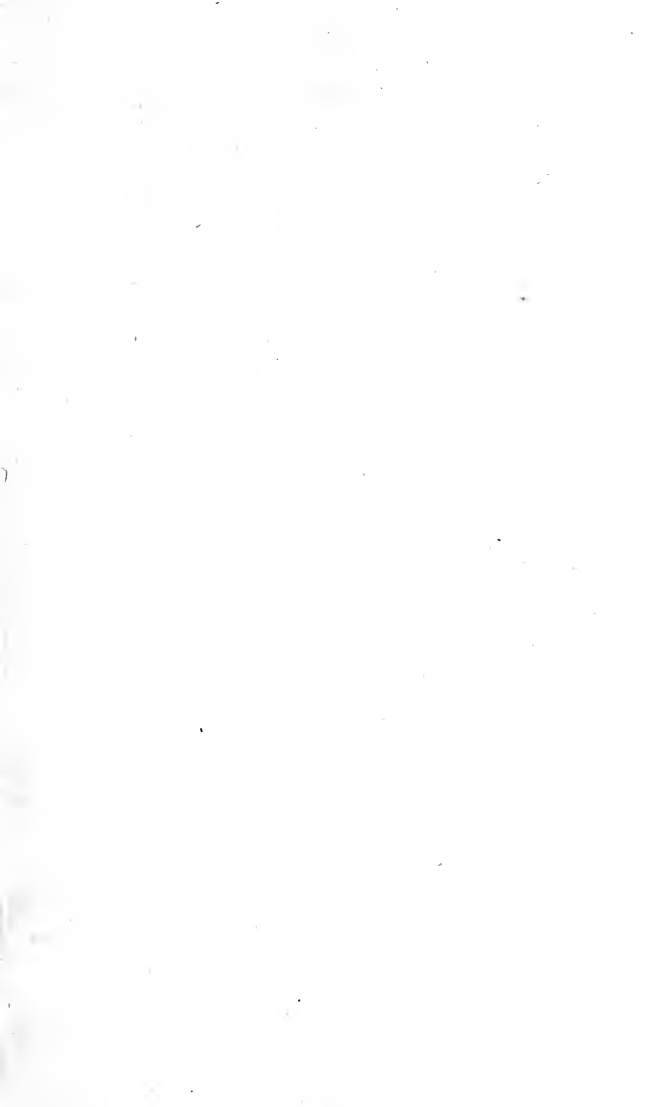
123. Observations on the motions of this joint.
124. Of luxations, fractures, &c. of the thigh bone, and methods of treating them.
125. Of the TIBIA and FIBULA.  
General description of their structure and shape.  
Separate examination of all the parts of these bones.  
Of their connexion with each other.  
Of the articulation of the tibia, with the os femoris.
126. Of the semilunar cartilages, crucial ligaments, &c.
127. Of the PATELLA, and its uses.
128. Of luxations and fractures of the patella, and of the bones of the leg.
129. Of the TARSUS.











The names and structure, of the seven bones which compose it.

Of their connexion with each other, and particular uses.

130. Of the articulation of the *astragalus*, with the bones of the leg.

131. Of the METATARSUS and TOES.  
Separate examination of these bones.

Of the difference between them, and those of the metacarpus, and fingers.

132. Remarks on the mechanism of the foot, and the manner in which progression is performed.

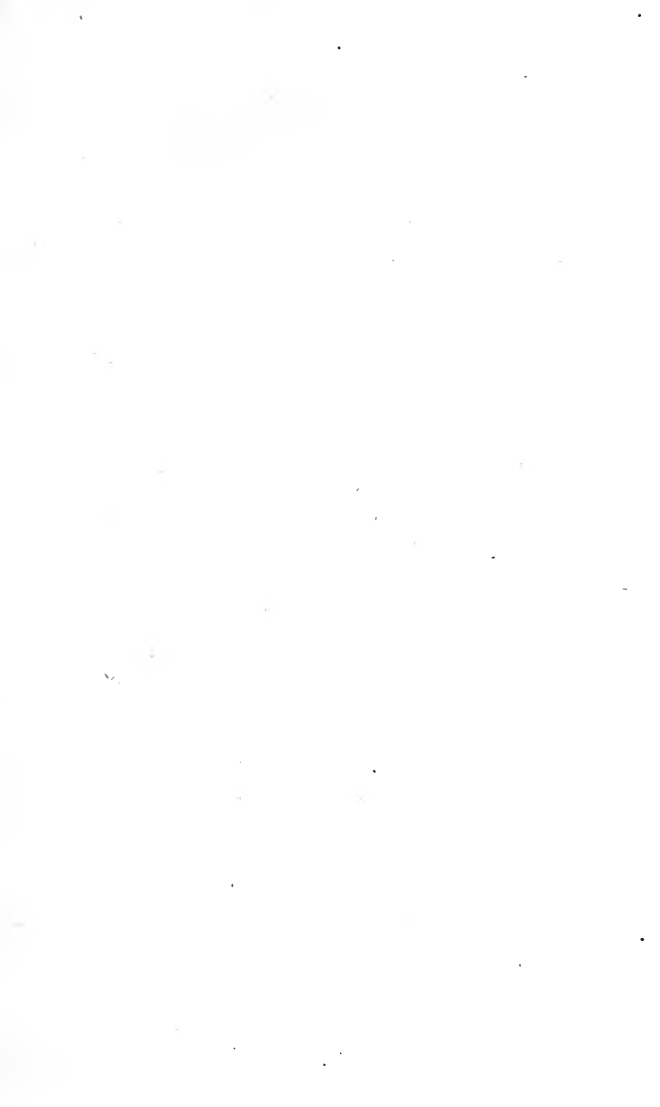
133. SKELETON of a FŒTUS examined, and compared with that of the adult subject.

134. Remarks on its striking peculiarities, with regard to the number, shape,

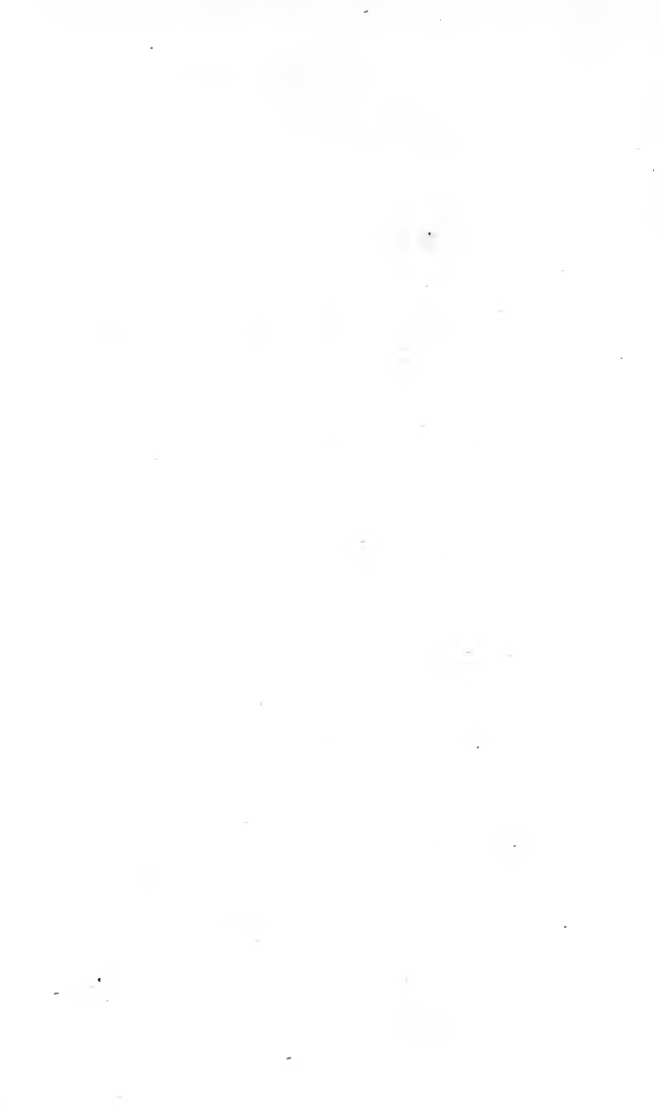
shape, connexion, and uses of the bones.

135. Observations on the peculiar advantages of the cartilaginous appendages affixed to the bones of a foetus.











OF M U S C L E S.

136. **O**F the general structure, and various attachments, of muscles.
137. Of simple, and compound muscles.
138. Of the names of muscles derived from their insertion, connexion, form, situation, use, &c.
139. Muscles voluntary, and involuntary.
140. Of the phænomena of muscular action.
141. Hypotheses concerning the immediate cause of muscular motion.
142. Tendons how formed.  
Of their connexions, and uses.

143. *Apon-*

143. *Aponeuroses.*

Their structure, and uses.

\* *Muscles of the Abdomen.*

144. A particular description of their structure, and mode of action.

Of their manifold use.

Great importance of the action of these muscles, to the animal œconomy.

145. Of *Poupart's* ligament.

146.<sup>d</sup> Particular description, and use of the abdominal rings.

147. Remarks on the descent of the testis.

148. Practical remarks on the different species of *Herniæ*.

149. Observations on the manner of performing the operation for *Bubonocèle*.

150. Of

\* See a List of all the Muscles at the end.











150. Of the treatment of wounds of the abdomen.

*Muscles of the Upper Extremity.*

151. Of the muscles which move the scapula on the trunk.

152. Of those which move the os humeri on the scapula.

153. Of those which move the bones of the fore-arm on the os humeri.

154. Of those which move the radius upon the ulna.

155. Of those which move the carpus on the fore-arm.

156. Muscles of the metacarpus and the fingers.

157. Of the general and particular uses of the muscles of the upper extremity.

*Muscles of the Lower Extremity.*

158. Of the muscles which move the thigh upon the pelvis.

D

159. Of

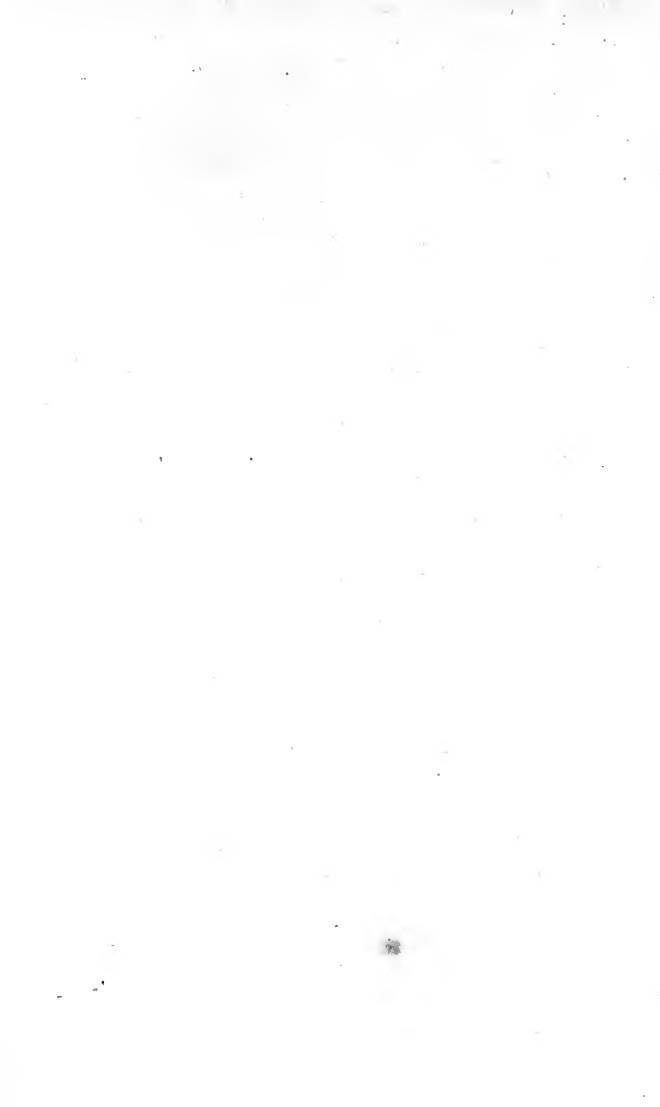
159. Of those which move the bones of the leg, upon the os femoris.
160. Of those which move the tarsus on the leg.
161. Muscles which move the metatarsus, and the toes.
162. Remarks on the structure of each of the above muscles.  
Of their uses.

*Muscles which move the Head on  
the Trunk.*

163. Situation, structure, and use of each of these muscles.

*Muscles of the Neck, Back, and  
Loins.*

164. Their structure and situation.  
Of their general uses.
165. *Of the Physiology of the Muscles.*









OF THE CONTENTS OF THE  
THORAX.

*Of the Pleura.*

166. Its situation and attachments.  
Of the structure, and uses of the  
pleura.
167. Of the *mediastinum*, and its  
uses.
168. Pathological remarks on the dis-  
eases of the pleura.  
Of the *hydrops pectoris*.

*Of the Thymus.*

169. Different states of this gland in  
the adult subject, and in the  
foetus.  
Opinions concerning its use.

*Of the Pericardium.*

170. Its structure, &c.  
Of the fluid contained in it.

Of the use of the pericardium.

Of the H E A R T.

171. Of the situation of the heart.

Of its form, and general structure.

Remarks on the disposition of its muscular fibres.

172. Division of the heart, into auricles, and ventricles.

Of the septa between the auricles and ventricles.

Of the *foramen ovale*.

Observations on its being sometimes found pervious in the adult subject.

*Of the Right Auricle.*

173. Its form, substance, and situation.

Of the opening of the two *venæ cavæ* into it.

Of











Of its communication with the right ventricle.

*Of the Right Ventricle.*

174. Its particular structure, situation, and capacity.

175. The *columnæ carneæ* how formed. Their particular uses explained.

176. Of the *valvulæ tricuspidales*, placed between the right ventricle and auricle.

Their structure and use.

177. Of the communication of the right ventricle with the pulmonary artery.

Of the *valvulæ semilunares*.

Their use, &c.

*Of the Left Auricle.*

178. Its structure, &c.

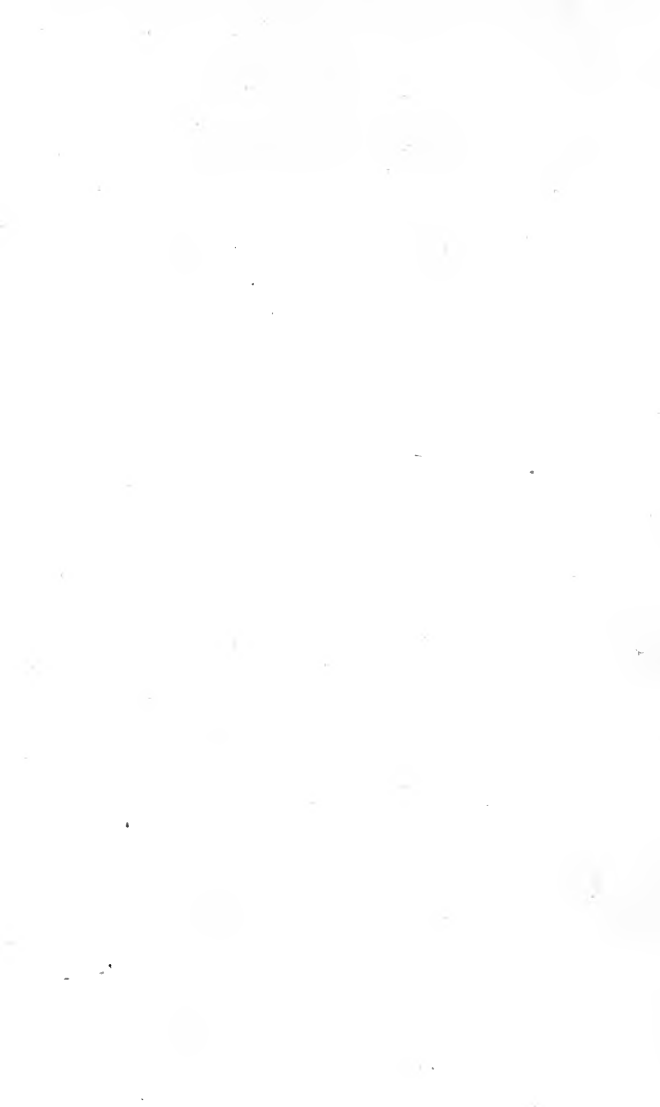
Of the entrance of the pulmonary veins into it.

179. Of its communication with the left ventricle.

180. In

*Of the Left Ventricle.*

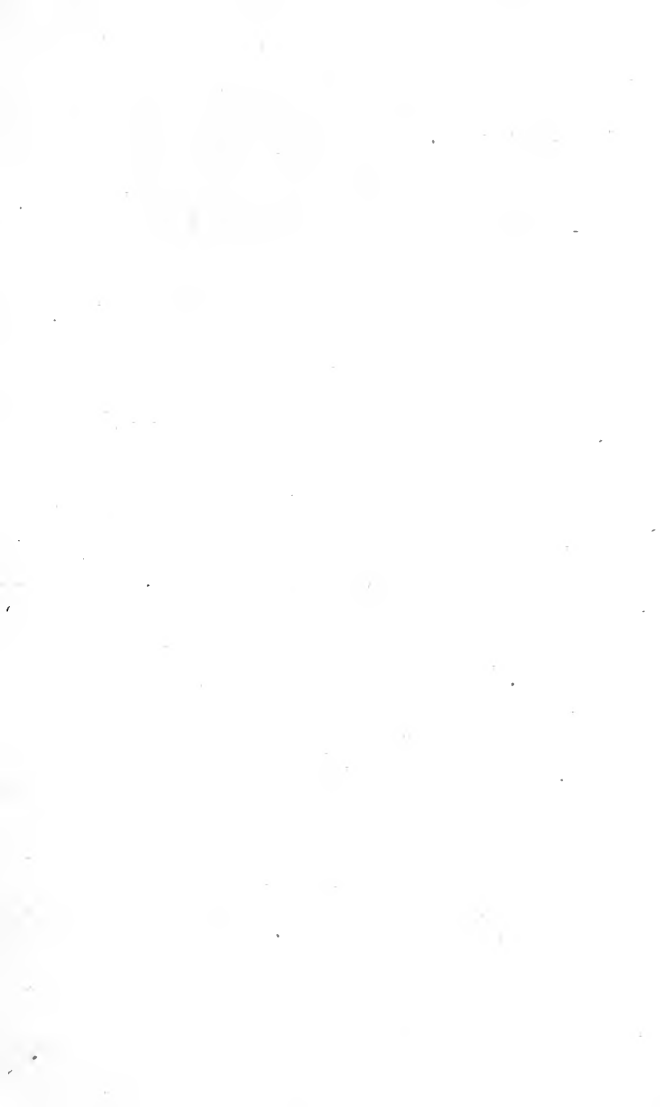
180. Its substance, situation, &c.
181. Of the *valvulae mitrales*, placed between this ventricle, and its corresponding auricle.  
Of the office of these valves, and their manner of acting.
182. Of the communication of the left ventricle with the AORTA.  
Valves of the aorta.
183. Of the coronary veins and arteries.
184. Remarks on the different capacities, and strength of the two ventricles.
185. Observations on the involuntary action of the heart.
186. Of the use of the heart in general.
187. Of *polypi*, *aneurism*, and other diseases of the heart, and its vessels.
188. Of











188. Of the structure of arteries and veins, and their general use.

Of the *vasa vasorum*.

Of the anastomosing branches of the blood vessels.

Of the connexion between the extreme branches of arteries and veins.

189. Particular description of the AORTA and VENA CAVA.

OF THE CIRCULATION OF THE BLOOD:

190. Of the ancient doctrines concerning it.

Of the discovery of it, by Harvey.

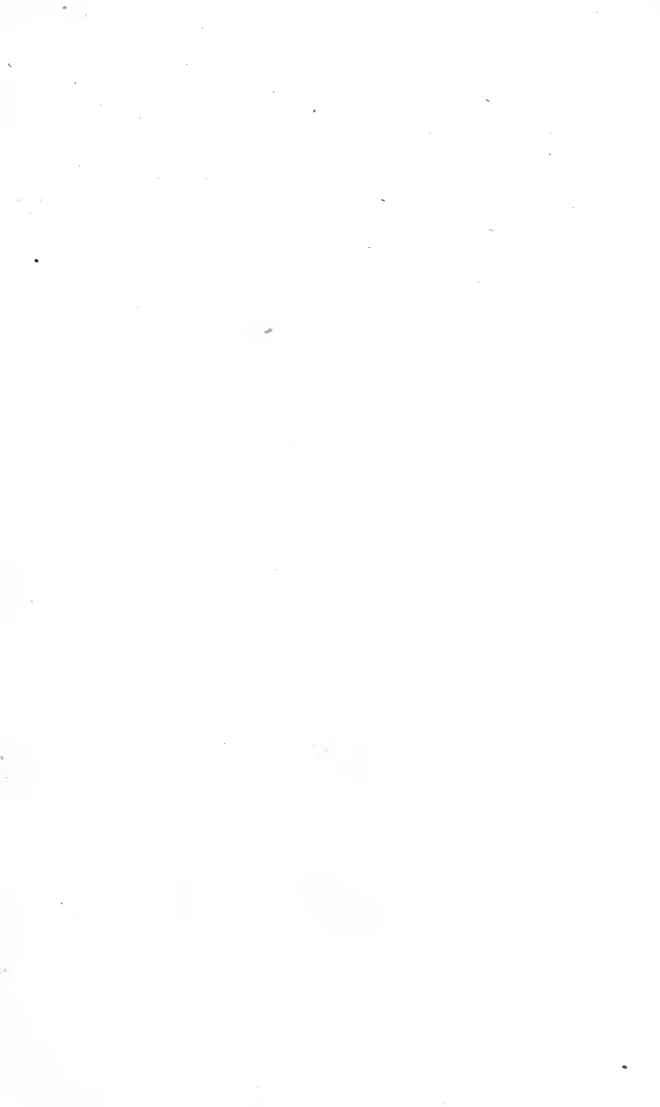
*Particular Description of the manner in which the Circulation is performed.*

191. Of the SYSTOLE and DIASTOLE of the ventricles and auricles of the heart.

Of

- Of their alternate action.
192. Of the passage of the blood from the right ventricle to the lungs, by the pulmonary artery.
  193. Of its return from the lungs to the left side of the heart, by the pulmonary vein.
  194. Of its exit from the left ventricle, and distribution throughout the whole body, by the aorta and its branches.
  195. Of its return to the right auricle of the heart, by the vena cava.
  196. Experimental proofs of the reality of this mode of circulation.
  197. Remarks on the quantity of blood, and the velocity with which it circulates in a healthy state.
  198. Of the valves in the veins, their situation and use.
  199. Of the systole and diastole of the arteries.
  200. Ob-











200. Observations on the different kinds of pulses, in various diseases.

Of the L U N G S.

201. Their situation, and figure.

Their general structure, and division into lobes.

202. Of the BRONCHIA, or air vessels.

Their particular structure.

Of their ramifications, and the termination of them in the *vesiculæ bronchiales*.

203. Of the bronchial arteries and veins.

204. Of the *Pulmonary Artery* and *Vein*.

Distribution of these vessels throughout the substance of the lungs.

Of their peculiar office.

205. Of the bronchial glands, and their use.

206. Of the *trachea*, or *aspera arteria*.

Its structure, situation, and use.

## OF RESPIRATION.

*Of the Diaphragm, and Muscles employed in Respiration.*

207. Situation, figure, and attachments of the diaphragm.

Of its *crura*, and *centrum tendinosum*.

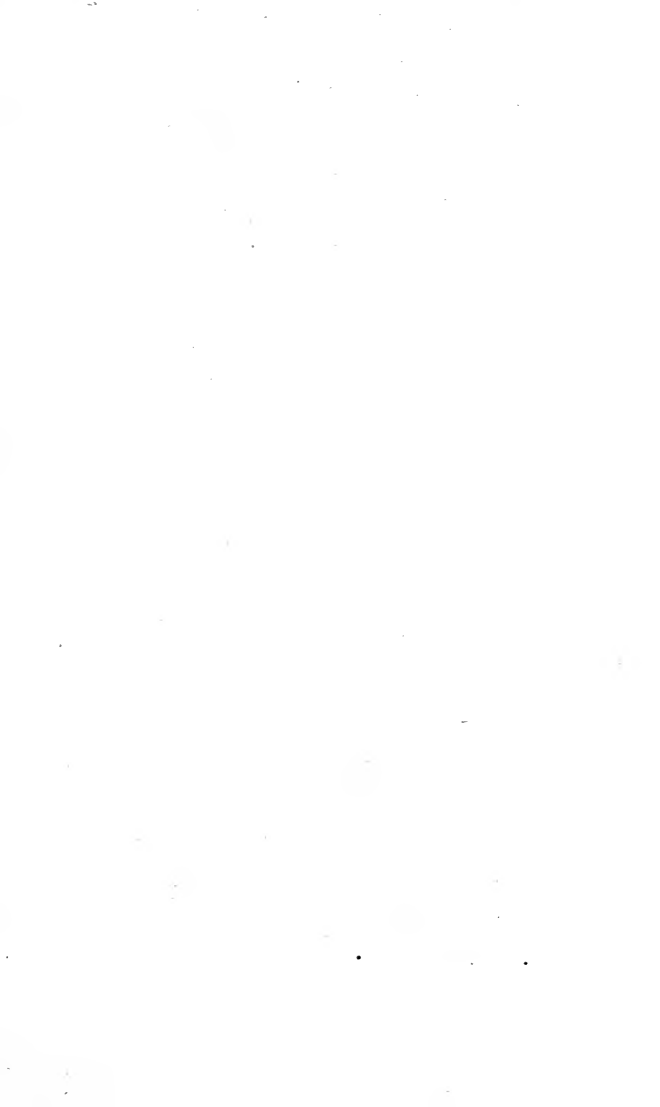
Of the perforations of the diaphragm for the passage of the *œsophagus* and *vena cava*.

208. Remarks on the alternate contraction and relaxation, of this important muscle.

Hypotheses concerning the cause of this phenomenon.

209. Of









209. Of the situation, and office of the intercostal muscles.

210. Of the manner in which respiration is performed.

*Of expiration and inspiration.*

Effects of these opposite actions, on the pulmonary vessels.

211. Of the primary uses of respiration:

212. Of the changes produced in the blood, in its passage through the lungs:

Various opinions of authors on this subject.

Priestly's theory and experiments.

213. Of the secondary uses of the organs of respiration.

214. Observations on the cause of hickuping, and other spasmodic affections of the diaphragm.

215. Of *peripneumony, asthma, phthisis pulmonalis*, and other diseases of the lungs.

216. Of suffocation.

Remarks on the methods, made use of, for the recovery of drowned persons.

217. General remarks on the peculiarities of the circulation in a foetus.

*Of the general distribution of the Blood-Vessels throughout the body.*

218. Of the course of the principal arteries and veins.

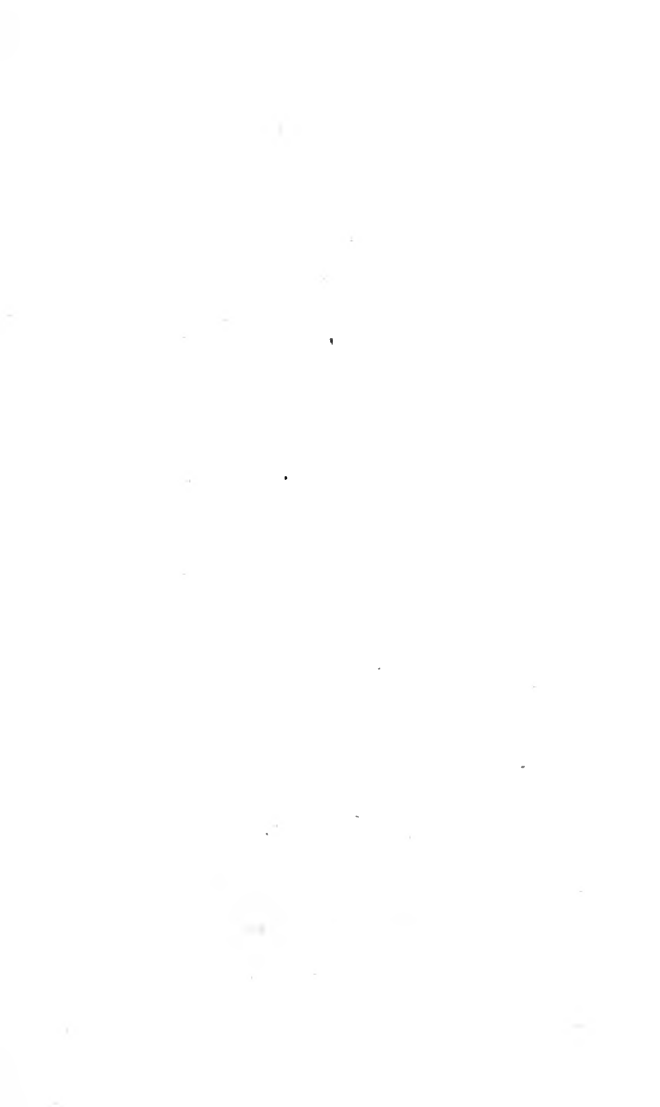
Of their names, origin, and respective uses.

219. The peculiarities of each pointed out, and the causes of them investigated.

220. Prac-











220. Practical remarks on the treatment of *Popliteal Aneurism*.

221. OF PHLEBOTOMY.

Of the arteries, and veins of the arm, in particular.

Their situation, separately, and relatively considered.

222. Of the course of the nerves, with respect to the blood-vessels.

223. Of the manner in which bleeding in the arm is usually performed.

General rules and cautions to be observed.

224. Of *Aneurism* occasioned by puncture of the artery in blood-letting.

Reflections on other dangerous consequences of unskilful venæsection.

225. ARTERIOTOMY, how performed, and when necessary.

Of

<sup>i</sup> Of the BRAIN.

*Of the Meninges of the Brain.*

226. Of the DURA MATER.

Its structure and attachments.

227. Of the processes of the dura mater and their uses.

Of the longitudinal, and lateral sinus's, *Torcular Herophili*, &c.

228. Of the TUNICA ARACHNOIDÆA.

229. Of the PIA MATER.

Its structure and uses.

230.<sup>k</sup> Of the circulation of the blood in the brain.

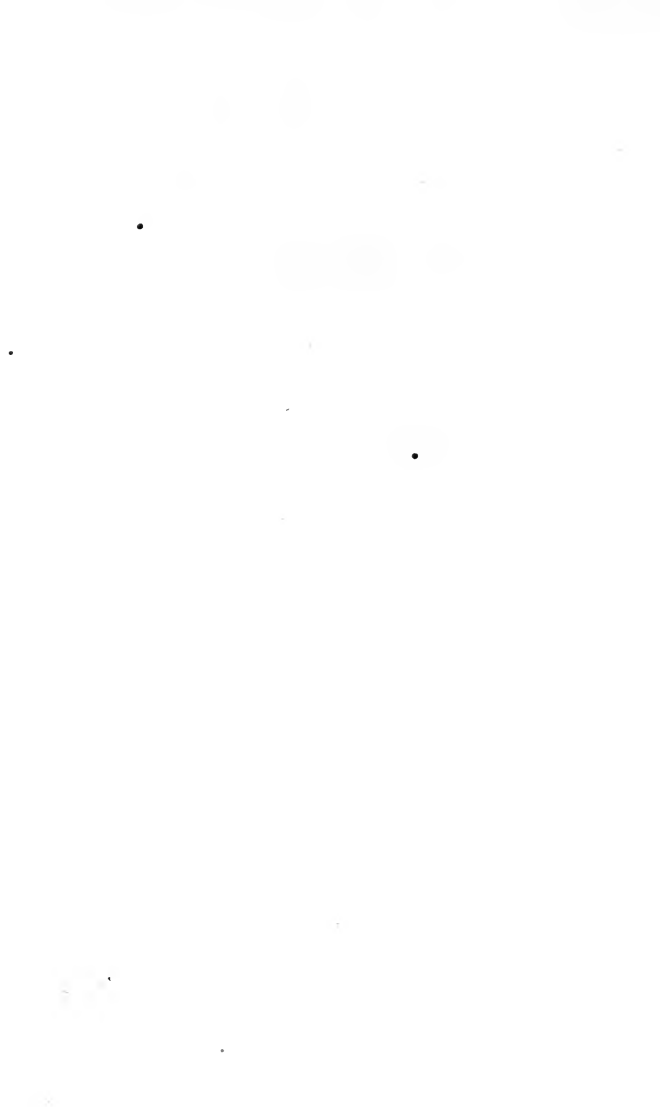
*General Division of the Brain.*

231. Of the CEREBRUM.

Division of this part into hemispheres and lobes.

232. Of the cortical substance.

233. Of











233. Of the medullary substance.
234. Of the *corpus callosum*, *fornix*, &c.
235. Of the *corpora striata*, *thalami nervorum opticorum*, &c.
236. Of the *tubercula quadrigemina*, and *pineal gland*.
237. Of the four ventricles of the brain, and their communication with each other.
238. Of the infundibulum, pituitary gland, and other remarkable parts of the brain.

*Of the Cerebellum and Medulla Oblongata.*

239. Of their situation and structure.  
Of their connexion with each other, and with the cerebrum.
240. Of their peculiarities.
241. Conjectures concerning the uses of the several parts of the brain.

242. Of

242. Of the ten pair of nerves which pass out of the ENCEPHALON.

243. A particular description of each, and general account of their distribution, and uses.

244. Various hypotheses concerning the uses, and functions of the brain, and nerves in general.

An account of the principal experiments which have been made on this subject.

*Of the Spinal Marrow.*

245. Its exit from the brain and passage through the vertebral canal.

246. Of the nerves arising from the spinal marrow, and the distribution of them throughout the body.

247. Of pains in the head.

248. Of *apoplexy, palsy, &c.*

249. Of nervous disorders in general.











## OF GLANDS.

250. Their division into simple, and compound.

251. Of their excretory ducts.

Dispute between RUYSCH and MALPIGHI concerning the structure of glands.

252. Of glandular secretion, and the opinions of various authors on that subject.

Of morbid secretions.

253. Opinions concerning the doctrine of transfusion.

254. Of *Schirrus*, *Cancer*, and other diseases of the glands.

*Of the Salival Glands.*

255. Of the situation, and office, of the *parotid*, *maxillary*, and *sublingual* glands.

F

256. O

256. Of their excretory ducts, and the entrance of them into the mouth.

257. Disagreeable consequences of wounds in these parts.

258. Of the nature and use of the *saliva*.

*Of the Mouth in general.*

259. Of the lips and palate.

260. Of the *glandulæ lenticulares*.

261. Of the *os hyoides*, and tongue.

262. Of the papillæ of the tongue, and the sense of tasting.

263. Of the *velum pendulum palati*, and *uvula*.

Consequence of their destruction by the *Lues venerea*, and other diseases.

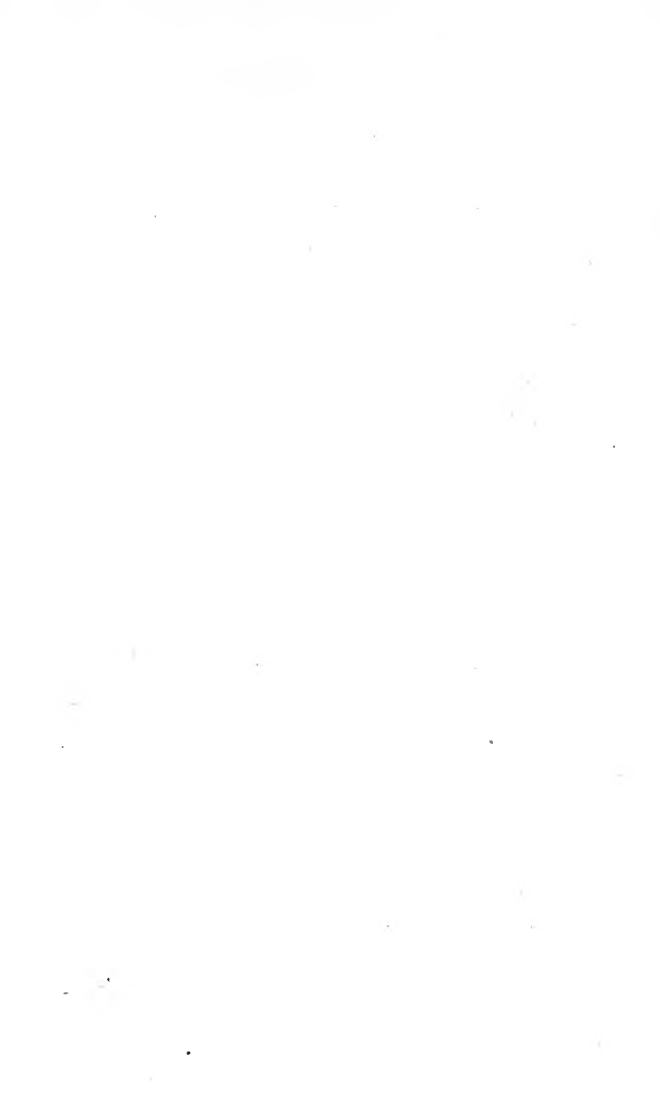
264. Of the *pharynx* and *œsophagus*.

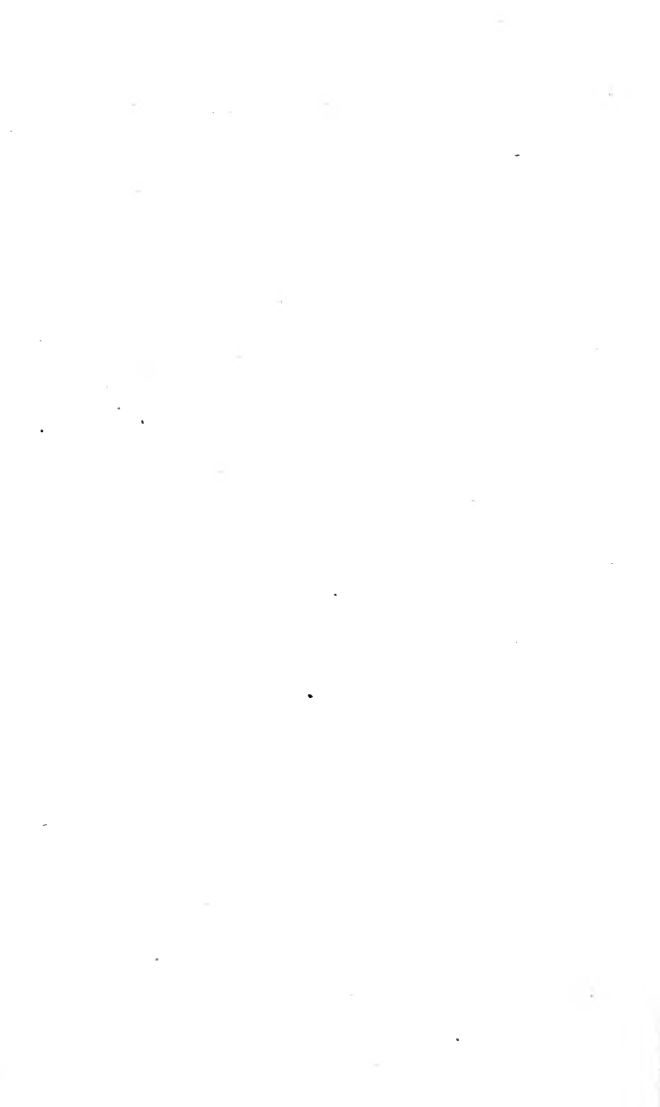
Their situation, structure, action, and uses.

265. Of









265. Of the muscles employed in mastication, deglutition, and formation of the voice.

Of their separate uses, and mode of action.

*Of the Oesophagus.*

266. Phœnomena attending the passage of the aliment, from the mouth to the stomach.

267. Of *angina* or quinsy.

268. Of the LARYNX, and the cartilages which compose it.

Of the *glottis* and *epiglottis*.

Their structure, and peculiar uses.

269. Remarks on the general effects produced by the ossification of these parts.

270.<sup>m</sup> Of the formation of articulate sounds.

Of the ABDOMEN.

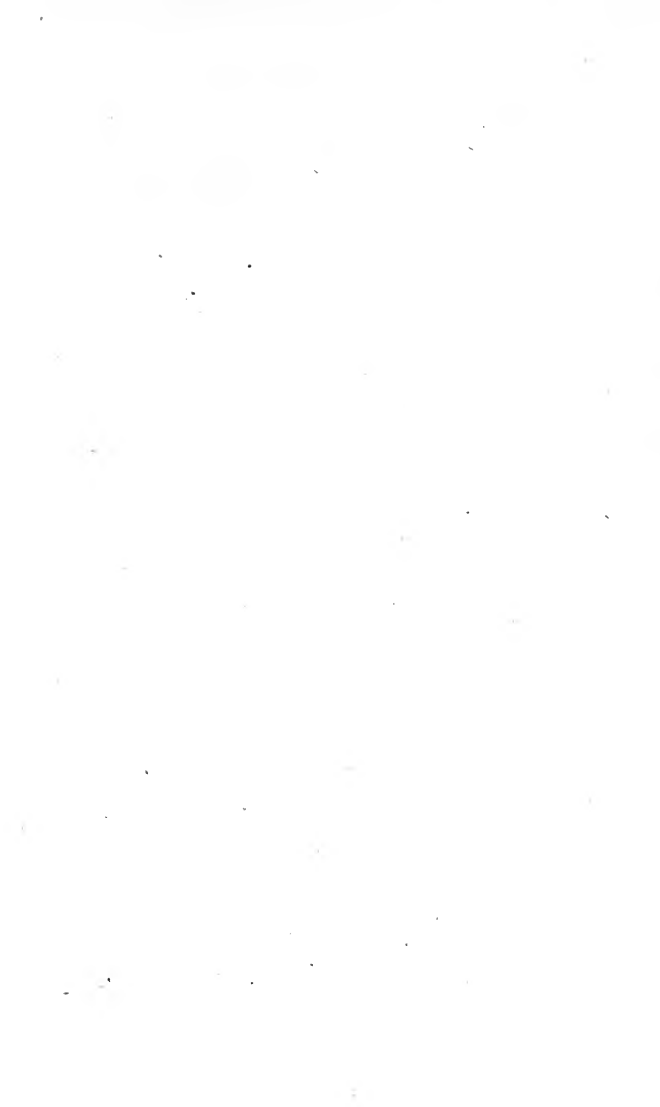
271. Of the external form, and regions of the abdomen.
272. Of its internal cavity.
273. Of the *peritonæum*.  
Its structure, processes, extensibility, and uses.
274. Practical observations on the causes, and cure of *ascites*, and other diseases of the abdomen.

*Of the Abdominal Viscera.*

275. Of the stomach.  
Its structure, size, and natural situation.
- Of the coats of the stomach, and their uses.
- Of the action of the stomach.
- Of the nerves, and blood vessels of the stomach.

Of











Of the *cardia* and *pylorus*.

276. Remarks on the entrance and exit of the food, by these orifices.

## OF DIGESTION.

277. Examination of the principal hypotheses which have been formed to explain the nature of this process.

278. Objections to each of these.

278. Of the discoveries lately made on this subject.

279. Of the *succus gastricus*.

Examination into the nature and properties of this fluid in men and other animals.

280. Experiments of REAUMUR, SPALLANZANI and others.

281. Why the stomach itself is not acted upon by the solvent power of the *succus gastricus*.

282. Of

282. Of hunger and thirst.

283. Of diet in general.

284. Of substances which promote, or retard digestion.

Remarks on the pernicious effects of excessive drinking.

285. Of the effects of various kinds of poisons taken into the stomach.

286. Of *cardialgia*, indigestion, and other diseases of this organ.

287. Of the causes and effects of vomiting.

Remarks on the use of emetics in general.

### Of the P A N C R E A S.

288. Its structure, situation, &c.

Of its excretory duct, and the entrance of it into the *duodenum*.

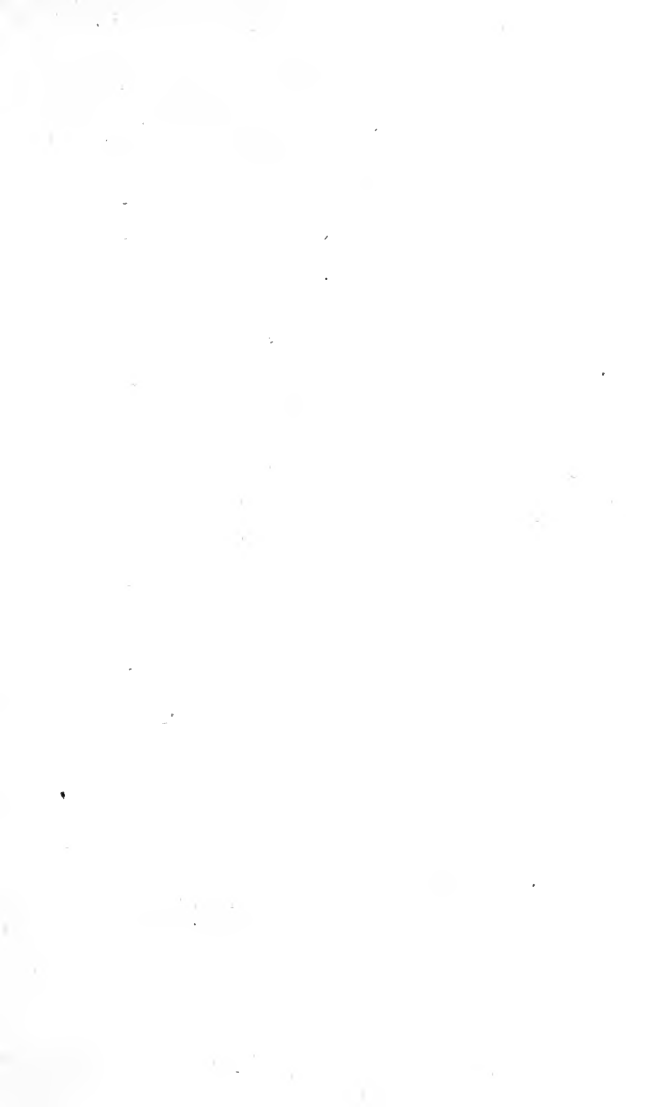
289. Of











289. Of the nature and properties of the pancreatic juice.

°Of the S P L E E N.

290. Its structure, and situation.

Of the blood vessels and nerves of the spleen.

291. Conjectures concerning its use.

Theories of HEWSON and others.

Of animals who have been deprived of this organ.

292. Of the diseases of the spleen, and pancreas.

°Of the O M E N T U M.

293. Its figure, situation, and structure.

Of its blood vessels.

Of the fat contained in the cells of the omentum.

294. Of the use of the omentum.

Of the L I V E R.

295. Form, situation, and general structure of this viscus.

Of the *capsula glissoni*, and external covering of the liver.

Of its nerves and blood vessels.

296. Of the *vena portarum*.

Its origin, distribution, and extraordinary office.

297. Of the branches of the *cava* returning the blood from the liver.

298. Of the hepatic artery.

Observations concerning its use.

299. Of the *pori biliarii*.

300. Their origin, and the termination of them in the *Hepatic Duct*.

301. Of the *Gall Bladder*.

Its form, situation, and office.

302. General











302. General observations concerning those animals which have no gall bladder.

303. Of the *Cystic Duct*.

Its union with the hepatic duct, forming the *ductus communis choledochus*.

304. Entrance of the *ductus communis* into the *duodenum*.

305. Of the use of the liver.

306. Of the difference between the *cystic* and *hepatic* biles.

307. Examination into the nature, and uses of each.

308. Observations on the mixture of the bile and pancreatic juice with the imperfect chyle.

309. General account of *Chylification*.

310. Of the diseases of the liver.

Of calculi in the gall bladder, &c.

311. Of the causes, symptoms, and cure of the *jaundice*.

Of the INTESTINES in general.

312. Division of the intestines into large and small.

Of their general structure, situation and length.

Of the coats of the intestines.

Of the *succus intestinalis*.

313. Of the peristaltic motion of the intestines.

314. Of the operation of cathartic medicines, &c.

315. General description of the *Mesentery*.

Of the DUODENUM.

316. Its connexion with the stomach, &c.

317. Entrance of the *ductus communis*, and *ductus pancreaticus* into it.









Of the *valvulæ conniventes*, their structure and use.

Of the JEJUNUM and ILEUM.

318. Their situation, extent, &c.

Remarks on the decrease of the *valvulæ conniventes* in the ileum.

319. Of the entrance of this intestine into the *Colon*.

Of the valve of the colon.

Mechanism and use of this valve.

Observations on the fatal consequences of disease in this part.

Of the CÆCUM.

320. Its figure, situation, and supposed uses.

\*Of the variety of its shape and size in different animals.

321. Of the *Appendicula vermiformis cæci*.

Conjectures concerning its use.

Of the COLON.

322. Description of the course and circumvolutions of this intestine. Of its ligamentary bands and other peculiarities.

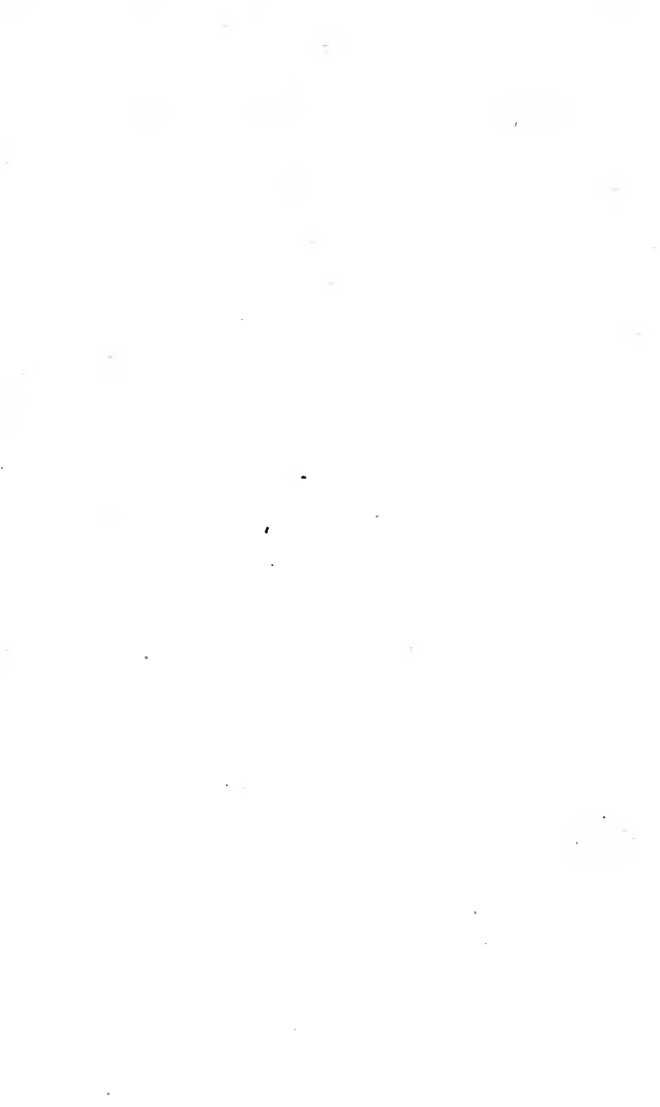
Of the RECTUM.

323. Its structure and situation. Of the *rugæ* formed by the internal coat of the rectum.
324. Of the *sphincter* and *levator* ani.
325. Of the glandular *lacunæ* of the large intestines.
326. Remarks on the difference of the structure and uses of the large and small intestines.
327. Of diseases and wounds of the intestines.
328. General observations on the use of clysters.

*Particular*











*Particular description of the Mesentery.*

329. Its mode of connexion with the intestines.

Of the blood vessels, nerves, &c. of the mesentery and intestines.

Distribution and use of these vessels.

Of the LACTEAL VESSELS.

330. Of the first discovery of them by *Afellius*.

Of the general structure of the *lacteals* and *lymphatics*.

Description and use of their numerous valves.

331. Of the *ampullulæ* of the lacteals.

Demonstration of the lacteals on the intestines of an animal recently killed.

332. Of their passage to the *thoracic duct*.

333. Of

333. Of the *Receptaculum Chyli*.

334. Of the *Thoracic Duct*.

Of the structure and situation of this duct.

Of its termination in the angle between the *jugular* and *subclavian* veins on the left side.

Use of this duct.

335. Remarks upon its passage, and the manner in which the *chyle* and *lymph* are propelled through it.

336. Observations on the manner in which animals are nourished.

Of the *Lymphatics*.

337. General history of the absorbent system.

Discovery of this system in birds, fishes, and amphibia.

Remarks on the importance of this discovery.

338. Of











338. Of the origin of the lymphatics.  
Their universality, &c.

Of their termination in the thoracic duct.

339. *Modus operandi* of these vessels.

Antient opinions concerning absorption by the *meseraic* veins.

Refutation of this doctrine by the experiments of HUNTER and others.

The absorbent powers of these vessels, how promoted, &c.

### Of *Lymphatic Glands*.

340. Their number, names, size, and situation in different parts of the body.

Their structure explained.

Of the manner in which the lymphatic vessels are connected with them.

Of the fluid secreted by them.

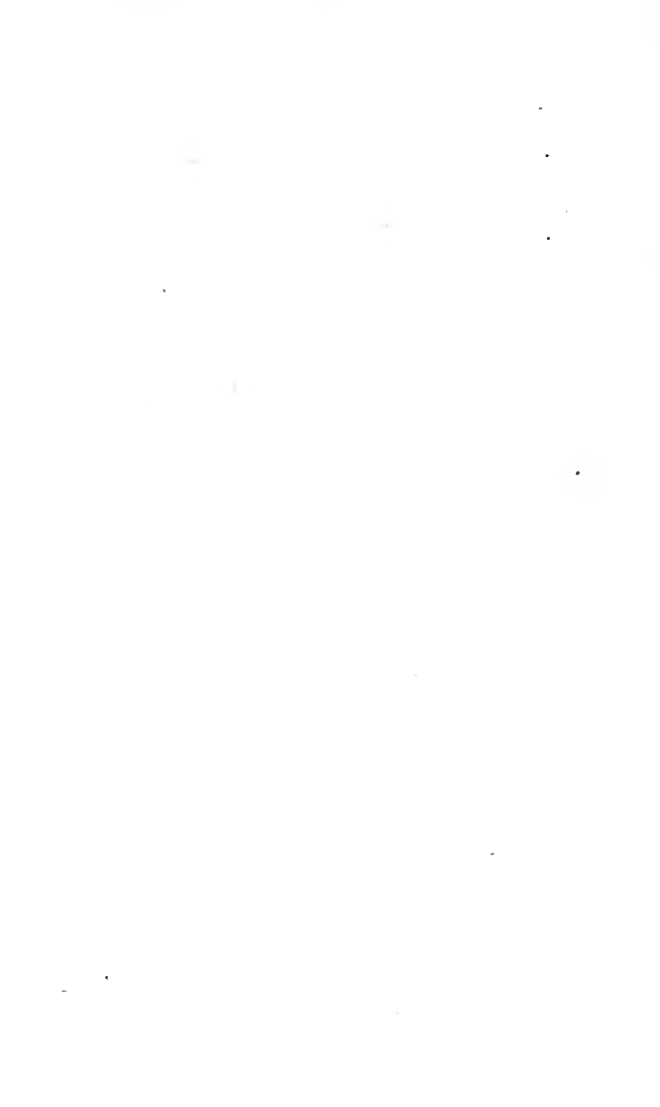
Uses

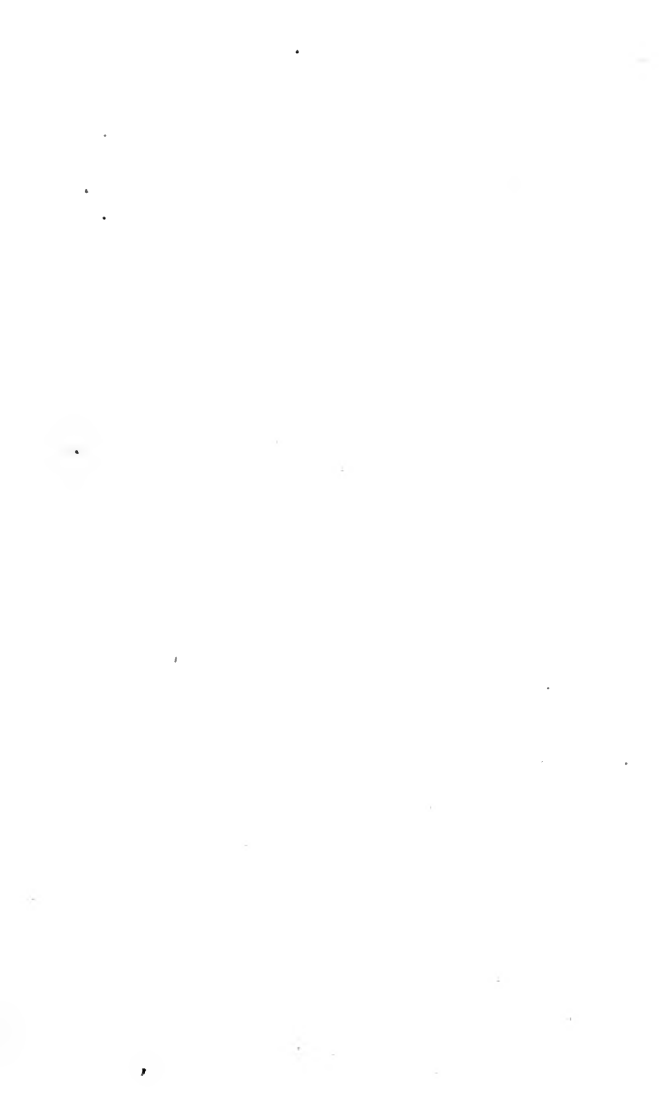
Uses attributed to them.

341. Of diseases of the lymphatic glands arising from the absorption of venereal matter, &c.
342. Of *Scrophula*.
343. Of the absorption of morbid matter from abscesses, ulcers, &c.
344. Practical remarks on the treatment of *hydropic complaints* in general.
345. Of the methods of discovering and injecting the lymphatic vessels.

Of the KIDNEYS.

346. Of the situation, and general structure of the kidneys.  
Of their nerves and blood vessels.
347. Of the cortical, and medullary substances of the kidneys.  
Of the *papillæ* and their orifices.











“Of the *infundibula* and pelvis of the kidneys.

348. Remarks on the quantity of blood sent to the kidneys.

349. Foetal peculiarities of the kidneys.

Of the use of the kidneys.

350. Of the URETERS.

Their structure, office, and course.

Of their entrance into the bladder.

351. Of the GLANDULÆ RENALES.

“Of the B L A D D E R.

352. Its situation, structure, and use.

353. Evacuation of the urine, how performed.

Of the muscles employed in this office.

354. Analysis of urine.

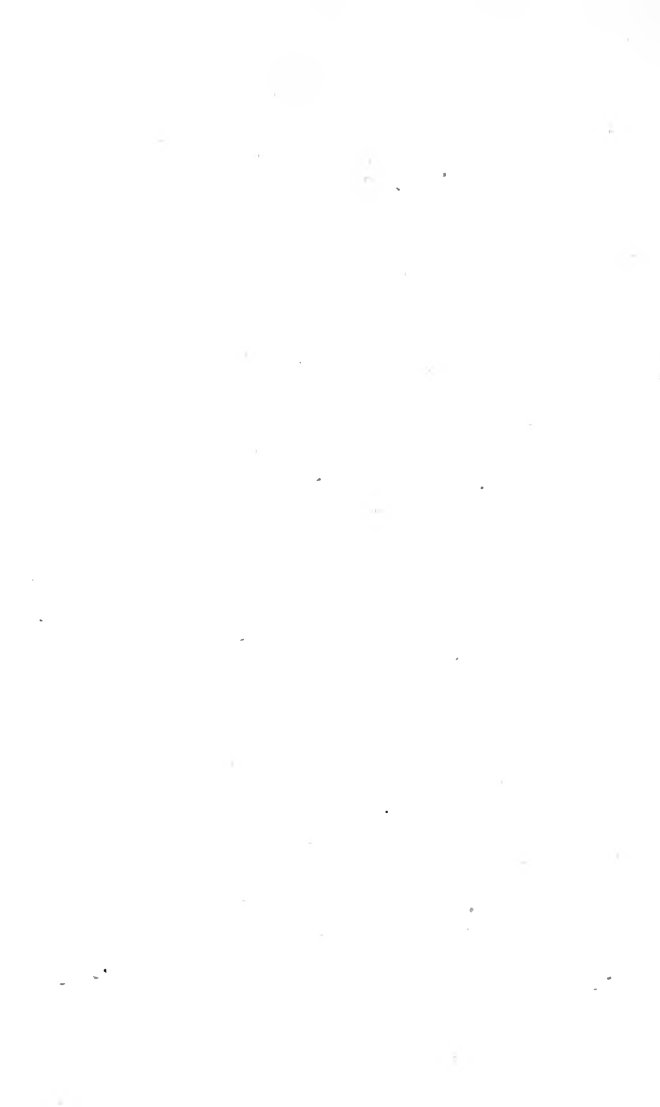
H

Remarks

355. Remarks on the different appearances of this fluid, in various diseases.
356. Of *Calculi* in the kidneys, and the symptoms attending their passage to the bladder.
357. Of *Nephrotomy*.
358. Of ulcers and other diseases of the kidneys.
359. Of *Calculi* in the urinary bladder.
360. Analysis of calculi.
361. Experiments of HALEs, and others.
362. Nature and properties of one species investigated by SCHEELÉ.
363. A different species discovered.
364. Observations on the various kinds of solvents made use of, for the removal of the stone.
365. Of *Lithotomy*, and the methods of performing that operation.
366. Of









366. Of *Diabetes, Dysfury*, suppression of urine, &c.

*Of the Male Organs of Generation.*

367. Of the SCROTUM.  
Its structure and uses.

Of the TESTES.

368. Coats of the testis.  
Of its general structure.

369. Of the spermatic artery and vein.

370. Of the *tubuli testis*.  
The *Epidydimis* how formed, &c.

371. Of the use of the testes, and separation of the semen.

372. Of the properties of the semen, and its agency in the generation of animals.

373. Theories, and experiments of LEWENHOEC and others.

374. Of *Hydrocele*.

375. Of *Hernia humoralis*, and other diseases of the testicles.

376. Of the *Vasa deferentia*.

377. Remarks on the structure, and passage of the spermatic cord.

378. Observations concerning eunuchs.

379. Of the *Vesiculæ seminales*.

Their texture, situation, &c.

Their use disputed by

J. HUNTER.

Observations concerning them.

380. Of the *Corpora cavernosa Penis*.

Of their cellular structure, &c.

381. Of the *Urethra*.

Of the corpus spongiosum urethræ.

Of the bulb of the urethra.

Of the membranous portion of the urethra.

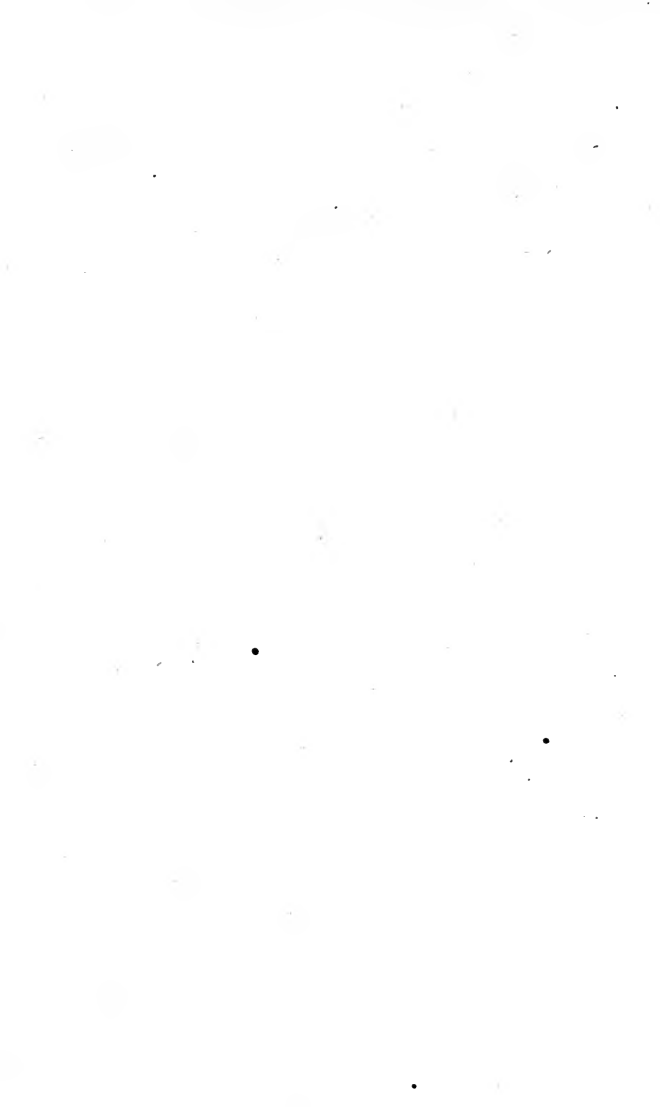
382. Of











382. Of the situation, structure, and office of the *Prostate Gland*.
383. Of Cowper's glands.
384. Lacunæ of the urethra, &c.
385. Of the Glans Penis and Præputium.
386. Of the blood vessels, nerves, and lymphatics of these parts.
387. Of the muscles called *Erectores*, and *Acceleratores*.
388. Of the separate, and combined uses of the above-mentioned parts.
389. Of strictures, and other diseases of the urethra.  
Of the introduction of the catheter.
390. Observations on the use of *Bougies*.
391. Of GONORRHŒA.  
Its symptoms, and effects.
392. Ob-

392. Observations on the use of mercury in this disease.

393. Of the LUES VENEREA.

394. Of the attack and progress of this disease.

395. Of its local and constitutional effects.

396. Of the treatment of the lues venerea in its different stages.

Consequences of neglect or ignorance in the attempts to cure this disease.

397. Of mercurial preparations in general.

398. Of the effects of mercury on the constitution.

*\*Of the Female Organs of Generation.*

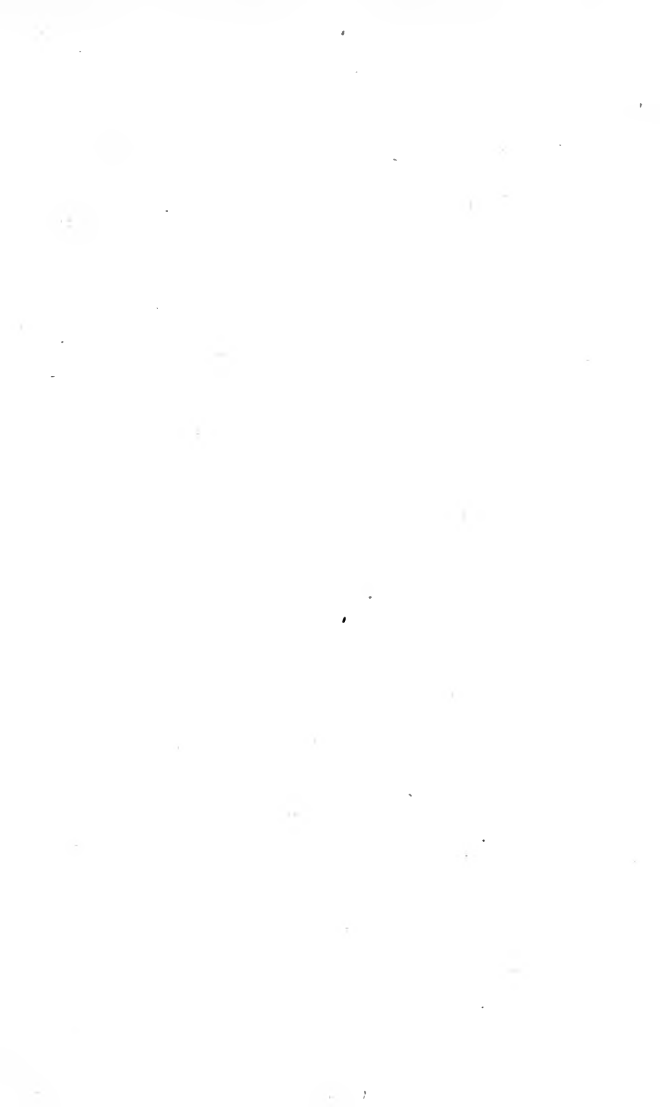
399. Of the external parts.

Of the *Clitoris*, *Hymen*, and *carunculæ myrtiformes*.

400. Of the *Urethra*.

Its











Its situation, and structure, compared with the Urethra of the male subject.

401. Of the *Vagina*.

Of the *rugæ*, and nervous *papillæ* of the vagina.

402. Of the *Uterus*.

Its substance, form, and situation.

403. Of the *os internum*, *cervix*, and *fundus uteri*.

Of the ligaments of the uterus.

404. Of its blood vessels, &c.

405. Of the *Tubæ fallopianæ*.

Their situation, and connexion with the *ovaria*.

406. Of the *Ovaria*.

Their structure, situation, &c.

407. Of the *Ovula* and *Corpora lutea*.

408. Of the particular functions, and combined uses of the above parts.

409. Of

409. Of the *Menses*.

Of the cause of the menstrual flux.

Of its natural duration and periodical return.

Consequences of the irregularity, obstruction, or excess of this evacuation.

410. Of the disorders incident to women at the first appearance, and natural cessation of this discharge.

411. Remarks on the cause of periodical hæmorrhages.

412. Of dropsy of the ovarium.

413. Of the diseases of the Uterus, &c.

*Of Impregnation and Conception.*

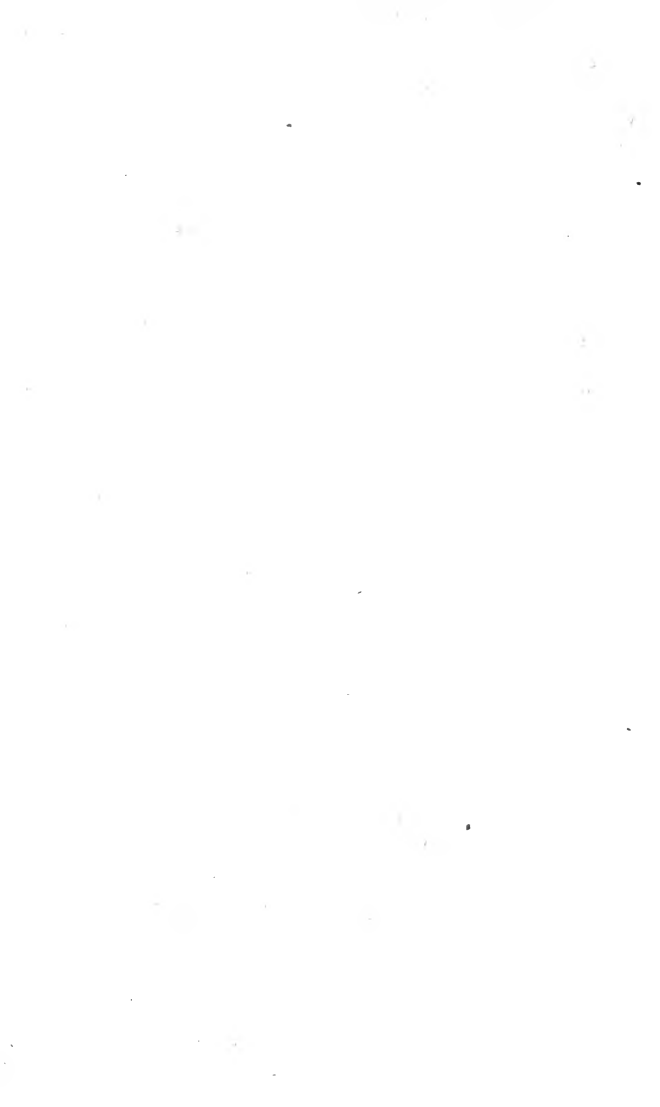
414. Of the state of the Uterus after conception.

Of











Of false conceptions.

Observations on the production  
of monsters.

415. Of extra-uterine conceptions.

Of the FŒTUS IN UTERO.

416. Of the *Placenta*.

Its structure and situation.

Of its connexion with the  
Uterus.

417. Of the *umbilical cord*.

418. Of the vessels which compose it,  
and their peculiarities.

419. Of the *Chorion* and *Amnios*.

420. Of the *Liquor Amnii*.

421. \*Of the *Allantois*.

422. Remarks on the mode of com-  
munication between the mother  
and the foetus.

I

423. Of

\* See comparative anatomy.

423. Of the manner in which it is supplied with nourishment.

Various opinions of authors on this subject.

424. Of the progressive changes which the foetus undergoes, during the usual term of pregnancy.

425. Of the situation of the foetus in utero at different periods of gestation.

426. Particular description of the circulation of the blood in a foetus.

Of the *ductus arteriosus*, *ductus venosus*, &c.

427. Of *Parturition*.

Symptoms of approaching labour.

428. Observations on the usual modes of delivery.









- Of the extraction of the *secundines*.
429. Of the causes of difficult labour.
430. Symptoms of the child's being dead, &c.
431. Of preternatural births, and the instruments employed for the extraction of the fœtus.
432. Of the *Cæſarean operation*.
433. Of the diseases incident to women during pregnancy.
434. Of the breasts, and the changes which take place in them during gestation, and after child birth.
435. Of the disorders subsequent to parturition, &c.
436. Of *Abortion*.  
Its causes and prevention.
437. Experiments generally instituted (in suspicious cases) to ascertain, whether

whether the child has been still born, or the contrary.

438. Observations on the usual appearances in cases of suspected violence.

439. Cautions to persons who may be called upon to give evidence on such occasions.











Of the E A R.

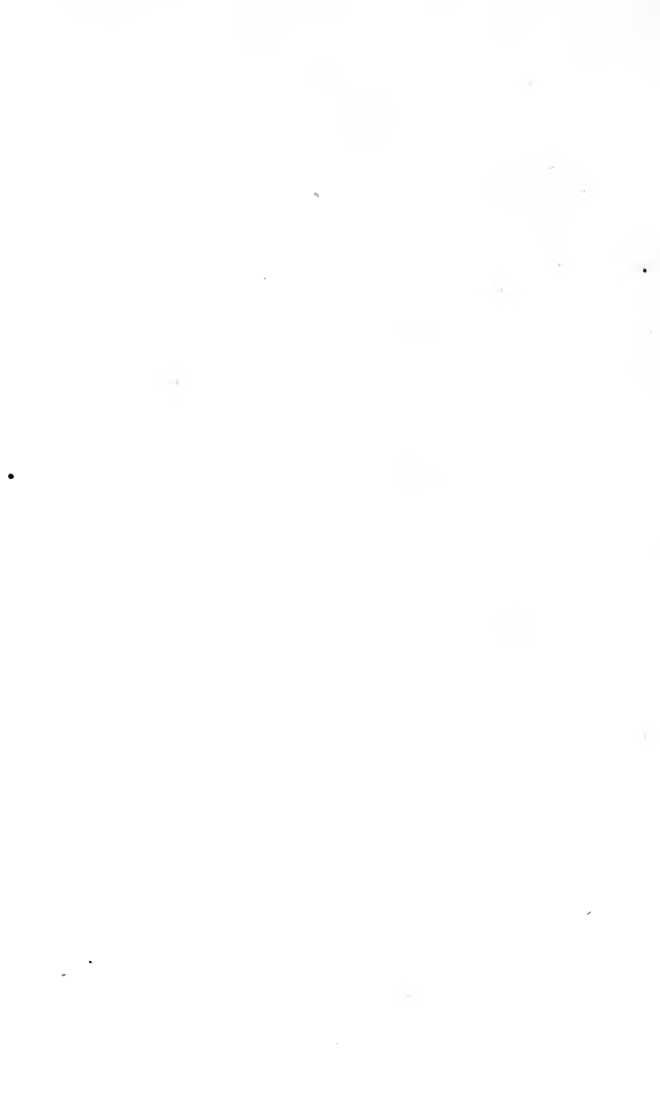
440. Of the external parts of the ear, and its muscles.  
Of the *Meatus auditorius externus*.
441. Of the *Glandulæ Ceruminosæ*.
442. Of the *Membrana Tympani*.  
Its structure, situation, attachments, &c.
443. Of the *Ossicula Auditus*, and the small muscles attached to them.
444. Of the *Labyrinth* of the ear.
445. *Vestibulum, semicircular canals, and cochlea*.  
Of the two *Fenestræ*.  
Of the mastoid cells, &c.
446. Of the *Tuba Eustachiana*.
447. Of the auditory nerves, and their distribution.

Of the *Chorda Tympani*.

448. Of the separate and combined uses of all these parts.
449. Of the sense of hearing.
450. Of deafness, and its causes.
451. Remarks on the cure of nervous deafness, by electricity.
452. Of pain in the ear, and other diseases of that organ.

Of the N O S E.

453. Of the external parts of the nose.  
Of the bones of the nose.  
Of its muscles and cartilages.
454. Of the *Septum Narium*.
455. Remarks on the peculiar form, situation, and use of the *Ossa Spongiosa*.
456. Of











456. Of the posterior openings of the nose.

457. Description of the sinus's which communicate with its internal cavity, and their uses.

458. Of the *lachrymal sac*.

459. Of the *Membrana Schneideriana*, or Pituitaria.

Structure, and extent of this membrane.

Of the mucus secreted on its surface.

Remarks on the uses of the pituitary membrane.

460. Of the *olfactory* nerves.

Their passage through the cribriform lamella of the æthmoid bone, and distribution of them over the pituitary membrane.

461. Of the sense of smelling.

462. Of nasal hæmorrhages, *Ozæna*, *Polypus*, &c.

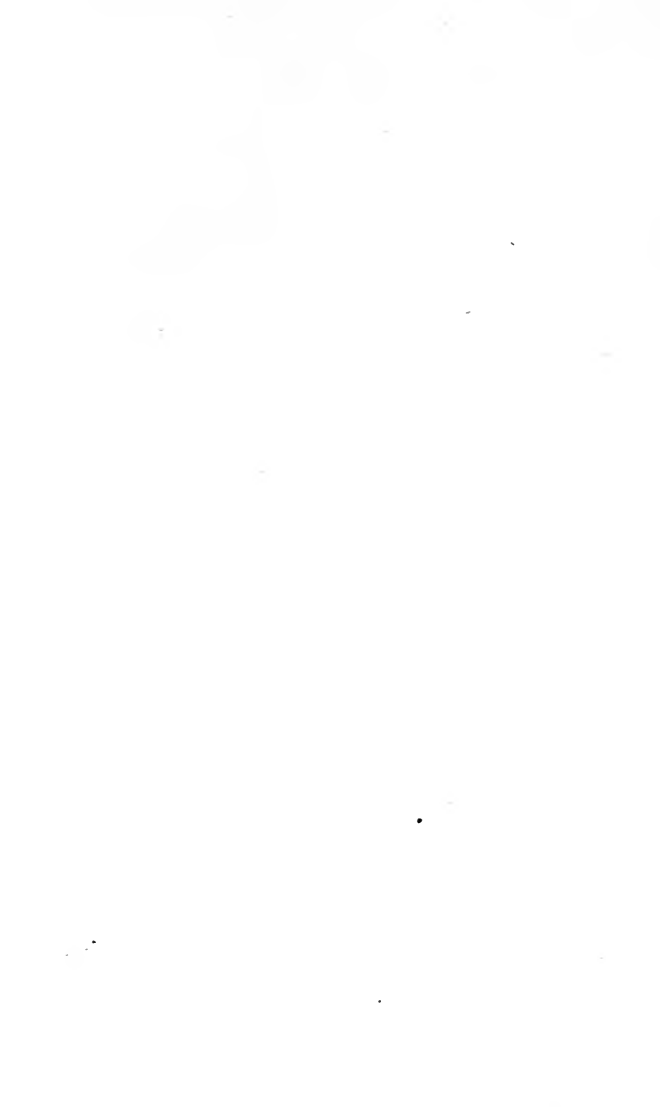
## Of the E Y E.

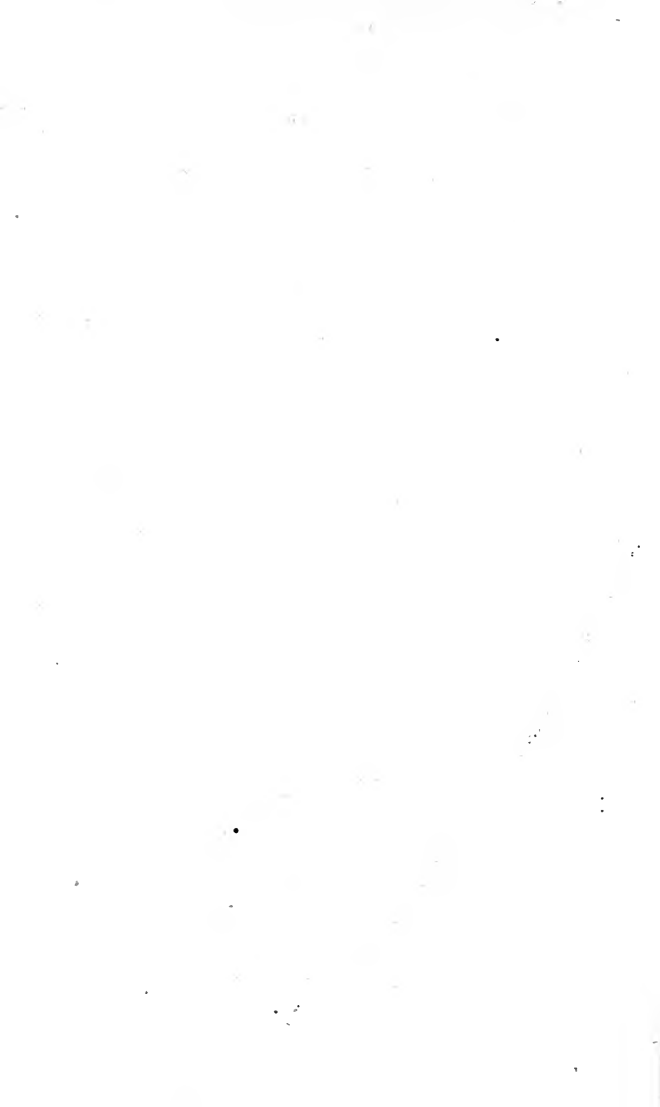
463. *Of the external parts of the eye.*  
 Of the structure and use of the  
 eye-brows.  
 Of the eye-lids, &c.
464. Of the lachrymal gland, and its  
 excretories.
465. Structure and uses of the *puncta*  
*lachrymalia*, *caruncula lachryma-*  
*lis*, and lachrymal duct.

*Of the Globe of the Eye.*

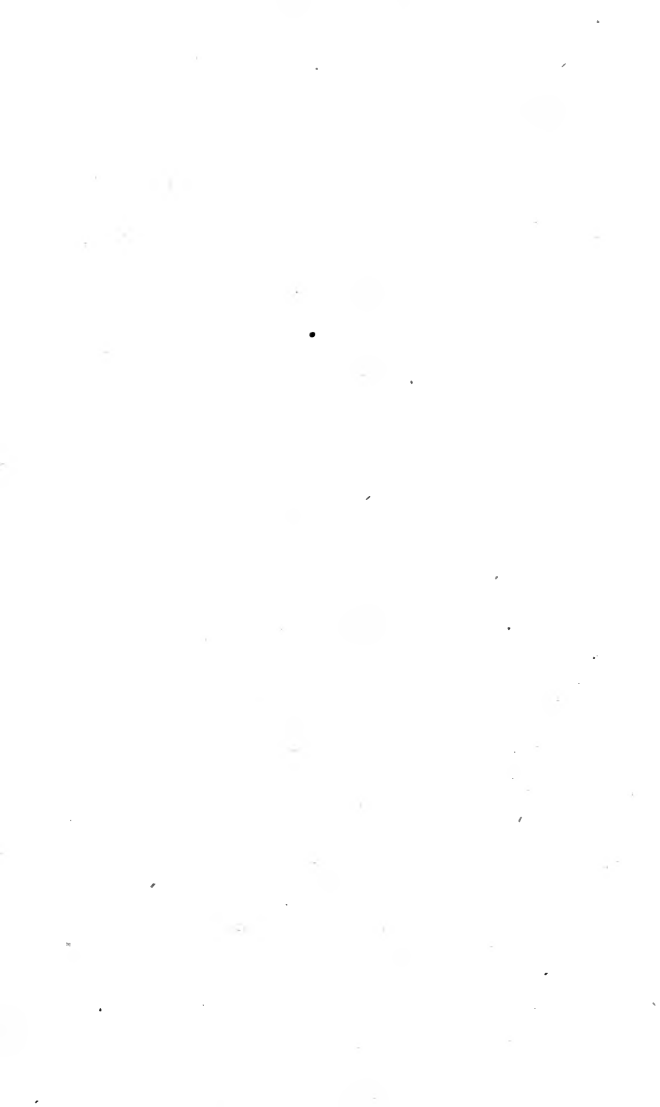
466. Of the *Tunica conjunctiva*, or  
*adnata*.  
 Of the *Tunica albuginea*.
467. Of the six muscles subservient to  
 the eye.  
 Explanation of their structure,  
 situation, and action.

Remarks











Remarks on the uniform motion  
of the eyes.

*Of the three proper coats of the eye.*

468. General explanation of the manner in which the coats of the eye are formed.

469. *Of the Sclerotica and Cornea.*

Particular examination of the structure and uses of this coat.

Of its connexion with the *Choroides*.

470. *Of the Choroides and Uvea or Iris.*

Peculiarities of this coat.

471. Of the manner in which the *Uvea* is formed.

472. *Of the Ligamentum Ciliare.*

473. *Of the Pigmentum nigrum.*

474. *Of the Pupil.*

- \*Remarks on the variety of its structure in different animals.
475. Of the expansion and contraction of the pupil.  
Several phœnomena hence accounted for.
476. Of the *Retina* and *Optic Nerve*.
477. The entrance of the optic nerve into the orbit, described.  
The opinions concerning the manner in which the optic nerves are conjoined.
478. Of the structure and distribution of the *Retina*.

*Of the three humours of the eye.*

479. General remarks on the situation, transparency, &c. of these humours.
480. Of the Chambers of the eye.
481. Of the *Aqueous Humour*.









- Of its different degrees of transparency, at different periods.  
Remarks on the effect of the Jaundice upon this humour.
482. Of the evaporation of the aqueous humour ; and the regeneration of it after it has been artificially evacuated.
483. Pathological remarks on the cause of *Hydrophthalmia*.
484. Of the *Crystalline Humour*.  
Of the structure and situation of the Crystalline Lens, and its Capsule.
485. Of its shape and density.  
Observations on its want of visible attachment, &c.  
Different states of it at different periods of life.
486. Of the *Vitreous Humour*.  
Remarks on the quantity, and density of this humour.
487. Of

487. Of the cellular structure of the membrane which contains it.

Of the cavity for the lodgement of the crystalline, &c.

### OF VISION.

488. Of the refracting powers, &c. of the different humours of the eye.

489. Of the respective uses of the three coats of the eye.

490. Observations on the use of the *ligamentum ciliare*.

491. Of the change produced in the eye, that objects may appear distinct at different distances.

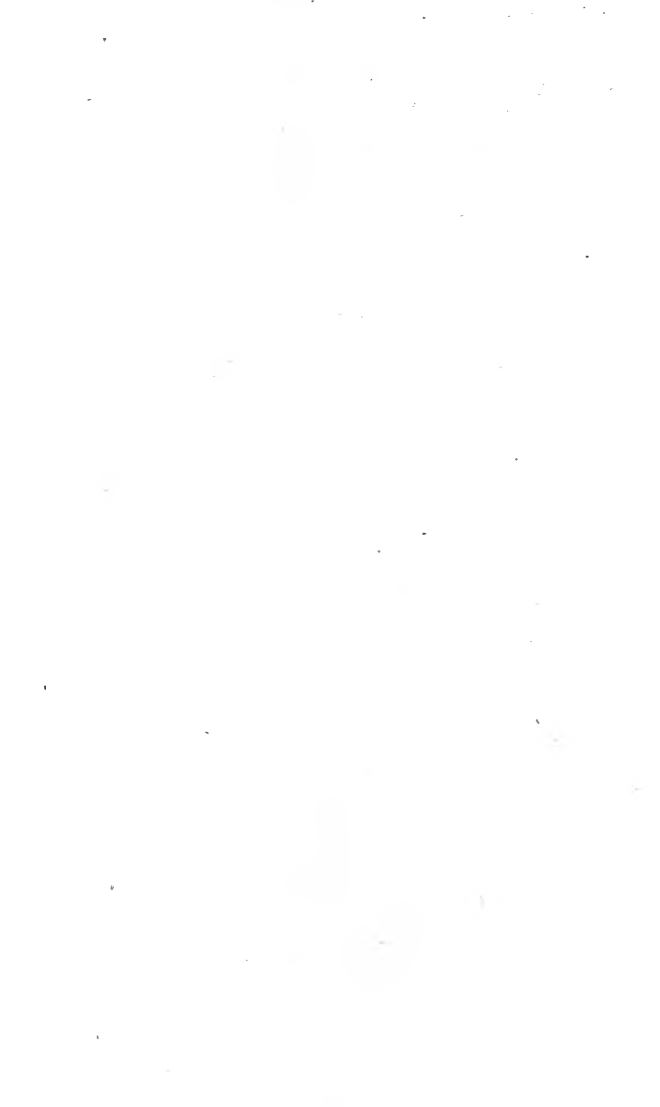
492. Of the manner in which the pictures of objects are formed upon the Retina.

493. Of the *punctum cæcum*, and MARIOTTE'S experiment to prove the insensibility of the Retina at that part.

494. Dispute











494. Dispute betwixt MARIOTTE and PEQUET concerning the seat of vision.

495. Of the causes and effects of the contraction and dilatation of the pupil.

Why we see best from a dark place to a light one, and *vice versa*.

496. Observations on the use of the *pigmentum nigrum*.

Why some people see better in the dark than others, &c.

Several other phœnomena accounted for.

497. Remarks on the cause of *Myopia*, or short sight.

498. Of *Presbyopia*, or weak sight.

Observations on the use of glasses to remedy the above imperfections.

499. Of *Cataract*.

Of

Of couching, and the manner of performing that operation.

500. Of the various causes of *Squinting*, and its usual remedies.

501. Of other diseases of the eye, and the methods of treating them.

Of the TEGUMENTS of the Body.

502. Of the *Cuticula* or *Epidermis*.

Its structure and office.

Of its speedy regeneration.

503. Remarks on the operation of blisters.

504. Of the *rete mucosum*.

Its situation and use.

505. Observations on the cause of the black colour of Negroes, &c.

506. *Of the Cutis or Skin*.

Its structure in general.

507. Of the papillæ of the skin.

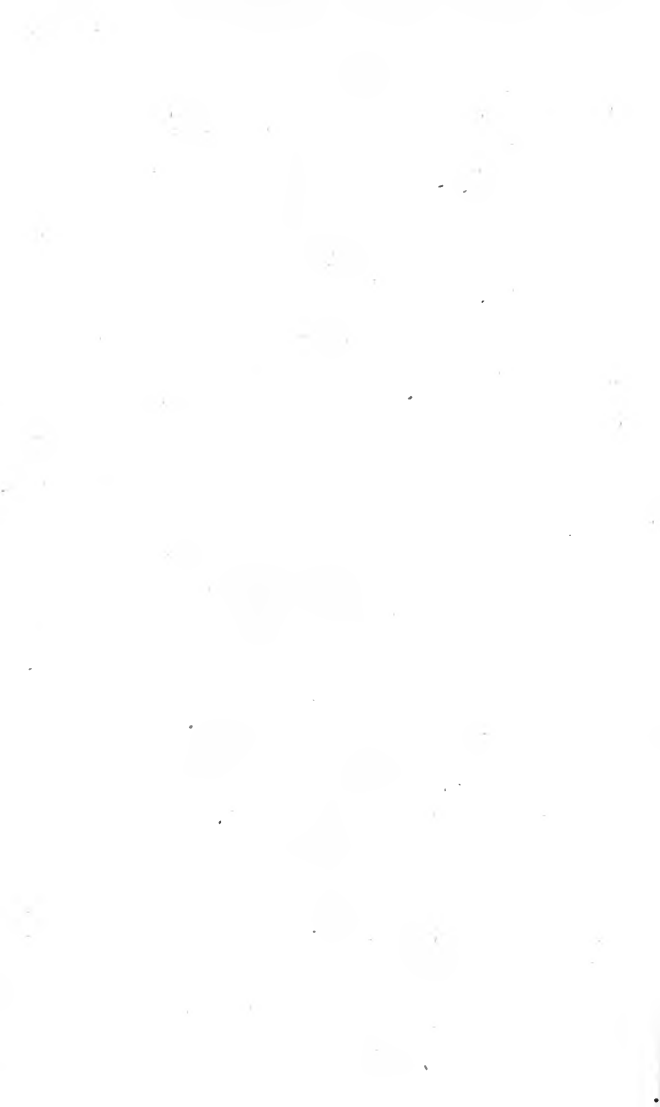
508. Ge-











508. General remarks on the sense of  
FEELING.

509. Of insensible transpiration.

510. Of the *glandulæ miliares*.

511. Of the perspirable matter.

Of its secretion, passage, and  
escape from the body.

512. Of the quantity of this evacu-  
ation.

Experiments of SANCTORIUS, and  
others.

513. Of the cutaneous Lymphatics  
and of absorption from the sur-  
face of the skin.

514. Observations on the use of nu-  
tritive baths.

515. Of the *Membrana adiposa*, and  
reticular substance.

Their texture and uses.

516. An enquiry into the nature and  
use of fat.

517. Observations on the treatment of  
*Emphysema*.

518. Of

518. Of the Nails. <sup>28</sup>  
Their structure, use, &c.
519. Of the Hairs.  
Manner of their growth and receiving nourishment.  
Of their general utility.
520. Of the *alopecia*, and *plica polonica*.
521. Observations on the collections of hair found in the stomachs of animals, and in some abscesses, &c.
522. Of the supposed integuments of the antients:
523. RECAPITULATION of the principal phœnomena of the animal œconomy, which have been taken notice of in the preceding lectures.

CONCLUSION.

COM-











---

## COMPARATIVE ANATOMY.

### INTRODUCTION.

1. OF the utility of comparing the structure of man with that of animals.

Of the use of comparative anatomy in reading antient authors, and its importance in the study of *Zoology*, &c.

2. Observations on the comparative size and strength of animals.
3. Of the general analogy observable in the structure of animals.
4. Of the division of animals into classes.

L

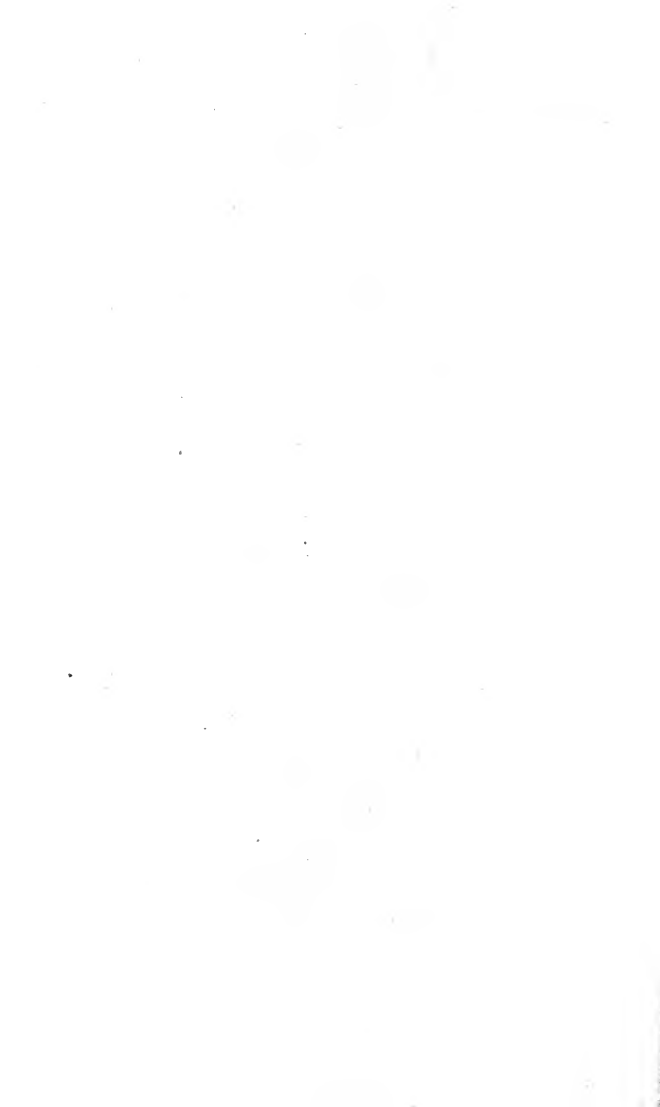
Of

5. Of QUADRUPEDS.
6. Remarks on the peculiarities in the skeletons of different quadrupeds.
7. Observations on the structure, and uses of the tails of various animals.
8. Of the Panniculus Carnosus.
9. Of the situation of the heart compared with that of the same organ in the human species.
10. Of the brain and nerves of quadrupeds.
11. Of the *rete mirabile*, or plexus of blood vessels on each side of the *fella turcica*.  
Reflections on the use of this plexus.
12. Of the NOSE of quadrupeds.  
Of its internal structure, and of the passage, and distribution of the olfactory nerves.









Remarks on the cause of the acute sense of smelling in various animals.

13. Of the EARS.

Of the variety in the shape, situation and uses of the external ear.

14. Of the EYE.

Its structure in different animals.

Of the *musculus suspensorius*.

15. Of the membrana nictitans.

16. Of the figure of the pupil in different animals.

Of its extreme dilatability in some animals, as in the cat, &c.

17. Of the different colours of the choroid coat, or *Tapetum*, in different animals.

Why certain animals are enabled to see with very little light.

18. Of the structure of the **TEETH** in various animals.

Of the difference between the teeth of granivorous, and those of carnivorous animals.

19. Of the want of the *Uvula* in quadrupeds, and the use of the muscle attached to the *Glottis*.

#### ANATOMY OF A DOG.

20. Of the *Omentum*.

Remarks on the size and extent of the omentum in quadrupeds.

21. Of the chylopoietic viscera.

Of the longitudinal direction of the *valvulae conniventes*.

Structure of the intestines of this animal compared with that of the human intestines.

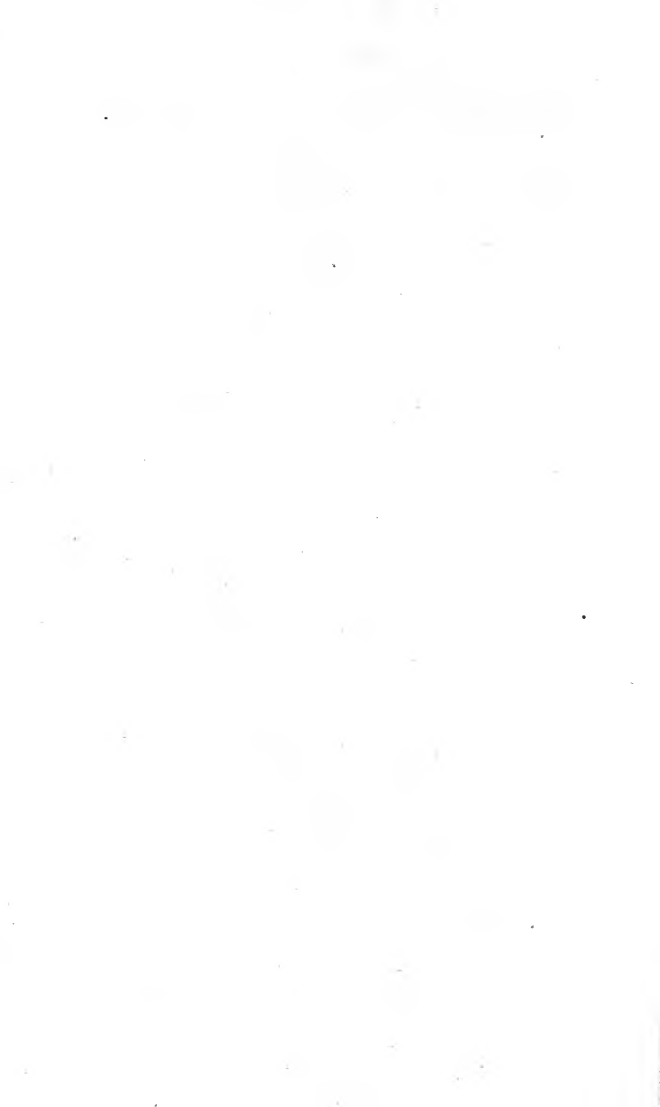
22. Of the digestion of carnivorous animals.











Remarks on the size of the *Appendix Vermiformis*.

Of the *Pancreas Afellii*.

Of the bags found at the extremity of the rectum.

23. Of the *pancreas*, *spleen*, and *liver* of this animal.

24. The kidneys and urinary bladder, compared with the same parts in the human subject.

25. The openings in the *abdomen* for the passage of the testes to the scrotum, compared with the abdominal rings in men.

26. Of the male parts of generation.

Of the want of *vesiculæ seminales* in the dog.

Remarks on the tedious copulation of this animal.

27. Of the female parts of generation,

28. Of

28. Of the defect of sensible perspiration in this species.

29. Remarks on the cause and prevention of the *Rabies canina*.

Of the *Hydrophobia* and the attempts to cure this disease.

30. Of the peculiarities observable in the anatomy of a HORSE.

31. Of the course of the principal blood vessels, &c.

32. Remarks on some of the most common diseases of horses.

### OF RUMINANT ANIMALS.

33. \*Of the four stomachs of ruminant animals, compared with the single stomach of other quadrupeds.

Of

• All ruminant animals have more than one stomach.











Of the manner in which rumination is performed.

Why ruminant animals require less food than other granivorous quadrupeds, who have but one stomach.

34. Of the parts of generation of a cow.

Of the *Uterus* and its *Cornua*.

35. Of the *Fœtus*.

36. Of the *Urachus* and *Allantois*, or reservoir of urine peculiar to the *fœtus* of quadrupeds.

#### OF BIRDS.

37. General remarks on this class of animals.

38. Of the peculiarities in the skeletons of birds.

39. Of the stomach and intestines of the carnivorous, compared with those of granivorous birds.

40. Of

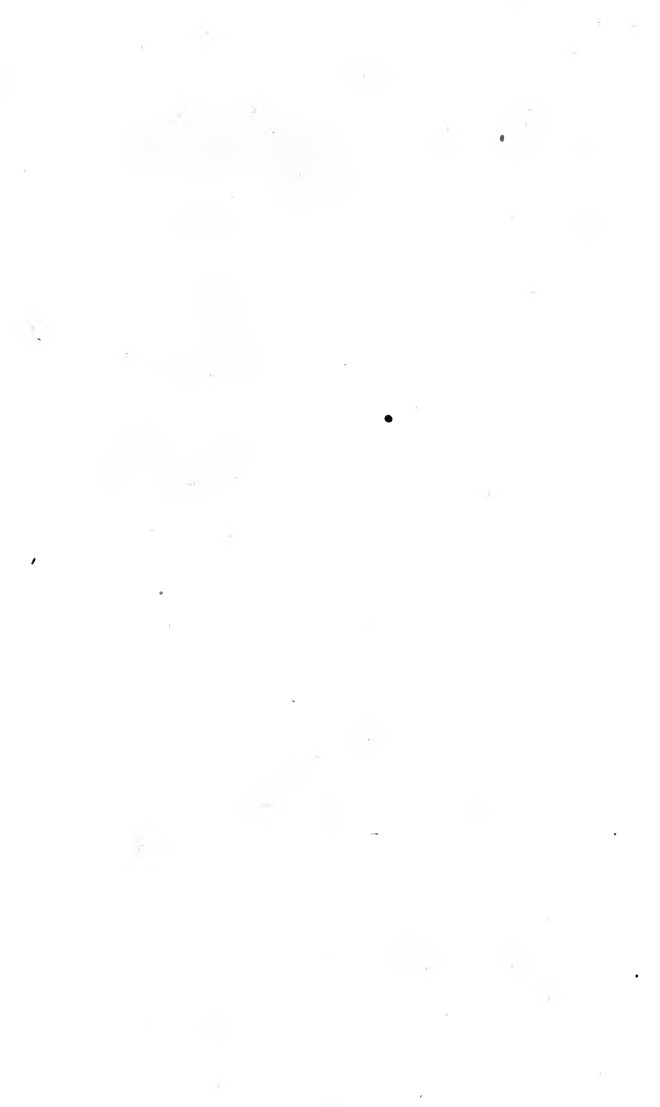
40. Of the *succus gastricus*, and the digestive faculties of the carnivorous tribe.
42. Of the *ventriculus succenturiatus*, and gizzard.
43. Of the triturating power of the gizzard, and the manner in which their food is digested.
44. Of the absorbent system in birds.
45. Of the kidneys and passage of the urinary secretion.
46. Of the extent and attachment of the lungs.  
Of their communication with the abdominal vesicles, and the air cells in the bones of these animals.
47. Of the Diaphragm.
48. Of the brain compared with that of quadrupeds.
49. Of the olfactory nerves, and the organ of smelling.

50. Of











50. Of the eye, and its peculiarities in this class of animals.

Of the *Marsupium nigrum*, or *Bourse noire*.

51. Of the organ of hearing in birds.

52. Of the organs of generation in the male.

53. Of the organs of generation in the female.

Of the vitellarium, infundibulum, &c.

54. Of the phœnomena attending the passage of the egg to the uterus.

55. Structure of an egg explained.

56. Of the progressive changes which the egg undergoes during incubation.

Of the nourishment of the fœtus of oviparous animals.

57. \*Of the secretion in the crops of breeding pigeons for the nourishment of their young.

OF AMPHIBIOUS ANIMALS.

58. Of the heart and lungs of amphibia.

Of the peculiarities in the structure of these organs.

59. Of the transverse canals in the septum between the ventricles, exemplified in the heart of a turtle.

Of the use of these canals.

60. Why all the arteries proceed from the right ventricle.

61. Description of the circulation of the blood in this class of animals.

62. Ob-

\* See a Dissertation on this subject, and also an account of the Air Cells in the Bones of Birds; in Observations on certain parts of the Animal Economy, lately published by Mr. J. Hunter.









62. Observations on the *pulmo arbitrarius* enjoyed by them.
63. General remarks on the structure of *serpents*.
64. Of the teeth of serpents, and their canal for the passage of the poisonous fluid.
- Of the reservoir in which this fluid is contained.
65. Of the general effects of wounds made by the teeth of venomous serpents.
66. Observations on the treatment of persons bit by this species of animals.

### OF FISHES.

67. Remarks on the structure and use of the fins, tail, and other external parts.
68. Of the situation, and structure of the teeth of fishes.

69. Of the organs of digestion, and of the chylopoietic canal.

70. Of the swimming bladder and its use.

71. Of the size and structure of the liver.

Of the situation of the gall bladder, and course of the hepatic and cystic ducts, &c.

72. Of the *intestinula cæca*, and their terminations.

73. Of the spleen, &c.

74. Description of the heart, and its vessels.

Of the single form of the heart, being composed of one auricle and one ventricle.

75. \*Of the circulation of the blood in this class of animals.

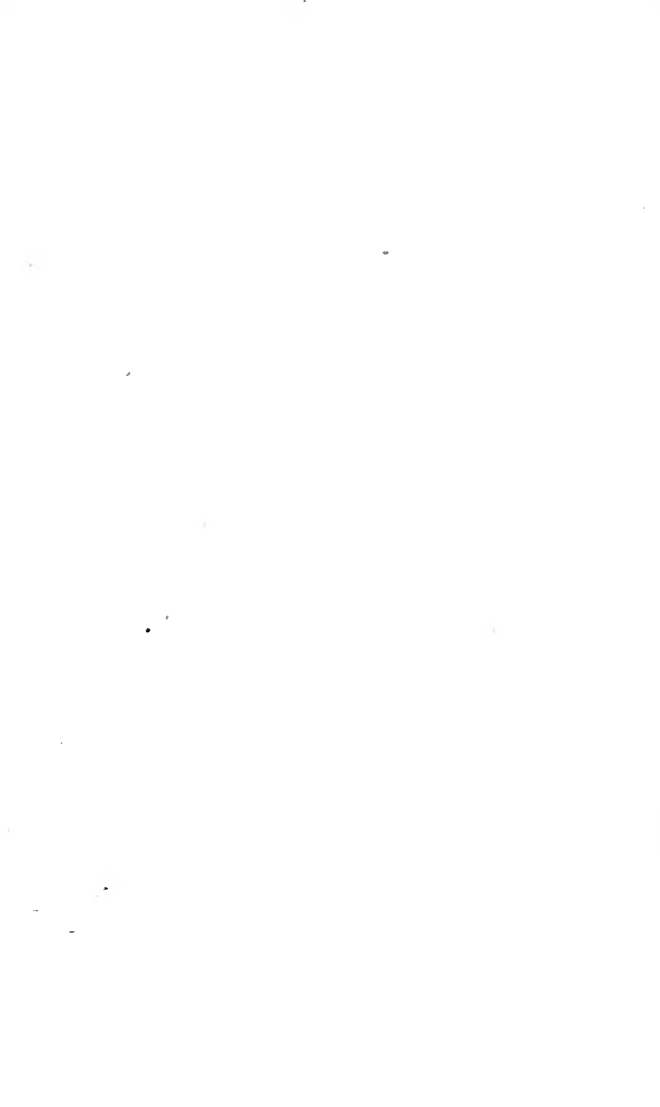
Of

\* See a Treatise on the Structure and Physiology of Fishes, published in 1785, by Alex. Monro, M. D. Professor of Physic, Anatomy, and Surgery, in the University of Edinburgh.











Of the passage of the blood from the ventricle of the heart to the gills, by the bronchial artery.

Of the union of the bronchial veins forming trunks, which perform the office of arteries, and convey the blood, (by their ramifications) all over the body.

Of the return of the blood to the heart by the *Venæ cavæ*.

76. Remarks on this mode of circulation, and on the use of the gills.

Observations on the peculiarities of the circulation in the *Sepia Loligo*, or cuttle fish.

77. Of the absorbent system in fishes.

78. Of the Brain and Nerves.

79. Of the organ of smell in fishes.

80. Of the Ear.

81. Its

81. Its structure and situation in the cartilaginous and osseous fishes.
82. Observations on the faculty of hearing in water.
83. Of the eye.  
Peculiarities of the crystalline, &c.
84. Of the *mucus ducts*, and the secretion of the liquor for the lubrication of the external surface of fishes.
85. Of the parts of generation in the cartilaginous and osseous fishes.
86. Of *Insects, Vermes, &c.*

CONCLUSION.















# SCELETI OSSIUM CATALOGUS.

<p>*OS Frontis.            Os Parietale            Os Temporale            *Os Occipitis            *Os Ethmoidale            *Os Sphænoïdale            Os Unguis            Os Nasi            Os Malæ            Os Maxillare            Os Spongiosum inferius            Os Palati            *Vomer            *Maxilla inferior            Dentes {              Incifores              Canini              Molares            *Os Hyoides            Officula {              Stapes              Incus            Auditus {              Malleus              Os Orbiculare            *Vertebræ {              Colli septem              Dorsi duodecim              Lumborum quinq.            *Os Sacrum            *Os Coccygis            Os Innominatum ex {              Ilio              Ischio              Pube</p>	<p>Costæ {              Veræ septem.              Spuriæ quinque            *Sternum            Clavicula            Scapula            Os Humeri            Ulna            Radius            Offis Carpi {              Scaphoides              Lunare              Cuneiforme              Pisiforme              Trapezium              Trapezoides              Magnum              Unciforme            Offa Metacarpi            Offa Digitorum quindecim            Os Femoris            Tibia            Fibula            Patella            Offa Tarfi {              Astragalus              Os Calcis              Os Naviculare              Offa Cuneiformia              Os Cuboides            Offa Metatarfi quinque            Offa Digitorum Pedis quatuordecim</p>	
--	--	--

MUS-

Those bones which are single in the skeleton, have no asterisk before them,—the rest are in pairs.

REPUBLICAN PARTY







# MUSCULORUM CATALOGUS.

Abdominis	{	Obliquus externus. Obliquus internus. Transversalis. Rectus. Pyramidalis.
Frontis et Occipitis.		Occipito-Frontalis.
Superciliorum.		Corrugator.
Genarum	{	Quadratus, five Platysma Myoides. Buccinator.
Palpebrarum	{	Orbicularis. Aperiens Rectus.
Alarum Nasi	{	Levator. Dilator. Constrictor five Transversalis.
Labiorum	{	Elevator } Labii Superioris proprius
	{	Depressor }
	{	Elevator } Labii Inferioris proprius
	{	Depressor }
	{	Elevator } Communis.
		Depressor }
		Zygomaticus major, et minor.
		Orbicularis.
Auriculam	{	Attollens. Retrahens.
Oculorum	{	Obliquus { Superior, five Trochlearis. Inferior.
	{	Attollens.
	{	Deprimens.
	{	Abductor.
	{	Adductor.
Auris Internæ	{	Externus. Internus. Obliquus. Stapedæus.
	{	Sterno-hyoidæus. Coraco-hyoidæus.
	{	Stylo-hyoidæus. Genio-hyoidæus.
	{	Milo-hyoidæus.

Lingua

Linguae	{	Genio-glossus.
		Stylo-glossus.
		Basio-chondro-cerato Glossus.
		Linguales.
Uvulae	{	Glossio-Staphylinus.
		Pterigo-Staphylinus.
		Pharyngo-Staphylinus.
		Levator, five Salpingo-Staphylinus.
Pharyngæus.		
Ocophagæus.		
Laryngis	{	Sterno-thyroidæus.
		Hyo-thyroidæus.
		Crico-thyroidæus.
		Crico-Arytenoidæus { posticus,
		latèralis.
		Arytenoidæus major, et minor.
		Thyro-Arytenoidæus.
Maxillæ Inferioris	{	Temporalis.
		Masseter.
		Digastricus.
		Pterigoidæus externus, et internus.
Thoracis	{	Serratas Anticus major, et minor.
		Subclavius.
		Scalenus.
		Triangularis Sterni.
		DIAPHRAGMA.
		Intercostales externi, et interni.
		Serratus Posticus superior, et inferior.
Scapulæ	{	Trapezius, five Cucullaris.
		Rhomboides.
		Levator, five Musculus Patientiæ.
Capitis	{	Splenius.
		Complexus.
		Rectus Posterior, major, et minor.
		Obliquus superior, et inferior.
		Sterno-mastoidæus.
		Trachelo-mastoidæus.
		Rectus Anterior { major.
		minor.
		latèralis.
Collis	{	Longus.
		Spinalis.
		Semispinalis.
		Transversalis.
		Inter-spinales.
		Inter-transversales.









- Dorsi { Sacrolumbalis.  
Longissimus.
- Lumborum { Quadratus.  
Sacer.  
Psoas Parvus.
- Coccygæus.
- Humeri { Pectoralis.  
Deltoides.  
Supra-spinatus.  
Infra-spinatus.  
Teres minor, et major.  
Latissimus Dorsi.  
Coraco brachialis.  
Subscapularis.
- Humeri { Biceps Flexor.  
Brachiaeus internus.  
Biceps extensor, five Gemellus.  
Brachiaeus externus.  
Anconæus.
- Volæ Manus. Palmarus longus, et brevis.
- Radii { Supinator longus, et brevis.  
Pronator Teres, et quadratus.
- Carpi { Flexor, Radialis, et Ulnaris.  
Extensor, Radialis, et Ulnaris.
- Digitorum Communes { Extensor.  
Flexor { Sublimis, five perforatus.  
Profundus, five perforans.  
Lumbricales.  
Interossei.
- Indicis { Indicator.  
Adductor proprius, et communis.
- Digiti minimi { Abductor.  
Primi internodii flexor.  
Extensor.
- Pollicis { Flexor internodii primi, secundi, et tertii five longus.  
Extensor internodii primi, secundi, et tertii.  
Abductor.  
Adductor, proprius et communis.
- Flexor Ossis Metacarpi, minimum Digitum sustinentis.
- Femoris { Psoas magnus.  
Iliacus internus.  
Pectineus.  
Glutæus magnus, medius et minimus.  
Triceps Extensor.  
Iliacus Externus, five pyriformis.  
Gemelli.  
Obturator externus, et internus five Marsupialis.  
Quadratus.

Cruis	{	Membranofus.
		Sartorius.
		Gracilis.
		Bracilis.
		Biceps Flexor.
		Seminervofus
		Semimembranofus.
		Rectus.
		Vaftus externus, et internus.
		Crureus.
Poplitæus.		
Tarsi	{	Tibialis Anticus.
		Gastrocnemius, ubi <i>Tendo Achillis</i> .
		Plantaris.
		Soleus.
		Peroneus longus et brevis.
Tibialis Pofticus.		
Digitorum Pedis	{	Extensor longus, et brevis.
		Flexor Perforatus, et Perforans.
		Lumbricales.
		Interoffei.
Pollicis Pedis	{	Extensor longus, et brevis.
		Flexor longus, et brevis.
		Abductor.
		Adductor.
Transverfalis Pedis.		
Digiti Minimi	{	Flexor Proprius.
		Abductor.
Penis	{	Erectores.
		Acceleratores Urinæ.
		Transverfalis.
Clitoridis, Erector.		
Vaginæ Sphincter.		
Ani	{	Levatores.
		Sphincter.









UNIVERSITY OF CALIFORNIA LIBRARY  
Los Angeles  
This book is DUE on the last date stamped below.

REC'D ED-URE

NOV 18 1980

24139

UC SOUTHERN REGIONAL LIBRARY FACILITY



A 000 000 194 1

A

