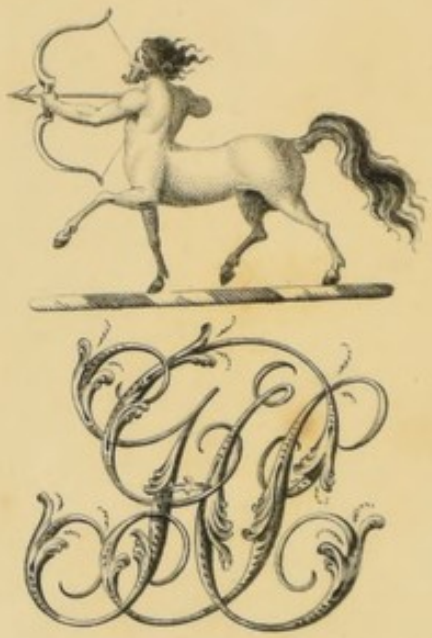

A SYNOPSIS OF A COURSE OF LECTURES ON ANATOMY and PHYSIOLOGY.

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.

TO

RICHARD FARMER, D.D.

MASTER OF EMMANUEL COLLEGE

AND

PRINCIPAL LIBRARIAN

IN THE UNIVERSITY OF CAMBRIDGE,

THE FOLLOWING

SYNOPSIS

OF A

COURSE OF LECTURES

ON

Anatomy and Physiology,

IS MOST RESPECTFULLY INSCRIBED,

BY

HIS MOST OBEDIENT HUMBLE SERVANT,

BUSICK HARWOOD.

EMMANUEL COLLEGE,
1st Feb. 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

as the nature of the undertaking would admit. And to remedy the inconvenience, which might arife from any occafional breach in this order, I have avoided the divifion of it into feparate lectures, and have prefixed numbers to each article, by which means they may be referred to at pleafure. The number of articles has alfo been reduced into as fmall a compafs as poffible, by omitting the enumeration of the Bones and Mufcles, a catalogue of which will be found at the end of the Syllabus.

Befides the more immediate purpofe for which the following pages were defigned, I am not without hopes that an attempt (which as far as I know is the firft,) to collect and arrange the principal facts, and difcoveries in Anatomy, may be of ufe to other Teachers of the art, who may poffibly 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 likewife my intention to give

fome

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 Œconomy, will be particularly pointed out.

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

Dr. Friend's History of Physic.

Hippocrates, mentions having ~~me~~ been
they ought to
"seen the skeleton of an human body."

Two eminent surgeons of Alexandria accused of
dissecting men alive:

Harvey the great founder of Anatomy
discovered the circulation of the blood from observing
the valves of the veins shewed to him by Fabricius Aquap

Linnaeus' arrangement of the kingdoms,
'Crescit, Vivit, Sentit,' defective.

Musciscula Dionea, (which entices flies, in-
closes them, & crushes them, & probably draws
nourishment from their juice,) a wonderful
link between the animal & vegetable kingdom
Anemonies, Polypus &c.

INTRODUCTION.

Hiſtory of Anatomy.

1. RISE, 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.

5. Explication of the general terms of Anatomy.

Of the Nature, and Properties of the
BLOOD.

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

Blood contains an alkaline salt.

The redness of the globules formerly attributed to the iron which is found from its being attracted by the load stone.

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.

Various

Blood becomes red by coming into a state of contact with air, altho' separated from it by thin membrane. Priestley hung it up in the thinnest bladder, & the effect was produced. –

Milk, air & quicksilver were successively injected into the heart of a dog without producing any violent case in the two first cases & in the latter the dog was relieved by a salivation.

Where a pound of blood beyond the usual quantity was infused into a dog, the animal ~~re~~ relieved itself by eating grass, & taking no food till it had been evacuated.

Of BONES.

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

disorder by which the calcareous
matter is dissolved, the bones become
soft &c. not to be cured: known to the Physicians

Chyle will receive madder, indigo &c. but
has the power of rejecting any noxious
matter such as ink

madder will make the bones hard.

venereal infection is immediately carried from the parts where it is first received to the ~~nest~~ glands; then mixes with the blood, affects the skin, & lastly corrodes the bones.

when the cartilage is spoiled the power of the joints is lost - sometimes the case with the arms &c. of old people.

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

Of LIGAMENTS.

Of ARTICULATION.

The stomach when full, compresses the gall bladder which discharges the bile that is necessary to digest the ~~bladder~~ food that is to pass from the stomach into the intestines.

The motion of the heart, lungs, &c cannot be ~~affected~~ stopped by any internal motion of the other parts, so that a man must commit an act of deliberate suicide to kill himself

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

50. Of Anchyloſis.

SKELETON.

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.

 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 ſinus'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. [a]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

Of the alveolar proceſſes.

Of the abſorption of theſe proceſſes in old age.

78. Of the teeth in general.

[b]Of the ſtructure and form of the different claſſes of teeth.

Of their enamel, and its uſes.

79. Obervations 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 SPINE.

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 Vertebræ of the Neck.

84. Of the ATLAS and EPISTROPHEUS. Obſervations on their peculiar form, and articulation.

85. Of the perforations of the cervical vertebræ, for the paſſage of the vertebral artery.

Of the Dorſal Vertebræ.

86. Of their ſubſtance, ſize, &c.

87. Of their articulation with the ribs.

Of the Lumbar Vertebræ.

88. Of their ſituation and ſtrength.

89. Of the peculiarities of the vertebræ of the back and loins.

90. Of the ligaments connecting the vertebræ.

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 PELVIS.

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.

Of the THORAX.

Of the Sternum.

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. Obſer-

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 PETELLA, and its uſes.

128. Of luxations and fractures of the patella, and of the bones of the leg.

129. Of the TARSUS.

The

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 *aſtragulus*, with the bones of the leg.

131. Of the METATURSUS 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 fœtus.

Of

Of MUSCLES.

136. OF 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.[d] 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 *Bubonocele.*

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.

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.*

150. Of the greatest of muscles of the shoulder.

Muscles of the Upper Extremity.

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

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

153. Of those which move the bones of the forearm on the os humeri.

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

155. Of those which move the carpus on the forearm.

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.

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 diſeaſes of the pleura.
Of the *hydrops pectoris*.

Of the Thymus.

169. Different ſtates of this gland in the adult ſubject, and in the fœtus.
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 HEART.

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.

Of the Left Ventricle.

180. Its ſubſtance, ſituation, &c.

181. Of the *valvulæ 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.

[f]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-

/itole

..eries.

~~Operation of the lungs performed by a~~

lungs supplied with air with air by a pair of bellows contrived for that purpose, I inserted thro the mouth. useful in the case of drowned persons to oxygenate the blood, & renew circulation.

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

Of the LUNGS.

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 phœnomenon.

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 fœtus.

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-

[i]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. [k]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

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 tranſudation.

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.

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

There is the same different between the Oesophagus &c. of carnivorous & granivorous birds, as there is between carnivorous & herbaceous ~~&~~ animals.

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.[m] 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

~~Stomach~~.

Four stomachs in ruminating animal
the camel has a fifth where ~~it~~ water
is ~~poured~~ kept for many days - this is fo
cellular, & detached from the other me
bers that the water may be preserve
pure. - the Arabs have sometim
when in great distress for water spe
their camels, & taken it from this sto-
mach.

experiment was made upon
with a man who could vomit without being sick
by quitting the atmospheric air. the gastric juice
acts first upon the outer layer of the food, con-
verts it into a sort of pulp, & then proceeds thro
that to affect the inner. — in this person com
plete digestion took two hours & a half. —

several hypotheses about digestion. the Ancients
attributed it to the natural heat of the sto-
mach. — others to trituration, which would
suppose the muscles of the stomach to
act with several 1000 pounds force. others to
fermentation which supposes a diseased system.
the true solvent the gastric juice. —
this has no effect on anything that has
the cause of life in it. — instanced in
worms upon which while alive it
cannot act; but which when killed by

medicine, are digested & may add to
nourishment. — for this reason it
does not dissolve the stomach it be-
longs to, altho' it would that of
any other animal introduced into it.
a live limb may therefore be put
into stomach of any animal without
danger. when fish are swallowed by lar-
ger fish, heat is dissolved before it reaches

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.

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.

Spallanzani first procured gastric juice by introducing a sponge into the stomach of an hungry dog.

282. Of

the human gastric juice acts so powerfull a that of fowls. their gastric juice when extracted by means of a sponge, acts upon any substance it is applied to, such as bone, ivory &c.

matter must be got rid of by gentle emetics

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 PANCREAS.

288. Its ſtructure, ſituation, &c.

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

289. Of

cardialgia or heart burn arises from too much acid in the gastric juice. – the chlorosis or green sickness arises either from too much or too little acid. in the case nature impells girls either to eat chalk ashes, &c. which neutralize the acid, or unripe fruit which produces it. no physician could prescribe better

birds &c. have trituration; but in fact they masticate in the stomach instead of the mouth, & after the trituration is over the operation of digestion begins. — lobsters have teeth in the stomach.

hunger caused by the gastric juice leaving nothing to work upon. —

bark retards digestion after food, but acts as a tonic upon an empty stomach.

husks, skins &c. indigestible. — ~~the fluids~~ the gastric juice acts with difficulty on fluids — milk, the only fluid food which nature has prepared for us, always coagulates before digestion begins.

the heart contains vessels to renew itself.

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mistake of the word crux which signifies both a precious stone & a nail, has given rise to ~~[illegible]~~ mistakes about poisons concealed in the nail

Poisons, are generally so from quantity more than quality. — every medicine in excess becomes poison. — they are of two sorts; the irritating & corroding, which affect the stomach by wounding it, & the dull, stupifying, which particularly lay hold of the nerves, & produce torpor, sleep &c. — different & opposite modes of cure for these, — ~~but~~ in the one case inflammation must be prevented — in the other the circulation quickened. — but in all the poisonous matter must be got rid of by gentle evacuation

the bite of mad dogs – may be cured by mercury where the constitution is able to bear a sufficient quantity. – it forecomfits the glands, which the poisonous matter – instance where it was tried; upon its being discontinued, the symptoms of Hydrophobia took place. – but upon its being repeated the disorder gave way:– a long continued dressing of warm water in poisonous bites, stings &c. when put in execution immediately, frequently successfull. –

Water boiled with Mercury an infallible cure for worms; & perfectly innocent.

one sort of poison used to counteract the other - the irritating to excite, where the stupifying have taken effect. this must be done by every means, even by pricking with red hot irons, pricking &c.

Ruptures proceed from a gut being passed with the testicles soon after birth. —

Tobacco smoke may be introduced into the intestines, stomach, &c. in glysters & will produce evacuations; when an obstruction prevents any thing else being used.

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

[o]Of the SPLEEN.

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.

[p]Of the OMENTUM.

293. Its figure, ſituation, and ſtructure.

Of its blood veſſels.

Of the fat contained in the cells of the omentum.

Of

294. Of the uſe of the omentum.

Of the LIVER.

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 bilarii*.

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.[q] 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

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 CŒCUM.

320. Its figure, ſituation, and ſuppoſed uſes.

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

321. Of the *Appendicula vermiformis cœci*.

* See comp. anat.

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 *levatores 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 *Aſellius*.

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 *ſub-clavian* 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

Of the KIDNEYS.

Of

[u]Of the *infundibula* and pelvis of the kidneys.

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

349. Fœtal 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.

[v]Of the BLADDER.

352. Its ſituation, ſtructure, and uſe.

353. Evacuation of the urine, how performed.

Of the muſcles employed in this office.

354. Analyſis of urine.

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 SCHEELE.

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*, *Dyſury*, ſuppreſſion of urine, &c.

w*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

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

tool secretion never affected in the
has venereal &c. but by sympath

the throat symptoms not with
the heat of generation both male
& female — in the mumps &c.

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

Difficulty of conception, as the semen must be fall down one of the Fallopian tubes to get into the Uterus.

A Forest

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

Monsters in animals occur much more in a tame than wild state. where chickens are hatched by artificial heat as in ~~Lent~~ Egypt. also in Scotland at Sir J. Hall's; where there was a large proportion of monsters at first, but when the heat was more regularly & evenly administered, the number diminish

the tumor here formed itself a placenta in the vagina where it is deposited. — dangerous because no conception can be effected.

Effects of fright certain on the foetus. a simple face in consequence of a blow which made the face of the mother bloody. —

instance of a lady whose fingers her husband had struck suddenly while with child, to ~~prevent~~ break her holding them behind her at the fire; the child had his fingers chopt just at the place. —

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 communication between the mother and the fœtus.

* See comparative anatomy.

Of

. . . a trial whether there has been life in a child
fallacy of swimming the lungs — since in
the first place, women who ~~assist~~ assist ~~often~~ at a
delivery often breathe into the mouth of a child
that appears dead in hopes of removing some
obstruction, & that may produce the effect —
dly in cases of putrefaction, a quantity of
inflammable air is emitted from the putrifying
~~of the~~ vessels, which being the lightest of all
gas is most likely to produce the effects.
how necessary to be cautious in these cases,
scarce any but proofs of external violence to
be admitted as evidence.

case of a midwife tried 80 years ago, who
being in the habits of delivering women of
dead children, was always sent for where
this was wished to be the case. This she
effected by introducing a knitting pin ~~to~~ into
the vagina, & thro the brain of child — &
this ~~passed~~ was conceived to be no murder, but ~~as an~~ only
abortion — once however she failed, as the
child breathed after it was born, & the
jury that was <u>murdered</u> from previous
violence received in the womb & the woman
was hanged accordingly. —

Of the extraction of the *ſecundines.*

429. Of the cauſes of difficult labour.

x 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

Of the EAR.

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

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 NOSE.

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

* See Art. 71 to 76.

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

Of the EYE.

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 lachrymalis*, 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

Pestalo lachrymalis

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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*.

 * Re-

*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

[illegible] – it not at all the
judge of distances by the [illegible] of
the rays – 1 eye no good
judge of [illegible] –

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 *Hydropthalmia*.

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 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 cœcum*, 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-

518. Of

518. Of the Nails.

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.

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 *ſella 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.

Re-

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 *valvulæ conniventes*.

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

22. Of the digeſtion of carnivorous animals.

Re-

Remarks on the ſize of the *Appendix Vermiformis.*

Of the Pancreas Aſellii.

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

OF RUMINANT ANIMALS.

Of

* All ruminant animals have more than one ſtomach.

Of Birds.

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 clafs of animals.

Of the *Marfupium nigrum*, or *Bourfe 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 paffage of the egg to the uterus.

55. Structure of an egg explained.

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

Of the nourifhment of the fœtus of oviparous animals.

57. *Of the ſecretion in the crops of breeding pidgeons 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 Œconomy, 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 cœca*, 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.

*OS Frontis.
Os Parietale
Os Temporale
*Os Occipitis
*Os Ethmoidale
*Os Sphænoidale
Os Unguis
Os Nasi
Os Malæ
Os Maxillare
Os Spongiosum inferius
Os Palati
*Vomer
*Maxilla inferior
Dentes { Incisores, Canini, Molares }
*Os Hyoides
Officula Auditus { Stapes, Incus, Malleus, Os Orbiculare }
*Vertebræ { Colli septem, Dorsi duodecim, Lumborum quinq. }
*Os Sacrum
*Os Coccygis
Os Innominatum ex { Ilio, Ischio, Pube }

Costæ { Veræ septem. Spuriæ quinque }
*Sternum
Clavicula
Scapula
Os Humeri
Ulna
Radius
Ossis Carpi { Scaphoides, Lunare, Cuneiforme, Pisiforme, Trapezium, Trapezoides, Magnum, Unciforme }
Ossa Metacarpi
Ossa Digitorum quindecim
Os Femoris
Tibia
Fibula
Patella
Ossa Tarsi { Astragalus, Os Calcis, Os Naviculare, Ossa Cuneiformia, Os Cuboides }
Ossa Metatarsi quinque
Ossa Digitorum Pedis quatuordecim

MUS-

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

MUSCULORUM CATALOGUS.

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

Linguæ

- Linguæ
  - Genio-gloſſus.
  - Stylo-gloſſus.
  - Baſio-chondro-cerato Gloſſus.
  - Linguales.
- Uvulæ
  - Gloſſio-Staphylinus.
  - Pterigo-Staphylinus.
  - Pharyngo-Staphylinus.
  - Levator, ſive Salpingo-Staphylinus.
- Pharyngæus.
- Oeſophagæus.
- Laryngis
  - Sterno-thyroidæus.
  - Hyo-thyroidæus.
  - Crico-thyroidæus.
  - Crico-Arytenoidæus
    - poſticus.
    - lateralis.
  - 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, ſive Cucullaris.
  - Rhomboides.
  - Levator, ſive Muſculus Patientiæ.
- Capitis
  - Splenius.
  - Complexus.
  - Rectus Poſterior, major, et minor.
  - Obliquus ſuperior, et inferior.
  - Sterno-maſtoidæus.
  - Trachelo-maſtoidæus.
  - Rectus Anterior
    - major.
    - minor.
    - lateralis.
- Colli
  - Longus.
  - Spinalis.
  - Semiſpinalis.
  - Tranſverſalis.
  - Inter-ſpinales.
  - Inter-tranſverſales.

Dorſi

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.
- Brachiæus internus.
- Biceps extenſor, ſive Gemellus.
- Brachiæus 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, ſive perforatus.
  - Profundus, ſive perforans.
- Lumbricales.
- Interoſſei.

Indicis
- Indicator.
- Adductor proprius, et communis.

Digiti minimi
- Abductor.
- Primi internodii flexor.
- Extenſor.

Pollicis
- Flexor internodii primi, ſecundi, et tertii ſive 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, ſive pyriformis.
- Gemelli.
- Obturator externus, et internus ſive Marſupialis.
- Quadratus.

Cruris

- Cruris
  - Membranosus.
  - Sartorius.
  - Gracilis.
  - Bracilis.
  - Biceps Flexor.
  - Seminervosus
  - Semimembranosus.
  - Rectus.
  - Vastus externus, et internus.
  - Crureus.
  - Poplitæus.
- Tarsi
  - Tibialis Anticus.
  - Gastrocnemius, ubi *Tendo Achillis.*
  - Plantaris.
  - Soleus.
  - Peroneus longus et brevis.
  - Tibialis Posticus.
- Digitorum Pedis
  - Extensor longus, et brevis.
  - Flexor Perforatus, et Perforans.
  - Lumbricales.
  - Interossei.
- Pollicis Pedis
  - Extensor longus, et brevis.
  - Flexor longus, et brevis.
  - Abductor.
  - Adductor.
- Transversalis Pedis.
- Digiti Minimi
  - Flexor Proprius.
  - Abductor.
- Penis
  - Erectores.
  - Acceleratores Urinæ.
  - Transversalis.
- Clitoridis, Erector.
- Vaginæ Sphincter.
- Ani
  - Levatores.
  - Sphincter.

F I N I S.

Fallacy of swimming bags: putrefaction
emits inflammable air which is lighter
than any. –