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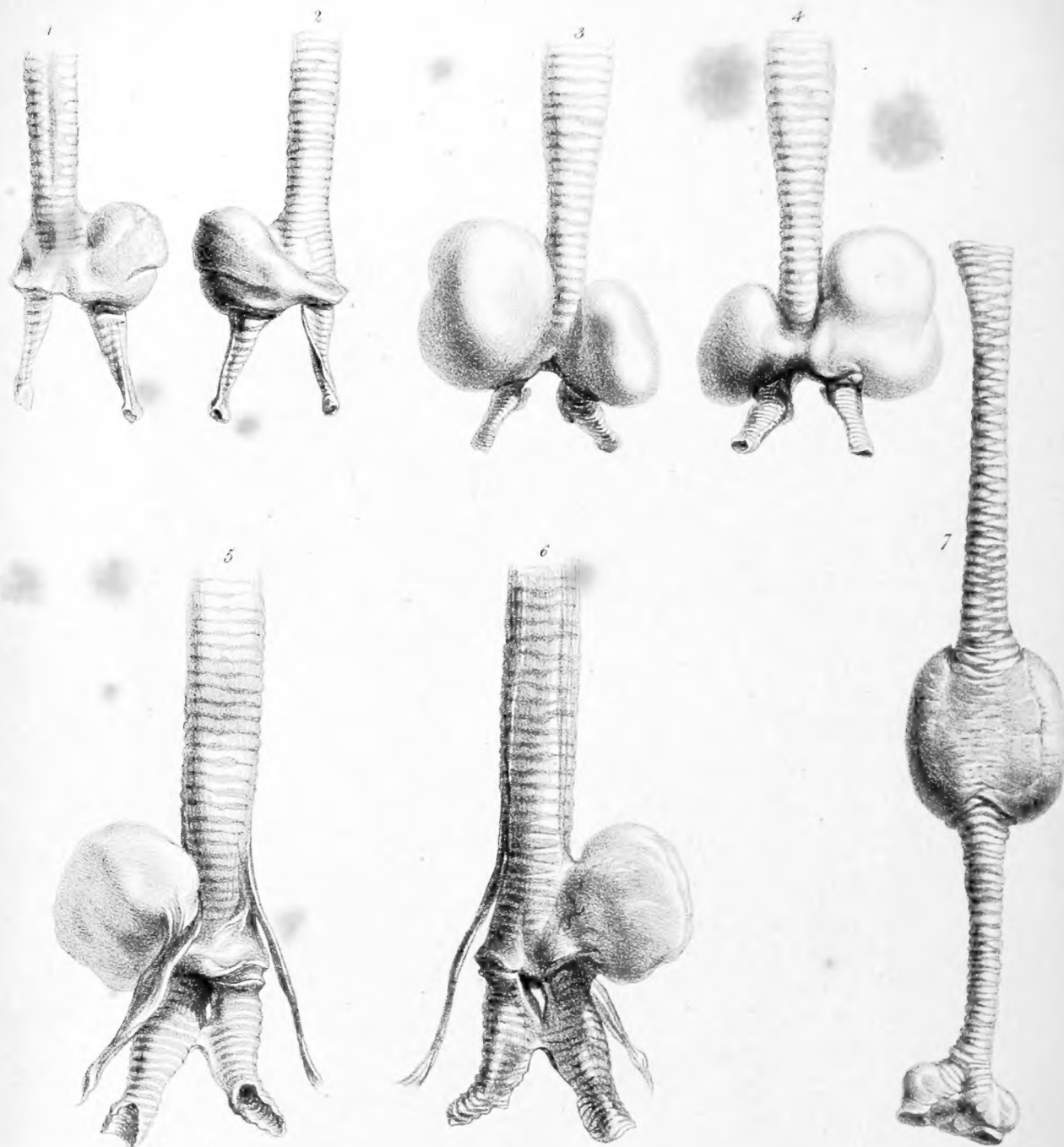
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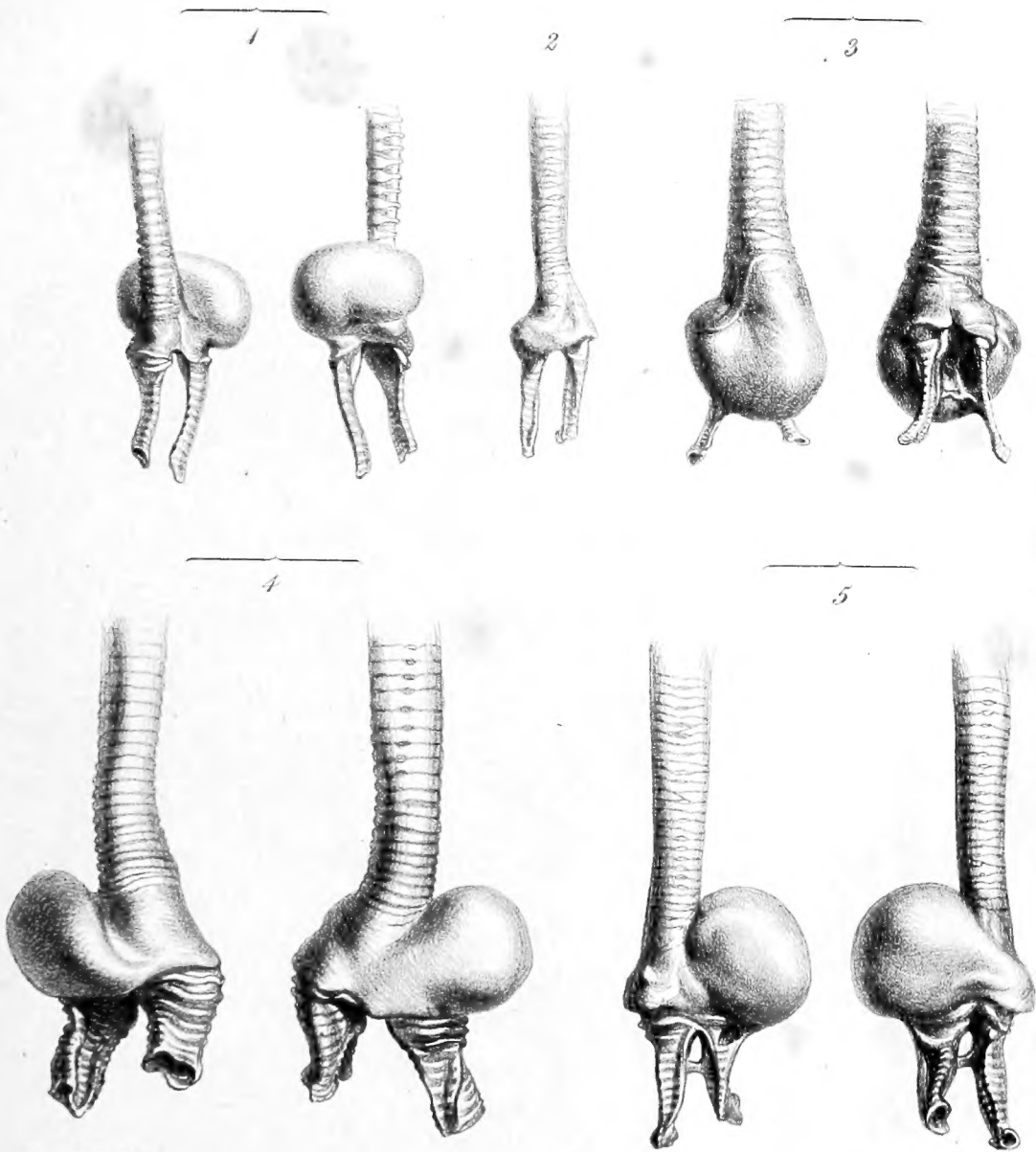


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Invent. by H. H. Mandel

Trachea of

1. 2. *Chloephaga Magellanica*. 3. 4. *Tadorna Belloni*.
 5. 6. *Carina Moschata*. 7. *Melanitta fusca*.



G. Schaeff del et lith.

Printed by C. Hallmandel.

Trachea of

Fig 1. Aia sponsa.

3 Cyanopterus circia

4. Micropterus latichonichus

2. Querquedula formosa 5. Bernicla antarctica

All males.



A

MONOGRAPH

ON

THE ANATIDÆ,

OR

DUCK TRIBE.

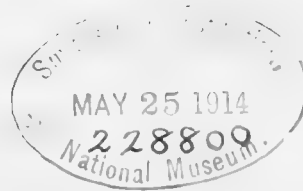
BY

T. C. EYTON, ESQ. F. L. S. F. Z. S.

LONDON:

LONGMAN, ORME, BROWN, GREEN, & LONGMAN, PATERNOSTER-ROW;
AND EDDOWES, SHIREWSBURY.

MDCCCXXXVIII.



Handwritten notes in the top left corner:
6
Chase
Quarrels
Birds



62
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PREFACE.

IN preparing the following work, the chief aim of the Author has been not the invention of new species, but the establishment of old ones, in which he flatters himself he has succeeded. Very few synonyms of the older authors on Ornithology not having been reconciled, the chief part of those that remain (with the exception of Forskall, of whose descriptions we cannot make any thing) may be placed to the score of varieties. The list of synonyms, he is perfectly aware, might have been increased to a much greater extent, but this would have much extended the work, and not, he conceives, have answered any good purpose. Many new species are also for the first time described: for the unlimited use of the specimens lately brought home by him from South Africa, and now exhibiting at Egyptian Hall, the author takes this opportunity of thanking Dr. Andrew Smith, who will shortly publish plates of the new species of that valuable collection in this and the other classes. His warmest thanks also are due to the gentlemen in charge of the National Collection, and to the Council and Curators of the Zoological Society, for the facilities afforded him in examining their respective collections. To the Earl of Derby, Charles Darwin, Esq. William Yarrell, Esq. and also to the author of that beautiful work the "Birds of Europe," he is much indebted for access to their notes and specimens. In the course of the work anatomical characters have for the first time been used for families, sub-families, and genera, where the author considered he had sufficient grounds to establish them; but as the number of specimens of foreign anatidæ he has been enabled to obtain in a fit state for dissection has necessarily been very limited, he earnestly requests the assistance of those gentlemen who have it in their power towards this important branch, in forwarding to him foreign specimens for dissection, recent or preserved in spirits or brine, which he shall always think well worth carriage from any distance.

Since the greater part of this work was printed we have received Mr. Swainson's volume of Dr. Lardner's Cyclopædia, entitled "Animals in Menageries." There is little new in it as regards the class we at present are endeavouring to illustrate, the greater part of the letter-press being copied from Latham. The following changes in nomenclature, however, occur, as regards which we shall leave our readers to judge for themselves, merely stating that we cannot agree with Mr. Swainson in them: viz. the specific name of the only known species of *Cercopsis* is changed from *Novæ Hollandiæ* to *Australis*; the semipalmated goose (*Anas semipalmata*, Lath. *Choris-topus semipalmata nobis*) is placed in *Dendrocygna*, Sw. being the same genus in which *Anas*

PREFACE.

arcuata, Horsf. has been before placed by Mr. Swainson, and on which species he instituted the genus; the musk duck (*Carina moschata*, Flem.) is placed in the same genus with the common sheldrake (*Tadorna*); the blue-winged teal (*Anas discors*, Linn. *Cyanopterus discors nobis*), the Baikal teal (*Anas formosa*, Linn. *Querquedula formosa nobis*), and the Java teal (*Anas Javanensis*, Lath. *Querquedula Javanensis nobis*), are all placed in Genus *Boschas*, Sw. together with the common wild duck. The specific name also of *Javanensis* is altered to *Javanica*.

We have also, since the printing of our generic characters, seen an article in the "Penny Cyclopædia" (*Fuligulinæ*) relating to a portion of the *Anatidæ*, in which we are informed that the generic appellation of *Chauliodus* has been pre-occupied: as we find on reference this to have been the case, we venture to propose that of *Ktinorhynchus* instead, alluding to the comb-like appearance of the lamellæ on each side of the bill.

In the Catalogue of European and American Birds, just published by the Prince of Musignano, the generic name *Chauliodes* is altered to *Chaulelasmus*, Gray, which had priority to our name for the same genus, having been published first; and *Fuligula Americana*, Bonap. is altered to *Aythya Erythrocephala*, Bonap. which genus we do not think a good one; its true name, therefore, will be *Fuligula Erythrocephala*.

Brehm's work "Hanbuck der Naturgeschite aller vogel Deutschlands" would have been scarcely worthy of notice, had it not been that some new genera had been instituted in it, and also the synonyms of Boie, which are valuable, as they forestall many of those given by authors in this country. Looking at the work, however, altogether, it is worse than those of the older authors as regards the creation of false species, five or six species in many instances being made of one.

CONTENTS.

| PREFACE. | PAGE. |
|------------------------------------|-------|
| Introductory Chapter | 1 |
| Characters of Family Anatidæ | 5 |
| Sub-family Plectropterinae | 7 |
| Genus Choristopus | 8 |
| Plectropterus | 10 |
| Sub-family Anserinae | 11 |
| Genus Cereopsis | 12 |
| Chloephaga | 13 |
| Bernicla | 14 |
| Cheniscus | 15 |
| Anser | 16 |
| Cygnus | 18 |
| Sarkidiornis | 20 |
| Chenalopex | 22 |
| Sub-family Anatinae | 24 |
| Genus Tadorna | 25 |
| Casarka | 27 |
| Dendrocygna | 28 |
| Leptotarsis | 29 |
| Dafila | 30 |
| Pæcillonitta | 32 |
| Mareca | 33 |
| Aia | 35 |
| Querquedula | 37 |
| Cyanopterus | 38 |
| Rhynchaspis | 40 |
| Malacorhynchus | 42 |
| Chauliodes chauleasmus | 43 |
| Anas | 45 |
| Carina | 47 |
| Sub-family Fuliginæ | 49 |
| Genus Micropterus | 50 |
| Melanitta | 52 |
| Somateria | 54 |
| Polysticta | 55 |
| Kamptorhynchus | 57 |
| Callichen | 59 |
| Fuligula | 61 |
| Nyroca | 63 |
| Harelda | 65 |
| Clangula | 67 |
| Sub-family Erismaturinae | 69 |
| Genus Thalassornis | 70 |
| Biziura | 71 |
| Erismatura | 73 |

CONTENTS.

| | | |
|---|-------|-----|
| Characters of Sub-family Merginae | ..... | 75 |
| Genus <i>Mergus</i> | ..... | 76 |
| Synopsis speciorum | ..... | 78 |
| Characters of <i>Choristopus semipalmatus</i> | ..... | 78 |
| <i>Plectropterus Gambensis</i> | ..... | 79 |
| <i>Cereopsis Novæ Hollandiæ</i> | ..... | 80 |
| <i>Chloephaga Sandvicensis</i> | ..... | 81 |
| — <i>Magellanicæ</i> | ..... | 82 |
| <i>Bernicla antarctica</i> | ..... | 84 |
| — <i>ruficollis</i> | ..... | 85 |
| — <i>leucopsis</i> | ..... | 86 |
| — <i>jubata</i> | ..... | 87 |
| <i>Cheniscus Madagascariensis</i> | ..... | 88 |
| — <i>Coromandelianus</i> | ..... | 89 |
| <i>Anser indicus</i> | ..... | 90 |
| — <i>erythropus</i> | ..... | 90 |
| — <i>segetum</i> | ..... | 91 |
| — <i>hyperboreas</i> | ..... | 92 |
| — <i>melanopterus</i> | ..... | 93 |
| — <i>ferus</i> | ..... | 93 |
| — <i>Guineensis</i> | ..... | 94 |
| — <i>Hutchinsii</i> | ..... | 95 |
| — <i>Canadensis</i> | ..... | 95 |
| <i>Cygnus olor</i> | ..... | 96 |
| — <i>immutabilis</i> | ..... | 96 |
| — <i>atratus</i> | ..... | 97 |
| — <i>nigricollis</i> | ..... | 98 |
| — <i>Bewickii</i> | ..... | 98 |
| — <i>Americanus</i> | ..... | 99 |
| — <i>buccinator</i> | ..... | 100 |
| — <i>anatoides</i> | ..... | 101 |
| — <i>ferus</i> | ..... | 101 |
| <i>Sarkidiornis regius</i> | ..... | 102 |
| — <i>Africanus</i> | ..... | 103 |
| <i>Chenalopex Ægyptiaca</i> | ..... | 103 |
| — <i>cana</i> | ..... | 104 |
| <i>Tadorna bellonii</i> | ..... | 105 |
| — <i>radjah</i> | ..... | 106 |
| <i>Casarka rutila</i> | ..... | 106 |
| — <i>tadanoides</i> | ..... | 107 |
| — <i>castanea</i> | ..... | 108 |
| <i>Dendrocygna arcuata</i> | ..... | 108 |
| — <i>autumnalis</i> | ..... | 109 |
| — <i>viduata</i> | ..... | 110 |
| — <i>arborea</i> | ..... | 110 |
| <i>Leptotarsis Eytoni</i> | ..... | 111 |
| <i>Dafila urophasianus</i> | ..... | 112 |
| — <i>pyrogaster</i> | ..... | 113 |
| — <i>caudacuta</i> | ..... | 113 |
| — <i>marmorata</i> | ..... | 115 |
| <i>Pæcillonitta erythrorhyncha</i> | ..... | 115 |
| — <i>Bahamensis</i> | ..... | 116 |

CONTENTS.

| | | | | | |
|--|-------|-------|-------|-------|-----|
| Characters of <i>Mareca Americana</i> | ..... | ..... | ..... | 116 | |
| — <i>Chiloensis</i> | ..... | ..... | .. | 117 | |
| — <i>fistularis</i> | ..... | ..... | ..... | 118 | |
| — <i>castanea</i> | ..... | ..... | .. | 119 | |
| <i>Aia galericulata</i> | ..... | ..... | ..... | 119 | |
| — <i>sponsa</i> | ..... | ..... | .. | 120 | |
| <i>Querquedula Javanensis</i> | ..... | ..... | ..... | 121 | |
| — <i>falcaria</i> | ..... | .... | .. | 126 | |
| — <i>erythrorhyncha</i> | ..... | ..... | ..... | 127 | |
| — <i>Carolinensis</i> | ..... | ..... | .. | 124 | |
| — <i>formosa</i> | ..... | ..... | ..... | 124 | |
| — <i>Manillensis</i> | | | | .. | 125 |
| — <i>glocitans</i> | | | | | 122 |
| — <i>crecca</i> | ..... | .... | .. | 123 | |
| — <i>creccoides</i> | ..... | .... | ..... | 128 | |
| — <i>Capensis</i> | | | | .. | 128 |
| — <i>Hottentota</i> | .... | .... | ..... | 129 | |
| <i>Cyanopterus circa</i> | .... | ..... | .. | 130 | |
| — <i>fretensis</i> | .... | .... | ..... | 131 | |
| — <i>discors</i> | ..... | .... | ..... | 131 | |
| — <i>Rafflesii</i> | .... | .... | .. | 132 | |
| <i>Rhynchaspis rhynchotis</i> | .... | .... | ..... | 133 | |
| — <i>maculatus</i> | | | | .. | 134 |
| — <i>clypeata</i> | | | | | 134 |
| — <i>Capensis</i> | .... | .... | .. | 135 | |
| <i>Malacorhynchus membrinacea</i> | ..... | .... | ..... | 136 | |
| <i>Ktinorhynchus (Chaulelasmus) strepera</i> | ..... | .... | .. | 137 | |
| <i>Anas pæcilorhyncha</i> | .... | .... | ..... | 138 | |
| — <i>specularis</i> | | | | .. | 138 |
| — <i>superciliosa</i> | .... | .... | ..... | 139 | |
| — <i>obscura</i> | | | | .. | 140 |
| — <i>boschas</i> | .... | .... | ..... | 140 | |
| — <i>flavirostris</i> | | | | .. | 141 |
| — <i>sparsa</i> | .... | .... | ..... | 142 | |
| <i>Carina moschata</i> | .... | .... | .. | 142 | |
| <i>Micropterus patachonicus</i> | .... | .... | ..... | 143 | |
| — <i>brachypterus</i> | .... | .... | .. | 144 | |
| <i>Melanitta Americana</i> | .... | .... | ..... | 144 | |
| — <i>nigra</i> | | | | .. | 145 |
| — <i>perspicillata</i> | ..... | .... | ..... | 146 | |
| — <i>fusca</i> | | | | .. | 147 |
| <i>Somateria spectabilis</i> | ..... | ..... | ..... | 148 | |
| — <i>St. Cuthberti</i> | | | | .. | 149 |
| <i>Polysticta Stellerii</i> | .... | .... | ..... | 150 | |
| <i>Kamptorhynchus Labradorus</i> | .... | .... | .. | 151 | |
| <i>Callichen caryophylaceum</i> | ..... | ..... | ..... | 152 | |
| — <i>rufinum</i> | | | | .. | 152 |
| <i>Fuligula valisneria</i> | .... | .... | ..... | 153 | |
| — <i>ferina</i> | .... | ..... | .. | 154 | |
| — <i>Americana</i> | ..... | .... | ..... | 155 | |
| — <i>marilla</i> | .... | .... | .. | 156 | |

CONTENTS.

| | | |
|---------------------------------------|-------|-----|
| Characters of <i>Fuligula affinis</i> | ..... | 157 |
| — <i>rufitorques</i> | ..... | 158 |
| — <i>cristata</i> | ..... | 159 |
| <i>Nyroca Australis</i> | ..... | 160 |
| — <i>leucophthalmus</i> | ..... | 160 |
| — <i>brunnea</i> | ..... | 161 |
| <i>Harelda glacialis</i> | ..... | 162 |
| <i>Clangula histrionica</i> | ..... | 163 |
| — <i>albeola</i> | ..... | 164 |
| — <i>Barrovii</i> | ..... | 165 |
| — <i>vulgaris</i> | ..... | 166 |
| — <i>Americana</i> | ..... | 167 |
| — <i>leuconotus</i> | ..... | 168 |
| <i>Biziura lobata</i> | ..... | 168 |
| <i>Erismatura maccoa</i> | ..... | 169 |
| — <i>ferruginea</i> | ..... | 170 |
| — <i>leucocephala</i> | ..... | 170 |
| — <i>rubida</i> | ..... | 171 |
| — <i>Australis</i> | ..... | 172 |
| — <i>Dominica</i> | ..... | 172 |
| <i>Mergus merganser</i> | ..... | 173 |
| — <i>serrator</i> | ..... | 175 |
| — <i>Brazilianus</i> | ..... | 176 |
| — <i>cucullatus</i> | ..... | 177 |
| — <i>albellus</i> | ..... | 178 |
| Appendix, No. 1. | | |
| Appendix, No. 2. | | |
| Supplement. | | |

LIST OF PLATES.

DIRECTIONS TO THE BINDER.

| | | |
|-----|--|----------------------|
| 1. | Trachea of <i>Cleophaga Magellanica</i> , <i>Tadorna bellonii</i> , <i>Carina moschata</i> , <i>Melanitta fusca</i> | } to be placed |
| 2. | Trachea of <i>Aia sponsa</i> , <i>Querquedula formosa</i> , <i>Cyanopterus circia</i> , <i>Micropterus brachyptera</i> , <i>Bernicla antarctica</i> | } before title page. |
| 3. | Posterior margins of the sterna of <i>Alca torda</i> , <i>Phalacrocorax cristatus</i> , <i>Podiceps cristatus</i> , <i>Clangula vulgaris</i> , <i>Fuligula cristata</i> , <i>Mergus albellus</i> , <i>Rhynchaspis clypeata</i> , <i>Carina mos-</i> <i>chata</i> , <i>Tadorna bellonii</i> , <i>Anser ferus</i> , <i>Cygnus olor</i> | to face p. 5. |
| 4. | Œsophagus, proventriculus, stomach, and cæca of <i>Anser segetum</i> | — p. 11. |
| 5. | Skeleton of <i>Anser cygnoides</i> | — p. 16. |
| 6. | Skeleton and trachea of <i>Cygnus ferus</i> | — p. 18. |
| 7. | ————— <i>Chenalopex Ægyptiaca</i> | — p. 22. |
| 8. | Œsophagus, proventriculus, stomach, and cæca of <i>Querquedula crecca</i> ; cæca of <i>Tadorna bellonii</i> | — p. 24. |
| 9. | Skeleton of <i>Tadorna bellonii</i> | — p. 25. |
| 10. | ————— and trachea of <i>Querquedula crecca</i> | — p. 37. |
| 11. | ————— <i>Anas boschas</i> | — p. 45. |
| 12. | Œsophagus, proventriculus, stomach, and cæca of <i>Melanitta nigra</i> ; cæca of <i>Fuligula ferina</i> , and <i>Clangula vulgaris</i> | — p. 49. |
| 13. | Skeleton and trachea of <i>Nyroca leucophthalmus</i> | — p. 63. |
| 14. | ————— <i>Harelda glacialis</i> | — p. 65. |
| 15. | Skeleton of <i>Clangula histrionica</i> ; trachea of <i>Clangula vulgaris</i> | — p. 67. |
| 16. | Œsophagus, proventriculus, stomach, and cæca of <i>Mergus serrator</i> | — p. 75. |
| 17. | Skeleton and trachea of <i>Mergus serrator</i> | — p. 76. |
| 18. | Trachea and muscles of voice in <i>Cygnus Bewickii</i> | — p. 98. |
| 19. | <i>Casarka castanea</i> | — p. 108. |
| 20. | <i>Dafila urophasianus</i> , male | — p. 112. |
| 21. | <i>Mareca Chiloensis</i> , male | — p. 117. |
| 22. | <i>Mareca castanea</i> , male | — p. 119. |
| 23. | <i>Nyroca brunnea</i> , male and female | — p. 161. |
| 24. | <i>Oxyura (Erismatura) Maccoa</i> ; <i>Oxyura Dominica</i> , fem. | — p. 169. |

CORRIGENDA.

| | | | | | | |
|--------|----|-----|--------------|--|-------------|----------------|
| p. 16. | 1. | 6. | <i>for</i> | instructis | <i>read</i> | instructa. |
| — | — | 7. | .... | inferiorum | .... | inferiorem. |
| — | — | — | .... | contractam | .... | contracta. |
| 22. | — | 4. | .... | calcaria | .... | calcari. |
| — | — | — | .... | una | .... | uno. |
| 24. | — | 5. | .... | processibusque | .... | processibus. |
| 28. | — | 2. | .... | armatæ | .... | armati. |
| 29. | — | 2. | .... | complanatâ | .... | complanatum. |
| — | — | 3. | .... | instructo | .... | instructum. |
| 30. | — | 6. | .... | onga | .... | longa. |
| 33. | — | 5. | .... | instructis | .... | instructa. |
| 37. | — | 19. | .... | 1½ | .... | 2½. |
| 43. | — | 1. | .... | Chauliodes | .... | Chaulelasmus. |
| 43. | — | 3. | <i>dele</i> | vix elongatæ. | | |
| — | — | 7. | <i>for</i> | laterater | .... | lateralliter. |
| 45. | — | 18. | .... | boschas | .... | pæcilorhyncha. |
| 49. | — | 9. | .... | extremus | .... | extremas. |
| — | — | 10. | .... | rami | .... | ramorum. |
| 54. | — | 13. | .... | mollissima | .... | spectabilis. |
| 61. | — | 6. | .... | instructis | .... | instructa. |
| — | — | 20. | .... | marilla | .... | cristata. |
| 65. | — | 3. | <i>after</i> | parte | <i>add</i> | anteriore. |
| 80. | — | 1. | <i>for</i> | Nova | <i>read</i> | Novæ. |
| 82. | — | 3. | <i>after</i> | collo <i>dele</i> que, and <i>add</i> que <i>after</i> | | pedibus. |

INTRODUCTORY CHAPTER.

BEFORE entering upon a description of the group we propose to illustrate, it may not be amiss to make a few observations on some of the divisions at present in use among Ornithologists, more particularly Genera and Species, for we regard all other divisions, if indeed Genera are not so, as certainly to a great extent arbitrary, and constituted merely for the convenience of the student in Zoology, that he may at once turn to the required species or group he may wish to find, instead of, as would be the case if he consulted the works of Buffon, having to turn over volumes before he would be able to find the wished-for place. When we use the term arbitrary, as applied to divisions of the animal kingdom, let them be called either classes, families, sub-families, or by any other name, we mean, that in forming them there are generally rejected as many points of connection between contiguous groups, and often stronger ones, than those made use of for their division. Divisions and arrangements of some sort are, however, absolutely necessary for the Zoologist, under each of which should be stated the points of connection it bears to others. Much has been said and written on analogy and affinity, and the connection by one or the other of them between the groups and species of the animal kingdom. We have not, however, been able to distinguish between them in any other manner than that the former is generally applied when the groups or species between which a connexion is supposed to exist are far removed from each other, and the latter when nearly related, we shall use the terms indiscriminately, as convenient.

A definition of species again presents to the Zoologist in particular another difficulty.

The generally received opinion is that of John Hunter, viz. that hybrids between true species will not be productive; and this, we are inclined to believe, is partially correct, but not entirely so, as some birds, in a state of domestication, have bred together, and their offspring been productive, although differing most materially in external form.

It may be advanced, however, and with truth, that those animals upon which this experiment has been tried have invariably been brought from countries far apart, and that consequently in a wild state the experiment has never been tried; no fact, that we are aware of, can be brought forward towards an answer to this objection. Should it prove true, that animals inhabiting different countries, and with slightly different forms and colouring, are of the same species, and we confess there is good reason for supposing that this may be the case, it can only be accounted for in this mode, namely, that at the universal distribution of animals after the Deluge, those of the same species, and derived from the same parents, going to different localities, have in a succession of ages been influenced by various local circumstances, as climate, the plenty, the want, or nature of food, which causes have changed their form, colouring, and, in many instances, their habits.

We have nothing whatever to urge against this theory, and we find much in favour of it, considering the different varieties of the human form and habits, although we cannot for a moment suppose that they are derived from other than the same common parents, and that the distinctions between the different races are caused otherwise than solely by climate, yet do we make

species of animals inhabiting the same countries, where man has undergone changes equal to any specific character we are able to give between his inferiors. As far, however, as our data at present go, the theory of Hunter, excepting those animals in a state of domestication, appears to be the true one, and we shall here take the liberty of referring our readers to some short papers by us in the Zoological proceedings for 1837, and to Loudon's Magazine of Natural History, No. VII. New Series, and also to a Note appended to a paper by Mr. Blyth, in volume IX. page 511, of the same Magazine.

That man is subjected to a change in complexion as well as in the formation of the skull, when acted upon by different climates, appears from the following quotation:—"In Cairo, and throughout the northern provinces, those (Mooslim Egyptians) who have not been much exposed to the sun have a yellowish but very clear complexion and soft skin, the rest are of a considerably darker and coarser complexion. The people of Middle Egypt are of a more tawny colour, and those of the more southern provinces are of a deep bronze or brown complexion, darkest towards Nubia, where the climate is hottest." Vide "An Account of the Manners and Customs of the Modern Egyptians, by W. Lane, Vol. I. Library of Entertaining Knowledge."

From a paper read at the meeting of the British Association, held at Liverpool, by Dr. Warren (of Boston, U. S.), it appears that the crania of Indians found buried in mounds in North America, and on that account called the Mound Indians, differ in form from those of the Indians at present inhabiting the same country, and agree with those of the Peruvians now inhabiting South America. Are the present North American Indians the posterity of these Mound Indians? What evidence is there that they are not?

The geographical distribution of animals is a subject of much interest to the Zoologist as well as to the Geologist, and very closely connected with the distinction of species, more nearly so, indeed, than is generally supposed.

Mr. Swainson divides the earth into five Zoological provinces, corresponding with the continents of Europe, Asia, Africa, America, and Australia; these are well known divisions of the world, and as such are convenient, but we must consider that those countries occupied by the different races of mankind (except where emigration of late date has taken place) form much more natural Zoological provinces than those mentioned by Mr. Swainson.

The division of the human species which appears to be most generally approved and adopted is that of Blumenbach: with the characters of these races we have at present nothing to do, but shall refer those of our readers who wish to investigate the matter further to the "Decades of Crania," by the author above quoted, to the "Regne animal," and Dr. Prichard's "Researches into the Physical History of Man."

We shall, however, make use of that division of the Mongolian variety slightly hinted at by Cuvier, separating from it the Samoïdes or Lapland race, and it is a singular fact that the Zoology of the country, as well as the human inhabitants of it, form the connecting links between the Zoology and human inhabitants of the three great continents, Europe, Asia, and America.

The following divisions or ranges are those which we think the most natural:—

The Caucassian range occupies the whole of Europe, excepting only Lapland and Finland, that part of Asia to the west of the Caspian sea, and the rivers Obe and Ganges.

The Mongolian range occupies that part of Asia not inhabited by the Caucassian races, except Malacca.

The Esquimaux range contains those most northern parts of the three continents of Europe, Asia, and America, not occupied by the other races.

The Ethiopian or Negro range is confined to Africa, together with the island of Madagascar.

The American range occupies the whole of that vast continent, except the parts north of a line drawn from the northern side of Hudson's Bay to Cook's Inlet, which forms a part of the Esquimaux range.

The Malay range contains Malacca, Australia, and the intermediate islands of the Pacific and Indian Oceans, extending as far northwards as the Phillipine Group, New Zealand, and New Guinea.

The numerous islands not mentioned are considered as belonging to the ranges to which they are contiguous,

The advantage of this arrangement of the globe is simply that the zoology of the country occupied by each range will, in a great measure, as far as we have been able to ascertain, be found to be peculiar, the central portions of each district being occupied by a race of animals as well as by a variety of man distinct from those of the other ranges, the borders of each district, or those points at which they approach one another, being as it were inhabited by a mixed zoology, many of the species and Genera of either of the contiguous ranges being found in it.

There are, however, certain birds of great power of flight found distributed to a very large extent over the surface of the globe, the Kestrel and Peregrine Falcon may be enumerated as examples.

The object we have in view in this detail is an attempt, however imperfect, to shew that the same districts occupied by the various races of man are also occupied by various races of animals, each differing from the races of man and animals in the other ranges, and that it is exceedingly probable that as the races of man are merely varieties, one of the other those of animals may also be so.

And why is it, we may ask, in any way improbable that, at the dispersion of man and animals after the flood, the same causes may not have influenced both? We can observe even in the present state of science and observation some instances in which a parallel between animals and the human race, inhabiting the same countries, can be traced, and it may be expected that as science advances these parallels will increase: any one acquainted with this subject, upon seeing a box of African bird skins, will at once, without examining each species, say from whence they came, by their general appearance, and the darkness of their hues; the negro race from the same countries is also dark. Mr. Swainson, in volume 66 of Lardner's Cyclopædia, observes, that European Ornithology is characterised by the great number of Genera it contains in proportion to the number of species. There are also, perhaps, more sub-varieties of the Caucasian race than of any other, caused, probably, by the great variety of the climates.

The birds and animals of the Esquimaux range are nearly all migratory; the human inhabitants of the country are also seldom stationary for long together in the same spot, for the same reason, the want of food.

Thus, in some instances at least, we see that man and animals are influenced by the same cause, and why, therefore, is it by any means improbable that many of the animals, inhabiting different countries, and allowed to be allied, are of the same species, but have, by local causes, through a succession of ages, become altered?

Although we have said much, perhaps too much, on this subject, and, we fear, tired our

readers, let it be understood that the whole is merely brought forward as a conjecture, to which, whatever data we have been able to collect being given, we leave our readers to decide with regard to the probability or the contrary of it. Should it, however, prove true that many now supposed species, inhabiting different countries, are the same, and merely varieties, it will not lessen in any degree, or make less interesting or important, the labours of the zoologist; for, in an intellectual point of view, can any thing be more interesting than to unravel what appears to be a mystery, and, in an useful one, to point out such animals as will breed together, and thereby open the way to improvement in our varieties of domesticated animals.

In the internal arrangements of the group we intend to illustrate we shall deviate from the course followed by other authors, and propose one which, as far as we have been able to carry our investigations, appears to be in harmony with both the external and internal organization of each genus. We must here mention it as a subject of regret, that, although our utmost endeavours have been used, we have been totally, on account of their rarity in this country, unable to obtain either subjects for dissection, or even a sight of the skeletons, of many Genera.

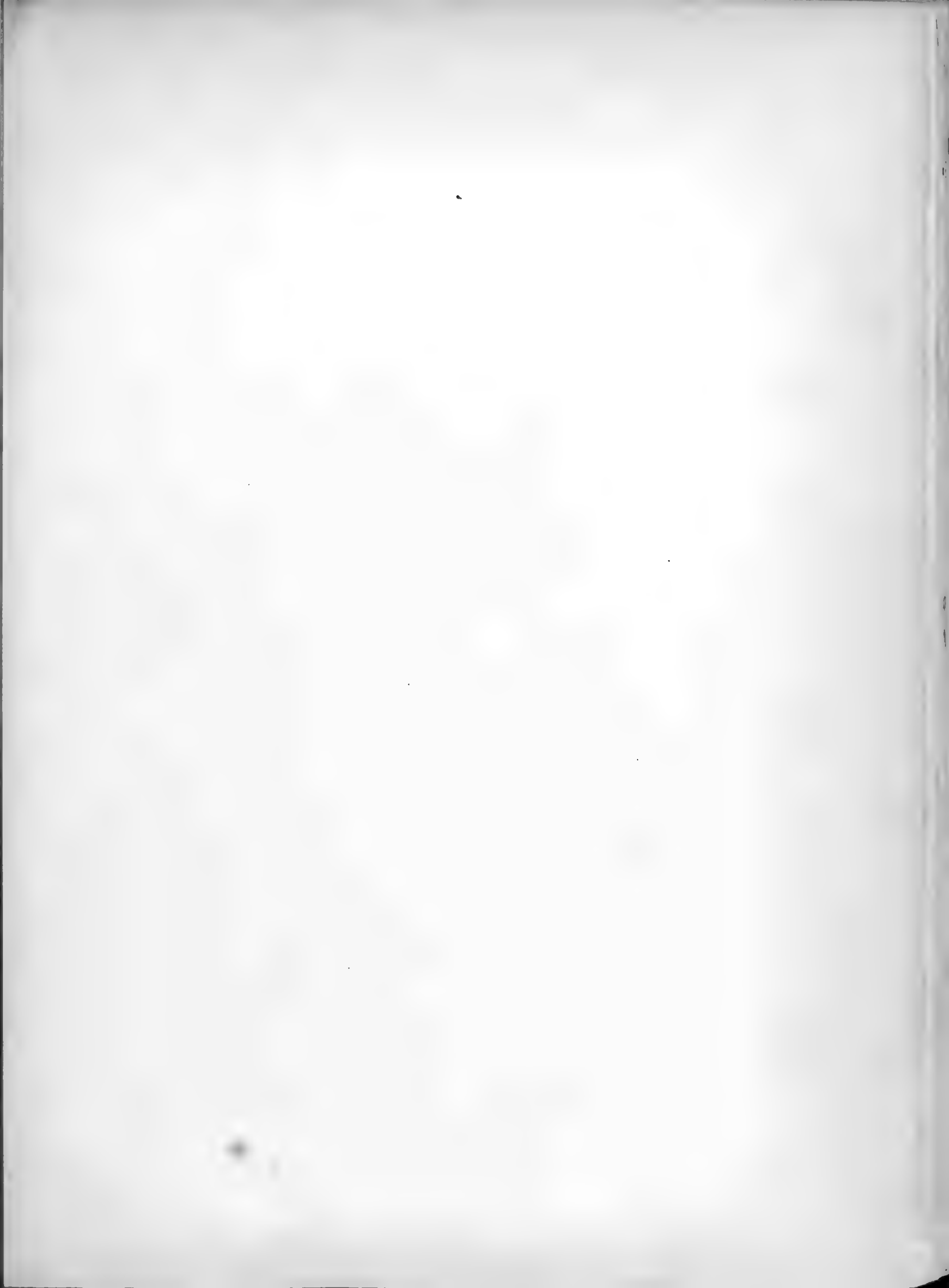
Many parts throughout the group appear to be in favour of Mons. Temminck's opinion, that there are no such divisions as Genera in nature, the transition from one extreme of form to another being so gradual that it is difficult to say where to draw the line of division.

Upon a minute examination, however, as far at least as we are at present acquainted with the species, there is always found some break as it were between the forms constituting contiguous Genera or Subgenera, and some tangible distinction between them, although in many particulars they appear closely to approach. It is probable, however, that many new forms will yet be discovered; therefore, in the present state of science, it is impossible to say whether this opinion of Mons. Temminck's will eventually prove true or not. Should it be correct, a serious difficulty will arise with regard to nomenclature, in designating the objects to be named by a specific appellation alone. If we do not admit Genera we cannot admit families, orders, or classes; the transition will, therefore, we contend, be complete through all, before we can abolish the one or the other.

We shall now add a few words on the characters we have employed. Measurements are always subject to a certain degree of variation; we have, therefore, when the opportunity has offered, given a mean of two or three. The number of tail feathers is far too variable a character to be admitted into any ornithological work. We have now before us three specimens of *Erismatura rubida*, in which, although in this genus the tail is an important member, the numbering of each differs. We have, for the first time, as far as we are aware of, made use of anatomical characters for divisions, taken from the trachea and skeleton principally; this has not been done without due consideration, and the examination of a great number of specimens.

We have no doubt that some will find fault with us on account of the shortness of the descriptions at the head of each specific character, the use of these, at least what we have supposed it to be, is, that in looking over a large number of descriptions we may readily catch some mark whereby the object we wish to name may be distinguished, perhaps, in common with one or two others from its congeners, and thus that the time taken to read over a large number of long descriptions will be saved.

The characters of the Genera, and the cuts of bills and feet, are invariably taken from the species we have named as the generic type, unless it is mentioned to the contrary.





Pl. Entom. 121

- | | | | |
|---|--|----|---------------------------|
| 1 | Posterior margin of the Sternum of <i>Alca Torda</i> | 6 | <i>Mergus alpinus</i> |
| 2 | <i>Phalacrocorax cristatus</i> | 7 | <i>Mergus persicus</i> |
| 3 | <i>Podiceps cristatus</i> | 8 | <i>Mergus terebinthus</i> |
| 4 | <i>Chroicocephalus</i> | 9 | <i>Anser ferus</i> |
| 5 | <i>Fuligula cristata</i> | 10 | <i>Anser ferus</i> |
| | | 11 | <i>Cygnus olor</i> |

ORDER NATATORES.

FAM. ANATIDÆ.

EXT. CHAR. *Rostrum* magnum epidermide molli potius quam cornuo veritabili tectum; lateribus lamellis vel dentibus parvis armatis. *Lingua* magna carnosae lateribus setis instructis. *Alæ* mediocres. *Pedes* fere vel omnino in equilibrio locati, digitis tribus anterioribus membrano junctis.

ANAT. CHAR. *Sternum* et pelvis magna et lata. *Gigeria* magna carnosae *Cæca* longa. *Larynx* inferior in maribus fere bulbosa. *Trachea* aliquando convoluta, sæpius bulbosa. *Habitatio* aquatica,

EXT. CHAR. *Bill* large, covered with a soft epidermis rather than true horn, the sides armed with lamellæ or small teeth. *Tongue* large fleshy, with the margins toothed. *Wings* moderate. *Feet* placed in or near the equilibrium. *Toes*, with the three anterior ones, joined by a membrane. *Neck* long.

ANAT. CHAR. *Sternum* and pelvis large and broad. *Gizzard* large and fleshy. *Cæca* long. *Trachea* sometimes convoluted, more often bulbous. The inferior *Larynx* in the male commonly bulbous. Inhabits the water.

The intestinal anatomy of the family *Anatidæ* is characterised by the very great length of the alimentary canal compared to that of the bird: in some instances it is as many as five times its length, or even more. The cæcal appendages are also much elongated, being often equal to more than one-third the length of the body. The stomach is always large and muscular, forming a true gizzard. The œsophagus varies little in its diameter, but is generally slightly enlarged a little above the gizzard, again contracted, and then of nearly uniform diameter to the glottis.

The skeleton may be known by the length of the neck, and the great number of vertebræ of which it is composed, the large size of the sternum, the great development of its keel and the form of its posterior extremity, which is always perforated by two foramina or indented by two fissures; the great length as well as breadth of the pelvis; the laterally flattened and anteriorly arched form of the rami of the os furcatum. The truncate form and great depth of the occipital portion of the cranium in a vertical direction, and by the fibula not being entirely ankylosed to the tibia.

Affinities. Considerable resemblance to the Divers is shewn in the *Merginæ* and *Erisma-turinæ* in outward form, in the structure of the tail and the dense oily nature of the plumage. The

latter make an evident approach to the cormorants in particular ; nothing, however, is known of their anatomy. The *Merginæ* in their anatomy shew an affinity to the guillemots and the genera allied to them, chiefly consisting in the great developement of the keel of the sternum, and in its posterior edge being armed with an ensiform process. The pelvis also is much narrower and more elongated than is the case among the rest of the *Anatidæ*. The elongated head to the tibia possessed by all true divers is also slightly apparent in the genus *Mergus*.

We are aware by some authors that the Flamingo has been admitted among the *anatidæ*, chiefly on account of its slightly laminated bill and palmated feet, and some portions of its intestinal anatomy resembling this family : we cannot, however, follow this arrangement for the following reasons.

Characters for the larger divisions of birds are taken from the external organs necessary to procure their food, especially those of progression. The divisions of each of these have been made, on the other hand, chiefly from the different modifications of the bill.* Let us, for instance, take the order *grallatores* : we have there divisions or families formed for feeding on fish, mollusca, earth worms, and small insects : there is one general character of the skeleton through all. Not so with the bill and organs of digestion, which are modified, the former to procure and the latter to assimilate the different kinds of food necessary for the subsistence of the bird.

The same rule we shall find hold throughout all the different orders of birds, namely, that the skeleton and structure of the legs and feet will invariably furnish a sure guide to the Order ; while, on the other hand, the bill and organs of digestion supply characters for further subdivision.

What we have said above is by no means meant to imply that no modifications of the skeleton exist in the different divisions of each order, for such is not by any means the case ; some slight one always being to be found where there is a change of habit,—in other words, in the modes in which the various kinds of food are obtained.

The application of what we have said to the case in question is self-evident, that the flamingoes, having the organs of progression and skeleton peculiar to *grallatorial* birds, consequently must be placed in the order *Grallatores*, and that the bill and organs of digestion are fitted, the one for procuring, and the other for assimilating its natural food,—minute animalculæ obtained at the edges of waters by wading and not by swimming. The webbed feet also possessed by this bird peculiarly fit it for walking on the soft mud and sand, commonly found on shores ; their structure, however, is not that of any modification among the *anatidæ*, but essentially that of a crane, which bird has them also slightly webbed.

* Where such is not the case the orders and families are evidently unnatural.

SYNOPSIS
FAMILIARUM ET GENERUM.

SUB FAM. I. PLECTROPTERINÆ.

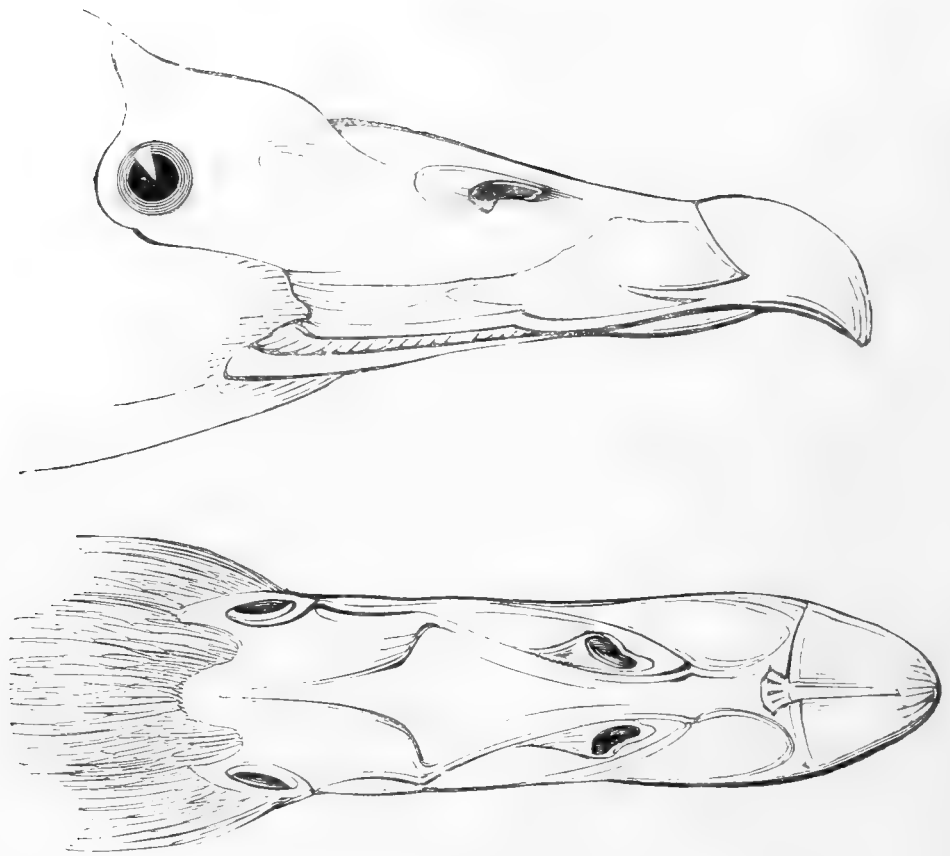
EXT. CHAR. *Rostrum* magnum, ad apicem augustatum, et ungue magnâ instructâ. *Plumæ* inter oculos rostrumque carent. *Tibiæ* parte quarta denudatæ. *Pedes* validi, digitis unguibus magnis instructis.

ANAT. CHAR. *Trachea* aliquando convoluta maribus sed non in sterno penetrans. *Caca* mediocria.

EXT. CHAR. *Bill* large, narrowed at the apex, and armed with a large claw. The space between the eyes and bill devoid of feathers. *Thighs* denuded for a quarter of their length. *Feet* strong, armed with sharp claws.

ANAT. CHAR. *Trachea* sometimes convoluted in the males, but not penetrating the sternum. *Caca* moderate.

Affinities. This curious group appears to lead directly to the gallatorial birds, but with the flamingo in particular it coincides to a great degree in the intestinal anatomy, while its skeleton, at least the fragments of it we have inspected, is that of a true goose, that of the flamingo approaching most intimately the *Ardeidæ*, which in our opinion (although in some particulars its intestinal anatomy appears to accord with the *Anatidæ*) entirely precludes it from being admitted into the order.



GENUS I. CHORISTOPUS.

EXT. CHAR. *Pedes* digitis longis, semi-membrinatis, unguibus magnis incurvatis instructis. *Tarsi* magni. *Tibiæ* multum denudatæ. *Rostrum* longum acuminatum cerâ ad oculos tendente. *Caput* osscâ tuberculâ supra nares et ungue, magnâ.

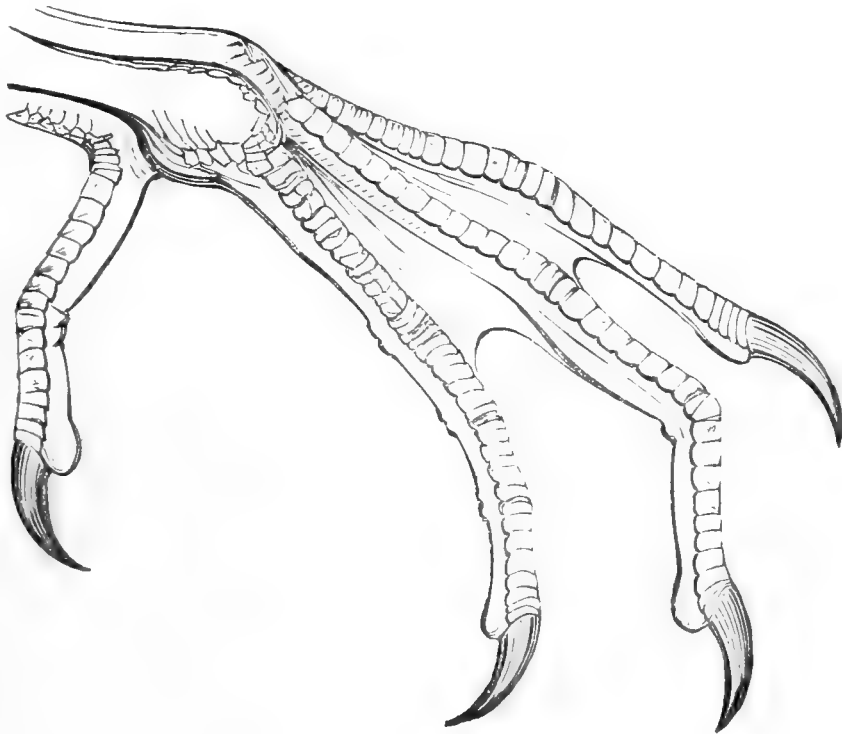
ANAT. CHAR. *Trachea* longa convoluta.

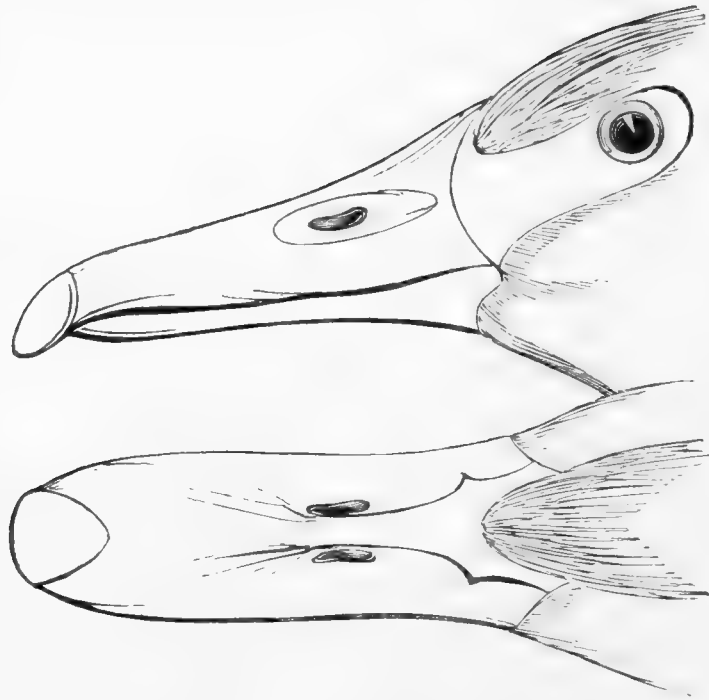
CHORISTOPUS nobis.

ANSER. *Linn. Auct.*

TYPE. *Choristopus semipalmatus.*

Affinity. This genus certainly approaches most nearly of any among the *Anatidæ* to the order *Grallatores*. To the genus *Plectropterus* it is nearly allied in form.





GENUS II. PLECTROPTERUS.

EXT. CHAR. *Pedes* membrinati digitis posterioribus longis, magnis, sed non lobatis, unguibus magnis et incurvatis instructis. *Rostrum* latum ungue magnâ instructâ. *Nares* ovales, in medio rostri positæ. *Alæ* una calcariâ armatæ.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes long, large and not lobed, armed with large and curved claws. *Bill* broad, furnished with a large nail. *Nostrils* oval, placed in the middle of the bill. *Wings* armed with one spur.

ANAT. CHAR. Unknown.

ANAS. *Linn.*

PLECTROPTERUS. *Steph.*

TYPE. *Plectropterus gammersis.*

Affinity. We are ignorant that any anatomical character of the genus has been ascertained; in default of which we have placed it next to the genus it appeared to approach in external character.





Pl. 136

1. Esophagus Proventriculus & Stomach of *Anser domestica* Em.
2. Caeca of Ditto

SUB FAM. II. ANSERINÆ.

EXT. CHAR. *Rostrum* altius-quam latum. *Pedes* mediocres validi, digitis posterioribus non lobatis.

ANAT. CHAR. *Sternum* mediocre, postice fissuris magnis et apertis; carinâ non antice productâ, latâ postice et non ad ultimam marginem sterni continuatâ. *Pelvis* mediocris. *Foramina ischiadica* magna et ovata. *Os furcatorium* validum arcuatum. *Processus coracoides* validus et brevis. *Alæ* longæ. *Costæ* latæ, processu longo instructæ. *Trachea* fere complanata, sed aliquando bulbosa, et in sterno penetrans. *Larynx inferior* aliquando bulbosa.

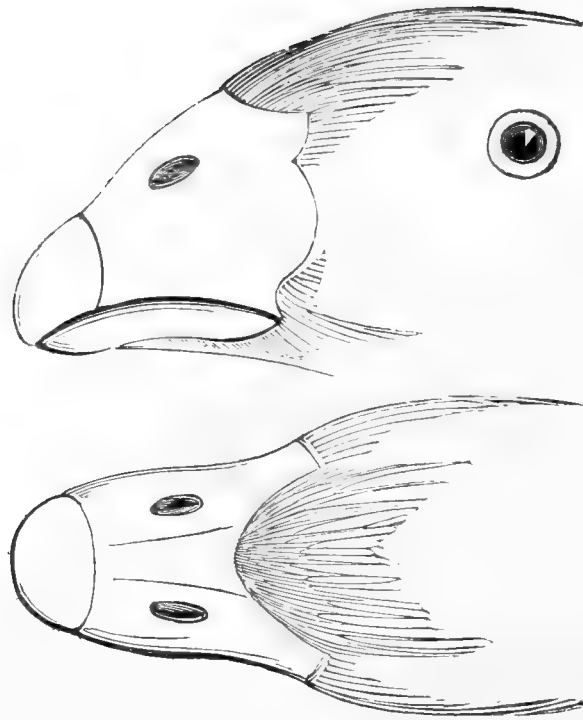
EXT. CHAR. *Bill* higher than broad. *Feet* moderate, strong, the posterior toes not lobed.

ANAT. CHAR. *Sternum* moderate, furnished with large and open fissures behind: keel not produced anteriorly, broad, not continued to the posterior margin. *Pelvis* of moderate size, with the ischiadic foramina large and ovate. *Os furcatorium* strong, arcuated. *The coracoid process* strong and short. *Wings* long. *Ribs* broad, furnished with a long process. *Trachea* commonly of equal size. *The inferior larynx* sometimes bulbous.

HABIT. The birds contained in this family feed equally on the land and water; some species, however, scarcely ever approach it; the whole live almost entirely on vegetables. They have a very wide geographical range, and are mostly migratory.

TYPE. *Anser*.

Affinities. The nearest affinity it appears to present to the following sub-family appears to be through the genus *Chenalopez*. On the other hand the genus *Cereopsis* appears to approach the *Plectropterinæ* in its anatomy and habit.



GENUS I. CEREOPSIS.

EXT. CHAR. *Pedes* similibus genere sequenti. *Rostrum* breve, obtusum; culmine arcuato. *Nares* cerâ tectæ, magnæ, et rotundatæ.

ANAT CHAR. *Trachea* magna, complanata. *Larynx inferior* anseribus similis.

EXT. CHAR. *Feet* as in the preceding. *Bill* with a cere covering the nostrils; the culmen arched. *Nostrils* large, rounded.

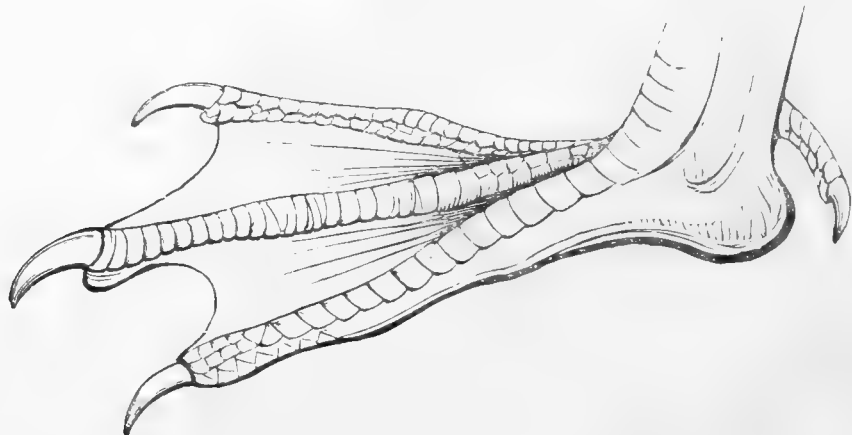
ANAT. CHAR. The *Trachea* large, uniform. *Inferior Larynx* like that of the geese.

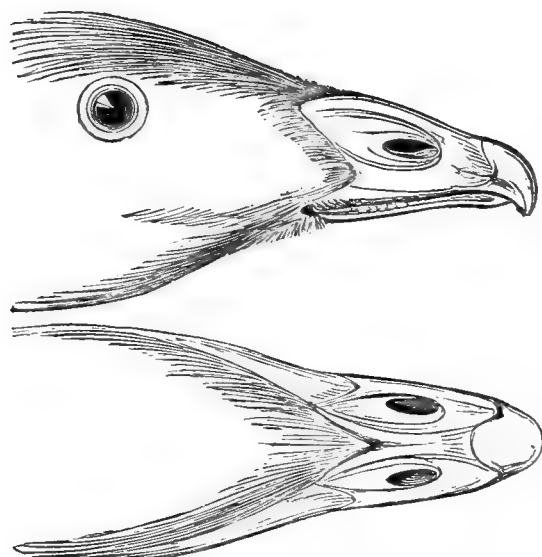
CEREOPSIS. *Lath.*

TYPE. *Cereopsis Novæ Hollandiæ.*

The only anatomical notes that I know of in existence, with regard to this curious bird, are those of Mr. Yarrell, in the *Zoological Proceedings* (1830, p. 25), which in giving our specific account of it, we cannot do better than extract.

Affinities. Another rather anomalous genus, more closely connected, however, with the geese than the preceding.





GENUS II. CHLOEPHAGA.

EXT. CHAR. *Pedes* robusti. *Digitis posterioribus* mediocribus, unguibus incurvatis instructis. *Membrana* inter digitos antè concavatis. *Tarsi* robusti longi. *Rostrum* robustum, culmine vix arcuatum, ungue magnâ instructâ. *Nares* lineares in medio rostri positæ. *Lamelle* parvæ antice oblitteratæ.

ANAT. CHAR. *Trachea* bulbo uno latere osseo.

EXT. CHAR. *Feet* robust. *Posterior toes* moderate, armed with a curved claw, with the *Membranes* between the toes scolloped out in front. *Tarsi* large and strong. *Bill* robust, with the culmen slightly arched, armed with a large nail. *Nostrils* linear, placed in the middle of the bill. *Lamellæ* small, obliterated anteriorly.

ANAT. CHAR. *Trachea* with one osseous bulb on the side.

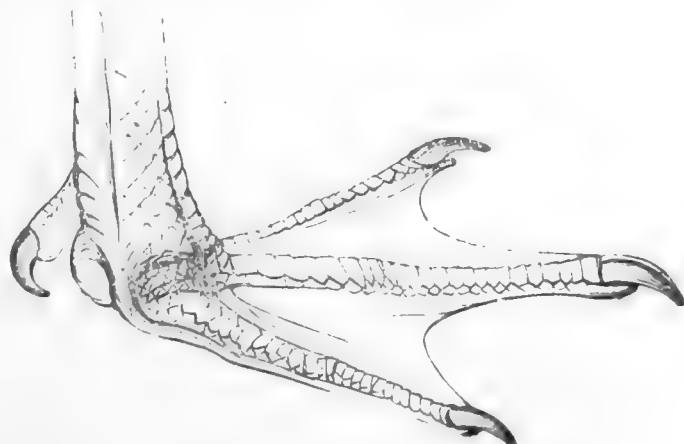
ANAS. *Linn.*

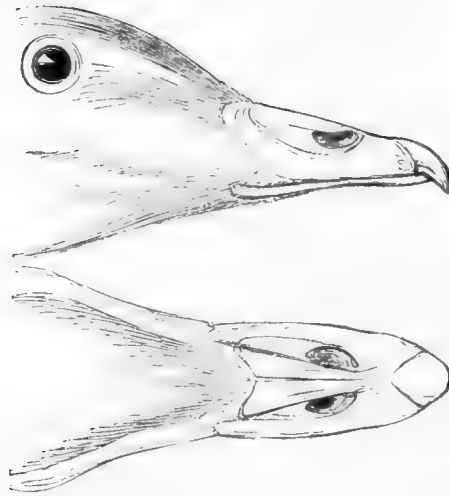
BERNICLA. *Steph.*

CHLOEPHAGA *nobis.*

TYPE. *Chloephaga Magellanica.*

Affinities. The above genus we have formed on *Bernicla Magellanica*, which bird in outward form appears to make a link between the genera *Bernicla* and *Cereopsis*, and internally, as far as regards the trachea, presents an affinity to the *Anatinæ*.





GENUS III. BERNICLA.

EXT. CHAR. *Pedes* parvi, *digitis* posterioribus non lobatis, *unguibus* magnis instructis. *Tarsi* elongati. *Rostrum* parvum, *capite* brevius. *Nares* lineares, in medio rostri positæ.

ANAT. CHAR. *Trachea* tubulâ equali. *Larynx inferior* ossea aliquando bulbosa.

EXT. CHAR. *Feet* small, with the posterior toes not lobated; the nails large. *Tarsi* elongate. *Bill* small, shorter than the head. *Nostrils* linear, placed in the middle of the bill.

ANAT. CHAR. *Trachea* with the tube of equal size. The *inferior Larynx* osseous but not bulbous.

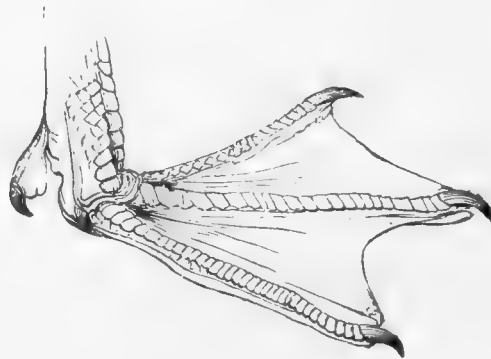
BERNICLA. *Steph.*

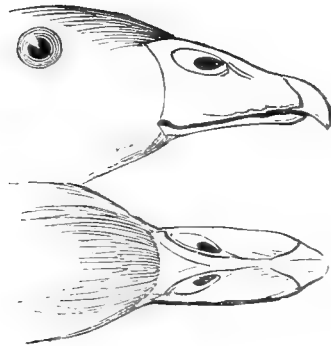
ANAS. *Linn.*

TYPE. *Bernicla jubata.*

The proportions of the skeleton are as follows:—Depth of the keel to the length of the sternum, as 1 to $3\frac{1}{2}$. Breadth of the pelvis to its length, as 1 to 2. Length of sternum to that of tibia, as 1 to $1\frac{2}{3}$. Height of cranium to its length, as 1 to $2\frac{1}{3}$. The keel is not continued to the posterior extremity of the sternum.

Affinity. Nearly allied, both in anatomy and habit, to the preceding and following.





GENUS IV. CHENISCUS.

EXT. CHAR. *Rostrum* parvum, ad basin elevatum, valde altius-quam latum, et ungue magnâ instructâ. *Nares* rotundatæ, culmen versus positæ. *Pedes* magni. *Digiti* longi et acutis unguibus armati. *Tarsi* breves. *Cauda* rotundata.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Bill* small, elevated at the base, much higher than broad, and armed with a large nail. *Nostrils* rounded, placed towards the culmen. *Feet* large. *Toes* long, and armed with sharp claws. *Tarsi* short. The *tail* rounded.

ANAT. CHAR. Unknown.

ANSER. *Linn. Lâth.*

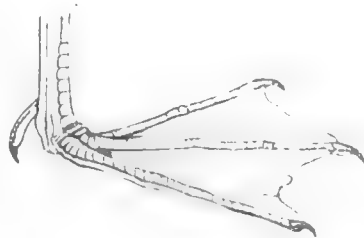
BERNICLA. *Steph.*

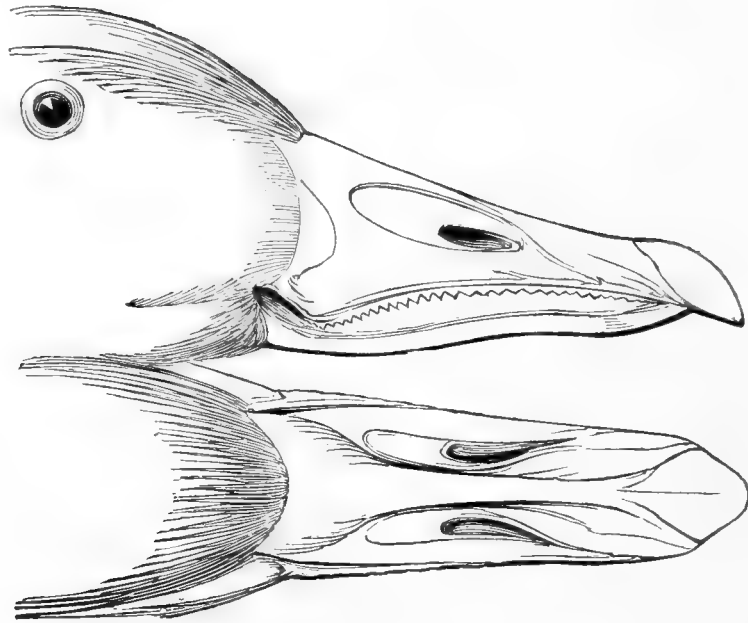
QUERQUEULA. *Gray.*

CHENISCUS. *Brookes' MSS.*

TYPE. *Cheniscus Coromandeliana.*

Affinity. In the structure of the feet this genus bears considerable resemblance to the species of the genus *Anser*, adapted for swimming, though of extremely diminutive size. The bill, on the contrary, is that of *Bernicla*.





GENUS V. ANSER.

EXT. CHAR. *Pedes* digitis posterioribus non lobatis, unguibus magnis arcuatis. *Tarsi* robusti et magni. *Tibiæ* parte tertiâ denudatæ. *Rostrum* magnum, validum, ungue magna instructum, lateribus plerumque hiantibus. *Nares* ovales in medio rostri positæ. *Lingua* obtusa non ad apicem appendiculata, sed subtus cornea, in latera unâ ordine setarum brevium, et supra has setas multis rigidis spinis instructis ad apicem tendentibus.

ANAT. CHAR. *Trachea* tubula complanata, sed versus larynginem inferiorum contractam. *Larynx inferior* ossea, sed non tuberculosa.

EXT. CHAR. *Feet* with the posterior toes not lobated, armed with large claws. *Tarsi* robust and large. *Tibiæ* for a third part denuded. *Bill* large, strong, furnished with a large nail, the sides gaping. *Nostrils* oval, placed in the middle of the bill. *Tongue* obtuse, without an appendage, but below corneous, the sides armed with one rank of bristles, above and on the sides is a row of many stiff bristles extending to the tip.

ANAT. CHAR. *Trachea* with the tube of equal size, but contracted towards the inferior larynx. The *inferior Larynx* long and not tuberculous.

ANSER. *Auct.*

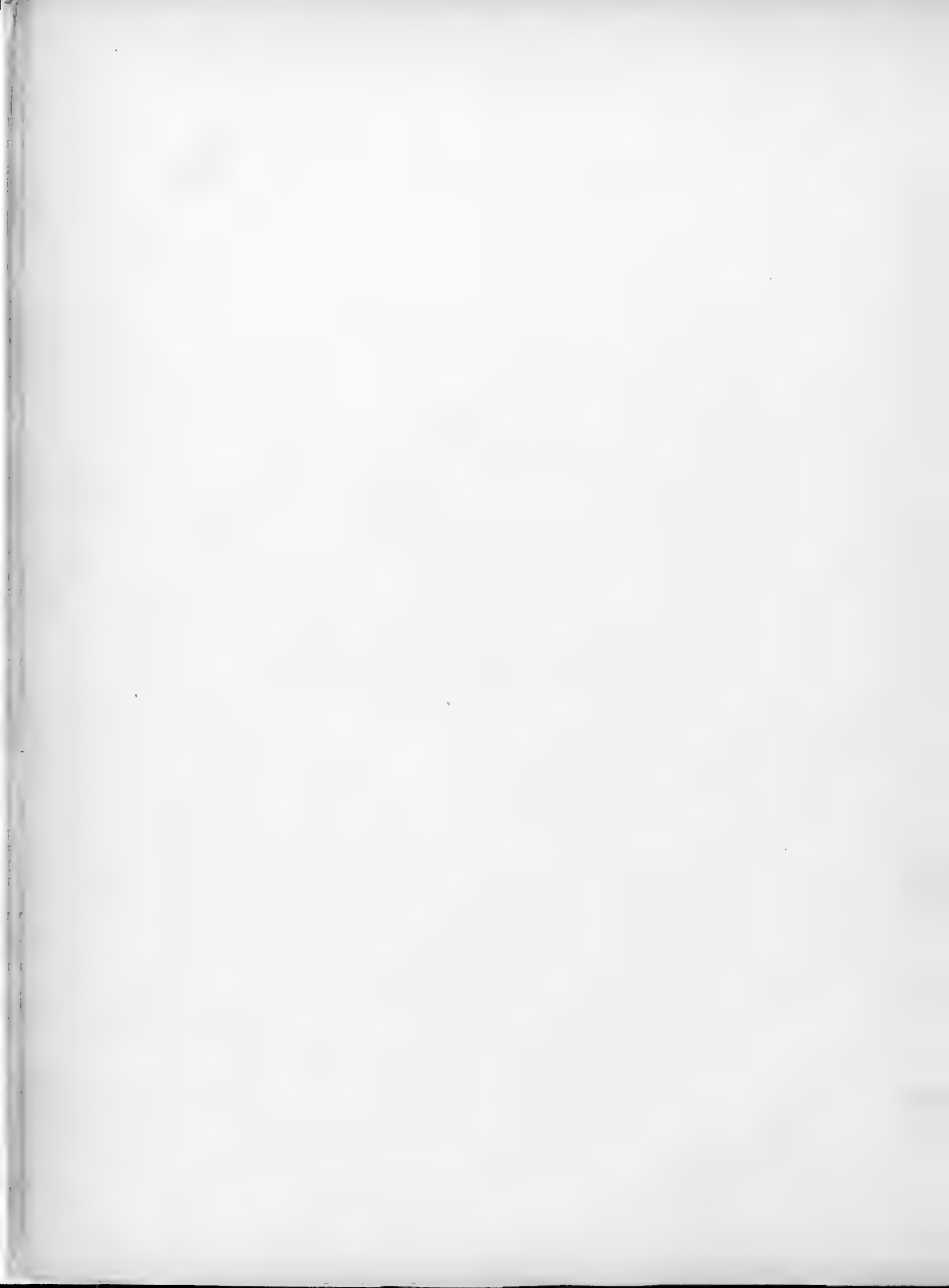
ANAS. *Linn.*

TYPE. *Anser ferus.*

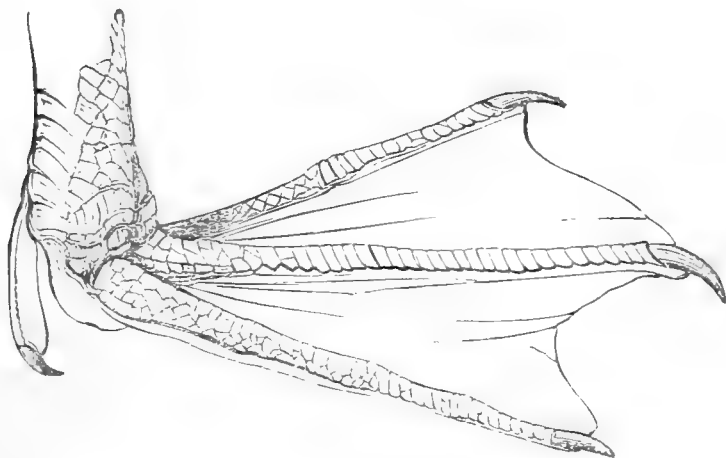
The proportions of the skeleton are as follows:—Depth of the keel to the length of the sternum, as 1 to 4. Breadth of the pelvis to its length, as 1 to $1\frac{1}{2}$. Length of sternum to that of tibiæ, as 1 to $1\frac{2}{3}$. Height of cranium to its length, as 1 to 3.

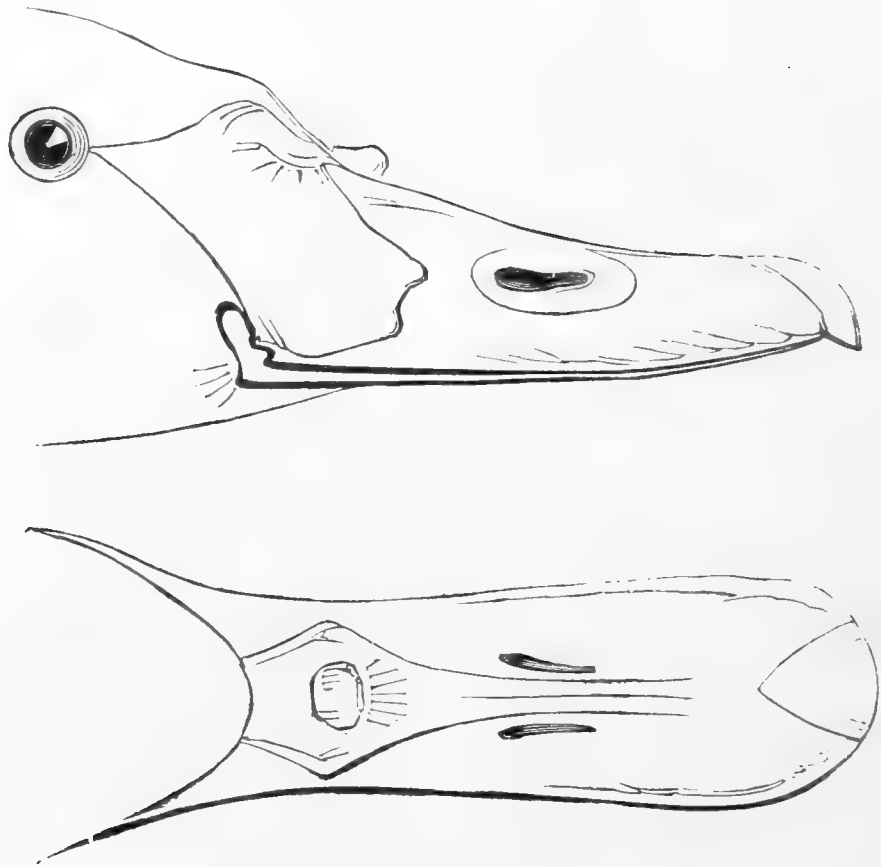


ANSER CYGNOIDES.
Half the Nat. Size



Affinities. Some of the species of this genus approach near the swans, as *Anser Canadensis*, while others present an affinity to the Bernicles, as *Anser indica*.





GENUS VI. CYGNUS.

EXT. CHAR. *Pedes* magni, digitis posterioribus parvis, gibbosis, mediis longissimis. *Rostrum* magnum, lateribus parallelibus. *Nares* subovales, in medio rostri positæ. *Cervix* longa.

ANAT. CHAR. *Trachea* tubulâ equali, aliquando in sterno penetrante. *Larynx inferior* ossea. *Sternum* carinâ anticè incurvatâ.

EXT. CHAR. *Feet* large, with the posterior toes small, gibbous, the middle ones longest. *Bill* large, the sides parallel. *Nostrils* suboval, placed in the middle of the bill. *Neck* long.

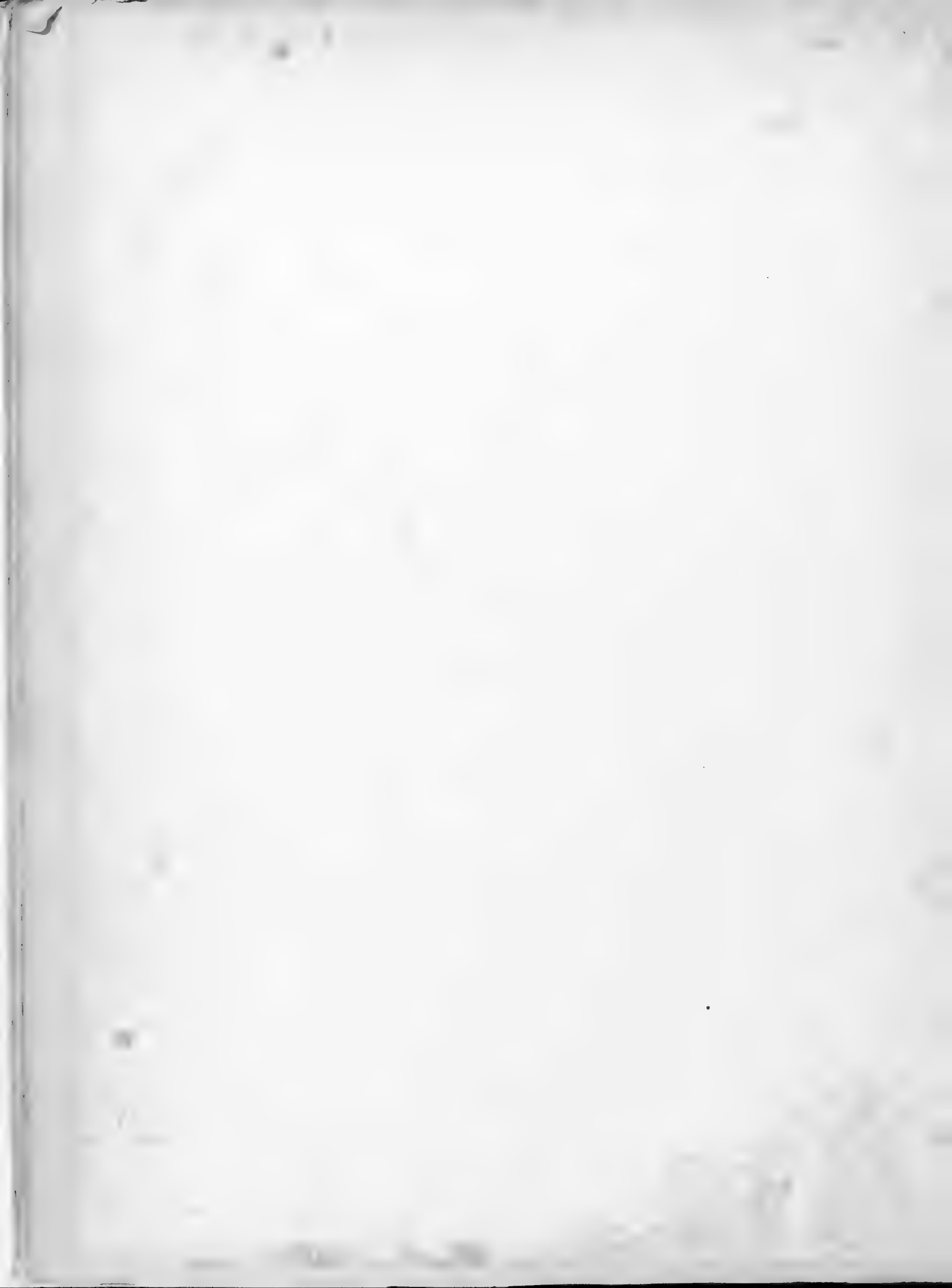
ANAT. CHAR. *Trachea* with the tube of equal size, sometimes penetrating the sternum. *Inferior Larynx* osseous. *Sternum* with the keel anteriorly curved.

CYGNUS. *Ray. Briss.*

ANAS. *Linn. Lath.*

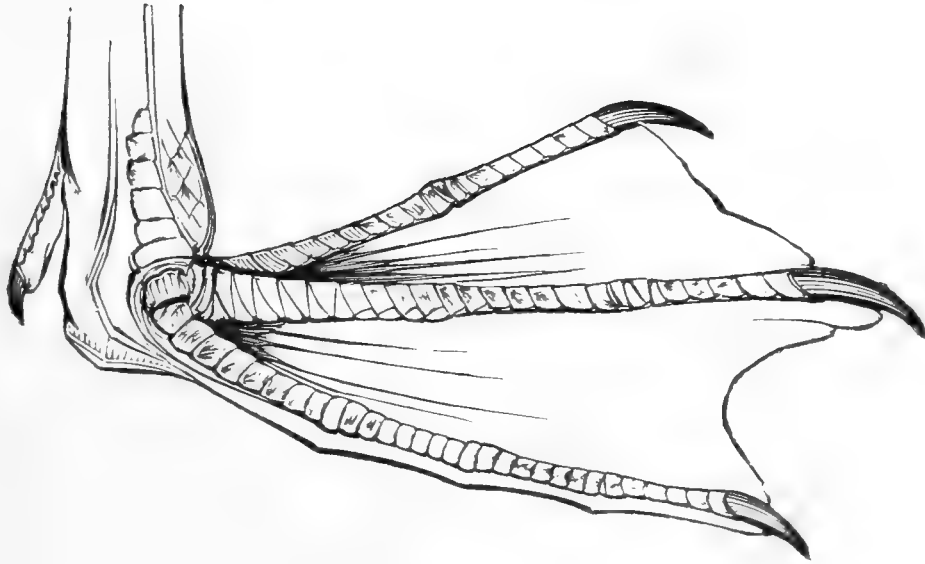
TYPE. *Cygnus ferus.*

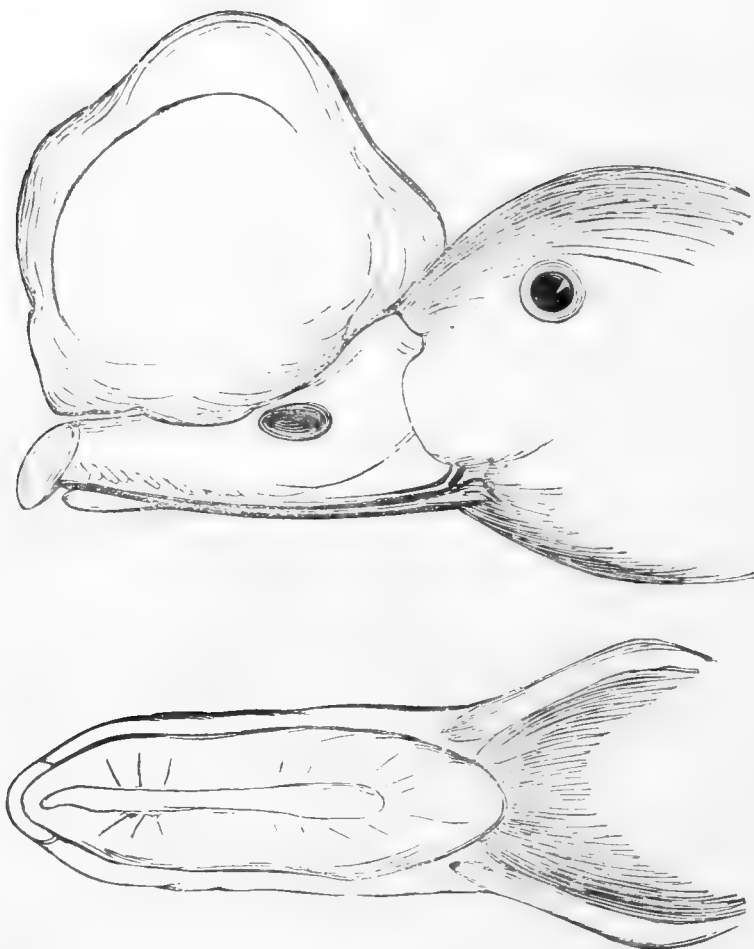




The proportions of the skeleton are as follow:—Depth of the keel to the length of the sternum, as 1 to 4. Breadth of pelvis to its length, as 1 to $2\frac{1}{4}$. Length of sternum to that of tibia, as 1 to 2. Depth of cranium to its length, as 1 to 3.

Affinities. Although we have placed the swans with the geese, we are not by any means certain that it is their proper place.





GENUS VII. SARKIDIORNIS.

EXT. CHAR. *Pedes* digitis posterioribus mediocribus, in tarsi altè locatis. *Tarsi* medioeres. *Rostrum* in maribus carunculâ magnâ compressâ culmine. *Nares* rotundatæ magnæ. *Alæ* una calcaria armatæ, et remigibus apices versus incurvatis. *Cauda* ad apicem truncata.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes moderate, placed high on the tarsi. *Tarsi* moderate. *Bill* in the males with a large compressed caruncle on the top. *Wings* each armed with a spur, and with the quills incurved towards the points. *Tail* squared at the end.

ANAT. CHAR. Unknown.

CARINA. *Steph.*

ANSER. *Linn.*

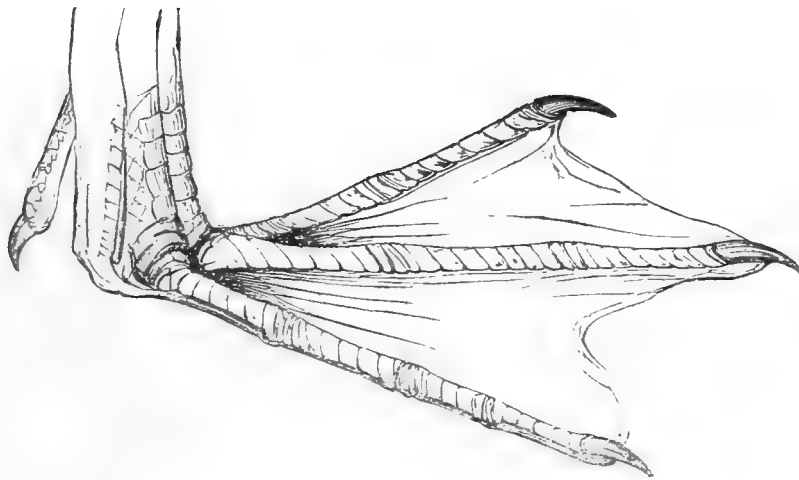
SARKIDIORNIS *nobis.*

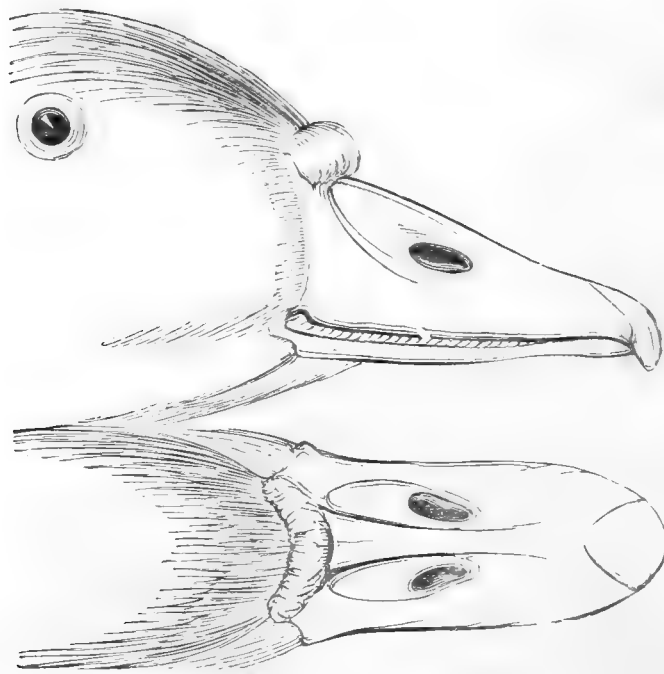
PLECTROPTERUS. *Steph.*

TYPE. *Sarkidiornis melanotus.*

Various have been the genera in which the bird before us has been placed (*Anser melanotus*, Linn.), with none of which does it agree. We have therefore proposed a new one for it.

• *Affinities.* We have placed it, as far as we have been able (no anatomical character being known), in what appears to us to be its proper place, namely between the genera *Chenalopeus* and *Anser*. It agrees with the former, in having a spur on the wing.





GENUS VIII. CHENALOPEX.

EXT. CHAR. *Pedes* digitis posterioribus gibbosis, et unguibus robustis. *Tarsi* longi. *Rostrum* validum ad basum tuberculatum. *Lamellæ* non ad marginem rostri continuatæ. *Nares* subrotundatæ in medio rostri positæ. *Alæ* calcaria una armatæ. *Cauda* ad apicem truncata.

ANAT. CHAR. *Trachea* tubulâ equali. *Larynx inferior* bulbo laterali.

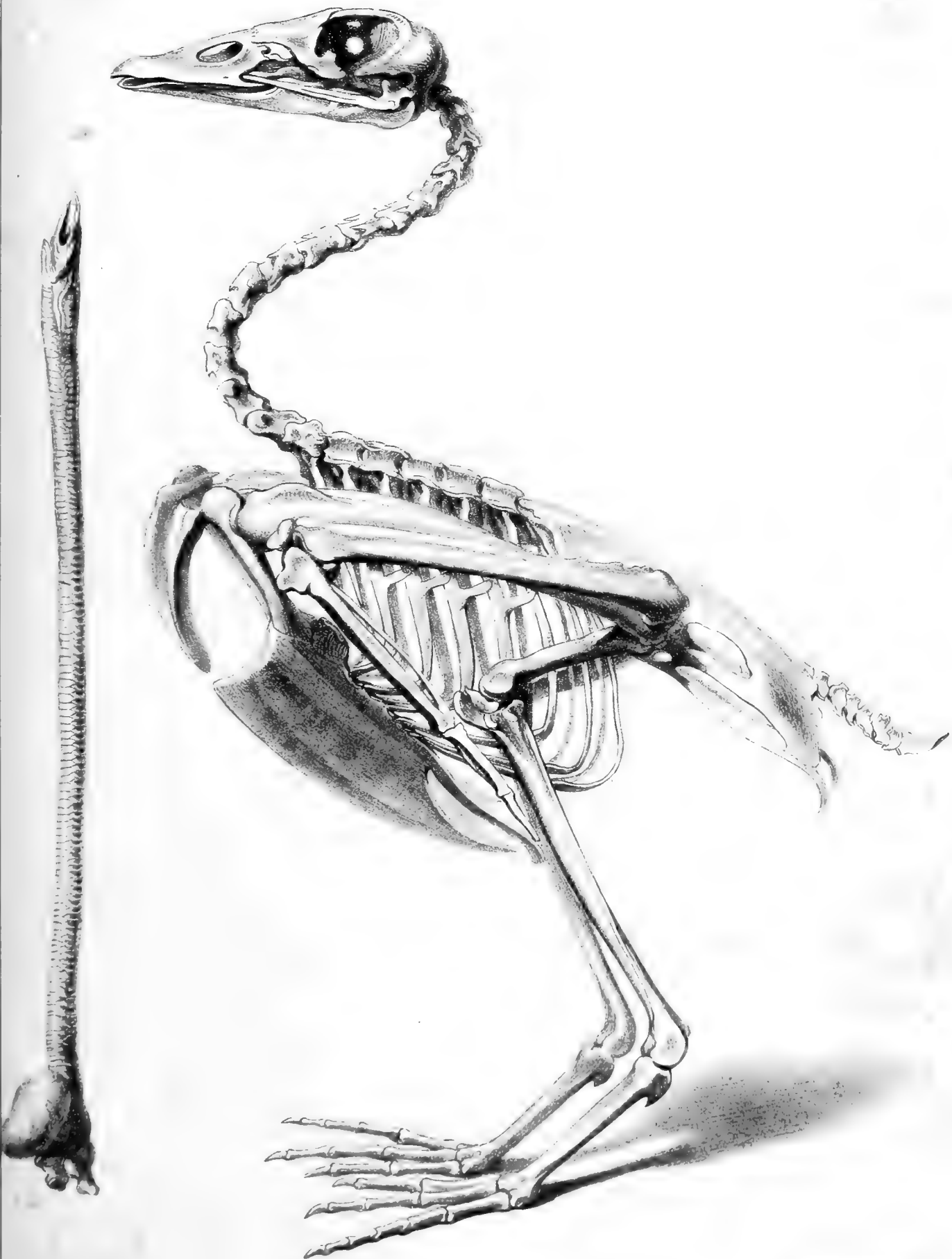
EXT. CHAR. *Feet* with the posterior toes gibbous, and the claws strong. *Tarsi* long. *Bill* strong, at the base tuberculated. *Lamellæ* not continued to the margin. *Nostrils* rather rounded, placed in the middle of the bill. *Wings* armed with one spur. *Tail* squared at the end.

ANAT. CHAR. *Trachea* with the tube of equal size. *Inferior larynx* with a lateral bulb.

ANSER. *Auct.*

CHENALOPEX. *Steph. Antiq.*

TYPE. *Chenalopex Egyptiaca.*



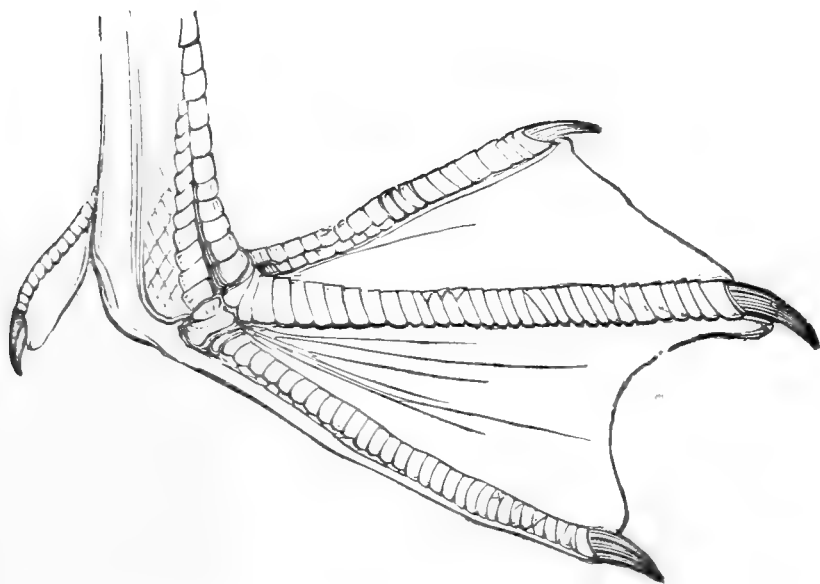
W. H. Murray del. et lith.

LEBENALPPEM. MEXI. TIAUA & TINALTEZ.

Three fifths the Nat size



Affinity. This genus, in possessing a bulb on the trachea, presents an affinity to the ducks; while its form and habit evidently point out its connection with the geese.



SUB FAM. III. ANATINÆ.

EXT. CHAR. *Rostrum* latitudine altitudini æquante. *Pedes* mediocres, *digiti* posteriores nunquam lobati, sed aliquando gibbosi.

ANAT. CHAR. *Sternum* longum, angustatum, posticè latissimum, carinâ anticè productâ et latâ posticè, ad ultimam marginem sterni continuatâ. *Pelvis* lata, brevis. *Os furcatum* mediocre lateribus compressis. *Processus coracoïdes* longus, sed non anticè productus. *Costæ* processibusque posterioribus compressis. *Trachea* tubulâ in omni parte ferè equali. *Larynx inferior* bulbosa ferèque omninò ossea in maribus.

EXT. CHAR. *Bill* in breadth and height equal. *Feet* moderate, posterior toes never lobated, but sometimes gibbous.

ANAT. CHAR. *Sternum* long, narrowed, behind broadest, with keel anteriorly produced, broad posteriorly, continued to the margin of the sternum. *Pelvis* broad, short. *Os furcatum* moderate, compressed on the sides. *Coracoid process* long, and not anteriorly produced. *Ribs* and the posterior processes compressed. *Trachea* generally of equal size throughout. *Inferior Larynx* bulbous, and altogether osseous in the males.

TYPE. *Anas*.

HABIT. Aquatic, frequenting fresh water in preference to the sea, feeding generally along the edges of lakes and rivers, on small molluscous animals, in preference to diving for them; soft aquatic plants and weeds also constitute a considerable portion of their food: they often also feed on land. The species, having great power of flight, have a very wide geographical range.

Affinities. To the *Fuliginæ* this sub-family is connected by the musk duck (*Carina Moschata*), which, besides having a largely developed and slightly lobated hind toe, has the bulb situated at the inferior larynx compressed, and not altogether osseous, as is the case in the rest of the family. The genus *Micropterus* has, on the other hand, a trachea very nearly resembling that of the true land duck. We prefer taking the genus *Anas*, as at present restricted, for the type of this sub-family, instead of *Rhynchaspis*, as proposed by Mr. Swainson, regarding that form and the nearly allied one of *Malacorhynchus*, rather as ultra than typical, and not so well suited to what may be termed the true habit of the sub-family as that we have chosen.



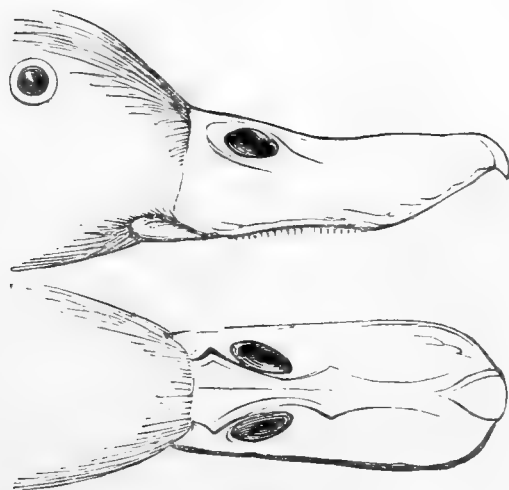
1. Esophagus proventriculus and Stomach of Quercedula crecca Linn.
2. Gaster. 3. Gaster of Tadorna Billoni Mal.







Half the Act Size



GENUS I. TADORNA.

EXT. CHAR. *Pedes* digitis posterioribus non lobatis, unguibus robustis armatis. *Tarsi* robusti et longi. *Rostrum* mediocre validum recurvatum. *Lamellæ* vix elongatæ. *Nares* ovales, magnæ, in dimidio basali rostri positæ. *Cauda* rotundata.

ANAT. CHAR. *Trachea* tubula æquali, sed ad larynginem inferiorem paululum expandente et tunc contracta. *Larynx inferior* duabus osseis bulbis utrinque, et anticè extendentibus.

EXT. CHAR. *Feet* with the posterior toes not lobated, armed with thick claws. *Tarsi* thick and long. *Bill* moderate strong. *Lamellæ* scarcely elongated. *Nostrils* oval, large, placed in the basal half of the bill. *Tail* rounded.

ANAT. CHAR. *Trachea* with the tube of equal size, but a little expanded and again contracted towards the inferior larynx. The *inferior Larynx* with two osseous bulbs extending on each side and before.

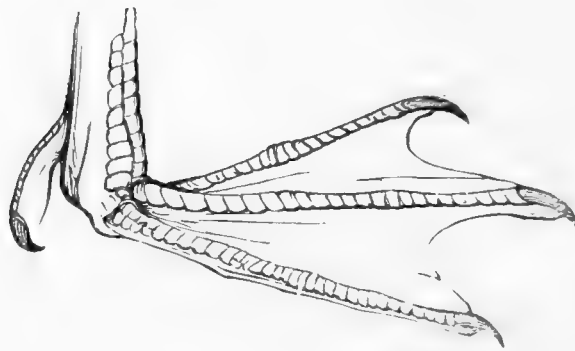
ANAS. *Linn. Gmel. Lath.*

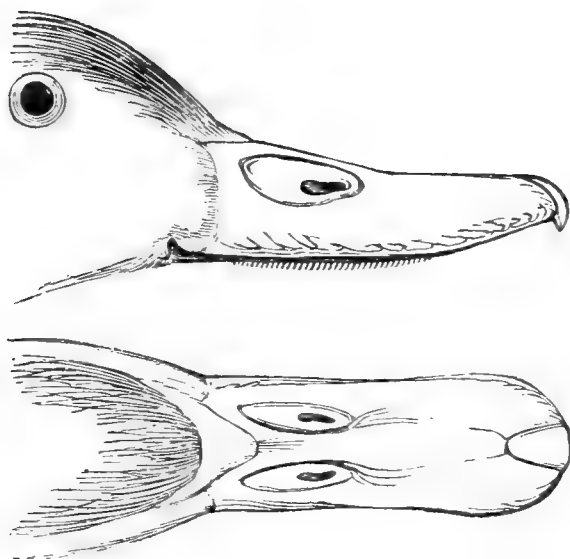
TADORNA. *Leach. Flem. Steph.*

TYPE. *Tadorna Bellonii.*

The depth of the keel to the length of the sternum is as 1 to 4. The breadth of the pelvis to its length as 1 to $1\frac{5}{8}$. The length of the sternum to that of the tibia as 1 to 2. The breadth of the cranium to its length as 1 to $2\frac{3}{4}$.

Affinities. The common Sheldrake approaches near in external character to the following genus. Nothing being known of the anatomy of that genus, we cannot trace the affinity farther.— To the *Anserina* it also approaches in its osteology and general habit, particularly to the genus *Chenalopex*.





GENUS II. CASARKA.

EXT. CHAR. *Rostrum* mediocre lateribus parallelibus non recurvatum. *Nares* subovales, culminem versus positæ. *Lamellæ* elongatæ. *Pedes* robusti, digiti unguibus magnis armati.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Bill* moderate with the sides parallel, not recurved. *Nostrils* suboval, placed near the culmen. *Lamellæ* elongated. *Feet* robust, the toes armed with large claws.

ANAT. CHAR. Unknown.

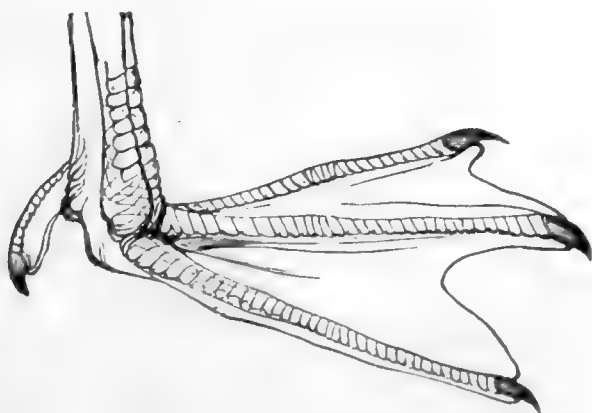
ANAS. *Linn. Lath.*

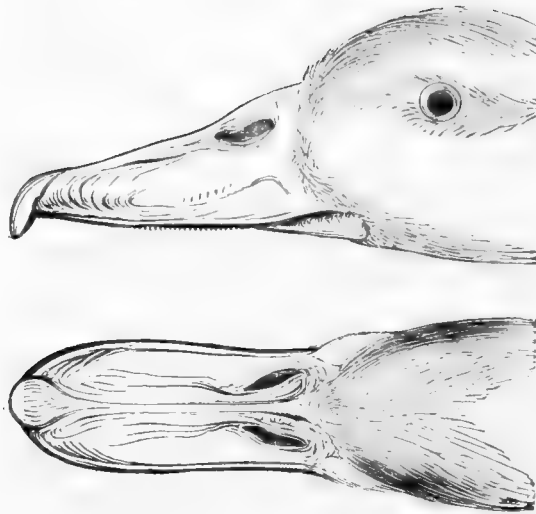
TADORNA. *Selby.*

CASARKA. *Bonap.*

TYPE. *Casarka rutila.*

Affinity. This genus may be distinguished from *Tadorna*, to which it is closely allied, by the straighter and much shorter bill.





GENUS III. DENDROCYGNA.

EXT. CHAR. *Pedes* digitis posterioribus longis, non lobatis unguibus longis armatæ. *Tarsi* robusti et longi. *Rostrum* mediocre validum altius-quam latum. *Nares* ovales magnæ prope culmen in medio rostri positæ. *Lamellæ* abbreviatæ. *Cauda* flexilis rotundata. *Alæ* remigibus primariis magnâ incisurâ in medio parte.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes long, not lobated, and with long claws. *Tarsi* robust and long. *Bill* moderate strong, higher than broad. *Nostrils* placed near the culmen in the middle of the bill. *Lamellæ* abbreviated. *Tail* flexible, rounded. *Primaries* with a deep notch in the middle.

ANAT. CHAR. Unknown.

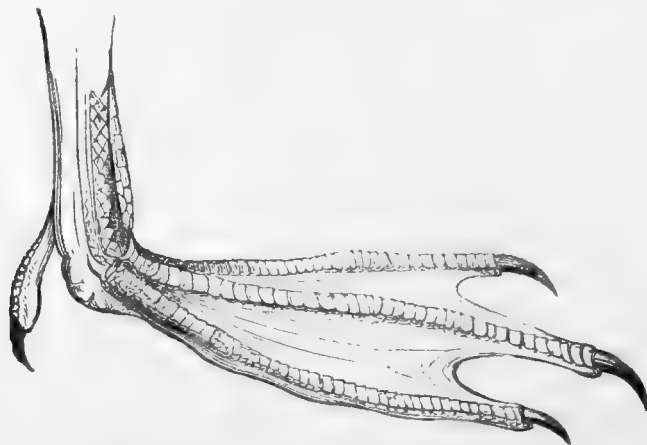
ANAS. *Linn.*

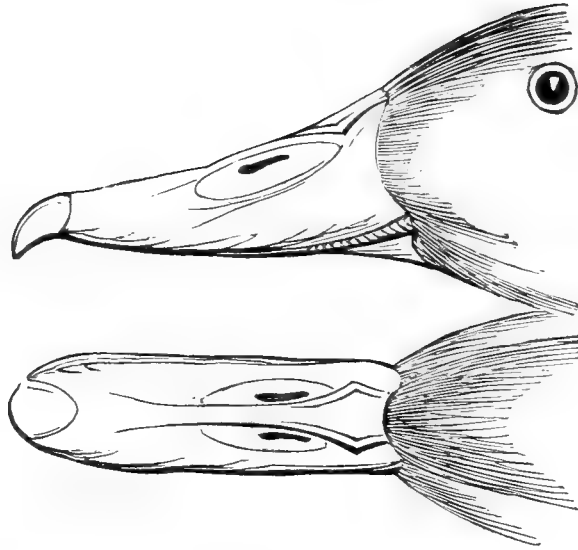
DENDROCYGNA. *Swainson.*

TYPE. *Dendrocygna arcuata.*

This genus will be easily recognized by the great length of the tarsi, and at the same time rounded form of the tail. *Anas arcuata*, *Hors.* or *Anas viduaia*, *Linn.* may be considered as typical species.

Affinities. The genus appears to form a beautiful connecting link between the true fresh-water ducks and the foregoing genus.





GENUS IV. LEPTOTARSIS.

EXT. CHAR. *Rostrum* mediocre ad basin, altius-quam latum, culmine complanatâ et ungue magno instructo. *Nares* parvæ, culmen versus locatæ. *Tarsi* longi et graciles. *Digiti* unguibus paululum incurvatis acutisque armati.

ANAT. CHAR. Ignoti.

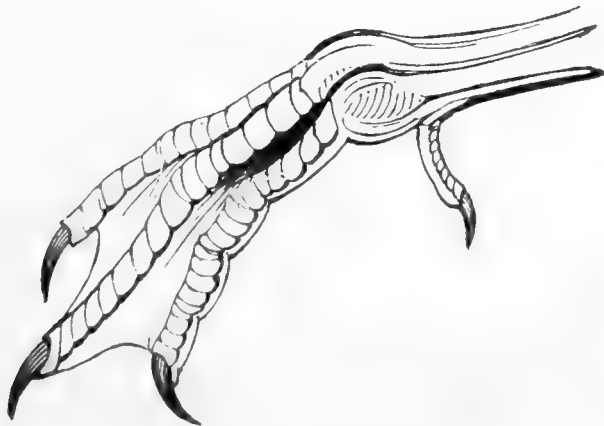
EXT. CHAR. *Bill* moderate at the base, higher than broad, the culmen much flattened and with a large nail. *Nostrils* small, placed near the culmen. *Tarsi* long and slender. *Toes* armed with curved and sharp claws.

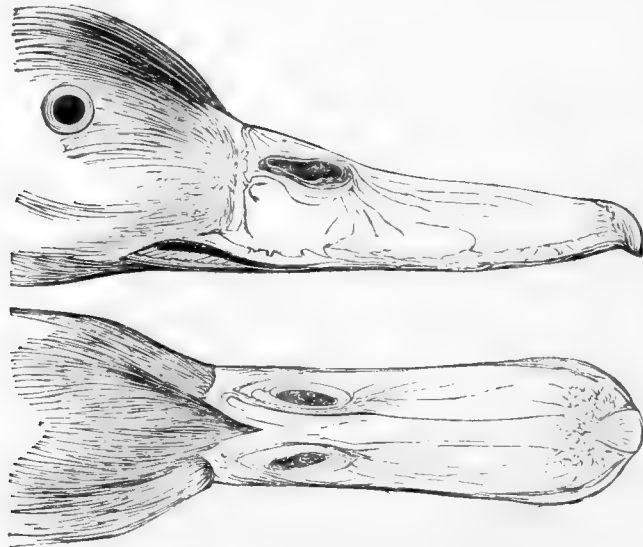
ANAT. CHAR. Unknown.

LEPTOTARSIS. *Gould*.

The only species of this genus we have seen is in the collection of the Zoological Society, and was received from New South Wales.

Affinity. The structure of the bill appears to ally this genus to that of *Dendrocygna*; while, on the other hand, that of the tail, which, though not elongated, is acuminate, to the genus *Dafila*.





GENUS V. DAFILA.

EXT. CHAR. *Pedes* digitis posterioribus, non lobatis, mediis longissimis. *Tibiæ* paululum denudatæ. *Rostrum* longius capite lateribus parallelibus. *Nares* magnæ ovals, prope culmen ad basin positæ. *Lamellæ* ad marginem rostri continuatæ. *Lingua* subobtusa ad apicem appendiculata lateribus una ordine setarum brevium, supra has setas in medio octo spinis rigidis instructa. *Cauda* longa.

ANAT. CHAR. *Trachea* tubula æquali sed larynginem inferiorem versus paululum contracta. *Larynx inferior* bulbo mediocre uno latere tendente.

EXT. CHAR. *Feet* with the posterior toe not lobed, the middle one longest. *Thighs* a little denuded. *Bill* longer than the head, the sides parallel. *Nostrils* large oval, placed near the culmen at the base. *Lamellæ* continued to the edge of the bill. *Tongue* rather obtuse, at the point with an appendage, the sides furnished with one row of bristles, and above the bristles in the middle with eight stiff spines.

ANAT. CHAR. *Trachea* with the tube equal, but towards the inferior larynx a little contracted. The *inferior Larynx* with a middle-sized bulb on one side.

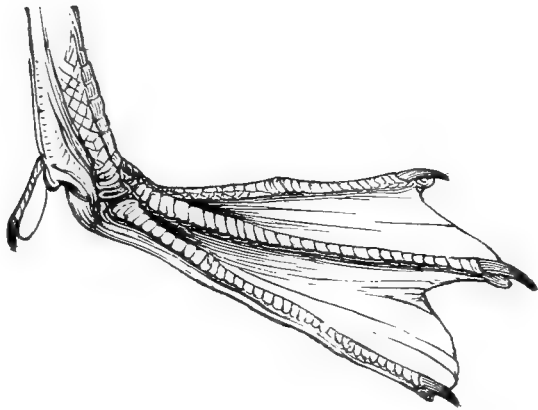
ANAS. *Linn.*

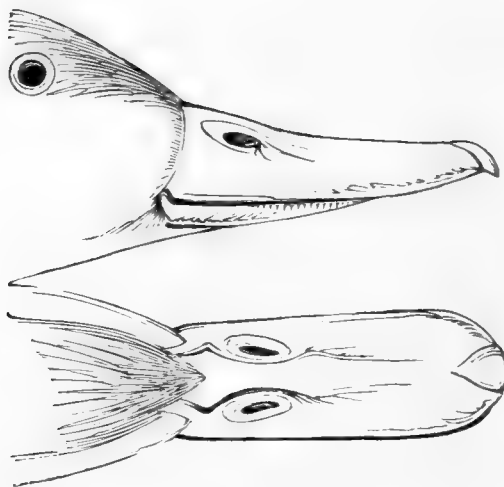
DAFILA. *Leach. Steph.*

TYPE. *Dafila acuta.*

The proportions of the skeleton are: the depth of the keel to the length of the sternum as 1 to 4. Breadth of pelvis to its length as 1 to $1\frac{2}{3}$. Length of sternum to that of the tibia as 1 to $1\frac{7}{8}$. Height of cranium to its length as 1 to 3.

Affinity. The tail in this genus is much elongated, presenting in that particular an affinity to the genus *Mareca*, which has it slightly so.





GENUS VI. PÆCILONITTA.

EXT. CHAR. *Pedes* digitis posterioribus brevibus et parvis, non lobatis. *Rostrum* mediocre, altitudine latitudine æquante. *Nares* prope basi positæ, rotundatæ. *Cauda* mediocris, rotundata.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes short and small, not lobed. *Bill* moderate, the height equal to the breadth. *Nostrils* placed near the base, rounded. *Tail* moderate, rounded.

ANAT. CHAR. Unknown.

ANAS. *Linn.*

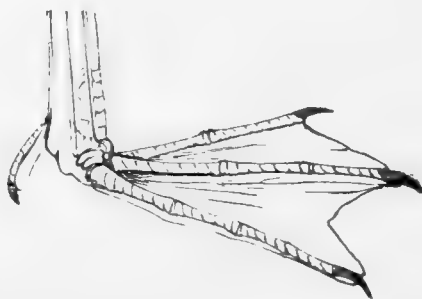
MARECA. *Steph.*

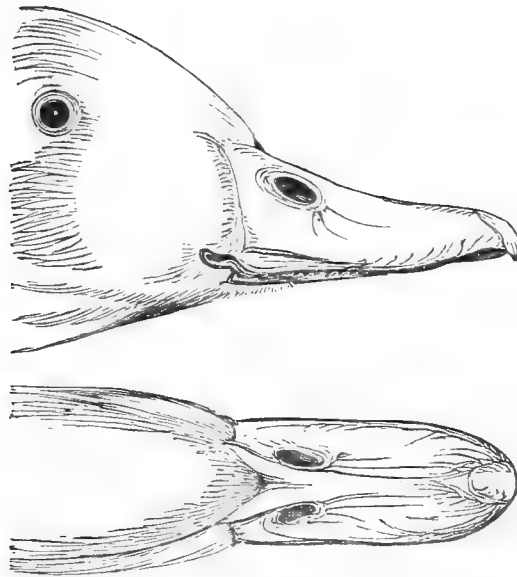
PÆCILONITTA *nobis*

TYPE. *Pæcilonitta Bahamensis*.

We have formed this genus for the reception of *Anas Bahamensis* and its near ally *Anas Erythrorhyncha*.

Affinity. In default of anatomical character, and from general structure, this genus appears to be nearly allied to *Dafila*.





GENUS VII. MARECA.

EXT. CHAR. *Pedes* digitis posterioribus non lobatis mediis longissimis. *Tibiæ* paululum denudatæ. *Rostrum* brevius capite, prope basin latissimum. *Nares* parvæ, ovales. *Lamellæ* ad marginem rostri continuatæ. *Lingua* subobtusa, ad apicem appendiculata latera una ordine setarum brevium et in medio duplice ordine instructis.

ANAT. CHAR. *Trachea* in maribus tubulâ infra glottidem expandente, tunc contractâ, rursus expandente usque ad larynginem. *Larynx inferior* bulbo magno osseo latere et paululum anterieus tendente.

EXT. CHAR. *Feet* with the posterior toes not lobed, the middle one longest. The *Thighs* a little denuded. *Bill* shorter than the head, near the base broadest. *Nostrils* small, oval. *Lamellæ* continued to the margin of the bill. *Tongue* rather obtuse, with an appendage at the tip.

ANAT. CHAR. *Trachea* with the tube expanding below the glottis, then contracted, again expanded as far as the inferior larynx. *Inferior Larynx* with a large osseous bulb extended on the side and a little before.

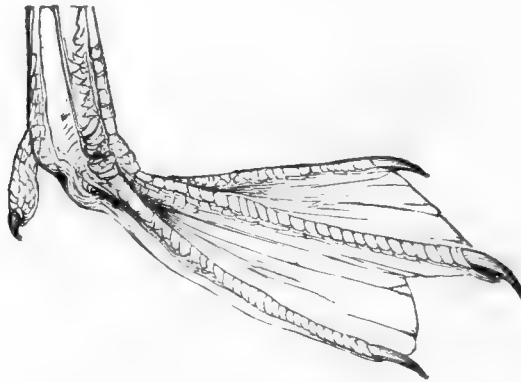
ANAS. *Linn.*

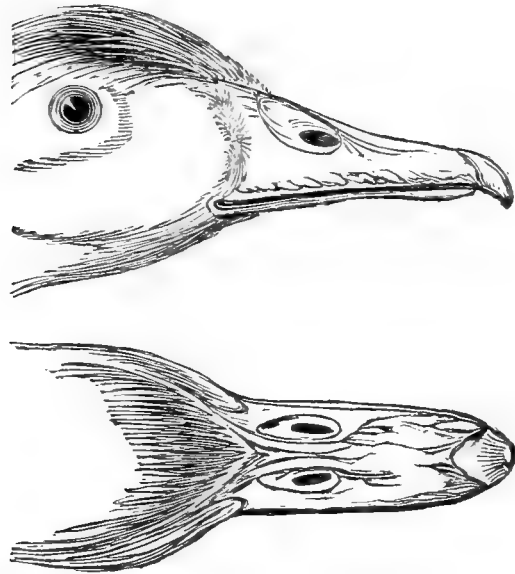
MARECA. *Steph.*

TYPE. *Mareca fistularis.*

The proportions of the skeleton are:—Height of the keel to the length of the sternum as 1 to $3\frac{1}{3}$. Breadth of the pelvis to its length as 1 to $1\frac{1}{2}$. Length of femur to that of the tibia as 1 to $1\frac{2}{3}$. Height of cranium to its length as 1 to $2\frac{1}{3}$.

Affinity. To the next genus this presents an approach in the formation of the tail, which in some of the species is pointed and slightly elongated. To the following the form of the bill presents an affinity.





GENUS VIII. AIA.

EXT. CHAR. *Pedes* digitis posterioribus non lobatis, mediis longissimis. *Tibiæ* plumatæ. *Rostrum* brevius capite, baso ad apicem angustatum. *Lamellæ* abbreviatæ. *Nares* subovales, parvæ. *Cauda* mediocris.

ANAT. CHAR. *Trachea* tubula equali. *Larynx inferior* bulbosa, ossea, similis precedenti.

EXT. CHAR. *Feet* with the posterior toes not lobated, the middle ones longest. *Thighs* feathered. *Bill* shorter than the head, narrowed from the base to the point. *Lamellæ* abbreviated. *Nostrils* suboval, small. *Tail* moderate.

ANAT. CHAR. *Trachea* with the tube equal. The *inferior larynx* bulbous, osseous like the preceding genus.

ANAS. *Linn.*

AIA. *Boie.*

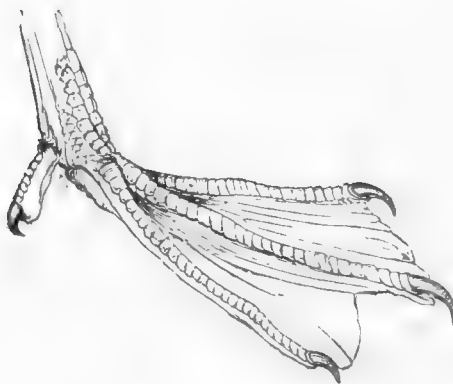
QUERQUEDULA. *Briss. Steph.*

DENDRONESSA. *Swain.*

TYPE. *AIA sponsa.*

Its habit of sitting and making its nest in trees is curious.

Affinity. Certainly more nearly allied to *Querquedula* and *Mareca* than any other genus of this sub-family.

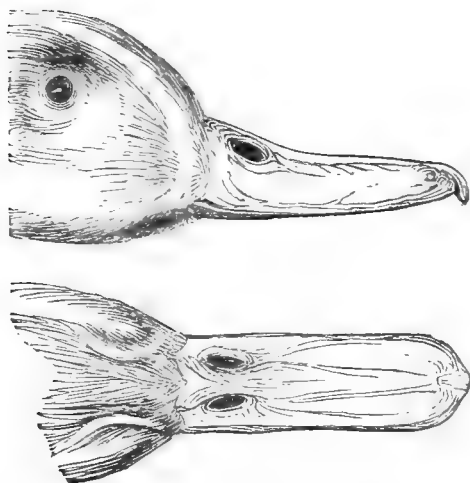






designed by J. G. Thompson

QUERQUEDULA CREUCA & TRACHEA
Nat. size



GENUS IX. QUERQUEDULA.

EXT. CHAR. *Pedes* digitis posterioribus non lobatis. *Rostrum* lateribus parallelibus. *Lamellæ* paululum elongatæ. *Nares* rotundatæ mediocres. *Cauda* brevis. *Lingua* subobtusa, ad apicem appendiculata, unâ ordine setarum brevium, ad apicem aliquando pene oblitteratæ, supra hæ setæ, in medio, lateraliter, septem spinis instructâ.

ANAT. CHAR. *Trachea* tubulâ infra glottidem expandente, tunc contractâ, rursus expandente, et contractâ. *Larynx inferior* bulbo parvo osseo latere et anticé extendente.

EXT. CHAR. *Feet* with the posterior toes moderate, and not lobated. *Bill* with the sides equal. *Lamellæ* slightly elongated. *Nostrils* rounded, moderate. *Tail* short. *Tongue* rather obtuse, with an appendage at the tip, the sides armed with one rank of short bristles towards the apex very short; above these bristles, in the middle, on each side, armed with seven spines.

ANAT. CHAR. *Trachea* with the tube below the glottis expanding, then contracted, again expanding, and again contracted above the inferior larynx. The *inferior Larynx* with a small osseous bulb extending on one side and before.

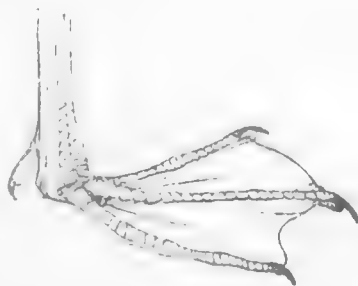
ANAS. *Linn.*

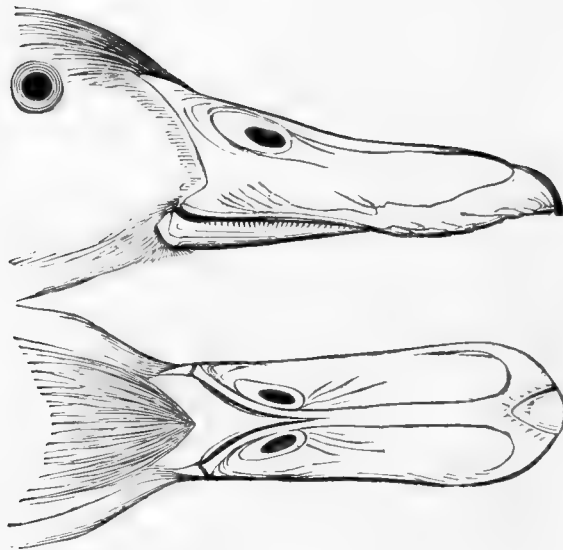
QUERQUEDULA. *Ray, Briss.*

TYPE. *Querquedula crecca.*

The proportions of the skeleton are:—Breadth of the keel to the length of the sternum as 1 to $4\frac{1}{5}$. Breadth of the pelvis to its length as 1 to $1\frac{1}{2}$. Length of femur to that of the tibia as 1 to $1\frac{2}{3}$. Height of cranium to its length as 1 to 3.

Affinity. More closely allied to the genera *Mareca* and *Aia* than any other in the sub-family.





GENUS X. CYANOPTERUS.

EXT. CHAR. *Pedes* digitis posterioribus mediocribus, et non lobatis. *Rostrum* latius ad apicem quam ad basin. *Lamellæ* paululum elongatæ. *Nares* rotundatæ, magnæ. *Cauda* vix elongata. *Alæ* ptilis cæruleis.

ANAT. CHAR. *Trachea* tubulâ infra glotidem expandente, tunc contractâ, rursusque expandente, et contractâ supra larynginem inferiorem. *Larynx inferior* bulbo magno osseo lateribus et antice tendente.

EXT. CHAR. *Feet* with the posterior toes moderate, and not lobated. *Bill* broader at the tip than at the base. *Lamellæ* a little elongated. *Nostrils* rounded, large. *Tail* a little elongated.

ANAT. CHAR. *Trachea* with the tube below the glottis expanding, then contracted, and again expanding, and contracted above the inferior larynx. The *inferior Larynx* with a large osseous bulb extending below and on both sides.

ANAS. *Linn.*

QUERQUEDULA. *Briss.*

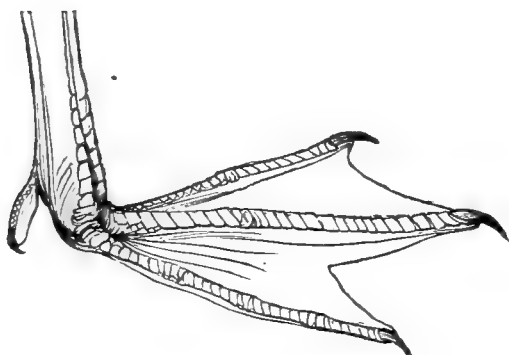
CYANOPTERUS *nobis.*

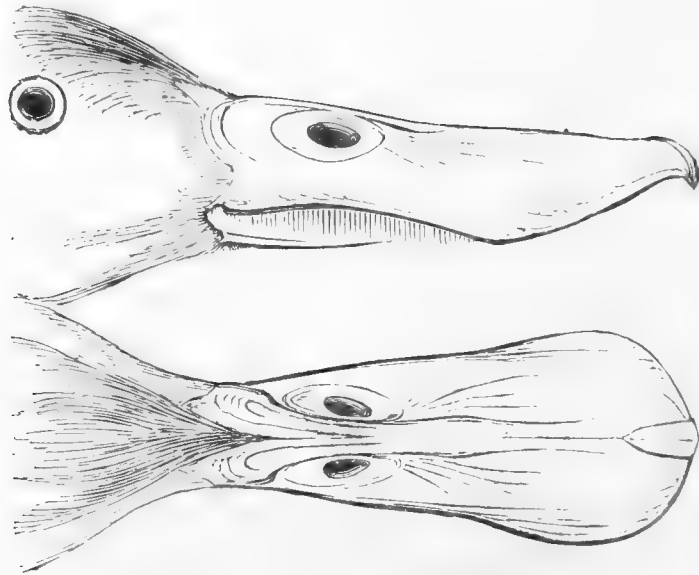
TYPE. *Cyanopterus Rafflesii.*

The above genus consists of that group commonly called the blue-winged teal; nor do we know one instance of a bird agreeing with the character which has not bright azure blue wings, except the *Garganey*, which has, however, dull slate-coloured ones. *Anas Rafflesii*, *King*, may be considered as a good specimen of the form, which may be always distinguished by the peculiar abrupt termination to the upper mandible, which is bent as it were over the lower one, both in front

and on the sides at the apex. The *Garganey* comes nearer to the common teal than the rest of the genus in external form, but in the form of the trachea differs from it. We have never observed a skeleton in any collection except that of the *Garganey*, which we do not consider typical.

Affinities. In the form of the bill and trachea this genus approaches that of *Chauliodus*, but differs from it in the former not having the lamellæ so much elongated, and in the trachea being more enlarged above the inferior larynx. From the following genus it is very distinct in both particulars, but agrees with it in general colouring.





GENUS XI. RHYNCHASPIS.

EXT. CHAR. *Pedes* digitis posterioribus parvis, et non lobatis. *Tibiæ* parte quartâ denudatâ. *Rostrum* longum, ad apicem multum latissimum. *Lamellæ* elongatæ. *Nares* ovales, prope culmine et baso locatæ. *Lingua* obtusa, ad apicem appendiculata, lateraliter una ordine setarum brevium, et supra has setas posticè novem spinis instructa; et duplici ordine centrali spinarum brevium ornata.

ANAT. CHAR. *Trachea* tubulâ inferiore parte maximâ. *Larynx inferior* bulbo parvo osseo latere.

EXT. CHAR. *Feet* with the hind toe small, and not lobated. *Thighs* with a fourth part naked. *Bill* long, much the broadest at the tip. *Nostrils* oval, placed near the culmen and base. *Tongue* obtuse, with an appendage at the tip, furnished with one row of short bristles on the sides, and above these bristles behind with nine spines; in the middle, above, with a double rank of stout spines.

ANAT. CHAR. *Trachea* with tube largest inferiorly. *Inferior Larynx* with a small bulb extending on one side and behind.

ANAS. *Linn. Swainson.*

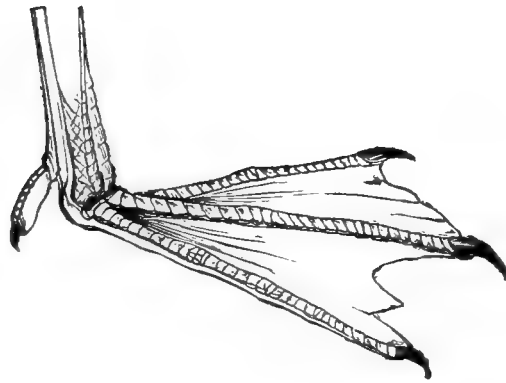
RHYNCHASPIS. *Leach MSS. Steph.*

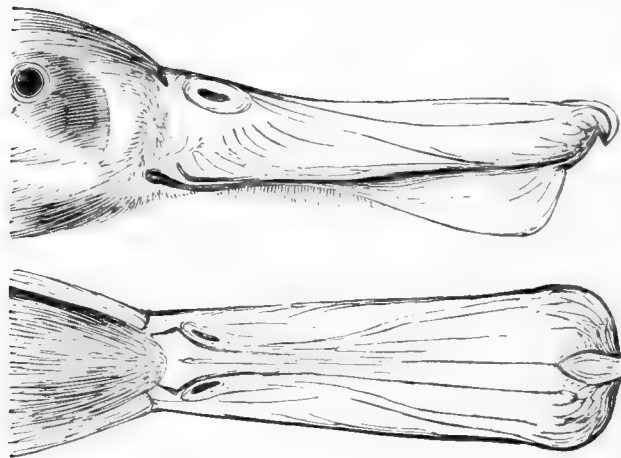
SPATHULEA. *Flem.*

TYPE. *Rhynchaspis clypeata.*

The proportions of the skeleton are:—Depth of the keel to the length of the sternum as 1 to 4. Breadth of the pelvis to its length as 1 to $1\frac{1}{2}$. Length of femur to that of the tibia as 1 to $2\frac{2}{3}$. Height of cranium to its length as 1 to 5.

Affinities. This and the two following, as well as the preceding genera, are very nearly connected, both in form and habit.





GENUS XII. MALACORHYNCHUS.

EXT. CHAR. *Pedes* digitis posterioribus parvis, et non lobatis. *Tibiæ* paululum denudatæ. *Rostrum* longum, ad apicem multum latissimum, et lateribus membranis flexilibus instructis. *Lamellæ* longæ. *Nares* ovales, parvæ, prope basin locatæ.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toe small, and not lobated. *Thighs* little denuded. *Bill* long, at the apex much the broadest, and furnished on the sides with flexible membranes. *Lamellæ* long. *Nostrils* oval, small, placed near the base.

ANAT CHAR. Unknown.

ANAS. *Linn.*

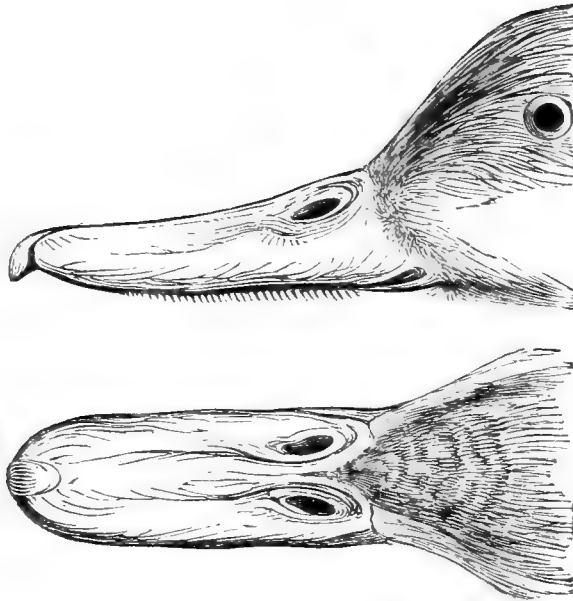
RHYNCHASPIS. *Leach.*

MALACORHYNCHUS. *Swainson.*

TYPE. *Malacorhynchus membrinacea.*

Affinities. No skeleton is, that I am aware of, at present in England; but we should suppose that the bony part of the bill does not extend so far laterally at the point as might be supposed, or, in other words, is not so broad at the apex. Under this supposition, the bird on which Mr. Swainson formed the genus (*Malacorhynchus membrinacea*) forms a beautiful link between the true shovellers and the following genus.





GENUS XIII. CHAULIODES.

EXT. CHAR. *Pedes* digitis posterioribus mediocribus, et non lobatis. *Rostrum* non latius ad apicem quam ad basin. *Lamellæ* paululum elongatæ. *Nares* ovales, magnæ, vix elongatæ. *Lingua* obtusa, ad apicem appendiculata, lateribus unâ ordine setarum brevium, supra has setas laterater centrali parte quinque spinis, et in medio supra duplice ordine setarum brevium instructa.

ANAT. CHAR. *Trachea* tubulâ inferiore parte maximâ, sed supra larynginem inferiorem contractâ. *Larynx inferior* bulbo mediocri osseo latere et multum anticè tendente.

EXT. CHAR. *Feet* with the posterior toes of moderate size, and not lobated. *Bill* not broader at the tip than at the base. *Lamellæ* elongated. *Tongue* obtuse, with an appendage at the tip, the sides furnished with a rank of short bristles, above these in the middle of the sides with five spines, and in the middle of the upper surface with a double rank of short spines.

ANAT. CHAR. *Trachea* with the tube enlarged near the lower extremity, but above the inferior larynx contracted. *Inferior Larynx* with a middle-sized osseous bulb extending on one side and also much anteriorly.

ANAS. *Linn. Gmel. Lath.*

CHAULIODES. *Swainson.*

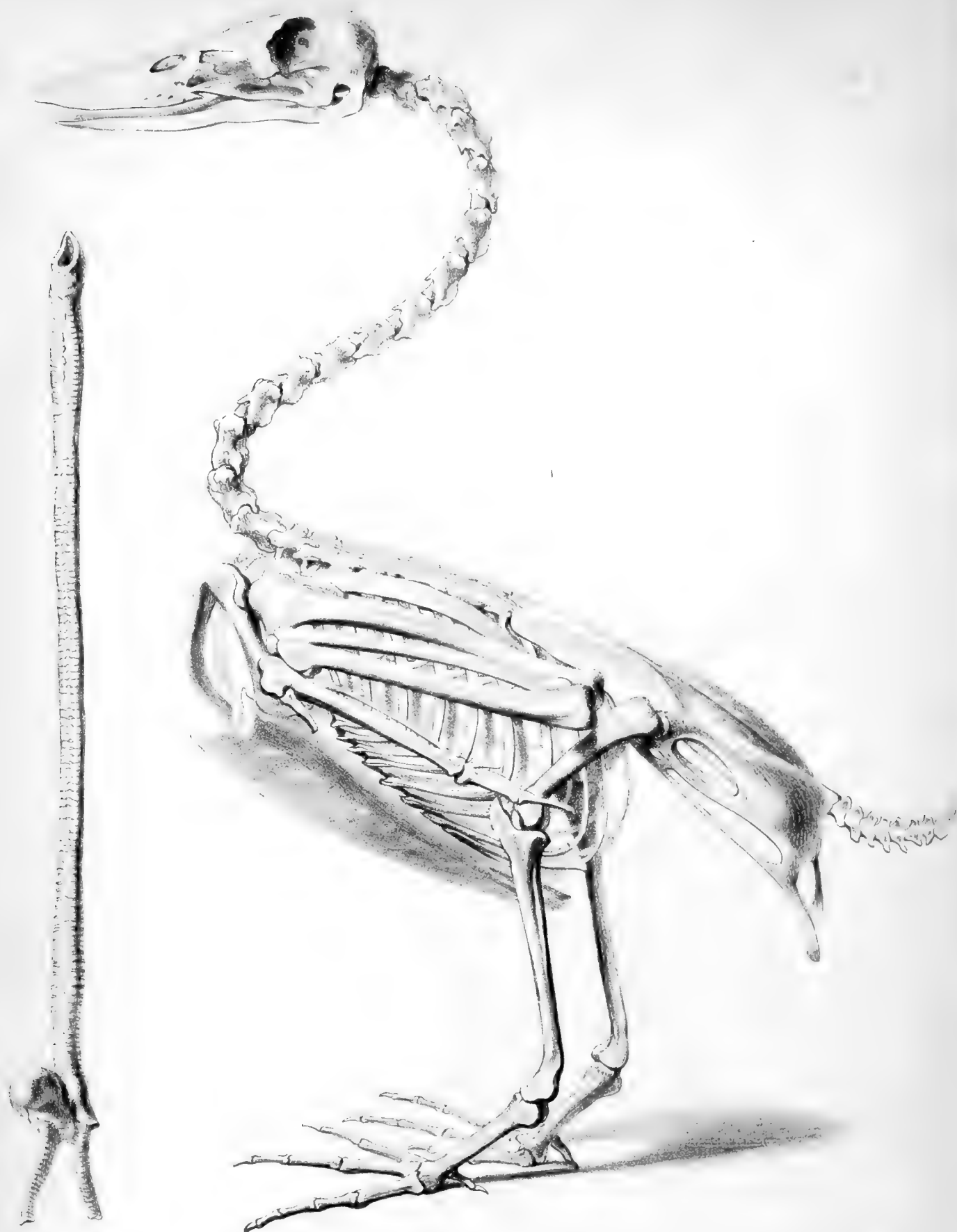
TYPE. *Chauliodus Strepera.*

The proportions of the skeleton are:—Depth of the keel to the length of the sternum as 1 to 5. Breadth of the pelvis to its length as 1 to 1 4-5ths. Length of femur to that of tibia as 1 to $1\frac{2}{3}$. Depth of cranium to its length as 1 to $2\frac{2}{3}$.

Affinity. The elongated lamellæ ally this genus to the two preceding. It appears, indeed, to be precisely intermediate between them and the following.



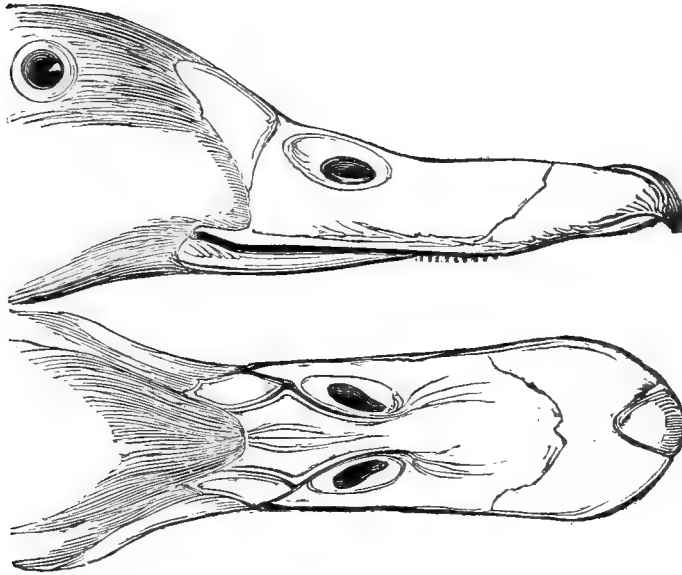




See next plate

Printed by Holmmandel

ANAS BOSCHAS & TRACHEA.
2 thirds the Nat Size



GENUS XIV. ANAS.

EXT. CHAR. *Pedes* digitis posterioribus simplicibus, mediis longissimis. *Tibiæ* parte tertiâ inferiore denudatâ. *Rostrum* lateribus parallelibus. *Nares* ovals, prope culmen ad basin locatæ. *Lingua* obtusa, ad apicem appendiculata, lateraliter una ordine setarum longarum et flexilum instructa, supra has setas ad latera sex spinis instructa, et in medio suprà duplici ordine setarum brevium.

ANAT. CHAR. *Trachea* tubula equali. *Larynx inferior* unâ bulbâ osseâ latere et antice extendente in maribus.

EXT. CHAR. *Feet* with the posterior toes simple, the middle one longest. *Thighs* with a third part naked. *Bill* with the sides parallel. *Nostrils* oval, placed near the culmen at the base. *Tongue* blunt, at the point with an appendage, the sides furnished with one rank of long and flexible bristles, above these bristles in the middle of the sides furnished with six spines, and in the middle above with a double rank of short bristles.

ANAT. CHAR. *Trachea* with the tube of equal size. *Inferior Larynx* with one osseous bulb on the side and extending anteriorly.

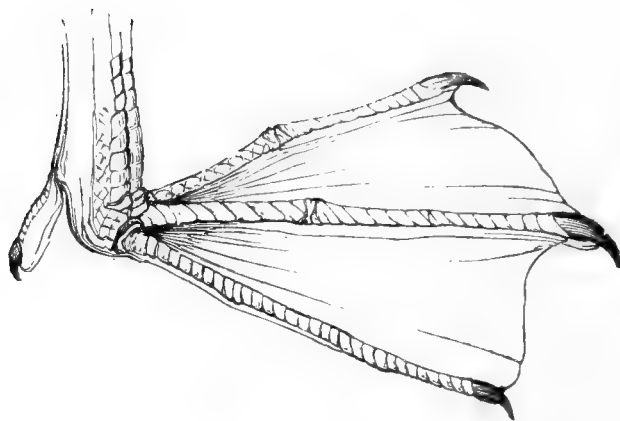
ANAS. *Linn.*

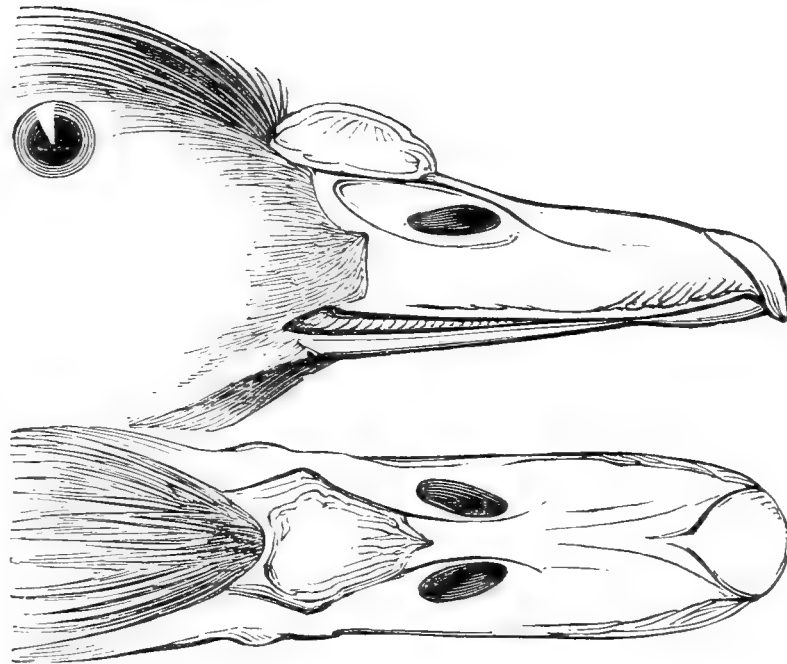
BOSCHAS. *Swainson.*

TYPE. *Anas Boschas.*

We have here retained the old Linnean name for this genus, instead of that of *Boschas* proposed by Mr. Swainson. The proportions of the skeleton are:—The depth of the keel to the length of the sternum as 1 to 5. Breadth of the pelvis to its length as 1 to $1\frac{3}{4}$. Length of femur to that of tibia as 1 to $1\frac{2}{3}$. Depth of cranium to its length as 1 to 3.

Affinity. In size and the form of the tongue this genus approaches nearest to the last of any among the *Anatinæ*.





GENUS XV. CARINA.

EXT. CHAR. *Pedes* digitis posterioribus gibbosis, mediis longissimis. *Tibiæ* plumatæ. *Rostrum* equale, et carunculâ subglobosâ supra nares positâ. *Nares* ovales, magnæ, prope culmine basi locatæ, *Caput* ad oculos denudatum. *Lingua* obtusa, ad apicem appendiculata lateraliter unâ ordine setarum et supra has quatuoribus spinis instructis et in medio supra duplici ordine setarum brevium armata.

ANAT. CHAR. *Trachea* tubulâ equali. *Larynx inferior* unâ bulbâ compressâ latere partem osseâ partem membrinaceâ et postice tendente instructo.

EXT. CHAR. *Feet* with the posterior toes gibbous, the middle longest. *Thighs* feathered. *Bill* with the sides equal, and with a subglobose tubercule placed above. *Nostrils* oval, large, placed at the base of the bill near the culmen. *Head* naked to the eyes. *Tongue* obtuse, with an appendage at the point, the sides armed with one row of bristles, above these with four spines, and in the middle on the upper side armed with a double row of short bristles.

ANAT. CHAR. *Trachea* with the tube equal. The *inferior Larynx* with one compressed bulb, partly osseous, partly membrinaceous, extending on the side and behind.

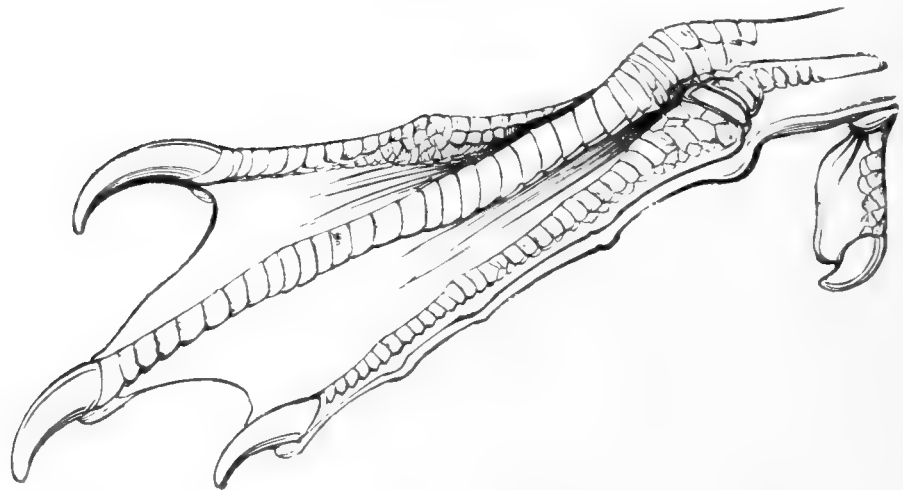
ANAS. *Linn.*

CARINA. *Flem.*

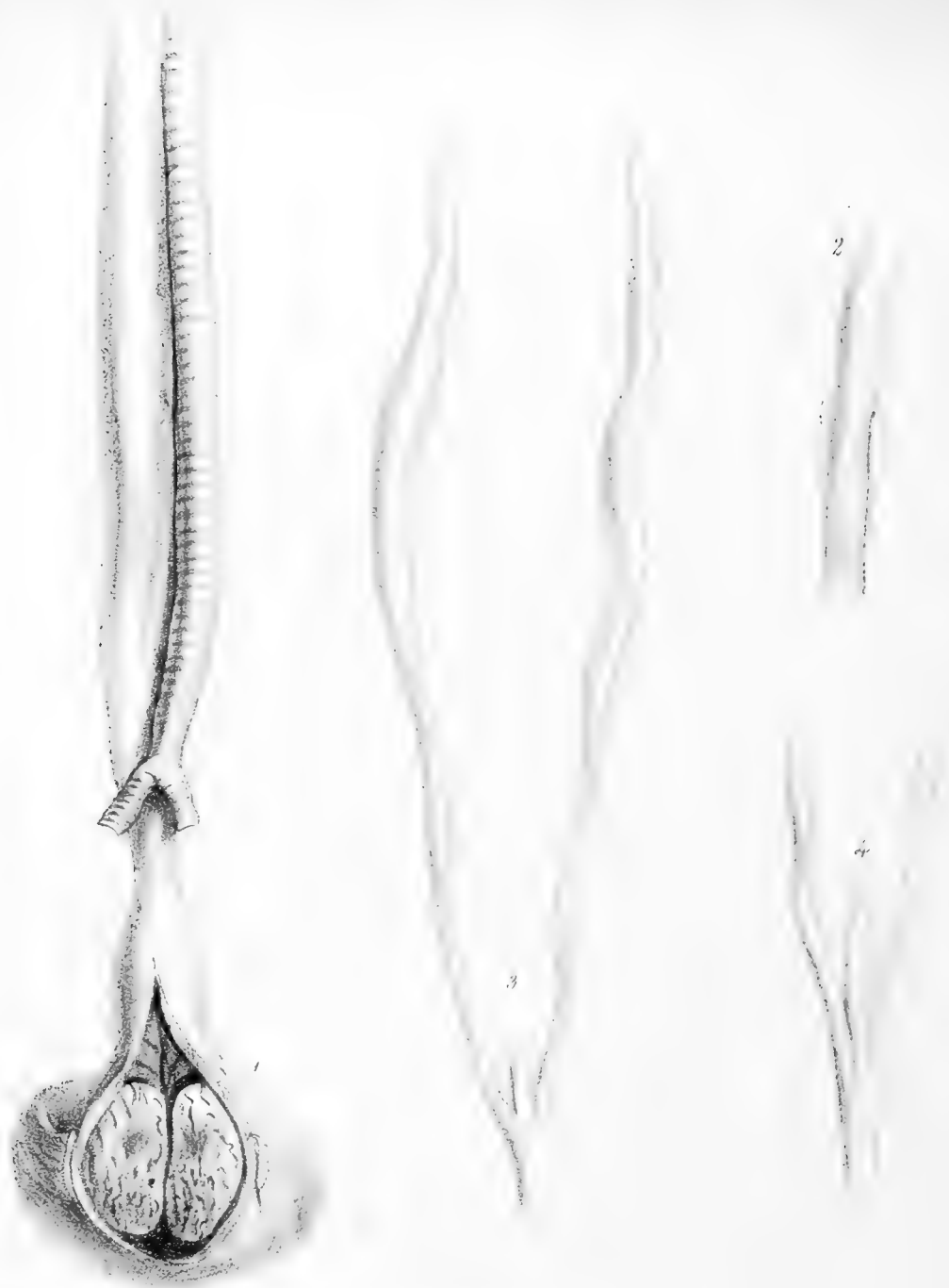
TYPE. *Carina moschata.*

The proportions of the skeleton are:—Depth of the keel to the length of the sternum as 1 to $5\frac{1}{3}$. Breadth of the pelvis to its length as 1 to $1\frac{1}{2}$. Length of femur to that of tibia as 1 to $\frac{2}{3}$. Depth of the cranium to its length as 1 to $2\frac{1}{3}$. The keel of the sternum produced in front. Ischiadic foramina large.

Affinities. To some of the genera in the next sub-family this genus presents an affinity in the form of the hind toe, which, though not strictly lobated, is thickened on its lower side. The trachea presents considerable affinity to both the sub-family we have placed it in, and also to the following. The bulb at the inferior larynx much more osseous on its external aspect than among the *Fuligulinæ*, and less so than among the *Anatinæ*: it is also laterally much compressed, as in the following sub-family.







1 *Esophagus Proventriculus and Stomach of Melospiza rosea Fem.*
 2 *Caeca of D.* 3. *Caeca of Fuligula ferrina. Male* 4 *Caeca of Clangula vulgaris. Fem.*

SUB FAM. IV. FULIGULINÆ.

EXT. CHAR. *Rostrum* ad basin altius-quam latum. *Pedes* magni, digitis posterioribus lobatis, externis vix brevioribus intermediis. *Rectrices Caudæ* plerumque breves et flexiles. *Alæ* mediocres.

ANAT. CHAR. *Sternum* carinâ parte anteriore vix productâ; posticè non ad marginem sterni continuatâ margine duabus fissuris instructâ his posticè angustatis, intus magnis et ovalibus; nonnunquam autem fissuræ vicè foraminibus multum latioribus posticè quam anticè. *Costæ* longe in abdomine tendentes processibus marginalibus arcuatis vel ad apicem bifidis. *Processus coracoides* anticè vix ultra humeros elongatus. *Os furcatum* arcuatum præcipuè ad extremus partes rami. *Pelvis* latitudine mediocris, elongata. *Cranium* ad occiput altius-quam latum. *Larynx inferior* partim ossea, partim membrinacea.

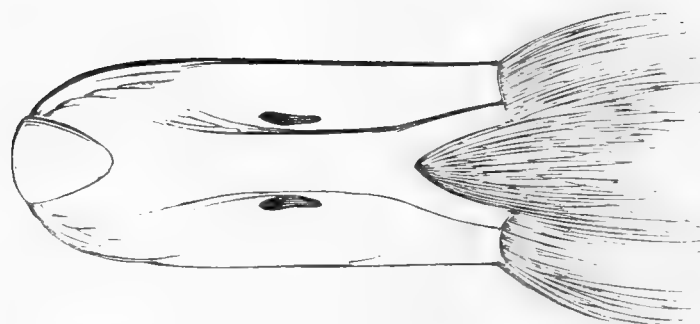
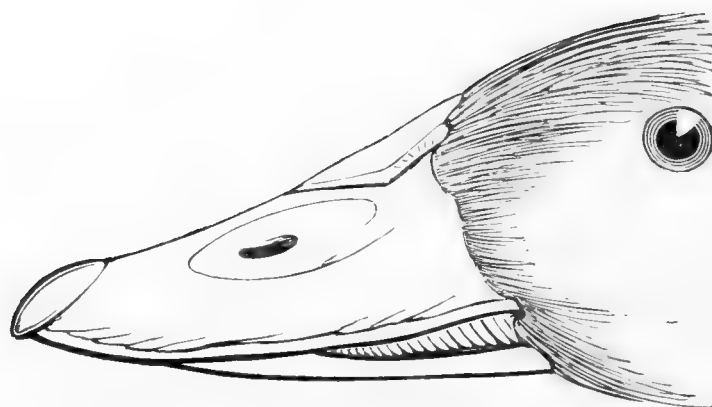
EXT. CHAR. *Bill* higher than broad at the base. *Feet* large, posterior toe lobated, the outer slightly shorter than the middle one. *Tail feathers* generally short and flexible. *Wings* moderate.

ANAT. CHAR. *Sternum* with the keel slightly produced in front, and not continued to the posterior margin; posterior margin furnished with two fissures narrowed posteriorly, each interiorly large, and oval; or with two foramina on each side, much broader posteriorly than anteriorly. *Ribs* extending far backwards, with the processes on the posterior margin arcuated or bifid at the extremity. *Coracoid process* slightly elongated anteriorly. *Os furcatum* with the rami arched in front, more so above. *Pelvis* of moderate width, long. *Cranium* at the occiput higher than broad.

TYPE. *Fuligula*.

Habit. Aquatic and marine, feeding on small molusca, and occasionally small fish; some of the species possess considerable power of flight.

Affinity. The sterna of some genera of this family, *Clangula* and *Harelda*, are furnished with an ensiform process as in the *Mergansers*. In the former the trachea also much resembles that family. To the *Anatinæ*, as we have before stated, we believe it to be connected through the genus *Micropterus* and *Carina*.



GENUS I. MICROPTERUS.

EXT. CHAR. *Pedes* digitis posterioribus lobatis. *Rostrum* validum, rugosum. *Lamellæ* magnæ. *Nares* in medio rostri positæ. *Tibiæ* plumatæ. *Alæ* breves.

ANAT. CHAR. *Trachea* tubula equali. *Larynx inferior* bulbo laterali osseo.

EXT. CHAR. *Feet* with the posterior toes lobated. *Bill* strong, wrinkled. *Lamellæ* large. *Nostrils* placed in the middle of the bill. *Thighs* feathered. *Wings* short.

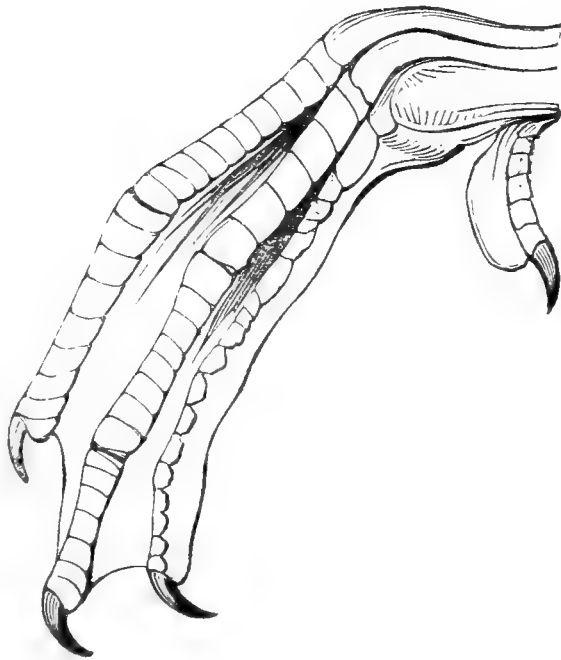
ANAT. CHAR. *Trachea* with the tube of equal size. The *inferior Larynx* with an osseous lateral bulb.

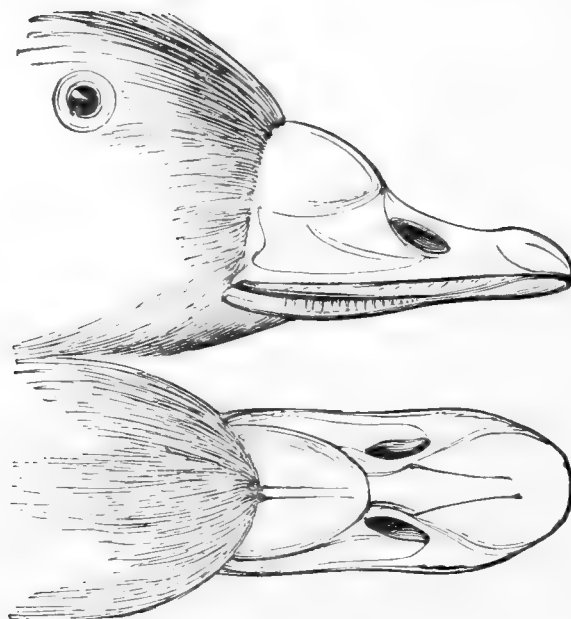
ANAS. *Linn.*

MICROPTERUS. *King.*

TYPE. *Micropterus Patachonichus,*

Affinity. The structure of the hind toe and foot unites this genus to the *Fuligulinæ*, while, on the other hand, that of the trachea bears a great resemblance to the *Anatinæ*.





GENUS II. MELANITTA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, et externis longissimis. *Rostrum* magnum, basi elevatum. *Lamellæ* magnæ, ad marginem continuatæ. *Nares* ovales, magnæ, in medio rostri positæ.

ANAT. CHAR. *Trachea* uno vel duabus bulbis tubulâ. *Larynx inferior* non bulbo instructo.

EXT. CHAR. *Feet* with the posterior toes lobated, the outer ones longest. *Bill* large, elevated at the base. *Lamellæ* large, continued to the margin. *Nostrils* oval, large, placed in the middle of the bill.

ANAT. CHAR. *Trachea* with one or two bulbs on the trachea. The *inferior larynx* without a bulb.

MELANITTA. *Boie.*

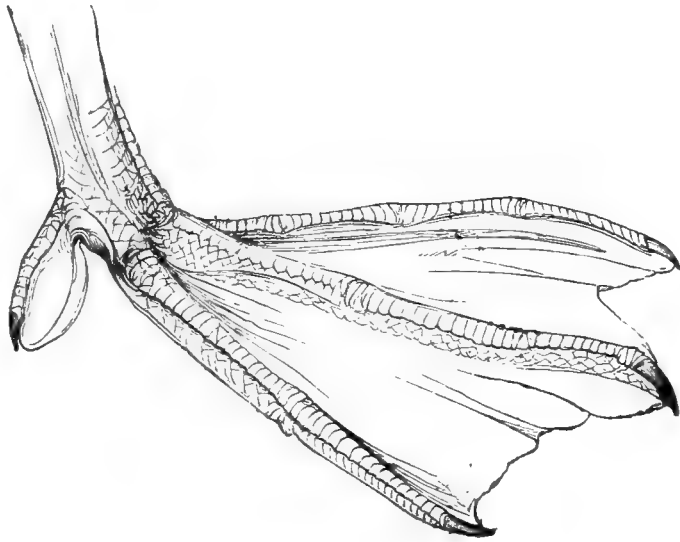
ANAS. *Linn.*

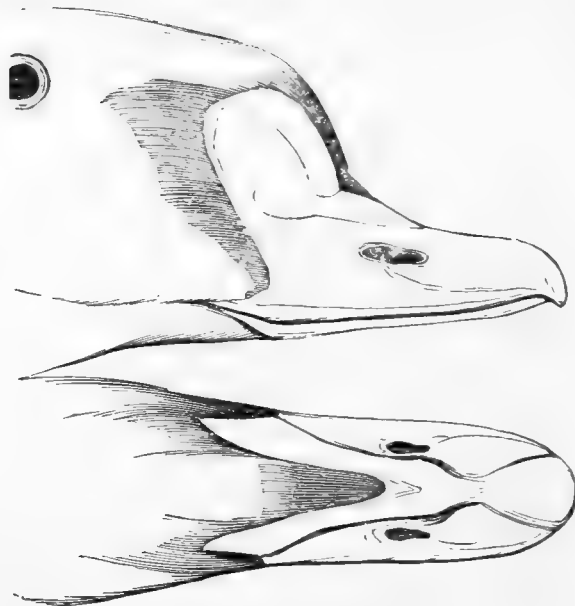
OIDEMIA. *Flem.*

TYPE. *Melanitta fusca.*

The proportions of the skeleton are:—The depth of the keel to the length of the sternum, as 1 to $4\frac{3}{4}$. Breadth of the pelvis to its length, 1 to $3\frac{1}{2}$. Length of the femur to that of the tibia, as 1 to $1\frac{3}{4}$. Depth of cranium to its length, as 1 to $2\frac{1}{4}$. Keel of the sternum not produced to the posterior extremity.

Affinities. The form of the bill in some of the species of the genus presents an affinity to the genus *Somateria*. In its general form, however, and the structure of the feet, it bears a close resemblance to the foregoing genus,





GENUS III. SOMATERIA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis mediis equalibus. *Rostrum* mediocre ad basin elevatum, et ad apicem angustatum. *Lamellæ* non ad apicem continuatæ.

ANAT. CHAR. *Trachea* tubulâ equali. *Larynx inferior* bulbosum osseum, bronchiâ sinistrâ maximâ.

EXT. CHAR. *Feet* with the hind toes lobated, the external ones equal to the middle. *Bill* moderate, with the base elevated, and narrowed towards the tip. The *Lamellæ* not continued to the apex.

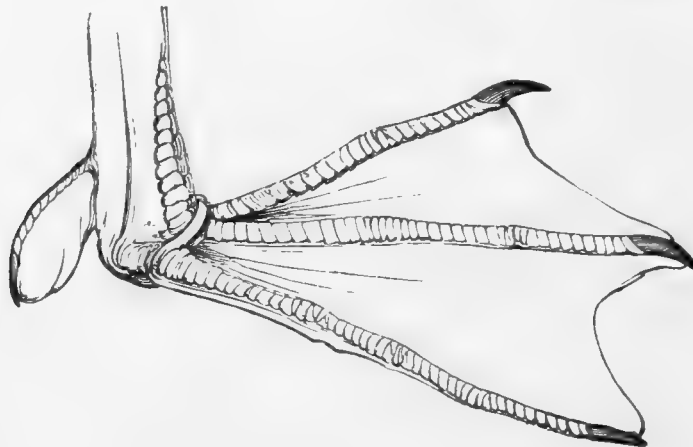
ANAT. CHAR. *Trachea* with the tubes of equal size throughout. The *inferior Larynx* bulbous, the left bronchia largest.

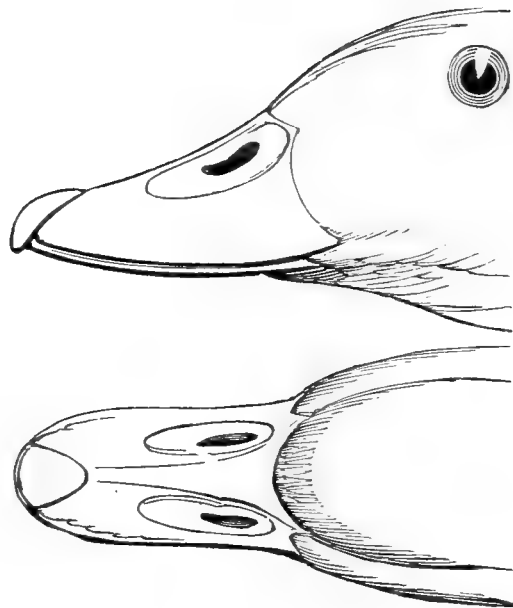
ANAS. *Linn.*

SOMATERIA. *Leach.*

TYPE. *Somateria mollissima.*

Affinity. In the form of the inferior larynx this genus approaches near the *Anatinae*.





GENUS IV. POLYSTICTA.

EXT. CHAR. *Pedes* magni, digitis posterioribus lobatis. *Rostrum* ad basin elevatum, ad apicem angustatum. *Caput* parvum, et cristatum maribus. *Cauda* brevis et acutâ. *Remiges tertiæ* longæ.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* large, with the posterior toes lobated. *Bill* elevated at the base, narrowed towards the point. *Head* small, and crested in the male. *Tail* short, sharp. *Tertiaries* long.

ANAT. CHAR. *Unknown.*

ANAS. *Linn.*

FULIGULA. *Gould.*

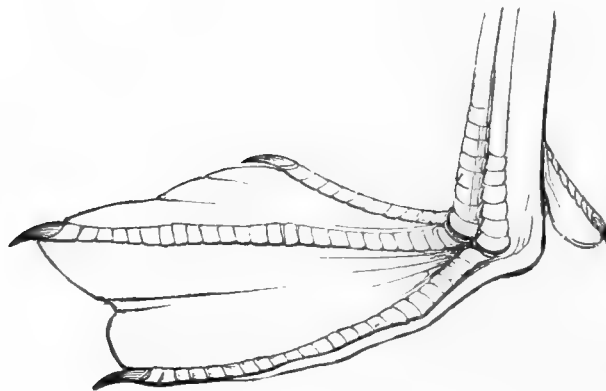
MACROPUS. *Nuttall.*

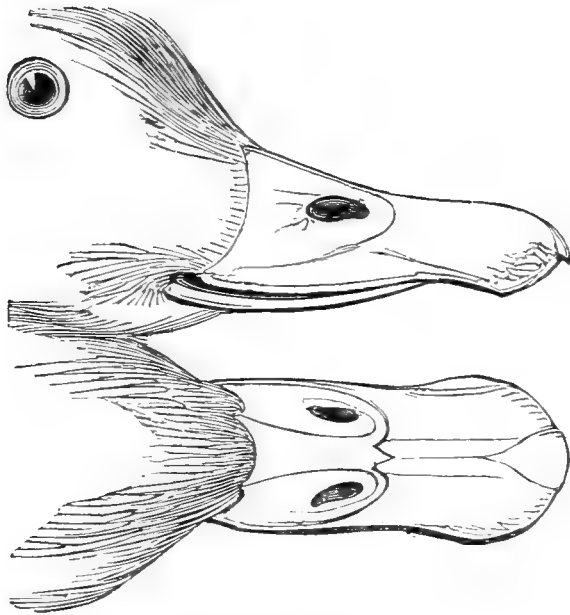
POLYSTICTA *nobis.*

TYPE. *Polysticta stelleri.*

After we had proposed *Polysticta* as a new generic name for the Western Duck, we found that Nuttall, in his American Ornithology, had also made it into a new genus. Which name has the priority we are uncertain; but that proposed by Mr. Nuttall (*Macropus*) having been used as a generic appellation to a genus of kangaroos, cannot stand. Our own, therefore, is that which we have placed at the head of this genus.

Affinity. The long tertiary feathers and the form of the bill in this genus evidently point out a near affinity to *Somateria*.





GENUS V. KAMPTORHYNCHUS.

EXT. CHAR. *Pedes* magni, digitis externis mediis æquantibus, posterioribus lobatis. *Rostrum* lateribus ad apicem latum, et flexile. *Nares* magnæ, ovales, prope basum locatæ. *Unguis* magna et lata.

ANAT. CHAR. *Trachea* maribus duabus bulbis tubulâ.

EXT. CHAR. *Feet* large, the outer toe equal to the middle one, posterior one lobated. *Bill* broad towards the point at the sides, flexible. *Nostrils* large, oval, placed near the base. *Nail* large and broad.

ANAT. CHAR. *Trachea* in the males with two bulbs on the tube.

ANAS. *Linn.*

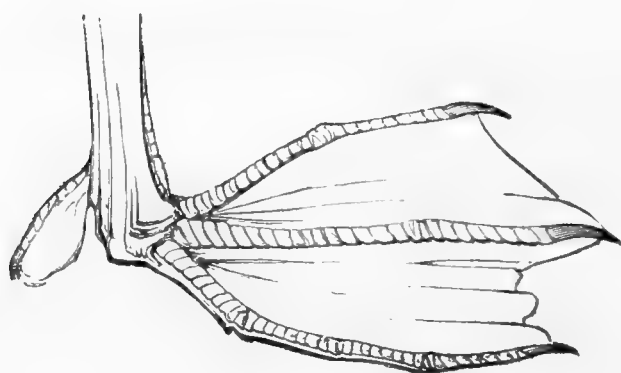
FULIGULA. *Ray, Leach.*

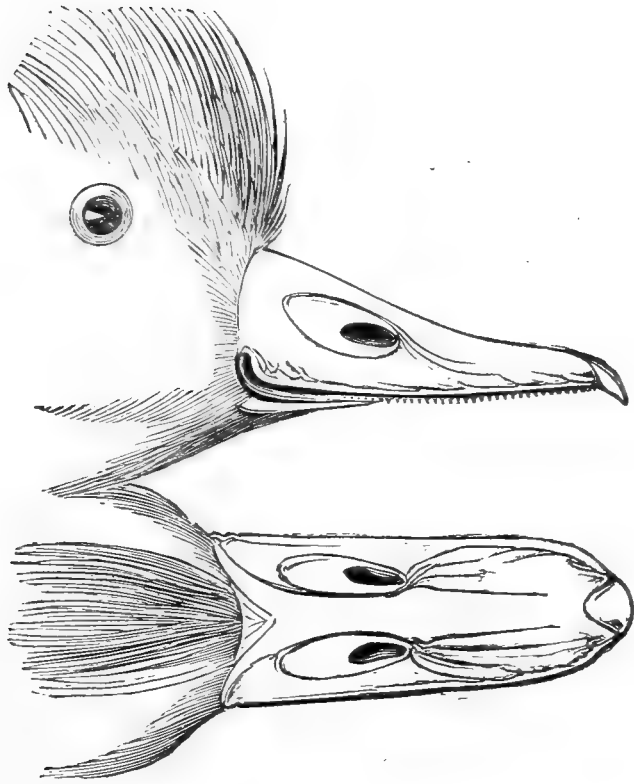
KAMPTORHYNCHUS *nobis.*

TYPE. *Kamptorhynchus Labradoræ.*

This genus we have formed on *F. Labradoræ Bonap*, the variety it exhibits being amply sufficient to distinguish it from any other genus. Nothing that I am aware of is known concerning anatomical characters, besides those mentioned in Wilson, and quoted at length under the head *Kamp. Labradoræ.*

Affinities. We have never seen the skeleton of this bird, nor are we aware of one in existence in this kingdom. As far, however, as we are acquainted with it, from Wilson's account, its true place appears to be somewhere near that we have assigned to it.





GENUS VI. CALLICHEN.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, intermediis vix longissimis. *Tibia* plumatæ. *Rostrum* capite equalè, prope basum latissimum. *Lamellæ* validæ, et ad marginem continuatæ. *Nares* subovales, magnæ. *Cauda* mediocris. *Caput* cristatum.

ANAT. CHAR. *Trachea* duobus bulbis tubula. *Larynx inferior* bulbo laterali, partim membranaceo, partim osseo, latere complanato.

EXT. CHAR. *Feet* with the posterior toes lobated, the middle ones scarcely the longest. *Thighs* feathered. *Bill* equal to the head, broadest at the base. *Lamellæ* strong, and continued to the margin. *Nostrils* suboval, large, *Tail* moderate. *Head* crested.

ANAT. CHAR. *Trachea* with two bulbs on the tube. *Inferior Larynx* with a lateral bulb, partly membranaceous, partly osseous, on the side flattened.

ANAS. *Linn.*

FULIGULA. *Ray, Leach.*

GLAUCIUM, QUERQUEDULA. *Briss.*

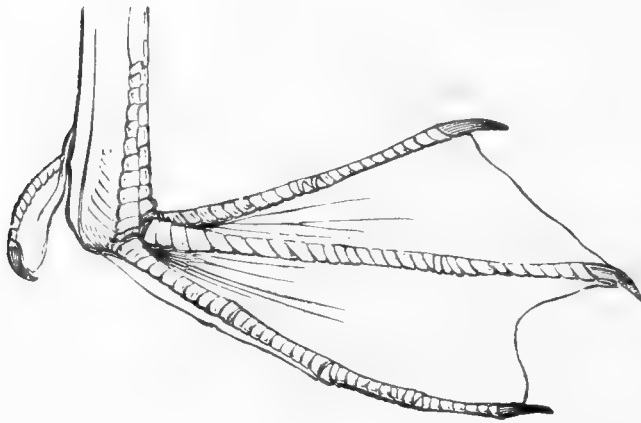
CALLICHEN. *Brehm.*

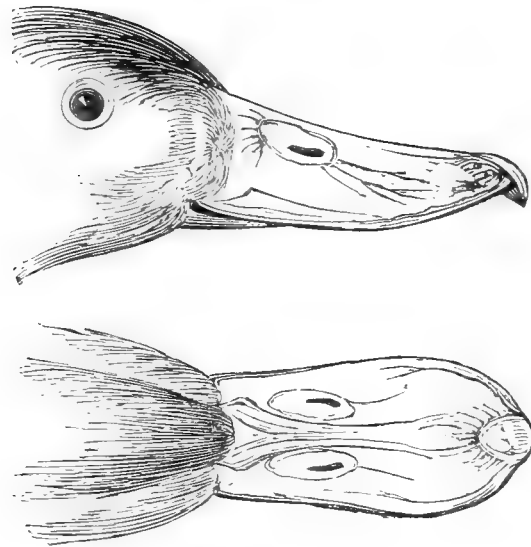
MERGOIDES *nobis.*

TYPE. *Callichen rufina.*

We first instituted this genus on *F. rufina*, after having observed the trachea of that species. To this, however, will be added the beautiful species *Fuligula caryophylacea*. With any anatomical character further than that above given we are unacquainted, not having ever seen the skeleton.

Affinities. In having bulbs on the tube of the trachea, and also in general form, this bird presents considerable affinity to the *Mergansers*.





GENUS VII. FULIGULA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis inter mediis equantibus. *Tibiæ* plumatæ. *Rostrum* prope apicem latissimum, obtusum. *Lamellæ* abbreviatæ et non ad marginem continuatæ. *Nares* subovales, parvissimæ. *Cauda* brevissima. *Lingua* obtusa ad apicem appendiculata, lateribus unâ ordine setarum flexilum instructis; in medio ad latera supra has setas quatuoribus spinis instructis.

ANAT. CHAR. *Trachea* tubulâ inferiore parte contractâ. *Larynx inferior* bulbo laterali, partim membrinaceo, partim osseo, latere complanato.

EXT. CHAR. *Feet* with the hind toes lobated, the outer ones scarcely equal to the middle. *Thighs* feathered, *Bill* broadest at the point, blunt. *Lamellæ* abbreviated, and not continued to the margin. *Nostrils* suboval, very small. *Tail* very short. *Tongue* obtuse, with an appendage at the tip, and the sides furnished with one row of flexible bristles; in the middle with the sides above the bristles furnished with four spines.

ANAT. CHAR. *Trachea* with inferior portion of the tube contracted. The *inferior Larynx* with one lateral bulb, partly membrinaceous, partly osseous, on the sides compressed.

ANAS. *Linn.*

FULIGULA. *Ray, Leach.*

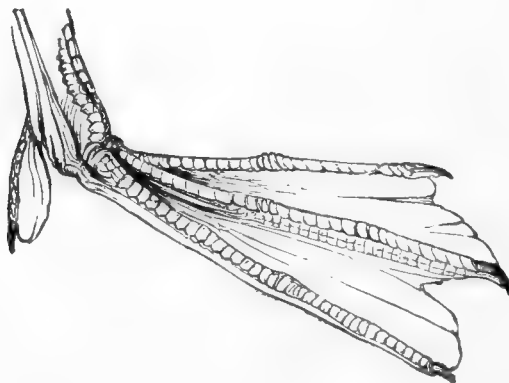
NYROCA. *Fleming.*

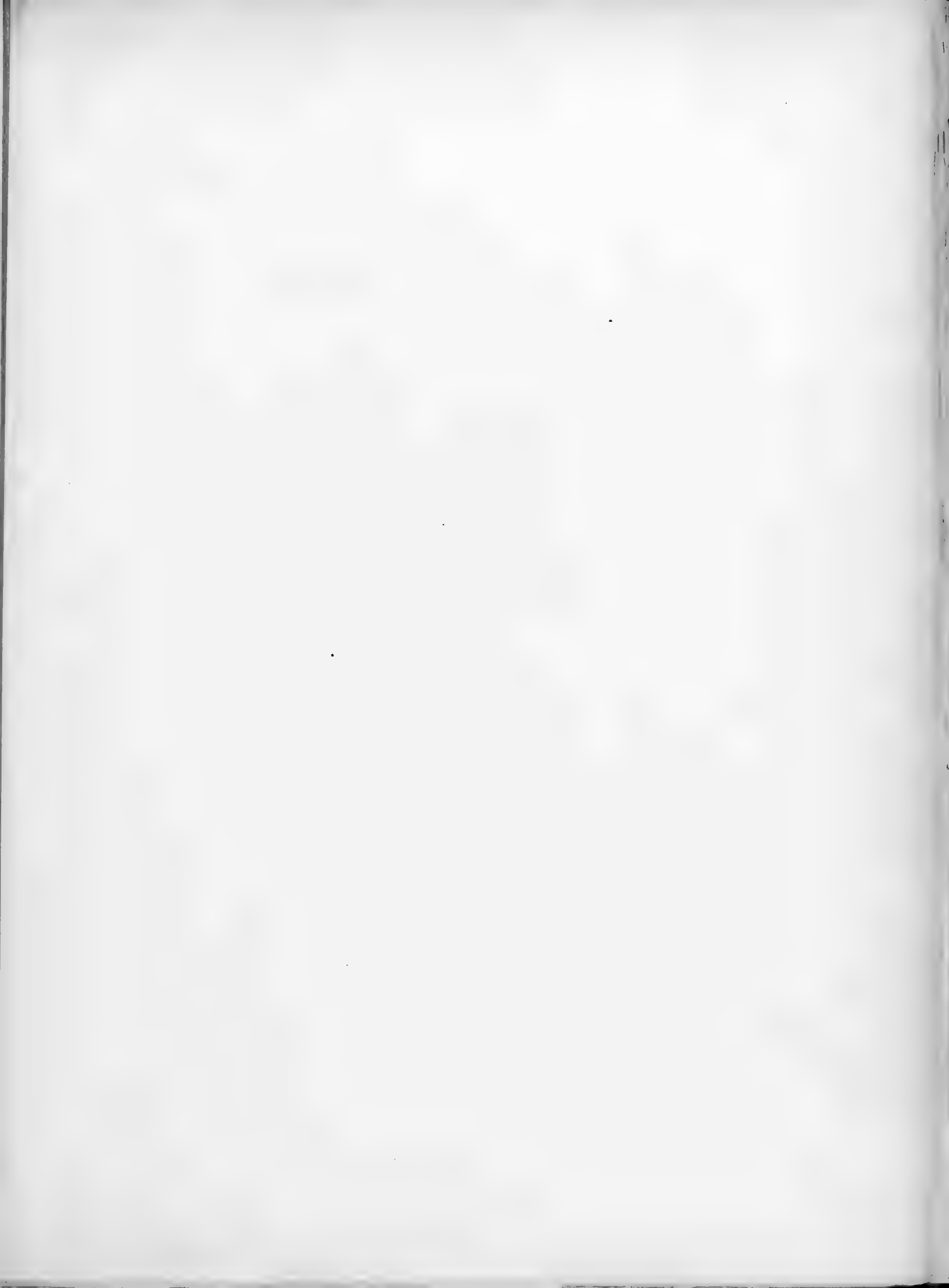
GLAUCIUM, QUERQUEDULA. *Briss.*

TYPE. *Fuligula Marilla.*

We here again assume the name to this genus given to it by Ray, as being the oldest. The proportions of the skeleton are:—Depth of the keel to the whole length of the sternum as 1 to 4. Breadth of the pelvis to its length as 1 to $1\frac{3}{4}$. Length of femur to that of tibia as 1 to $1\frac{7}{8}$. Depth of cranium to its length as 1 to $2\frac{3}{4}$. Sternum with the keel produced anteriorly. Ribs projecting far backwards.

Affinities. To the following genus this bears a near affinity in the external form and that of the trachea and skeleton, as well as to the foregoing.

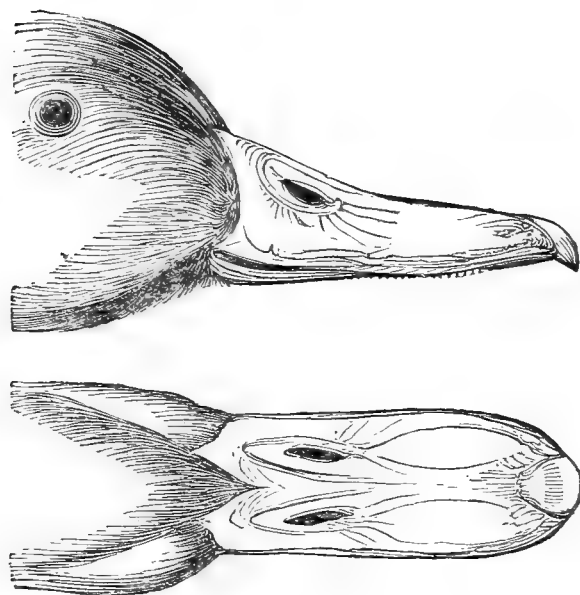






NITROCA LEUCOTHALUS & TRACHEA.

PL. 17. 22.



GENUS VIII. NYROCA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis mediis vix æquantibus. *Tibiæ* plumatæ. *Rostrum* brevius capite, prope apicem latissimum, obtusum. *Lamellæ* abbreviatæ, et non ad marginem continuatæ. *Nares* subovales, parvæ. *Cauda* brevis. *Lingua* obtusa, ad apicem appendiculata, lateribus unâ et in medio duplici ordine setarum flexilium instructis, ad latera supra has setas quinque spinis instructis.

ANAT. CHAR. *Trachea* tubulâ in medio multum expandente, contractâ supra larynginem inferiorem. *Larynx inferior* partim ossea, partim membranacea.

EXT. CHAR. *Feet* with the posterior toes lobated, the outer ones scarcely equal to the middle. *Tibia* feathered. *Bill* shorter than the head, near the point broadest, obtuse. *Lamellæ* abbreviated, and not continued to the margin. *Nostrils* suboval, small. *Tail* short. *Tongue* obtuse, with an appendage at the point, the sides with one and the middle with a double rank of flexible bristles, above these bristles on the sides armed with five strong spines.

ANAT. CHAR. *Trachea* with the tube much expanded in the middle, again contracted above the inferior larynx. The *inferior Larynx* partly osseous, partly membranaceous.

ANAS. *Linn.*

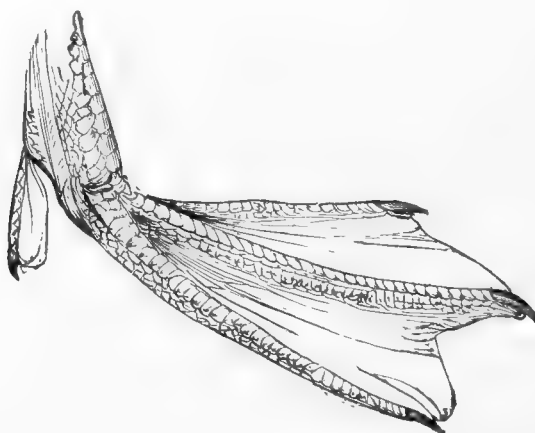
NYROCA. *Flem.*

TYPE. *Nyroca leucophthalmus.*

Dr. Fleming included the Scaup, Tufted Duck, and Pochards in his genus *Nyroca*. It is, however, now restricted to the Pochards which want the crested head.

The proportions of the skeleton are:—The depth of the keel to the whole length of the sternum, as 1 to 5. Breadth of the pelvis to its length, as 1 to 2. Length of femur to that of tibia, as 1 to $1\frac{2}{3}$. Depth of the cranium to its length, as 1 to $2\frac{2}{3}$. The keel of the sternum much produced anteriorly.

Affinities. This genus, as before stated, presents an affinity to the last in general form, and also in that of the inferior larynx.



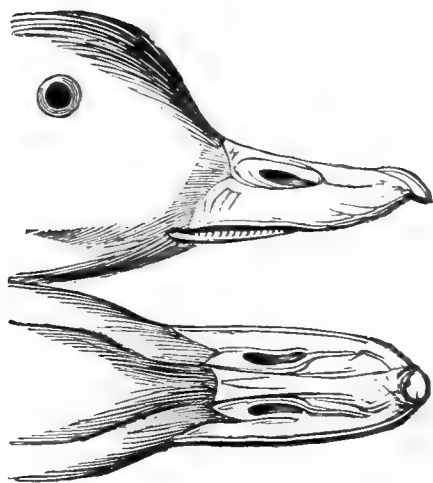


O. Bonaparte del. et sculp.

Pinnae by Chaumondesi

MARELDA GLACIALIS & TRACHEA.

2 This is the Nat size



GENUS IX. HARELDA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis mediis vix equantibus. *Tibiæ* plumatæ. *Rostrum* mediocre, baso ad apicem angustatum. *Lamellæ* parte omnino oblitteratæ. *Nares* lineares, versus media rostri positæ. *Cauda* maribus elongata.

ANAT. CHAR. *Trachea* tubulâ inferiore parte tuberculosâ a posteriore membranâ tectâ. *Larynx inferior* bulbosa, partim ossea, partim membrinacea.

EXT. CHAR. *Feet* with the posterior toes lobated, the outer one scarcely equal to the middle. *Thighs* feathered. *Bill* moderate, narrowed from the base to the apex. *Lamellæ* altogether obliterated at the points. *Nostrils* linear, situated about the middle of the Bill. *Tail* in the male elongated.

ANAT. CHAR. *Trachea* on the lower part posteriorly covered with a membrane. The *inferior Larynx* bulbous, partly osseous, partly membrinaceous.

HARELDA. Ray. Leach.

ANAS. Linn.

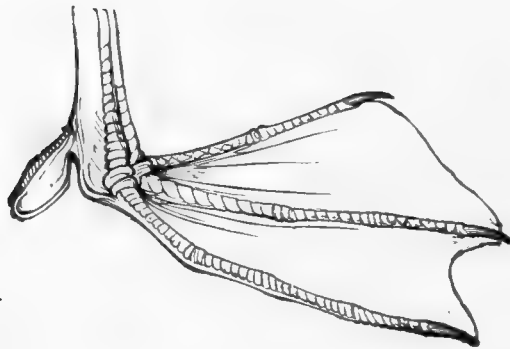
QUERQUEDULA. Briss.

CLANGULA. Flem.

TYPE. *Harelda Glacialis*.

This genus having been instituted by Ray, requires no alteration. The depth of the keel to the whole length of the sternum is as 1 to 4. The length of the femur to that of the tibia as 1 to $1\frac{2}{3}$. The height of the head to its length as 1 to $2\frac{5}{8}$. There is a small ensiform process attached to the posterior margin of the sternum.

Affinity. The sternum in this genus, as well as in the next, being furnished with an ensiform process, evidently points out an affinity between them. The trachea, however, differs most materially, and the elongated tail is unlike any other genus of the family: still, that this is its true place no doubt can remain, the ribs projecting far backward over the abdomen, and the hind toe being largely lobated.

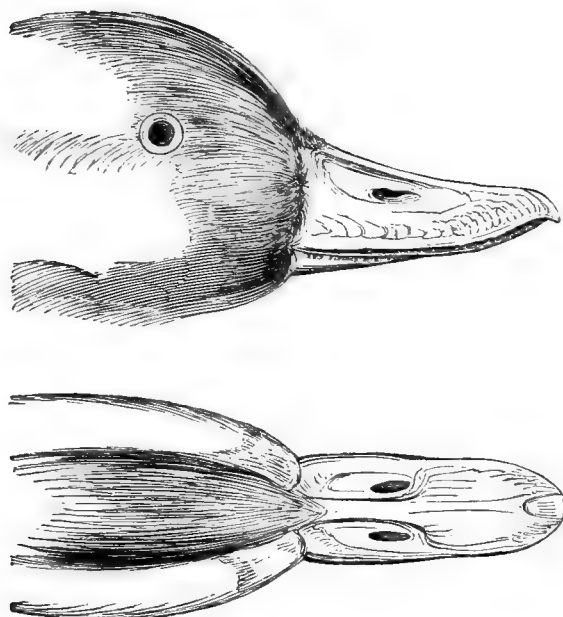






1. SKELETON OF *CLANGULA HISTRIONICA*.
2. TRACHEA OF *CLANGULA VULGARIS*.

Two thirds the Nat. size



GENUS X. CLANGULA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis mediis vix æquantibus. *Tibia* plumosæ. *Rostrum* parvum, capite brevius, a basi ad apicem angustatum. *Nares* ovales, medium versus rostri positæ. *Lamellæ* ad apicem pene oblitteratæ. *Cauda* rectricibus rigidis, sed ad apicem flexilibus. *Lingua* obtusa, ad apicem appendiculata, lateribus ordine uno setarum flexilium instructis.

ANAT. CHAR. *Trachea* tubulâ bulbo uno instructâ. *Larynx inferior* bulbo magno partim membrinaceo, partim osseo. *Costæ* a posticè longe tendentes. *Sternum* posticè appendice ensiformi parvo.

EXT. CHAR. *Feet* with the posterior toes lobated, the outer ones scarcely equal to the middle. *Tibiæ* feathered. *Bill* small, shorter than the head, narrowed from the base to the point. *Nostrils* oval, placed towards the middle of the bill. *Lamellæ* almost obliterated at the top. *Tail* with the quills stiff, but flexible at the points. *Tongue* obtuse, with an appendage at the point, the sides garnished with one row of flexible bristles.

ANAT. CHAR. *Trachea* with one bulb on the tube. The *inferior Larynx* with a large bulb, partly membrinaceous, partly osseous. *Ribs* extending far backwards. *Sternum* behind with a small ensiform appendage.

ANAS. *Pars. Linn.*

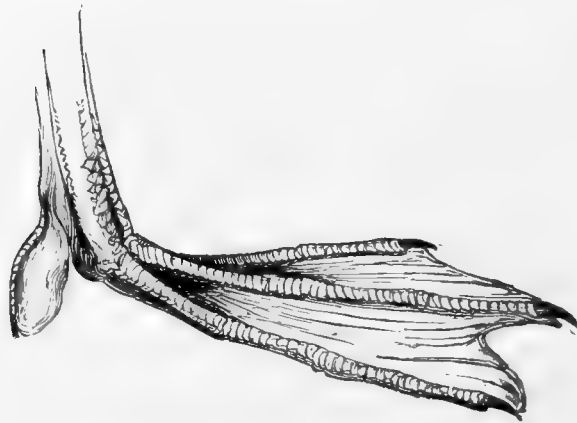
CLANGULA. *Leach, Flem.*

QUERQUEDULA. *Briss.*

TYPE. *Clangula vulgaris.*

This genus was instituted by Dr. Leach. Brisson included the birds contained in it in the genus *Querquedula*, which is now applied solely to a genus of fresh-water ducks (*Anatidæ*). The depth of the keel to the length of the sternum in this genus is as 1 to $4\frac{1}{2}$. Breadth of the pelvis to its length as 1 to $1\frac{1}{2}$. Length of femur to that of tibia as 1 to $1\frac{1}{2}$. Depth of cranium to its length as 1 to $2\frac{1}{8}$.

Affinity. The disposition to rigidity, and the form of the tail, as well as that of the bill and feet, evidently point out an affinity to the next family; while the skeleton approaches to that of the genus *Mergus*, both in possessing an ensiform appendage to the sternum, and in the form of the inferior larynx.



SUB FAM. V. ERISMATURINÆ.

EXT. CHAR. *Rostrum* ad basin altius-quam latum. *Pedes* magni, digitis posterioribus lobatis, externis et intermediis inter se æqualibus. *Rectrices Caudæ* longæ et validæ. *Alæ* breves.

ANAT. CHAR. Ignoti.

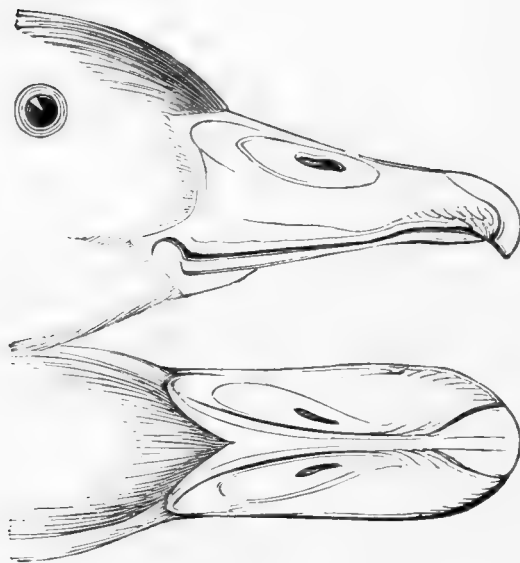
EXT. CHAR. *Bill* higher than broad. *Feet* large, posterior toe lobated, the outer toe equal to the middle. *Tail feathers* long and stiff.

ANAT. CHAR. Unknown.

TYPE. *Erismatura*.

Habit. Like the last, truly aquatic.

Affinity. The shortness of the wing deprives these birds of any great power of flight, consequently the species have not a wide geographical range. We are not aware that the use of the stiff tail feathers found on birds of this family and the cormorants has ever been ascertained, and which character appears to separate them so distinctly from the other families of ducks: they are certainly of great use to them when on shore and stationary, their position being necessarily upright, the legs being placed far backwards. We should also suppose them to be connected with their motion in the water while diving, perhaps giving them the power of raising or lowering themselves suddenly. If it should be eventually ascertained that fish constitute any considerable portion of their food, this power must be of great use to them, as well as to the cormorants, in following their prey through the water.



GENUS I. THALASSORNIS.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis inter-mediis vix æquantibus. *Tibiæ* plumosæ. *Rostrum* validum, latum; lateribus parallellibus; et ungue magnâ armatum. *Nares* parvæ, ovales, in medio rostri culminem versus positæ. *Cauda* rotundata, rectricibus brevibus et subrigidis instructa. *Alæ* breves, remigibus ad apices incurvatis.

ANAT. CHAR. Ignoti.

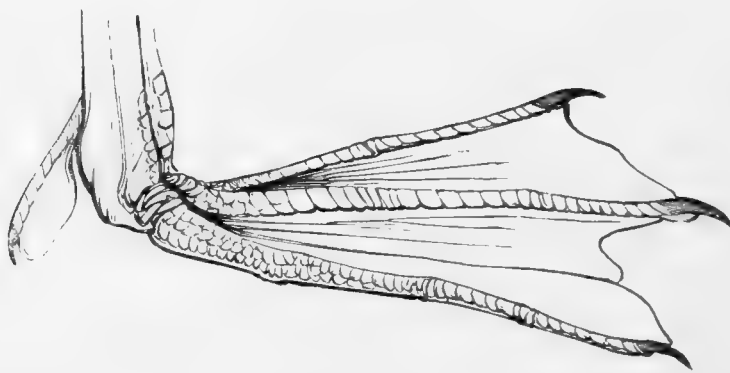
EXT. CHAR. *Feet* with the posterior toes lobated, the outer ones scarcely equal to the middle. *Thighs* feathered. *Bill* strong, broad; the sides parallel, and armed with a large nail. *Nostrils* small, oval, placed in the middle of the bill towards the culmen. *Tail* rounded, furnished with short and slightly rigid feathers. *Wings* short, with the quills incurved at the apex.

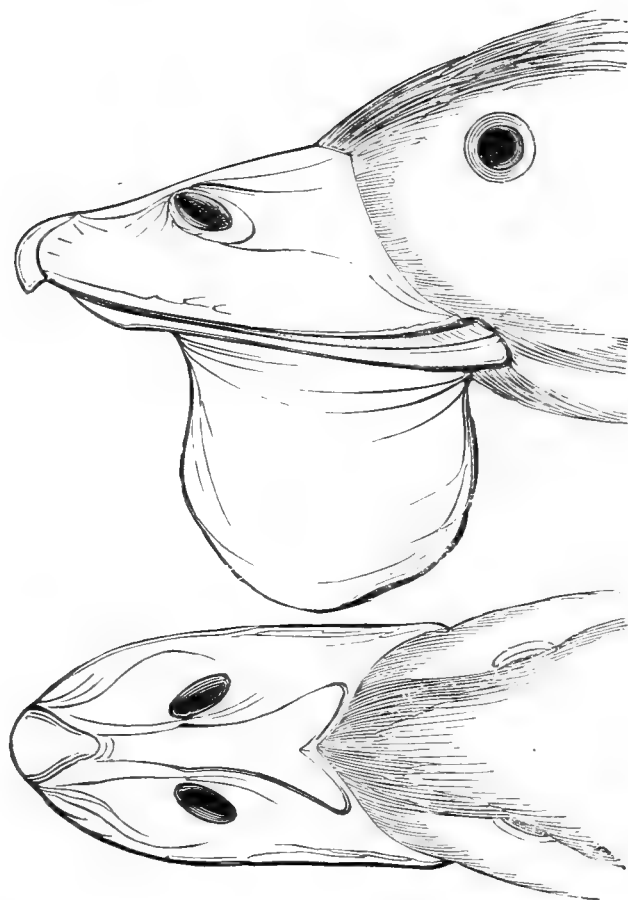
ANAT. CHAR. Unknown.

THALASSORNIS *nobis*.

TYPE. *Thalassornis leuconotus*.

Affinity. The above genus appears to form a connecting link between the genus *Clangula* and *Biziura*, the structure of the tail being nearly that of the former genus, while the bill is that of the latter.





GENUS II. BIZIURA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis inter mediis æquantibus. *Tibiæ* plumosæ. *Rostrum* validum, latum, ad apicem angustatum. *Mandibulæ* ambæ unguiculatæ, inferior in maribus paleâ magnâ pendente instructa. *Nares* rotundatæ, in medio rostri, culminem versus positæ. *Cauda* rotundata, retricibus rigidis et acutis instructa. *Alæ* remigibus, ad apices incurvatis.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes lobated, the external ones equal to the middle. *Thighs* feathered. *Bill* strong, broad, narrowed towards the apex. Both *mandibles* furnished with nails, the inferior one in the males with a large hanging wattle. *Nostrils* rounded, placed in the middle of the bill towards the culmen. *Tail* rounded, furnished with stiff and acute quills. *Wings* with the quills at the points incurved.

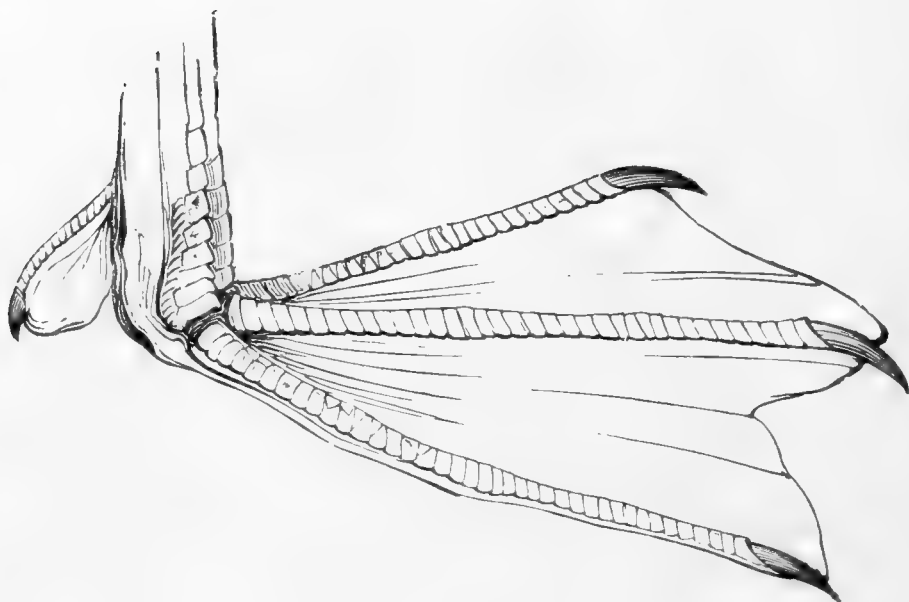
ANAT. CHAR. Unknown.

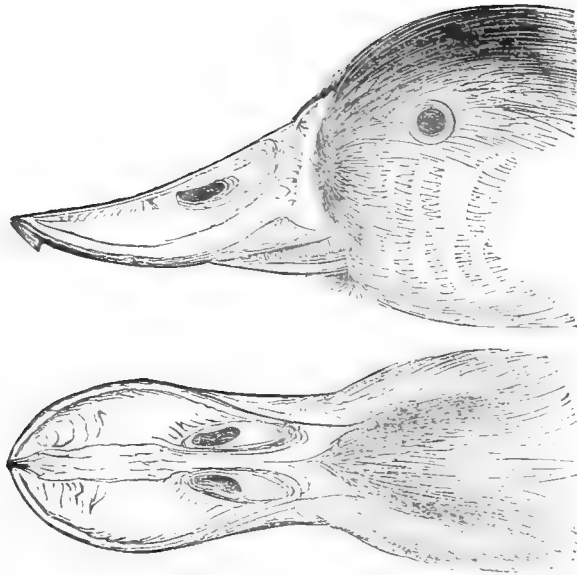
BIZIURA. *Steph. Leach.*

TYPE. *Biziura lobata.*

Mons. Temminck included this genus, together with all the other aquatic ducks, in one large genus *Hydrobates*. The name of *Biziura* was first given to it, according to Stephens, in Shaw's *Zoology*, by Leach, in his MSS. and was afterwards published by Mr. Stephens in the above work. It is much to be regretted that no skeleton or parts to illustrate the anatomy of this extraordinary bird have hitherto been brought to England.

Affinity. It bears considerable resemblance to the other genera of the family, but differs from all in having the lobe under the chin.





GENUS III. ERISMATURA.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, externis mediis vix æquantibus. *Tibiæ* plumatæ. *Rostrum* validum, aut mediocre, prope apicem latissimum. *Mandibulæ* unguiculatæ. *Nares* ovales, parvæ, in medio rostri versus culminem positæ. *Cauda* rotundata, rectricibus rigidis. *Alæ* remigibus paululum incurvatis.

ANAT. CHAR. Ignoti.

EXT. CHAR. *Feet* with the posterior toes lobated, the outer one scarcely equal to the inner. *Thighs* feathered. *Bill* moderate, broadest near the tip. *Mandibles* furnished with nails. *Nostrils* oval, small, placed in the middle of the bill towards the culmen. *Tail* rounded, with the quills stiff. *Wings* with the quills a little incurved.

ANAT. CHAR. Unknown.

ANAS. *Linn.*

OXYURA. *Bonap.*

ERISMATURA. *Bonap.*

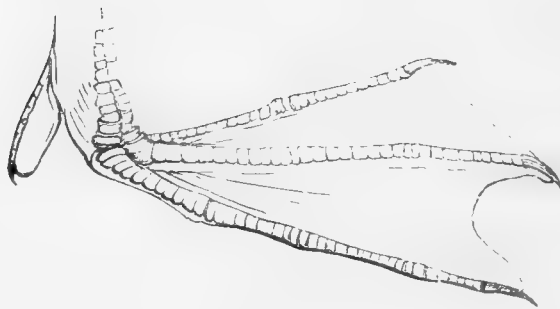
UNDINA. *Gould.*

GYMNURA. *Nuttall.*

TYPE. *Erismatura rubida.*

The genus *Oxyura* was first instituted by the Prince of Musignano, for the reception of *Anas rubida*, *Wils.* Mr. Gorler having overlooked it, formed his genus *Undina*, or *Anas Leucocephala*, *Linn.* a bird of the same conformation. Mr. Nuttall having discovered that the name of *Oxyura* had been before used for a genus of creepers, substituted that of *Gymnura* for it. The Prince of Musignano had, however, in the appendix to the same work in which he named the genus *Oxyura*, also called it *Erismatura*, which name will stand, that of *Oxyura* having been before employed for another genus.

Affinity. Some of the species in this genus appear to present a slight approach to the next sub-family, the tail being diminished in length and rigidity, and also in the wings not being so much curved inwards as in the last.





Co. Nat. Hist.

1. Esophagus proventriculus and Stomach of *Merus Serrator* Penn
2. Caeca of *Id.*

SUB FAM. VI. MORGANINÆ.

EXT. CHAR. *Rostrum* mediocre, ad apicem angustatum acuminatum et dentibus ad latera instructum. *Digiti* posteriores lobati.

ANAT. CHAR. *Sternum* carinâ parte anteriore valde angustatâ et non ad marginem continuatâ, margine posteriore appendice ensiformi instructo, et duobus foraminibus ad latera. *Processus coracoideus* antice elongatus. *Os furcatum* arcuatum, rami lateraliter compressi. *Trachea* uno vel duobus bulbis tubulâ. *Larynx inferior* in maribus bulbo osseo instructa. *Œsophagus* dilateri potest. *Gigeria* interne magna cavitione.

EXT. CHAR. *Bill* moderate, narrowed to the point, acuminate, and at the sides armed with teeth. Posterior *Toes* lobated.

ANAT. CHAR. *Sternum* with the keel anteriorly produced, posteriorly narrowed, and not continued to the margin, furnished with an ensiform process and two lateral foramina. *Coracoid process* elongated anteriorly. *Os furcatum* arched, the branches laterally compressed. *Trachea* with one or two enlargements on the tube. The *inferior Larynx* in the males furnished with an osseous bulb. *Œsophagus* dilatable. The *Gizzard* internally with a large cavity.

TYPE. *Mergus*.

Affinities. Having, under the head *Lamellirostres*, stated some of the affinities which exist between the family generally and others, we have merely, under the head sub-families, stated those which hold between each contained in the above family. In both external and internal character the strongest relation exists between the above and that of *Fuligininæ*, the genera *Clangula* and *Harelda* in particular, both of which possess the ensiform process on the posterior margin of the sternum, and the latter a bulb on the tube of the trachea, formed by enlarged rings. The genus *Callichen* possesses two bulbs, but the skeleton does not approach so nearly as that of the two genera before mentioned. To the *Erismaturinæ* we suspect the affinity is not so great, certainly not so far as relates to external character, although we have placed them contiguous, there being evidently a double point of affinity to the Divers.

Habit. The habit of this sub-family is truly aquatic, its length of body, and legs being placed far backwards, give the birds contained in it great power of diving. Its food consists principally of small fish.



GENUS I. MERGUS.

EXT. CHAR. *Pedes* digitis posterioribus lobatis, mediis vix longissimis. *Tibiæ* plumatæ. *Rostrum* a baso ad apicem angustatum, lateribus serratis, apice unguiculato. *Nares* subovales, mediocres, versus medium rostri positæ. *Lingua* acuminata, lateribus ordine uno, parte centrali duplici ordine setarum reflexarum instructa.

ANAT. CRAR. *Trachea* uno vel duobus bulbis tubulâ in maribus instructa. *Larynx inferior* bulbo magno, parte membrinaceo, parte osseo. *Costæ* postice longè tendentes.

EXT. CHAR. *Feet* with the posterior toes lobated, the middle ones scarcely the longest. *Thighs* feathered. *Bill* narrowed from the base to the point, the apex with a nail. *Nostrils* oval, moderate, placed towards the middle of the bill. *Tongue* pointed, the sides armed with one and the middle with two rows of bristles.

ANAT. CHAR. *Trachea* with one or two bulbs on the tube in the males. The *inferior Larynx* with a large bulb, partly osseous, partly membrinaceous. *Ribs* extending far backwards.

MERGUS. *Ray*, *Linn.* *Gmel.* *Briss.*

MERGANSER. *Briss.*

TYPE. *Mergus serrator.*



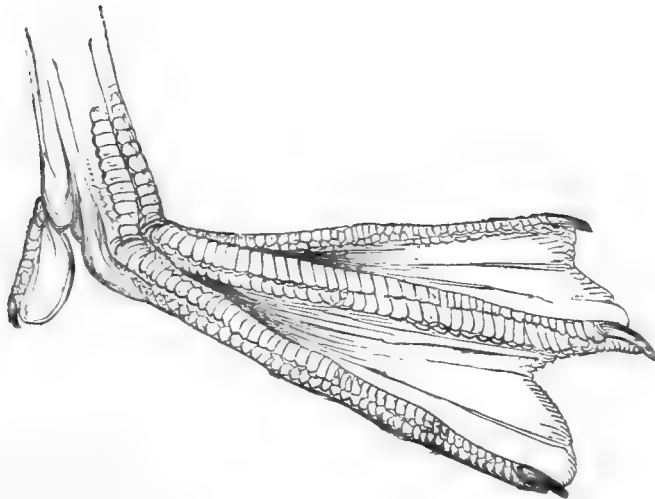
Drawn by H. J. G. S. G.

FRIGATEBIRD'S SERRATED & TRACILIA.
I'm think the, but die



Mr. Stephens, in vol. XII. p. 156, of Shaw's Zoology, divides this genus, separating from it the Smew (*Mergus albellus*), and placing the other Mergansers under the genus *Merganser*, *Briss.* The depth of the keel to the length of the sternum in this genus is as 1 to 5. Breadth of the pelvis to its length as 1 to $2\frac{1}{4}$. Length of the cranium to its depth as 1 to $3\frac{1}{2}$. Length of the femur to the length of the tibia as 1 to $1\frac{3}{4}$.

We have spoken before of the affinities of this genus under the head of the sub-family *Merginæ*.



SYNOPSIS SPECIERUM.

CHORISTOPUS SEMIPALMATUS.

Cho.—Capite colloque nigro, dorso superiore albo.

SEMIPALMATED GOOSE.

CHO. with the head and neck black, the upper part of the back white.

| | FT. | IN. | | IN. |
|---------------------|-----|-----|------------------------|-----|
| <i>Length</i> | 3 | 4 | <i>Tarsi</i> | 4 |
| <i>Bill</i> | | 4 | <i>Middle toe</i> | 4½ |

CHO.: with the upper part of the back, rump, and below, with the exception of the tibiæ, white; the remainder and the tibiæ glossy black; legs and bill orange; the nail of the latter horn colour.

- Anas semipalmata* Linn. *Trans.* iv. 103.
Lath. Ind. Orn. App. 69.
Semipalmated Goose..... Lath. *Gen. Syn. Sup.* 2, 347.
Anas melanoleuca Lath. *Ind. Orn. App.* 69.
Trachea Lin. *Trans.* vol. xv. p. 383, pl. xiii, xiv.

Inhabits New Holland, and utters a shrill whistling note.

Mr. Yarrell, in vol. 15, p. 383, gives the following anatomical peculiarities of this bird. The trachea "was situated on the outside of the left pectoral muscle, under the skin, sufficiently raised under the wing that respiration would not be impeded when the bird rested with its breast on the ground, the parallel tubes being firmly attached both to the muscle and the skin by cellular tissue. The clavicle on the right side of the bird is of the usual character, but that on the left is both shorter and wider, having an aperture about the middle, the sides diverging, with a projecting point on the inner side, to which the tube of the trachea is firmly attached about two inches above the bone of divarication. The trachea lying on the left side of the bird, the lower portion of the tube, in its passage to the lungs, crosses the left branch of the furcula at a right angle, but becoming attached to this projection of the clavicle, receives from the point described its central direction into the body. The whole length of the windpipe in this bird is four feet eight inches." In a young bird dissected by Mr. Yarrell, the trachea was not nearly so much convoluted.

PLECTROPTERUS GAMBENSIS.

Plec.—Ater; subtus albus.

GAMBA GOOSE.

PLEC. black; below white.

| | | | | | |
|-------------|------------------|----------------------------|-----|------------|-----|
| | IN. | | IN. | | IN. |
| Length..... | 39 $\frac{1}{2}$ | Naked part of the bill.... | 5 | Tarsi..... | 5 |

PLEC.: smaller wing coverts, belly, neck, and thighs white; the remainder deep purplish black; spur on the wing of the male one inch long; male with a large knob on the culmen, at the base of the bill.

Female smaller than the male, and with the knob at the culmen of the bill smaller.

| | |
|--------------------------------------|------------------------------------|
| <i>Plectropterus Gambensis</i> | <i>Steph. Shaw Zool.</i> 12, 7. |
| <i>Anas Gambenses</i> | <i>Linn. Syst. Nat.</i> 1, 195. |
| | <i>Gmel. Syst. Nat.</i> 1, 503. |
| | <i>Lath. Ind. Orn.</i> 1, 839. |
| | <i>Shaw, Mus. Sev. pl.</i> p. 231. |

An African species, inhabiting the Gamba.

The following are some notes we took on the dissection of a female specimen. The length of the intestinal, from gizzard to anus, 6 feet 4 inches; from cæca to anus 4 inches; the length of cæca 5 $\frac{3}{4}$ inches. Trachea acted upon by two pairs of muscles; first pair the usual sterno tracheal ones; second pair diverging from the trachea higher than the first, and inserted in the coracoids. Tube of large calibre, contracted slightly just above the inferior larynx, which resembles in form that of the true geese. The bronchiæ of equal diameter. Œsophagus placed on the right side of the neck, and much dilated in the middle. The sternum long and narrow.

The above account appears to bear a considerable resemblance to that of the *Cereopsis* of Mr. Yarrell.

N. B. Our cut of the bill and foot illustrating the genus was taken from a female specimen.

CEREOPSIS NOVA HOLLANDIÆ,

Cer.—*Cimerius tectricibus alarum atribus maculis ornatis.*

NEW HOLLAND CEREOPSIS.

CER. blue grey, spotted on the wing coverts with black.

| | | | |
|---------------------|-----|------------------------|-------------------|
| | IN. | | IN. |
| <i>Length</i> | 34 | <i>Middle toe</i> | 3 $\frac{1}{4}$ |
| <i>Tarsi</i> | 4 | <i>Outer</i> | 3—2 $\frac{3}{4}$ |
| | | <i>Hind toe</i> | 1 $\frac{1}{2}$ |

CER.: blueish grey, with the tail, under and upper tail coverts, and a few spots on the scapulars, black; bill black; cere covering the nostrils greenish yellow; webs scolloped, as in the Sandwich Island goose; nostrils large and round; legs orange; feet black.

Cereopsis Nova Hollandiæ..... *Lath. Ind. Orn. Sup.* 67.

Anser Griseus..... *Veill. 2 edit. Dic. Hist. Nat.* 23—338.

Cereopsis cendriæ

Tinn. Pl. col. 266).

Now found in most of our large museums; has also been brought over alive. Appears to dread the water, and feed chiefly on grass. Inhabits New Holland.

In the Zoological Proceedings for January 25, 1831, we find the following: Mr. Yarrell stated, that having examined the body of the bird, he had remarked that its trunk was much shorter than that of the true geese, and more triangular in its shape; the pectoral muscles were large and dark coloured; the trachea was of large and nearly uniform calibre, without convolution, and attached in its descent to the right side of the neck, as in the heron and bittern; in the form of its bone of divarication and bronchiæ it most resembled the same part in the geese. The muscles of voice were two pairs, one pair attached to the shafts of the os furcatorium, the other to the inner lateral surface of the sternum. The lobes of the liver were of large size, morbidly dark in colour; their substance broke down under the finger on the slightest pressure. The stomach, a true gizzard, was of small size as compared with the bulk of the bird. The first duplicature of intestine was six inches in length, at the returning portion of which the biliary and pancreatic ducts entered; from thence to the origin of the cæca four feet six inches; the cæca nine inches each; the colon and rectum together five inches: the whole length of the intestines was seven feet five inches. The stomach and intestinal viscera were loaded with fat; the other parts exhibited nothing remarkable. Internally this bird, which was a male, resembled the true geese, but externally, in the character of the bones, particularly in the rounded form of the edge, and great depth of the keel of the sternum, and the lateral situation of the trachea in reference to the cervical vertebræ, it was decidedly similar to the *Ardeidæ*.

CHLOEPHAGA SANDVICENSIS.

Chlo.—Brunnea, vertice, genis, colloque parte posteriore, atris.

SANDWICH ISLAND GOOSE.

CHLO. brown, with the crown, cheeks, and line down the back of the neck, black.

| | | | |
|---------------------------|----------------------|-----------------------------|----------------------------------|
| <i>Length</i> | ^{IN.} 23 | <i>Middle toe</i> | ^{IN.} $3\frac{1}{4}$ |
| <i>Tarsi</i> | $3\frac{1}{2}$ | <i>Outer</i> | $2\frac{7}{8}$ |
| <i>Bill</i> | $1\frac{1}{2}$ | <i>Inner</i> | $2\frac{3}{8}$ |
| <i>Hind toe</i> | $\frac{5}{8}$ | | |

CHLO. : crown, cheeks, quills, and a line down the back of the neck black ; remainder of the neck bright brownish grey ; quills, tail, and upper tail coverts white ; remainder ashy grey, darker on the back, with each feather tipped with brown or grey ; ring round the neck brown ; wings black, the edges of the feathers lighter ; legs, feet, and bill black ; webs deeply scalloped.

Berniela Sandvicensis *Vig. Zool. Pro. May 27, 1834.*

Inhabits the Sandwich Islands.

An interesting account of the habits of this bird, while confined in Lord Derby's menagerie, by that nobleman, will be found in the Zoological Proceedings as above quoted, when he states they laid four eggs of a white colour, and large in proportion to the size of the bird, two of which were hatched, and one reared ; since which time also another hatch has been reared by the Zoological Society.

CHLOEPHAGA MAGELLANICA.

Chlo. Mas.—Albus, dorso subtusque atro transversum strigato; rostro, pedibus, tarsisque nigris.

Chlo. Fem.—Ferruginea; subtus albus atro strigato; colloque canescente; tarsi rubris; pedibus nigris.

UPLAND MAGELLANIC GOOSE.

CHLO. Mas. white, with the back and under surface transversely barred with black; the bill, feet, and legs black.

CHLO. Fem. ferruginous; below white barred with black; neck hoary; legs red; the feet black.

| | | IN. | | IN. |
|---------------------------|-----------------|-----|------------------------|-----------------|
| Male: <i>Length</i> | 26 | | <i>Inner toe</i> | 1 $\frac{5}{8}$ |
| <i>Bill</i> | 1 $\frac{1}{4}$ | | <i>Middle</i> | 2 $\frac{1}{2}$ |
| <i>Tarsi</i> | 3 | | <i>Outer toe</i> | 2 $\frac{1}{8}$ |

Head, neck, under surface, and back white, the two latter barred with black; wing coverts and secondaries white; tertiaries and bastard wings blue black, tipped with white; bill and legs black, the latter approaching to orange in dried specimens.

| | | IN. | | IN. |
|--------------------------|-----------------|-----|-------------------------|-----------------|
| Fem. <i>Length</i> | 25 | | <i>Middle toe</i> | 2 $\frac{1}{2}$ |
| <i>Bill</i> | 6 $\frac{3}{4}$ | | <i>Outer</i> | 2 |
| <i>Tarsi</i> | 1 $\frac{1}{8}$ | | <i>Inner</i> | 1 $\frac{5}{8}$ |

Lower part of the neck, upper part of the back, and breast light ferruginous, barred with black; head and neck grey or hoary brown; quills, tail, upper tail coverts, and lower part of the back black, glossed with green inflections; tertiaries long, grey; secondaries white, behind which is a bar of black; wing spot (formed by the secondary coverts) metallic green; wing coverts, belly, and vent white; flanks white barred with black; bill black; legs orange, with the inside black.

Young: the young birds of both sexes have the head and upper part of the neck brownish ash; below greyish white lined with dark brown; upper part of the back grey barred with black; rump and scapulars deep ash; thighs white barred with light brown; vent brownish black; middle of the belly and wing coverts white; bill as in the adults; legs greenish black.

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|----------------------------------|----------------------------------|
| <i>Bernicla leucoptera</i> | <i>Less. Traite d' Orn.</i> 627. |
| <i>Anas</i> | <i>Gmel. Syst.</i> 1. 505. |
| | <i>Lath. Ind. Orn.</i> 2. 835. |
| <i>Bernicla</i> | <i>Steph. Sh. Zool.</i> 12. 58. |
| <i>Anas Magellanica</i> | <i>Gmel. Syst. Nat.</i> 1. 505. |
| | <i>Lath. Ind. Orn.</i> 2. 836. |
| <i>Bernicla</i> | <i>Steph. Sh. Zool.</i> 12. 61. |
| <i>Anas Picta</i> | <i>Gmel. Syst.</i> 1. 504. |
| | <i>Lath. Ind. Orn.</i> 2. 836. |

holocephala?

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| <i>Bernicla</i> | <i>Steph. Sh. Zool.</i> 12. 60. |
| <i>White-winged Antarctic Goose</i> | <i>Brown. Illust. Zool.</i> pl. 40. |
| <i>Bastard Goose</i> | <i>Lath. Syn.</i> 6. 440. |
| <i>Magellanica Goose</i> | <i>Lath. Syn.</i> 6. 443. |
| <i>Painted Goose</i> | <i>Lath. Syn.</i> 6. 443. |
| <i>Oie des iles Malouines</i> | <i>Buff. Ois.</i> ix. 69. |
| | <i>Less. Traite Orn.</i> 627. |
| <i>L' Oie des terres Magellaniques</i> | <i>Buff. Ois.</i> ix. p. 58, pl. En. 1006. |

Inhabits the southern extremity of America and the Falkland Isles; found generally in flights, according to Lesson; though we are informed by Charles Darwin, Esq. that it is generally found in pairs.

The changes which the plumage of the female of this species undergoes are very extraordinary. With those of the male we are at present ignorant, as to whether it assumes the white state at once or not. The young female, which is the *Anas Picta* of authors, first in its approach to the adult state, has the black bars on the back and neck, which become ferruginous; those on the flanks become darker, and the intermediate spaces white; the head also becomes ashy grey, and the legs approach to deep orange. Before the time of incubation black bars again appear on the neck, breast, and the upper part of the back, and the ferruginous colouring becomes lighter; the vent and under tail coverts are in very old birds white; in younger ones ferruginous, the legs become of a brighter orange, and the head and neck become brown.

Such are what we believe to be the changes of this bird: for material assistance in its investigation we are indebted to Charles Darwin, Esq. and also for the trachea from which our figure is taken. The inferior larynx is furnished with a hollow rounded bulb, very similar to that of the common widgeon, but differing in its form, being flattened superiorly, and of a much stronger structure than is usual among the wading ducks. It may at once be distinguished from all the other tracheæ with which we are acquainted, by an indented line on the lower surface of the bulb.

(*Vide our plate.*)

BERNICLA ANTARCTICA.

Ber. Mas.—Albus, remigibus primariis apicibus nigris.

Ber. Fem.—Nigra, dorso subtusque albo transversim strigato; occipite brunneo: rostro aurantiaco.

ANTARCTIC GOOSE.

BER. Mas. white, with the ends of the primary quills black.

BER. Fem. black, with the back and beneath transversely striped with white; the occiput brown; the bill orange.

| | | | |
|---------------------------|-----------|--------------------|-----|
| | IN. | | IN. |
| Male: <i>Length</i> | 25 | <i>Tarsi</i> | 2½ |
| <i>Bill</i> | 1 7-12ths | | |

Entirely white except the apical half of the primaries, which are ashy black. The back of the head in young birds is tinged with cinereous; legs orange; bill (in the preserved specimens we have seen) black, with an orange patch over the nostrils: but Azara says it is orange.

| | | | |
|---------------------------|-----|------------------------|-----|
| | IN. | | IN. |
| Fem.: <i>Length</i> | 26 | <i>Inner toe</i> | 2 |
| <i>Bill</i> | 1½ | <i>Middle</i> | 3⅛ |
| <i>Tarsi</i> | 2½ | <i>Outer</i> | ¾ |

Neck, breast, and belly black barred with white, the bars minute towards the head; back part of the head umber brown; scapulars and primaries very dark brown, sometimes black; smaller wing coverts and secondaries white; tertiaries blue green; tail, lower part of the back, under tail coverts, and thighs, white; bill and legs orange; toes and webs black in dried specimens.

| | |
|----------------------------------|--|
| <i>Anas Antarctica</i> | Gmel. <i>Syst.</i> 1. 505. |
| | <i>Lath. Ind. Orn.</i> 2. 835. |
| <i>Bernicla</i> | <i>Steph. Sh. Zool.</i> 12. 59. |
| <i>Anser candidus</i> | <i>Vell. Nouv. Dict. Hist. Nat.</i> 23. 331. |
| | <i>En Method.</i> 3. 351. |
| | <i>Steph. Sh. Zool.</i> 12. 38. |
| <i>Ganso Blanco</i> | <i>Azara Parax del Paraguay,</i> 3. 406. |
| <i>Die anarctque, fem.</i> | <i>Voy. de la Coquille,</i> pl. 50. |
| <i>Antarctic Goose</i> | <i>Lath. Gen. Syn.</i> 6. 442. |

The male of this species appears to have been first discovered by Azara. A good plate of the female will be found in the "Voyage de la Coquille." It inhabits South America and the adjoining islands, frequenting the sea coast and the lowlands adjoining, from whence it is called by Mr. Darwin, in his amusing Journal, the Lowland Goose. For the trachea from which our figure is taken we are indebted to the above-named friend. The bulb of the inferior larynx is not flattened above as in the last bird, but altogether bears considerable resemblance to it and the wading ducks, from which latter, in common with all other geese, it may be distinguished by the rings of the trachea being more massive, and also by the form of the tube, which is always contracted towards the inferior larynx, while in the wading ducks it always expands in that part.

The flesh is not good food. Skins of both sexes are in the museum of the Zoological Society, brought home by Capt. King.

BERNICLA RUFICOLLIS.

Ber.—Vertice colloque posteriore atris; genis rufis.

RED-NECKED GOOSE.

BER. with the crown and neck posteriorly black; the cheeks red.

Length 21 inches.

BER.: crown, forehead, and back of the neck and throat, black; on the cheek a patch of brown margined by a line of white, which afterwards passes down the neck and breast, beyond which is a bar of white; belly, wings, and tail, black; abdomen, vent, upper and under tail coverts white; wing coverts margined with white; bill and legs fuscous.

| | |
|----------------------------------|----------------------------------|
| <i>Anser ruficollis</i> | <i>Pall. Spic.</i> 6. 21. |
| <i>Anas ruficollis</i> | <i>Gmel. Syst.</i> 1. 511. |
| <i>Anas torquata</i> | <i>Gmel. Syst.</i> 1. 514. |
| <i>Bernicla ruficollis</i> | <i>Steph. Sh. Zool.</i> 12. 53. |
| <i>Red-breasted goose</i> | <i>Penn. Arct. Zool.</i> 4. 571. |
| | <i>Lath. Syst.</i> 6, 455. |

A few specimens have at different times been killed in the British isles. It is a native of the arctic region, and is said to retire to Siberia and the Frozen Ocean to breed. Temminck informs us that it is in abundance near the rivers Ob and Lena during the breeding season. Nothing, however, appears to be known of its nidification or habits.

BERNICLA BRENDA.

Ber.—Cinerea, capite colloque nigro; hoc lateribus albo maculatis.

BRENT BERNICLE.

BER. cinereous, with the head and neck black; the latter on the sides with a white patch.

| | | | |
|---------------------|-------------------|-------------------------|-------------------------|
| <i>Length</i> | ^{IN.} 29 | <i>Tarsi</i> | ^{IN.} 2 2-5ths |
| <i>Bill</i> | 1 2-5ths | <i>Middle toe</i> | 2 |

BER.: head, neck, and breast black, on each side of the neck a patch of white; back and wing

coverts brown, with the edges of the feathers paler; below dirty white, with a yellow tinge; the margin of the feathers pure white; back and upper tail coverts black; neck and bill black.

| | |
|------------------------------|------------------------------------|
| <i>Bernicla Brenta</i> | <i>Steph. Sh. Zool.</i> 12. 46. |
| <i>Anas Bernicla</i> | <i>Linn. Syst.</i> 1. 198. |
| | <i>Gmel. Syst.</i> 1. 513. |
| | <i>Lath. Ind. Orn.</i> 2. 844. |
| <i>Brent Goose</i> | <i>Penn. Arct. Zool.</i> 2-N. 478. |
| <i>Le Cravant</i> | <i>Buff. Ois.</i> 9. pl. 87. |

Inhabits the same countries with *B. Leucopsis*; its nest is made of grass and sea-weed in morasses; it lays ten or twelve eggs, perfectly white.

Like its congeners, it is easily domesticated. The trachea and inferior larynx is that of the typical geese, but slightly expanded below the glottis.

BERNICLA LEUCOPSIS.

Ber.—Cinerea, capite colloque atro; facie albâ.

COMMON BERNICLE.

BER. cinereous, with the head and neck black; the face white.

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 25 | <i>Tarsi</i> | 2½ |
| <i>Bill</i> | 1¼ | <i>Middle toe</i> | 2½ |

BER.: cheeks, forehead, and throat white; crown, neck, and breast black; above blue grey, with the margins of the feathers lighter, within which there is a line of black; tail and quills black; tail coverts and the under surface white; the flanks with some dark bars of grey.

| | |
|------------------------------|------------------------------------|
| <i>Anser Leucopsis</i> | <i>Bechs. Nat. Deut.</i> 4. 921. |
| <i>Anas Leucopsis</i> | <i>Temm. Man.</i> 2. 828. |
| <i>Bernicle</i> | <i>Penn. Arct. Zool.</i> 2 N. 479. |
| | <i>Lath. Gen. Syn.</i> 6. 466. |
| <i>Le Bernache</i> | <i>Buff. Ois.</i> 9. 9. 3. f. 5. |

An arctic species, and, like most of its genus, is only a winter visitant in these islands; is easily domesticated. Little is known of its nidification, it having only once or twice bred in confinement. The trachea is like that of *B. Brenta*, but of rather smaller diameter.

BERNICLA JUBATA.

Ber. Mas.—Capite cristato, colloque brunneis; corpore cinereo, atro alboque maculato; abdomine atro.

Ber. Fem.—Capite colloque brunneis albo sparsis; corpore cinereo-brunneo et albo maculato; abdomine albo.

HAWKSURY BERNICLE.

BER. Male, with the head crested, together with the neck brown; body cinereous, spotted with black and white; abdomen black.

BER. Fem. with the head and neck brown blotched with white; body cinereous, spotted with brown and white; abdomen white.

| | | | |
|---------------------|----------------------|-------------------------|---------------------|
| <i>Length</i> | ^{IN.} 23 | <i>Tarsi</i> | ^{IN.} 2 |
| <i>Bill</i> | 1 1-6th | <i>Middle toe</i> | 2 1-6th |

Male: with the head and upper part of the neck umber brown; the feathers on the occiput much elongated and darker; upper part of the back, wing coverts, and lower part of the neck, cinerous, in the latter each feather having on its lateral edges a spot of black, and being tipped with white: lower part of the back, tail, abdomen, and belly in the centre, black; quills brown; tertiaries long, the largest cinereous, the smaller ones with the outer webs black with metallic green reflections; wing spot metallic green, bordered anteriorly with a band of white, then with one of black posteriorly with one of white; flanks white, beautifully barred and irrorated with narrow lines of black; bill and legs black.

Fem.: rather smaller than the male; head and neck as in the male, but spotted anteriorly with small white specks; a whitish line passes from the bill below the eye, and another above it; breast and flanks white, each feather having a transverse bar of brown, narrowest in the centre, and expanding at the edges; abdomen and vent white; tail coverts cinereous; remainder as in the male, with the exception of the bill, which is horn colour,

Bernicla Jubata *Steph. Sh. Zool.* 12. 63.

Anas Jubata *Lath. Ind. Orn. App.* 69.

Hawksbury Bernicle *Lath. Syn. Sup.* 2. 358.

Inhabits New South Wales, in the neighbourhood of the Hawksbury river; is said occasionally to perch in trees.

CHENISCUS MADAGASCARIENSIS.

Ber.—Dorso colloque maculâ viridi; subtus albus.

MADAGASCAR BERNICLE.

BER. with the back and neck with a patch of green; below white.

| | | | |
|---------------------|-----------------|-------------------------|---------|
| | IN. | | IN. |
| <i>Length</i> | $14\frac{3}{4}$ | <i>Middle toe</i> | 7-12ths |
| <i>Bill</i> | $\frac{7}{8}$ | | |

Male: occiput, a stripe down the back of the neck; scapulars and rump green, with purplish inflections; quills and primary coverts sooty black, the latter edged with white; upper part of the breast, tail coverts, and flanks, reddish yellow; lower part of the breast, belly, forehead, chin, cheeks, and front of the neck, white; an ovate patch on each side of the neck, light green, with a black edge irrorated with white; under tail coverts black; bill gamboge yellow; nail, legs, and feet, black.

Fem.: as in the male, but without the green marking on the neck, instead of which it is grey; the forehead is also grey; in other respects similar.

| | |
|-------------------------------------|--------------------------------|
| <i>Anas Madagascariensis</i> | <i>Gmel. Sys. Nat.</i> 1. 522. |
| | <i>Lath. Ind. Orn.</i> 2. 875. |
| <i>Madagascar Teal</i> | <i>Lath. Gen. Syn.</i> 6. 556. |
| <i>Sarcelle de Madagascar</i> | <i>Buff. Pl. Enl.</i> 770. |

Inhabits Madagascar. Specimens are in the British Museum, and in that of the Zoological Society. Mr. Leadbeater also possesses two most beautiful specimens. We have also been so fortunate as to obtain a specimen of the female.

CHENISCUS COROMANDELIANUS.

Ber.—Vertice, alis, dorso, caudaque, æneis-fuscis ; colloque striis nigricantibus strigato.

COTTON BERNICLE.

BER. with the crown, wings, back, and tail, brassy brown ; neck streaked with black.

| | | | | | |
|---------------------|--|-------------------|-------------------------|--------------------|-------------------------|
| <i>Length</i> | <small>IN.</small> 13 $\frac{1}{4}$ | <i>Bill</i> | <small>IN.</small> 1 | <i>Tarsi</i> | <small>IN.</small> 1 |
|---------------------|--|-------------------|-------------------------|--------------------|-------------------------|

BER.: crown black or brassy brown ; the remainder of the head and neck white ; a bar of metallic green across the breast ; wings and body brown or black, glossed with green ; beneath white, with the lateral under-tail coverts ferruginous ; legs black ; bill lead-coloured.

The female differs from the male in the markings being less distinct, and being slightly smaller.

Both sexes have occasionally the basal half of the quills white.

| | |
|--------------------------------------|---------------------------------|
| <i>Anas Coromandeliana</i> | <i>Gmel. Syst. Nat.</i> 1. 522. |
| | <i>Lath. Ind. Orn.</i> 2. 875. |
| <i>Bernicla Coromandeliana</i> | <i>Steph. Sh. Zool.</i> 12. 56. |
| <i>Coromandel Teal</i> | <i>Lath. Gen. Syn.</i> 6. 556. |
| <i>Sarcelle de Coromandel</i> | <i>Buff. Pl. Enl.</i> 949-950. |
| <i>Bernicla Girra</i> | <i>Gray Ind. Zool.</i> |

Is found in Coromandel, Australia, and India. Specimens are in the museum of the Zoological Society, and in the British Museum.

This bird, which is included in Col. Sykes's catalogue of birds found in the Deccan, contained in the "Proceedings of the Zoological Society," is said by that gentleman to be "monogamous: vegetable matter and gravel were found in the stomach. These birds, when wounded, dive, and on returning to the surface shew only the bill above water, keeping the body below at pleasure." It is called the "Cotton Teal" by the Europeans of the Deccan, from the quantity of white in the plumage.

ANSER INDICUS.

Ans.—Cinereus; capite albo; fasciâ lunatâ occipitali brunneâ.

BAR-HEADED GOOSE.

Cinereous goose; with the head white; a lunate fascia on the occiput brown.

| | | | |
|---------------------|----------------------|-------------------------|---------------------|
| <i>Length</i> | ^{IN.} 27 | <i>Tarsi</i> | ^{IN.} 3 |
| <i>Bill</i> | 1 $\frac{3}{4}$ | <i>Middle toe</i> | 2 $\frac{3}{4}$ |

Light grey goose; with the head and neck white; a brown lunule on the occiput, and an irregular fascia a little below it, from which extends down the back of the neck a broad streak, both of the same colour as the lunule; anterior part of the neck brown grey, having a space of white down each side between it and the brown at the back; centre tail feathers and quills brown; lateral tail feathers, upper and under tail coverts, and under surface, yellowish white; a brown patch undulated with grey on each side above the thighs; bill and legs orange.

| | |
|-------------------------------|----------------------------------|
| <i>Anser Indica</i> | <i>Steph. Sh. Zool.</i> 12. 36. |
| <i>Anas Indica</i> | <i>Lath. Ind. Orn.</i> 2. 839. |
| <i>Bar-headed Goose</i> | <i>Lath. Gen. Syn. Sup.</i> 277. |
| <i>Anser Indica</i> | <i>Gould. Cent. Birds.</i> |

Found in most parts of India during the winter months.

ANSER ERYTHROPUS.

Ans.—Cinereus; maculâ albâ basum rostri cingente.

LAUGHING GOOSE.

Cinereous goose; with a white patch surrounding the base of the bill.

| | | | |
|---------------------|----------------------|-------------------------|-----------------------------------|
| <i>Length</i> | ^{IN.} 27 | <i>Tarsi</i> | ^{IN.} 2 $\frac{1}{2}$ |
| <i>Bill</i> | 2 | <i>Middle toe</i> | 2 $\frac{3}{4}$ |

Head, neck, chest, breast, and belly, grey brown, the latter marked with irregular patches and

- Bean Goose* *Brit. Zool.* 2. 575.
Arct. Zool. 2. V. 472.
L'Oie sauvage *Buff. Ois.* 9. 30.

Visits the British isles regularly during winter. Easily domesticated, becoming tame very shortly after their capture; but I am not aware that they have ever bred in this state, or does any thing appear to be known of their nidification.

Trachea and inferior larynx typical, the former slightly expanding above the latter part.

ANSER HYPERBOREAS,

Ans.—Albus; remigibus atris.

SNOW GOOSE.

White goose; with the quills black.

| | | | | | |
|---------------------|---------------------------|-------------------|--------------------------|--------------------|--------------------------|
| <i>Length</i> | <small>IN.</small> 31½ | <i>Bill</i> | <small>IN.</small> 2¼ | <i>Tarsi</i> | <small>IN.</small> 2¾ |
|---------------------|---------------------------|-------------------|--------------------------|--------------------|--------------------------|

White, with the quills black; the legs orange; bill black. In the young state this bird has the wing coverts blue, and the remainder of the plumage more or less tinged with cinereous. The bill of this species gapes more at the sides than in any other of the genus.

- Anas hyperborea* *Gmel. Syst. Nat.* 1. 504.
Lath. Ind. Orn. 2. 837.
Pall. Spic. vi. p. 26.
Anser niceus *Briss. Orn.* 6. 288.
Oie hyperboréé ou le neige *Temm. Man. d' Orn.* 525.
Cur. Reg. An. 1. 531.
Anas carulescens..... *Linn. Syst. Nat.* 1. 198.
Gmel. Syst. Nat. 1. 513.
Lath. Ind. Orn. 2. 836.
Oie des Esquimaux *Buff. Hist. Nat. Ois.* 9. 80.

Met with in the northern parts of America and Europe.

ANSER MELANOPTERUS.

Anser.—Albus; rectricibus majoribus, tertiis, et secundariis, atris.

BLACK AND WHITE GOOSE.

White goose; with the greater quills, tertiaries, and secondaries, black.

| | | | |
|-------------------------|-----------------|-----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | $28\frac{1}{2}$ | <i>Tarsi</i> | $3\frac{1}{2}$ |
| <i>Bill</i> | $1\frac{5}{8}$ | <i>Middle toe</i> | $3\frac{1}{2}$ |

White, with the greater quills and adjoining secondaries brown black, glossed with brassy; a few of the tertiary coverts with a longitudinal stripe of brown on the shaft; head and neck inclining to grey; bill orange; nail black; legs orange.

Anser melanopterus, nobis.

Brought home by Capt. King, obtained from the lake of Titicaca, Chili. In the museum of the Zoological Society. We observed also specimens in the British Museum, and in that of Lord Derby, at Knowsley.

ANSER FERUS.

Ans.—Cinereus; rostro aurantiaco.

WILD GOOSE.

Cinereous goose; with the bill orange.

| | | | |
|-------------------------|-----|-----------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 34 | <i>Bill</i> | $2\frac{3}{8}$ |

Head, neck, back, and wing coverts, grey brown, the former rather the lightest; all the feathers edged with light grey; breast and belly dirty white, crossed by a stripe of grey; rump, vent, and under tail coverts white; bill deep orange, with the nail white; legs, tarsi, and feet red.

| | |
|--|----------------------------------|
| <i>Anser ferus</i> | <i>Steph. Sh. Zool.</i> 12. 28. |
| <i>Anas ferus</i> | <i>Gmel. Syst.</i> 1. 510. |
| | <i>Lath. Ind. Orn.</i> 2. 841. |
| <i>Grey lag Goose</i> | <i>Penn. Brit. Zool.</i> 2. 570. |
| | <i>Penn. Arct. Zool.</i> 2. 473. |
| | <i>Lath. Syn.</i> 6. 459. |
| <i>Oie cendree ou premiere</i> | <i>Temm. Man. Orn.</i> 2. 818. |

We have followed Mr. Stephens and Mr. Gould in preserving to this species the name of *ferus*, and to one of the foregoing *A. segetum*, as being better known than those of Dr. Fleming used by Mr. Selby. The above bird arrives here in the winter in great numbers, and, according to Temminck, the distribution of it is very wide, being over Europe, Nubia, and part of Western Africa, inhabiting lakes and marshes.

Breeds in the north, and formerly reared its young in this country, laying about ten eggs of a white colour.

ANSER GUINEENSIS.

Ans.—Griseo-cinereus; subtus albus, tuberculo ad basin rostri.

SWAN GOOSE.

Griseous-cinereous goose; below white, with a tubercle at the base of the bill.

Length 39 inches.

Above cinereous grey, with the edges of the feathers light grey; from the occiput down the back of the neck runs a dark brown streak to the back; fore part of the neck, breast, and abdomen, dirty white; bill (which has a large knob at its base) greenish white colour; legs orange.

The female is less than the male, and with the colours not so distinct; the knob at the base of the bill is also smaller.

| | |
|-------------------------------|---|
| <i>Anser Guineensis</i> | <i>Raii Syn.</i> 1. 38. |
| | <i>Briss. Orn.</i> 6. 280. |
| <i>Anser cygnoides</i> | <i>Linn. Syst.</i> 1. 194. |
| | <i>Lath. Ind. Orn.</i> 2. 838. |
| <i>Chinese Goose</i> | <i>Penn. Arct. Zool.</i> 2. 571. |
| <i>Swan Goose</i> | <i>Bewick Brit. Birds,</i> 2. 281. |
| <i>L' Oie de Guinée</i> | <i>Buff. Ois.</i> 9. 72, <i>pl.</i> 3, <i>pl. Ent.</i> 347. |

Said to inhabit (in a wild state) some parts of Siberia and Kamschatka, and to have been originally brought to this country from Guinea, but are now to be found in a semi-domesticated state in most parts of Europe.

This species crosses freely with the common tame goose, and their offspring are again productive.

Trachea of large diameter, and very much in this part, as in its whole anatomy, resembling the true swans. The trachea descends between the rami of the os furcatum, and is joined to the point from whence they diverge by a strong ligament, as in the black swan.

ANSER HUTCHINSII.

Ans.—Minusquam sequenti, sed similis.

HUTCHINS GOOSE.

Goose similar to the following, but smaller.

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 25 | <i>Tarsi</i> | 2½ |
| <i>Bill</i> | 1⅔ | <i>Middle toe</i> | 3⅓ |

Goose with the head, neck, rump, and tail, black; back and wings brown, with the edges of the feathers lighter; a small mark anterior to the eye, and a kidney-shaped patch on the throat, white; below white, with the flank transversely barred with grey; bill and feet black.

Anser Hutchinsii..... *Faun. Bo. Am.* 2 p. 270.

Anas bernicla, Var. B...... *Rich app. Parry 2 Voy.* 1. 368.

A common species in Hudson's Bay and the arctic parts of America, where it has, until separated by Dr. Richardson, been confounded with the Canada goose, which it much resembles in every respect except in size.

ANSER CANADENSIS.

Anser.—Cinereus; capite colloque superiore atris; genis guttureque maculá albá.

CANADA GOOSE.

Cinereous goose; with the head and upper part of the neck black; the cheeks and throat with a white patch.

| | | | |
|---------------------|---------|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 42 | <i>Tarsi</i> | 3½ |
| <i>Bill</i> | 2 1-6th | <i>Middle toe</i> | 4¼ |

Goose with the head, upper half of the neck, quills, tail, and rump, velvet black; back and wings brown, with the edges of each feather lighter; the lower part of the neck anteriorly and under surface white, with a grey tinge at the root of the feathers; a large kidney-shaped patch on the throat and cheeks, with the small ends placed behind the eye, white; upper tail coverts also white; bill and feet black.

Anas Canadensis

Linn. Syst. Nat. 1. 198.

Anser Canadensis

Bonap, Syn. Bir. Am. 377.

Aud. Orn. Biog. 3. 18.

This species is easily kept in a semi-domesticated state, and breeds freely. In a wild state it breeds in the neighbourhood of Hudson's Bay, from whence they migrate southward over the American Continent during winter. Lays about five eggs.

CYGNUS OLOR.

Cyg.—Albus ; rostro aurantiaco, tuberculâ culmine ad basin pedibusque atris.

MUTE SWAN.

Cyg. white ; bill orange, with a knob on the culmen and feet black.

Length 5 feet 6 inches.

| | |
|------------------------------------|--------------------------------------|
| <i>Anas olor</i> | <i>Gmel. Syst.</i> 1. 501. |
| <i>Anas cygnus mansuetus</i> | <i>Linn. Syst. Nat.</i> 1. 194. |
| | <i>Raii Syn.</i> 133 <i>A.</i> |
| <i>Mute Swan</i> | <i>Penn. Arct. Zool.</i> 2. 470. |
| | <i>Lath. Gen. Syn.</i> 6. 436. |
| <i>Le Cygne</i> | <i>Buff. Ois.</i> 9. 3 <i>Pl.</i> 1. |

Supposed to have been introduced into this country from Asia, and is said at present to exist in a wild state in Russia and Siberia ; now found commonly on large rivers and pieces of water, where it is half domesticated and breeds freely, laying six or seven eggs of a dirty white colour, or with a very slight tinge of greenish ; sits about six weeks. The trachea in this species does not enter the sternum, but has the tube of equal thickness for its whole length, being merely slightly contracted above the inferior larynx.

CYGNUS IMMUTABILIS.

Cyg.—Albus ; rostro aurantiaco, tuberculâque culmine ad basin atro ; pedibus flavicantibus.

POLISH SWAN.

White swan ; with the bill orange, and a tubercle on the culmen at the base black ; the feet yellowish.

Similar in size and in every other particular to the preceding, except in the colouring of the feet and legs, which are light drab colour.

The young of this species are white from the eggs, and do not exhibit any of the grey or brown colouring found invariably among the others.

Cygnus immutabilis *Yarrell.*

For what we have said concerning this species we are altogether indebted to the Earl of Derby

and William Yarrell, Esq. We never have had an opportunity of minutely examining a specimen for ourselves. Several specimens have been killed this winter (1837-8) both in Scotland and England, from flocks varying in number from seven to thirty.

Mr. Yarrell also informs us, that hitherto he was only acquainted with the bird as an article of commerce among the London dealers in live birds, who distinguished it by the name of the Polish Swan.

CYGNUS ATRATUS.

Cyg.—Niger, cinereo undulato.

BLACK SWAN.

| | FT. | IN. | | IN. |
|------------------------|----------------|-----|------------------------|----------------|
| <i>Length</i> | 4 | 2 | <i>Outer toe</i> | $4\frac{1}{2}$ |
| <i>Tarsi</i> | $4\frac{1}{4}$ | | <i>Inner toe</i> | $3\frac{3}{4}$ |
| <i>Centre toe</i> | 5 | | <i>Hind toe</i> | $\frac{7}{8}$ |

Black, with the edges of the feathers cinereous; quills, secondaries, and greater coverts white tipped with black; bill carmine red, marked transversely near the tip with a white band; nail white; legs and feet dark yellowish ash, with the webs darkest.

| | |
|-----------------------------|--|
| <i>Anas atrata</i> | <i>Lath. Ind. Orn.</i> 2. 834. |
| <i>Anas plutonia</i> | <i>Shaw, Nat. Misc. pl.</i> 108. |
| <i>Cygnus atratus</i> | <i>Steph. Sh. Zool.</i> 12. 18. |
| <i>Black Swan</i> | <i>Lath. Gen. Syn. Sup.</i> 2. 343. |
| <i>Le Cygne noir</i> | <i>Cuv. Reg. An.</i> 1. 529. |
| <i>Trachea</i> | <i>Linn. Trans. vol.</i> 15, <i>tab.</i> 12. |

Entirely an Australian species. The tube of the trachea does not enter the sternum, but is attached to the *os furcatum* by a ligament; in other respects the anatomy resembles that of the true swans.

CYGNUS NIGRICOLLIS.

Cyg.—Albus; capite colloque atris.

BLACK-NECKED SWAN.

White swan; with the head and neck black.

| | | | | |
|-------------------------|-----|-----|-----------------------|----------------|
| | FR. | IN. | | IN. |
| <i>Length</i> | 4 | 2 | <i>Bill</i> | $3\frac{3}{4}$ |

White swan; with the head and neck black; bill black, with two knobs at the base; legs orange.

| | |
|--------------------------------------|---------------------------------|
| <i>Anas nigricollis</i> | <i>Gmel. Syst. Nat.</i> 1. 502. |
| | <i>Lath. Ind. Orn.</i> 2. 834. |
| <i>Anas melanocephalus</i> | <i>Gmel. Syst. Nat.</i> 1. 502. |
| <i>Cygnus nigricollis</i> | <i>Steph. Sh. Zool.</i> 12. 17. |
| <i>Anas melancorypha</i> | <i>Moll. French edit.</i> 213. |

Inhabits the Falkland Isles and the Straits of Magellan.

CYGNUS BEWICKII.

Cyg.—Albus; rostro atro, baso usque ad nares aurantiaco.

BEWICK'S SWAN.

White swan; with the bill black, the base orange to the nostrils.

| | | | | |
|-------------------------|-----|-----------------|-----------------------------|----------------|
| | FR. | IN. | | IN. |
| <i>Length</i> | 3 | $10\frac{1}{2}$ | <i>Tarsi</i> | $4\frac{3}{4}$ |
| <i>Bill</i> | | $3\frac{1}{2}$ | <i>Middle toe</i> | 5 |

White; with the bill black, the basal half yellow, the yellow marking truncated at the extremity; legs and toes black.

| | |
|---|--|
| <i>Cygnus Bewickii, and trachea</i> | <i>Yarr. Linn. Trans.</i> vol. 10. |
| | <i>Eyton, Hist. R. Brit. Birds,</i> p. 86. |

Discovered by Mr. Yarrell and Mr. R. Wingate to be an inhabitant of the British isles.

The trachea of this species during youth penetrates the keel of the sternum in a similar manner to that of *C. ferus*, but may always be distinguished by the greater length of the bronchiæ. As the bird approaches maturity the tube at the internal extremity of the portion penetrating the sternum takes a horizontal twist, increasing in size and the depth to which it penetrates with age.

The tube of the trachea is acted upon by two pairs of muscles, the first pair sterno-tracheal, the other having their attachment on the membrane stretched between the rami of the *os furcatum* and the *sternum*. (*Vide fig.*)



MUSCLES OF VOICE OF *CYNUS FERRETTUS*.
Am. Mus. Nat. Hist.



CYGNUS AMERICANUS.

Cyg.—*Cygnus Bewickii* similis, sed majore.

AMERICAN SWAN.

Swan like *Cygnus Bewickii*, but larger.

| | FT. | IN. | | IN. |
|-----------------------|-----|-----|-------------------------|-----|
| <i>Length</i> | 4 | 1 | <i>Tarsi</i> | 4 |
| <i>Ext. Alæ</i> | 7 | 0 | <i>Outer toe</i> | 5½ |
| <i>Bill</i> | 4 | | <i>Middle toe</i> | 6 |

The only specimen of this bird we have seen was shewn to us by Mr. Audubon; it appeared to have the bill more expanded towards the tip than is the case in *Cygnus Bewickii*, and altogether to be of larger size. The Prince of Musignano assures us that he is quite satisfied as to its distinctness from *C. Bewickii*.

| | |
|--------------------------------|---|
| <i>Cygnus Americanus</i> | <i>Sharpless in Silliman's Journal.</i> |
| <i>Trachea</i> | <i>Ditto ditto.</i> |
| <i>Cygnus Bewickii</i> | <i>Faun. Bo. Am. 2. 465.</i> |

Inhabits North America.

The following is an extract from Dr. Sharpless's paper above quoted. We must not, however, forget to mention that the tracheal anatomy of this species is so very similar to that of *C. Bewickii*, that Dr. Sharpless has copied the illustrations of Mr. Yarrell's paper on that species, published in the Linnæan Transactions, to illustrate his on *C. Americanus*.

SPECIFIC CHAR. Beak black and semi-cylindrical; sides of the base with a small orange or yellow spot; body white; tail feathers twenty; feet black.

| | <i>Hooper.</i> | <i>Bewick.</i> | <i>American.</i> |
|---|----------------|----------------|--------------------|
| Weight | 24 lbs. .. | 13¾ lbs. .. | 21 lbs. |
| Point of bill to the end of tail | 5ft. .. | 3ft. 9in. .. | 4ft. 6in. |
| ————— edge of forehead | 4¾in. .. | 3½in. .. | 4⅛in. |
| ————— eye | 5¼in. .. | 4¾in. .. | 5in. |
| ————— occiput | 7¼in. .. | 6¼in. .. | 7½in. |
| Width of the beak at the widest part near the point | | | } 1½in. } 1¾in. |
| ————— with wings extended | 7ft. 10in. .. | 6ft. 1in. .. | 7ft. 2in. |
| Carpus to the end of primaries | 2ft. 1½in. .. | 1ft. 8½in. .. | 1ft. 11in. |
| Length of middle toe | 6½in. .. | 5¼in. .. | 6in. |
| ————— intestine | 12ft. .. | 10ft. 2in. .. | 10ft. 7in. |
| ————— breast bone | 8½in. .. | 6¾in. .. | 7½in. |
| Depth of insertion of trachea | 3in. .. | 5¾in. .. | 6½in. |
| Length of bronchial tubes | 3½in. .. | 1½in. .. | 1½in. |
| Tail feathers in number | 20 .. | 18 .. | 20 |

It is not improbable, as Mr. Yarrell suggests, that this species and *C. Buccinator* will be found to be confined to America; *C. Bewickii* and *C. ferus* representing them in Europe.

Dr. Richardson, in the "Fauna Boreali Americana," says that "this swan breeds on the sea coast within the arctic circle, and is seen in the fur countries on its passage only. It makes its appearance among the latest of the migratory birds in the spring, while the Trumpeter swans are, with the exception of the eagles, the earliest. Capt. Lyon describes its nest as built of moss peat, nearly six feet long, four feet and three quarters wide, and two feet high exteriorly; the cavity a foot and half in diameter, the eggs brownish white slightly coloured with darker tints."

CYGNUS BUCCINATOR.

Cyg.—Albus; rostro atro.

TRUMPETER SWAN.

White swan; with the bill black.

| | | | |
|-------------------------|-----|-----------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 42 | <i>Tarsi</i> | 3½ |
| <i>Bill</i> | 2½ | <i>Middle toe</i> | 4¾ |

Cygnus Buccinator *Faun. Bo. Am.* 2. 461.

Trachea and sternum *Linn. Trans. vol. xvii. p. 1, T. 1.*

Dr. Richardson informs us, in the "Fauna Boreali Americana," that "this is the most common of the genus in the interior of the fur countries. It breeds as far south as lat. 61, but principally within the arctic circle, and in its migrations generally precedes the geese a few days. A fold of its trachea enters a protuberance on the dorsal or interior aspect of the sternum at its upper part, which is wanting in *C. ferus* and *C. Bewickii*." It is to the Trumpeter that the bulk of the swan skins imported from Hudson's Bay belong.

CYGNUS ANATOIDES.

Cyg.—Albus; remigibus primariis, ad apicem nigris; rostro pedibusque rubris, illo lato, subdepresso, tuberculo nullo. (*King.*)

DUCK-LIKE SWAN.

White swan; with the primaries black at the apices; bill and feet red, the former broad, subdepressed, without a tubercle.

| | | | |
|---------------------|----------------------|-------------------------|----------------------|
| <i>Length</i> | ^{IN.} 42 | <i>Tarsi</i> | ^{IN.} 3½ |
| <i>Bill</i> | 2½ | <i>Middle toe</i> | 4¾ |

Cygnus anatoides. *King* *Zool. Proc. Dec.* 14, 1830.

Habitat in sinibus interioribus apud extremitatis meridionalem America. (*King.*)

I am informed by C. Darwin, Esq. that he observed this swan in company with *C. nigricollis* in the Straits of Magellan. The bill in this species is broader in proportion to its length than is usual amongst the swans.

CYGNUS FERUS.

Cyg.—Albus; rostro atro, baso ultra nares aurantiaco.

HOOPER.

White swan; with the bill black, the base orange to beyond the nostrils.

| | | | |
|---------------------|----------------------|-------------------------|---------------------|
| <i>Length</i> | ^{IN.} 60 | <i>Tarsi</i> | ^{IN.} 4 |
| <i>Bill</i> | 4¾ | <i>Middle toe</i> | 6½ |

White; with an occasional tinge of buff colour; bill black, cere yellow, and is carried to a point before the nostrils on the edge of the upper mandible; legs and feet black.

| | |
|--------------------------------|---|
| <i>Cygnus ferus</i> | <i>Raii Syn.</i> 130 <i>A.</i> |
| <i>Anas Cygnus ferus</i> | <i>Linn. Syst.</i> 1. 194. |
| | <i>Gmel. Syst.</i> 1. 501. |
| | <i>Lath. Ind. Orn.</i> 2. 833. |
| <i>Whistling Swan</i> | <i>Penn. Arct. Zool.</i> 2. 833. |
| <i>Trachea</i> | <i>Linn. Trans. vol.</i> 4, <i>tab.</i> 12, <i>fig.</i> 1, 2. |

A winter visitant in the British isles, particularly during hard weather; its true habitation, however, is within the arctic circle. In Iceland it also occasionally breeds.

Lives well and is prolific on large pieces of water in a semi-domesticated state, sitting six weeks, and laying from four to six eggs of a greenish colour.

The trachea in this species perforates the keel of the sternum deeply in a vertical direction.

SARKIDIORNIS REGIUS.

Sar.—Supra niger-æneus, subtus albus; mas. carunculâ magnâ culmine rostri.

BLACK-BACKED GOOSE.

Goose with the upper part brassy-black; below white; the male with a large caruncle at the base of the bill.

| | | | | |
|-------|---------------------|----------------|-------------------------|--------------------|
| Male: | <i>Length</i> | IN. 30 | <i>Tarsi</i> | IN. $2\frac{3}{4}$ |
| | <i>Bill</i> | $2\frac{1}{2}$ | <i>Middle toe</i> | $3\frac{1}{4}$ |

Bill black, with a large caruncle on the culmen; head and neck white, spotted with metallic green; under parts white, and wings purplish black, glossed in some lights with brassy, a band of black extending from the back to the posterior part of the thighs; wings with a knob; lower part of the back white; tail coverts black.

Fem.: *Length* 27 inches *Bill*..... 2 inches

Bill without the caruncle, colouring similar, but with the white more or less tinged with brown, and without the band of black behind the thighs; bill and legs in both black.

| | |
|---|--|
| <i>Anas regius</i> | <i>Gmel. Syst. Nat.</i> 1. 508. |
| | <i>Lath. Ind. Orn.</i> 2. 847. |
| | <i>Moll. Hist. du Chili.</i> p. 212. |
| <i>Carina</i> | <i>Steph. in the Zool.</i> vol. 12, 82. |
| <i>Anas melanotus</i> | <i>Gmel. Syst. Nat.</i> 1. 503. |
| | <i>Lath. Ind. Orn.</i> 2. 839. |
| <i>L' Oie bronzee d' Coromandel</i> | <i>Buff. Hist. Nat. des Ois.</i> pl. 937. |
| <i>Black-backed Goose</i> | <i>Lath. Gen. Syn.</i> 6. 449. |
| <i>Le cravant royal</i> | <i>Vcil. En. Method. Orn.</i> vol. 1. 126. |
| <i>L' Oie bronzee</i> | <i>Buff. Ois.</i> 115. |

Found in Cayenne and most parts of India; is also included in the list of birds of the Deccan, by Col. Sykes, who also says that seeds of water grasses, and the remarkable quadrangular hard seeds met with in the stomach of *Pterocles exustus*, were also found in the stomach of this bird. Col. Sykes found the digastric muscle of the remarkable thickness of 1 1-5th inch.

SARKIDIORNIS AFRICANUS.

Sar.—Minusquam precedenti, sed in colore similis.

AFRICAN BLACK-BACKED GOOSE.

Less than the preceding, but in colour similar.

| | | | | |
|-------|---------------------|-------------------|-------------------------|------------------|
| Male: | <i>Length</i> | ^{IN.} 23 | <i>Tarsi</i> | ^{IN.} 2 |
| | <i>Bill</i> | 2 | <i>Middle toe</i> | 2½ |
| Fem.: | <i>Length</i> | 21 | <i>Tarsi</i> | 1¾ |
| | <i>Bill</i> | 1¾ | <i>Middle toe</i> | 2½ |

Both sexes resemble perfectly in colouring the preceding species, except in admeasurement, in which they differ considerably. We have never seen a specimen with the caruncle, our specimen having evidently had it cut off, probably from the difficulty of preserving it.

Sarkidiornis Africanus nobis.

The four specimens in our collection were received from the Gamba river. Specimens have also been brought home by Dr. Smith from Southern Africa, who will in his forthcoming work publish a figure of this species.

CHENALOPEX ÆGYPTIACA.

Chen.—Dorso castaneo; subtus leviter flavo-ferrugineo, sparsus lineatusque brunneo.

ÆGYPTIAN CHENALOPEX.

With the back castaneous; below slightly tinged with ferruginous yellow, sprinkled and lined with brown.

| | | | |
|---------------------|--------------------|-------------------------|------------------|
| <i>Length</i> | ^{IN.} 27½ | <i>Tarsi</i> | ^{IN.} 3 |
| <i>Bill</i> | 2½ | <i>Middle toe</i> | 3 |

Male: head and neck hoary, with the occiput and a stripe down the back of the neck approaching to ferruginous; a patch round the eyes and ring round the lower part of the neck deep castaneous; upper part of the back, scapulars, tertiaries, and a triangular patch on the breast, also castaneous, some of the feathers in the former being irrorated with black; the inner webs also of some of the tertiaries hoary grey. The whole of the remainder of the breast and under surface is light yellow ferruginous irrorated with brown, except the abdomen, which is pure white; vent ferruginous; lower part of the back, tail, quills, and spurious wing, black; secondaries bright metallic green, forming the wing spot; wing coverts white, the greater ones with a bar of black near the tips; bill and legs orange.

Female: with the chesnut patches round the eyes and on the breast smaller,

| | |
|-----------------------------------|-------------------------------------|
| <i>Anas Ægyptiaca</i> | <i>Linn. Syst.</i> 1. 197. |
| | <i>Gmel. Syst.</i> 1. 512. |
| | <i>Briss. Orn.</i> 6. 284. pl. 27. |
| | <i>Lath. Ind. Orn.</i> 2. 840. |
| <i>Chenalopex Ægyptiaca</i> | <i>Steph. Sh. Zool.</i> 12. 43. |
| <i>L' Oie d' Ægypte</i> | <i>Buff. Pl. En.</i> 379, 982, 983. |
| <i>Egyptian Goose</i> | <i>Lath. Syn.</i> 6. 455. |

Inhabits most parts of Africa, especially Egypt and the Cape of Good Hope. We have figured the trachea and skeleton of this bird in illustration of the genus.

CHENALOPEX CANA.

Che.—Mas. castaneus capite albo; occipite colloque canis.

Che.—Fem. Mari similis sed capite omnino cano.

GREY-HEADED SPURWING.

| | | | |
|---------------------|-----------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 25 | <i>Tarsi</i> | 2 $\frac{1}{4}$ |
| <i>Bill</i> | 1 $\frac{3}{4}$ | <i>Middle toe</i> | 2 $\frac{1}{4}$ |

Male: castaneous chenalopex, with the whole of the head excepting the crown white; neck and crown grey; wing coverts white; secondaries with the outer webs green; quills, tail, and vent hoary brown, the latter with a black band; bill and legs black; the bend of the wing armed with a spur.

Female: similar to the male, but with the whole of the head hoary.

| | |
|--|---------------------------------|
| <i>Anas Cana</i> | <i>Gmel. Syst.</i> 1. 510. |
| | <i>Lath. Ind. Orn.</i> 2. 840. |
| <i>Bernicla Cana</i> | <i>Steph. Sh. Zool.</i> 12. 61. |
| <i>Grey-headed Goose</i> | <i>Lath. Syn.</i> 6. 458. |
| <i>L' Oie sauvage a tête grise de Coromandel</i> | <i>Sonn Voy.</i> 2. 220. |

The above descriptions were taken from two specimens brought home by Dr. Smith, and exhibited in the South African museum, having been obtained in the neighbourhood of the Cape. It has, however, been introduced alive into this country, and kept in confinement both by Lord Derby at Knowsley and in the gardens of the Zoological Society. Specimens are in the museum of that society.

TADORNA BELLONII.

Tad.—Albus; capite colloque atris; rostro cruribusque rubris.

COMMON SHELDRAKE,

White sheldrake; with the head and neck black; the bill and legs red,

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 23½ | <i>Tarsi</i> | 2 |
| <i>Bill</i> | 2 | <i>Middle toe</i> | 2½ |

Head and upper part of the neck black, glossed with green; fore part of the wings, back, tail, abdomen, and tail coverts, white; tail feathers tipped with black; a line down the middle of the abdomen black; upper part of the back and band across the breast deep ferruginous; quills black; wing spot green; bill and legs reddish orange, the latter in some specimens inclining to flesh colour.

| | |
|--------------------------------|--|
| <i>Anas Tadorna</i> | <i>Linn. Syst. Nat.</i> 1. 195-4. <i>Raii Syn.</i> 140 A. 1. |
| <i>Tadorna vulpanser</i> | <i>Flem. Brit. An.</i> 1. 122. |
| <i>Le Tadorne</i> | <i>Buff. Ois.</i> 9. 205. |
| <i>Canard Tadorne</i> | <i>Temm. Man.</i> |
| <i>Tadorna vulpanser</i> | <i>Selb. Illust. Brit. Orn.</i> 11. 289. · <i>Gould, Birds of Europe.</i> |
| <i>Tadorna Bellonii</i> | <i>Steph. Sh. Zool.</i> 12. 72. |
| <i>Trachea</i> | <i>Linn. Trans. vol. iv. tab. 15, fig. 9, 10.</i> |

Found over nearly the whole of Europe and some parts of Asia and America; lays twelve eggs of a whitish colour, generally in rabbit holes; frequents the sea. Trachea of male slightly enlarged about an inch and half above the inferior larynx, and again contracted immediately above it, as among the *Anserinæ*. The inferior larynx is furnished with two large compressed bulbs, the one on the right side being nearly double the size of that on the left; but neither are of such strength as in those species of the last family which possess that adjunct.

TADORNA RADJAH.

Tad.—Capite, collo, ventre, ptilisque albis; collo inferiore lato castaneo cingulo ornato, sparso atro.

RADJAH SHELDRAKE.

Head, neck, belly, and anterior part of the wing white; the lower part of the neck surrounded by a band of deep castaneous irrorated with black.

Length..... $22\frac{1}{2}$ ^{IN.} *Bill*..... $1\frac{5}{8}$ ^{IN.} *Tarsi*..... 2 ^{IN.}

Head, neck, belly, and anterior part of the wing white; lower part of the neck surrounded by a collar of deep castaneous, thickly and beautifully irrorated with black; wing spot bright green, anterior to which there is a white stripe, then a very narrow one of black, posteriorly a narrow black stripe followed by one of white; scapulars dark sienna brown irrorated with black; tertiaries with the outer webs sienna brown; inner webs, quills, tail, back, and under tail coverts, black; vent black irrorated with white; bill and legs orange.

Anas Radjah..... *Duperrey, Voy. de la Coquille, pl. 49.*

Specimens are in most museums, received from Australia, but from what part we cannot say. Although we have examined many specimens, no sexual difference has been observed.

CASARKA RUTILA.

Cas.—Ferruginea; caudâ remigesque primariis atris; speculo viridi.

FERRUGINOUS SHELDRAKE.

Ferruginous sheldrake; with the tail and quills black; the wing spot green.

Length..... $24\frac{1}{2}$ ^{IN.} *Bill*..... $1\frac{1}{2}$ ^{IN.} *Tarsi*..... 2 ^{IN.}

Ruddy ferruginous, with the head and anterior part of the wing lighter, sometimes nearly white; tail and lower part of the back black glossed with green; quills black; secondaries bright glossy green, with the inner webs hoary; bill and legs black; sometimes a black ring round the neck is visible.

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| <i>Casarka rutila</i> | <i>Bonap. Cat. Am. and Europ. Birds.</i> |
| <i>Anas Casarka</i> | <i>Linn. Syst. 3 App. 224.</i> |
| <i>Anas rutila</i> | <i>Pall. Nov. Com. Petrop. 14. 579.</i> |
| <i>Tadorna rutila</i> | <i>Steph. Sh. Zool. 12. 71.</i> |
| | <i>Selb. Illust. Brit. Orn. 2. 293.</i> |
| <i>Canard Casarka</i> | <i>Temm. Man. Orn. 2. 832.</i> |
| <i>Ruddy Sheldrake</i> | <i>Gould, Birds of Europe.</i> |
| <i>Ferruginous Duck</i> | <i>Bew. Brit. Birds, 2. 313.</i> |
| <i>Ruddy Goose</i> | <i>Lath. Syn. 6. 456.</i> |

Met with occasionally in most parts of the European continent, India, and Africa; lays eight white eggs; frequents chiefly fresh water. Col. Sykes found these birds for the most part of the year in pairs in the Deccan; but on the Nerbudda river, in Guzerat, he has seen them congregated in hundreds in April. Col. Sykes found the stomachs of many of them filled with grass seeds and vegetable matter only.

CASARKA TADONOIDES.

Cas.—Capite, caudâ, vertreque atris, hoc castaneo sparso; cingulo albo collo.

NEW HOLLAND SHELDRAKE.

Sheldrake, with the head, tail, back, and belly black, the latter irrorated with castaneous; a white ring round the neck.

| | | | | | |
|---------------------|-----|-------------------|-----------------|--------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 27 | <i>Bill</i> | 1 $\frac{7}{8}$ | <i>Tarsi</i> | 2 |

Head, back, belly, and tail black; the back and belly irrorated with ferruginous; the lower part of the back and tail slightly tinged with green; upper part of the back, breast, and outer webs of the tertiaries ferruginous; a white collar round the neck; fore part of the wing white; wing spot light green; quills black; legs and bill black. In the female a white band surrounds the base of the bill, from which another passes through the eye.

Anas Tadonoides *Jard. & Selb. Illus. Orn. pl. 411.*

Inhabits New Holland.

CASARKA CASTANEA.

Cas.—Castanea; capite colloque albo.

CASTANEOUS SHELDRAKE.

Castaneous sheldrake; with the head and neck white.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 29 | <i>Tarsi</i> | $2\frac{1}{2}$ |
| <i>Bill</i> | $2\frac{1}{2}$ | <i>Middle toe</i> | $2\frac{1}{2}$ |

Sheldrake, with the body below castaneous; the head, neck, and greater wing coverts white; the back, rump, and tail brown, the former speckled with white; tertiaries with the external webs castaneous; the internal ones and some of the secondary coverts blueish grey; bill black; legs crimson.

Casarka castanea nobis.

Purchased from Mr. Leadbeater, who received it from New Holland.

DENDROCYGNA ARCUATA.

Dend.—Fusca; marginibus pennarum vinaceis, subtus castanea; vertice brunneo.

ARCUATED WHISTLING DUCK.

Fuscous duck; with the margins of the feathers vinaceous, below castaneous; the head brown.

| | | | |
|---------------------|---------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Tarsi</i> | $1\frac{3}{4}$ |
| <i>Bill</i> | $\frac{5}{8}$ | <i>Middle toe</i> | $2\frac{3}{4}$ |

Duck, with the head and neck whitish, slightly tinged with yellow vinaceous; crown brown; back hoary fuscous, the edges of each feather vinaceous, forming arcuated lines; wing and upper tail coverts deep chesnut; below ferruginous; under tail coverts white; quills and tail black; bill and feet also black.

Female smaller, and the colours less distinct.

| | |
|-----------------------------|--|
| <i>Anas arcuata</i> | <i>Hors. Zool. Res. Java.</i> |
| <i>Anas Javanica</i> | <i>Hors. Arrang. of the Birds of Java: Linn.</i> <i>Trans. vol. xiii. p. 199.</i> |
| <i>Mareca Ansuree</i> | <i>Sykes, Proc. Zool. Soc. 1832, p. 168.</i> |



Tadorna cristata. (Muhl.)

Swan, Leas

Swan, Leas



Found by Dr. Horsfield in Java, and by Col. Sykes in the Deccan. It appears to be generally dispersed over India. Col. Sykes, in his Synopsis, says it is "gregarious, and abundant in the Deccan. Sexes alike in plumage." "These birds are characterised by a very peculiar whistle when disturbed, by a proportionate length of the intestine (one-third shorter than any other species of the *Anatidæ*), and by the inferior larynx being dilated into two oblong chambers, placed rather in front of, than lateral to, the trachea."

DENDROCYGNA AUTUMNALIS.

Dend.—Fusca; ventre atro; rostro pedibusque rubris.

AUTUMNAL WHISTLING DUCK.

Fuscous; with the belly black; bill and legs red.

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 24 | <i>Tarsi</i> | 2 |
| <i>Bill</i> | 2 | <i>Middle toe</i> | 2½ |

Back, crown, head, collar on the neck, and tertiary coverts, vinaceous; streak down the back of the neck black fuscous; throat, cheeks, and upper part of the breast grey, inclining to vinaceous on the former; secondaries, top of the primaries, tail, belly, and lower part of the back black; under tail coverts barred with black and dirty white; base of the primaries and some of the primary coverts white.

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| <i>Anas Autumnalis</i> | <i>Linn. Syst.</i> 1. 205. |
| | <i>Gmel. Syst.</i> 1. 537. |
| | <i>Lath. Ind. Orn.</i> 2. 852. |
| <i>Red-billed Whistling Duck</i> | <i>Edw. Glea. pl.</i> 194. |
| | <i>Lath. Gen. Syn.</i> 6. 498. |
| <i>Siffleur a bec rouge et narines jaune</i> | <i>Buff. Ois.</i> 9. 183. |

Inhabits the West Indian Isles; is common also in South America. We have received it from Peru, where it is not uncommonly kept tame as in this country.

DENDROCYGNA VIDUATA.

Dend. Mas.—Capite anteriore guttureque albis; subtus atro.

Dend. Fem.—Mari similis, sed obscurior.

WIDOW WHISTLING DUCK.

Male duck, with the fore part of the head and throat white; below black.

Fem. duck, similar, but with the marking not so bright.

| | | | | | |
|-------------------------|----------------------|-----------------------|-----------------------------------|------------------------|-----------------------------------|
| <i>Length</i> | ^{IN.} 20 | <i>Bill</i> | ^{IN.} 1 $\frac{7}{8}$ | <i>Tarsi</i> | ^{IN.} 1 $\frac{3}{4}$ |
|-------------------------|----------------------|-----------------------|-----------------------------------|------------------------|-----------------------------------|

Fore part of the head and throat whitish; crown white, with the tip of the feathers stiff like hair, and olive brown; occiput and hind neck black; upper part of the neck and breast dark chesnut; back fuscous olive, the edge of each feather lighter; smaller wing coverts chesnut; quills and secondaries black; remainder of the wing fuscous, with a tinge of green; tail, middle of the abdomen, and thighs black; flanks yellowish white barred with black; legs and bill black.

Female similar, but with the colours not so bright.

Anas viduata *Linn. Syst.* 1. 205.

Gmel. Syst. 1. 536.

Lath. Ind. Orn. 2. 858.

Spanish Duck *Penn. Genera of Birds*, pl. 13.

Canard a face blanc de Maragnon *Buff. Ois.* 9. 255.

Inhabits both South America and Senegal. Is represented by travellers as having, like the rest of its genus, a peculiar whistling note.

DENDROCYGNA ARBOREA.

Dend.—Brunnea albo maculato; vertice nigro.

BLACK-BILLED WHISTLING DUCK.

Brown duck, mottled with white; the crown black.

| | | | |
|----------------------------|------------------------------------|-----------------------------|---------------------|
| <i>Length</i> | ^{IN.} 19 $\frac{1}{2}$ | <i>Middle toe</i> | ^{IN.} 3 |
| <i>Bill</i> | 2 $\frac{1}{8}$ | <i>Outer toe</i> | 2 3-5ths |
| <i>Tarsi</i> | 3 | <i>Hind toe</i> | 1 |
| <i>Inner toe</i> | 2 1-5th | | |

Crown black; fore part of the head, back, breast, and wings, dark brown; lighter on the

edges of the feathers; breast and neck dirty white, at the lower part slightly spotted with black and brown; a streak down the back of the neck dark brown; under surface white, each feather barred with black and brown; thighs the same; tail and lower part of the back black; bill lead-coloured; legs and feet black.

- Anas Arborea* *Linn. Syst. Nat.* 1. 207.
Gmel. Syst. Nat. 1. 540.
Lath. Ind. Orn. 2. 852.
Anas fistularis Jamaicensis *Raii Syn.* 192.
Black-billed Whistling Duck *Edw. Gla.* pl. 193.
Canard Siffleur de St. Dominique *Buff. Ois.* 804.

Inhabits the West Indies and the adjacent portions of America.

LEPTOTARSIS EYTONI.

Lep.—Brunneus; lateribus axillaribusque ferrugineis.

BROWN SLENDERLEGS.

Brown duck, with the flanks and axillaries ferruginous.

| | | | |
|---------------------|----------------------|-------------------------|---------------------------|
| <i>Length</i> | ^{IN.} 21 | <i>Tarsi</i> | ^{IN.} 2 1-5th |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 2½ |

Duck, with the wings, back, and scapulars vandyke brown, inclining to slaty blue on the upper part of the back; flanks posteriorly bright ferruginous buff, ornamented with very long axillary feathers, each of which are edged with black, and entirely covered when the wing is closed; tail coverts also buff; the flanks anteriorly and under wing coverts bright ferruginous, the former beautifully barred with black; crown and streak down the back of the neck sienna brown, the feathers on the former rather stiff; below luteous, inclining to dirty lemon colour; the chin and throat lighter; two-thirds of the bill towards the base black; the remainder, with the legs, approaching to orange yellow.

Leptotarsis Eytoni..... *Gould. MSS.*

This beautiful and unique bird, which Mr. Gould has done us the honour to call by our name, is in the possession of the Zoological Society, and was received from Australia.

DAFILA UROPHASIANUS.

Daf. Mas.—Caudá pallidé rufis; dorso, capite, colloque brunneis, marginibus pennarum saturatoribus.
Daf. Fem.—Mare similis, sed subtus fuscus.

PINTAIL.

Pintail, with the tail pale rufous; the back, head, and neck brown; with the edges of the feathers lighter.

Fem. like the male, but below fuscous.

| | | | | | |
|-------------------------|------------------|-----------------------|-----|------------------------|-----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 24 $\frac{1}{2}$ | <i>Bill</i> | 2 | <i>Tarsi</i> | 1 $\frac{3}{4}$ |

Male: with the head, neck, and body grey brown; the edges of the feathers light fuscous; cheeks, throat, and upper part of the fore neck, white; wing coverts fuscous; speculum bright green, anterior to which there is a stripe of pale red-fuscous; posteriorly a narrow one of black, then a broad one of pale reddish fuscous; tail and upper tail coverts pale reddish; bill and legs fuscous, the former with an orange patch on each side,

Female: similar to the male, but much smaller; and below brownish fuscous.

Anas urophasianus, King *Zool. Jour.* 4. 351.

Although some difference exists in length between our specimens of this bird and that described by Capt. King as above, and also a trifling one in colouring, we have been induced to place them as one, both having been received from the west coast of South America, placing ours the smallest as the female. Mr. Vigors, however, makes no mention of the orange marking on each side of the bill, which we suspect to be only apparent in old birds during the season of love. The buff colour on the wing also changes to white during certain times of the year in all the Pintails.



Plumage of the swan

Dasilia Urophasianus



DAFILA PYROGASTER.

Daf.—Subtus alba, singulis pennis marginatis apices versus lunulis brunneis.

BROWN-BELLIED PINTAIL.

Pintail; below white, with each feather edged near its tip with a lunule of bright brown.

| | | | |
|---------------------|----------------------|------------------------|----------------------------------|
| <i>Length</i> | ^{IN.} 24 | <i>Inner toe</i> | ^{IN.} $1\frac{3}{4}$ |
| <i>Bill</i> | 1 4-5ths | <i>Middle toe</i> | $2\frac{1}{8}$ |
| <i>Tarsi</i> | 2 | <i>Outer toe</i> | 2 |

Under parts, breast, and upper part of the back dirty white, each feather having near its tip a lunule of brown, brighter on the breast and shaded off at the edges; tail black; wing coverts brown; wing spot brassy purplish, edged posteriorly with brassy green, and then with a broad band of white, formed by the secondaries; neck dirty white, slightly spotted with brown and black; head slightly crested; crown and crest brown; bill lead coloured; legs black.

Anas pyrogaster *Meyen Nova acta.*

In the museum of the Zoological Society, and in Lord Derby's collection. Inhabits Chili.

DAFILA CAUDACUTA.

Daf. Mas.—Capite colloque anteriore brunneis; posterioriter atro, albo marginato.

Daf. Fem.—Brunnea, marginibus pennarum saturatoribus; speculo flavo-rufo.

PINTAIL.

Male pintail, with the head and upper part of the neck brown; the posterior part black bordered with white.

Fem. brown, with the edges of the feathers lighter; wing spot buff.

| | | | | | |
|---------------------|----------------------|-------------------|---------------------|--------------------|----------------------------------|
| <i>Length</i> | ^{IN.} 24 | <i>Bill</i> | ^{IN.} 2 | <i>Tarsi</i> | ^{IN.} $1\frac{3}{4}$ |
|---------------------|----------------------|-------------------|---------------------|--------------------|----------------------------------|

Male: crown, throat, cheeks, and upper part of the neck, brown, with purple inflections; back part of the neck black, bordered on each side with white; fore neck and below white; speculum green, bordered above with buff, below with white; scapulars black, with light buff

edges; back and flanks white, undulated with lines of black; middle tail feathers elongated grey black; bill lead coloured; feet and tarsi reddish; eyes brown.

Fem.: smaller than the male; brown, with the edge of the feathers light; lower parts lighter; scapulars buff, margined above with lighter, below with white; middle tail feathers slightly elongated. During the summer months the male assumes nearly the plumage of the female, being ferruginous below.

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| <i>Anas caudacuta</i> | Raii <i>Syn.</i> 147. <i>A</i> 5. |
| <i>Dafila caudacuta</i> | <i>Steph. Sh. Zool.</i> 12. 127. |
| <i>Anas acuta</i> | <i>Linn. Syst.</i> 1. 202. |
| | <i>Gmel. Syst.</i> 1. 528. |
| | <i>Wils. Am. Orn.</i> 8. 75. |
| <i>Querquedula acuta</i> | <i>Selb. Illust. Brit. Orn.</i> vol. ii. 311. |
| <i>Trachea</i> | <i>Linn. Trans.</i> vol. 4, tab. 13, fig. 6. |

A very widely distributed species, being found over Asia, Europe, America, and the north of Africa as far as the Gamba, from whence we have received them in the summer state of plumage. Breeds in Holland and Germany in morasses, building its nest of flags and grass, and laying eight eggs of a greenish blue colour.

Trachea with the tube of equal diameter to one-third of its length inferiorly, where it is slightly expanded, and again contracted above the inferior larynx, which is (except in size) similar to that of *A. Boschas*.

DAFILA MARMORATA.

Daf.—Toto corpore marmorato obscuro et subfusco.

MARbled DUCK.

Duck, with the whole body marbled with dark and light brown.

| | | | |
|---------------------|-----------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 18 | <i>Inner toe</i> | 1 $\frac{3}{4}$ |
| <i>Bill</i> | 1 4-5ths | <i>Middle toe</i> | 1 $\frac{7}{8}$ |
| <i>Tarsi</i> | 1 $\frac{5}{8}$ | <i>Outer toe</i> | 1 $\frac{3}{4}$ |

The whole body beautifully marbled with light sepia brown and dusky white; the edges of the feathers white, the base bright brown except those on the breast, which have the base lighter; head slightly crested; the forehead, crown, and occiput light brown, the former barred with black; neck white, with minute longitudinal black dashes; tail ashy brown, the tip of each feather lighter; bill and legs deep lead colour.

PÆCILONITTA BAHAMENSIS.

Pæc.—Gutturæ albo; speculo violaceo utrinque subflavo marginato; rostro duabus coccineis maculis lateribus.

BAHAMA MARBLED DUCK.

Throat white; wing spot metallic violet, bounded on each side by a streak of buff; the bill with two red markings on the sides.

| | | | |
|---------------------|-----|------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 18½ | <i>Tarsi</i> | 1½ |
| <i>Bill</i> | 1¾ | <i>Middle toe</i> | 1¾ |

Bill lead coloured, lighter on the sides; tail and back brown, edged with lighter; crown immaculate sepia brown; breast grey, spotted with brown; wing spot metallic violet, bounded anteriorly with a narrow stripe of buff, posteriorly with a broad one; legs and bill fuscous, the latter with a triangular patch of red on each side behind the nostrils.

Sexes similar.

In the young bird the bill is reddish brown.

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| <i>Anas Bahamensis</i> | <i>Linn. Syst.</i> 1. 199. <i>Gmel. Syst.</i> 1. 516. <i>Lath. Ind. Orn.</i> 2. 835. |
| <i>Plathera Duck</i> | <i>Catesb. Carol.</i> 1. pl. 63. <i>Penn. Arct. Zool.</i> 2. pl. 95. <i>Lath. Gen. Syn.</i> 6. 507. |
| <i>Mareca Bahamensis</i> | <i>Steph. Sh. Zool.</i> 12. 137. |
| <i>Le Marec</i> | <i>Buff.</i> |

Inhabits Brazil and the Bahamas.

MARECA AMERICANA.

Mar. Mas.—Speculo viridi, utrinque atro marginato, et fasciâ latâ viridi post oculari.

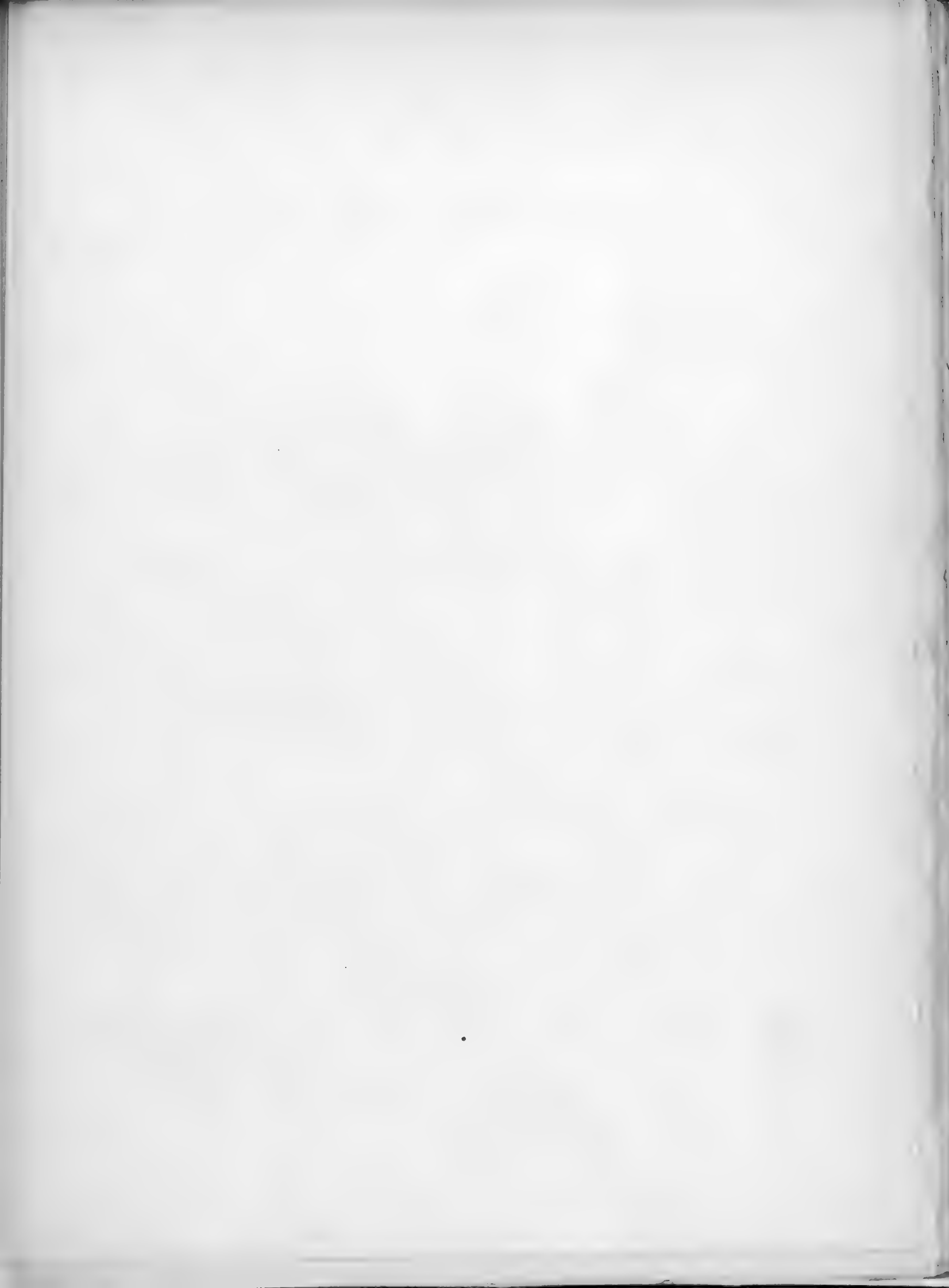
Mar. Fem.—Brunnea, marginibus pennarum saturatioribus.

AMERICAN WIDGEON.

Mas. speculum metallic green, broadly bounded on each side by black; a broad fascia of green behind the eye.

Fem. brown, the edges of each feather lighter.

| | | | | | |
|---------------------|-----|-------------------|-----|--------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 23 | <i>Bill</i> | 1½ | <i>Tarsi</i> | 1½ |





Mareca Chalcensis

Male: has a cream-coloured patch extending from the culmen of the bill to the crown; behind the eye a green patch extending to the occiput; remainder of the head and neck cream-colour, blotched and dotted with black; breast vinaceous, the edges of the feathers lightest; back grey, narrowly barred with black and cream-colour; wing coverts and abdomen white; under tail coverts black; quills and tail grey; tertiaries grey, with the outer webs black edged with cream-colour; bill lead colour tipped with black; legs reddish; two centre tail feathers elongated.

Fem.: with the upper surface brown; each feather edged with lighter; without the green on the head, and rather smaller than the male.

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| <i>Anas Americana</i> | <i>Gmel. Syst.</i> 1. 526. |
| | <i>Lath. Ind. Orn.</i> 2. 861. |
| <i>American Widgeon</i> | <i>Penn. Arct. Zool.</i> 2. 502. |
| | <i>Wils. Am. Orn.</i> p. 86, pl. 69, f. 4. |
| <i>Mareca Americana</i> | <i>Steph. Sh. Zool.</i> 12. 135. |

Inhabits America, the West Indies, and Cayenne, frequenting inland lakes and rivers, as well as the sea coast; breeds in the northern part of America in swamps, laying six or eight eggs. This bird is curious, as presenting a connecting link between the widgeon and pintail. The bill is that of the former, and the two elongated tail feathers shew an affinity to the latter.

MARECA CHILOENSIS.

Mar.—Fronte genis pteromatibus subtusque albis, strigâ post occulari purpurescente-æneâ.

CHILOE WIDGEON.

Widgeon, with the forehead, cheeks, wing coverts, and under surface white; a post ocular streak æneous-purple.

| | | | |
|---------------------|-----------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Middle toe</i> | 2 $\frac{1}{8}$ |
| <i>Bill</i> | 1 $\frac{3}{8}$ | <i>Inner toe</i> | 1 $\frac{1}{2}$ |
| <i>Tarsi</i> | 1 $\frac{1}{2}$ | <i>Outer toe</i> | 1 $\frac{7}{8}$ |

Widgeon; with the forehead, cheeks, abdomen, breast, upper and under wing coverts, and upper tail coverts, white; a streak from the eye to the occiput brassy purple; neck, remainder of the head, lower part of the back, and numerous transverse bars across the breast, dark brown; tertiaries and scapulars also dark brown, with the edges of the feathers white; quills light brown; speculum velvet black; flanks white clouded with ferruginous; tail brown; legs, feet, and bill brown.

Anas Chiloensis, King *Zool. Proc.* 1831. 15.

Inhabits the Island of Chiloe. We have also received specimens from Cayenne.

MARECA FISTULARIS.

Mar. Mas.—Vertice flavo; capite cristâque castaneis.

Mar. Fem.—Brunnea, marginibus pennarum saturatioribus.

WIDGEON.

Male, crown cream-coloured; head crested chesnut.

Fem. brown, with the edges of the feathers lighter.

| | | | | | |
|-------------------------|-----|-----------------------|----------------|------------------------|----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 20 | <i>Bill</i> | $1\frac{1}{2}$ | <i>Tarsi</i> | $1\frac{5}{8}$ |

Widgeon, with the crown cream-coloured; cheeks, throat, and neck chesnut, occasionally spotted with black; breast vinaceous; back white, each feather minutely barred and waved with dark grey; flanks the same; belly white; under tail coverts black; speculum metallic green, bounded by black; wing coverts white; remainder of the quills and coverts grey; bill lead coloured; legs and feet black.

Fem.: with the back fuscous grey, the edges of the feathers lighter; head and neck fuscous spotted with black; below white; remainder as in the male.

Mareca fistularis *Steph. Sh. Zool.* 12. 131.

Anas fistularis *Briss. Orn.* 6. 391, p. 35, f. 2.

Anas Penelope *Linn. Syst.* 1. 202.

Gmel. Syst. 1. 527.

Lath. Ind. Orn. 2. 860.

Widgeon *Penn. Brit. Orn.* 2. 268.

Lath. Gen. Syn. 6. 518.

Canard siffleur *Buff. Ois.* 9. 169, pl. 10, 11.

Trachea *Linn. Trans. vol. iv. tab. 13, fig. 9.*

Common in the British islands during winter, frequenting both the sea and fresh water. It is a very widely distributed species, being found throughout Africa, America, and Asia. The trachea in the male of this species, like that of several of the genera nearly allied to it, is largest immediately below the glottis, and again slightly enlarged at about one-third of its length interiorly; the inferior larynx, except in size (being smaller) greatly resembles that of *Anas Boschas*.





Mareca castanea

MARECA CASTANEA.

Mar. Mas.—Castaneus atro maculato; speculoque viridi.

Mar. Fem.—Brunnea cinerea, marginibus pennarum saturatoribus.

CASTANEOUS WIDGEON.

Mas. castaneous spotted with black; the wing spot green.

Fem. cinereous brown, with the edges of the feathers lighter.

| | | | | | |
|---------------------|------------------|-------------------|----------|--------------------|-----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 17 $\frac{1}{2}$ | <i>Bill</i> | 1 3-5ths | <i>Tarsi</i> | 1 $\frac{1}{2}$ |

Male: under parts, neck, and upper part of the back castaneous, spotted with black; lower part of the back black, each feather edged with castaneous; wing coverts brown, slightly tinged with greenish; quills brown; secondary coverts tipped with white; tail and under coverts black glossed with green and purplish; wing spot bright green; head black glossed with green; bill, legs, and feet black.

Fem.: rather smaller than the male; light brownish grey, spotted with darker; wing spot green, edged anteriorly with white, and posteriorly with black; bill and legs as in the male.

Mareca castanea nobis.

Inhabits New Holland. The first specimens we observed were in the collection of the Natural History and Antiquarian Society of Shrewsbury, presented (together with many other birds from the same country) by Major Wakeman.

AIA GALERICULATA.

Ai. Mas.—Vertice occipiteque viridibus; fasciâ latâ supra-occulari albâ; tectricibus tertiis ad apices expandentibus.

Ai. Fem.—Faciis duabus alis.

MANDARIN DUCK.

Male, with the crown and occipital crest green; a broad white band over the eye; tertiaries expanded at the tip, and prominent.

Fem. with two white bars on the wing

| | | | |
|-----------------------|-----------------------|---------------------------|----------------------|
| <i>Length</i> | ^{IN.} 18½ | <i>Inner toe</i> | ^{IN.} 1¾ |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 1¾ |
| <i>Tarsi</i> | 1½ | <i>Outer toe</i> | 1¾ |

Male: head with a long occipital crest and crown purplish green; above the eye a broad band of white; throat, cheeks, and remainder of the neck bright reddish ferruginous, the shaft of each feather lighter; breast bright purple; back, tail, and wings hair brown; scapulars with the outer webs black; the inner ones white; one tertiary prolonged and expanded on each side, prominent over the back; on the lower part of the breast a broad band of black not meeting in front, on which there are one or two narrow ones of white; flanks ferruginous, beautifully undulated with narrow bands of black; belly, vent, and under tail coverts white; bill and legs orange.

Fem.: similar to the summer duck *A. sponsa*, but may be distinguished from it (according to Latham) by having two bars of white on the wing, and by the white spots on the breast being round instead of triangular,

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| <i>Anas galericulata</i> | <i>Linn. Syst.</i> 1. 206. <i>Gmel. Syst.</i> 1. 539. <i>Lath. Ind. Orn.</i> 2. 871. |
| <i>Querquedula sinensis</i> | <i>Briss. Orn.</i> 6. 450. |
| <i>Chinese Teal</i> | <i>Edw. Glea. pl.</i> 102. <i>Lath. Gen. Syn.</i> 6. 548. |
| <i>Sarcelle de la Chine</i> | <i>Buff. Ois.</i> 9. 276. |

Inhabits China and Japan, where it is kept (as in this country), for the sake of its beauty, in a state of domestication. Nothing is known of its habits in a wild state.

AIA SPONSA.

Ai. Mas.—Capite colloque viridibus; gutture albo.

Ai. Fem.—Brunnea, rostro cinguloque occulari etiam ad basin rostri, et fasciâ alis albis.

SUMMER DUCK.

Mas. head and upper part of the neck metallic green; throat white; crest long.

Fem. dark brown, with the belly, space round the eye, and bill white; one white band across the wing.

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|----------------------|----------------------|----------------------------|----------------------|
| <i>Length</i> | ^{IN.} 20 | <i>Tarsi</i> | ^{IN.} 1¾ |
| <i>Bill</i> | 1¾ | <i>Middle toe</i> | 2 |

Crown and neck and occipital crest glossy green; line extending from the bill over the eye, another from the lower part of the eye to the occiput, together with the throat, white; neck and upper part of the breast purplish, and sprinkled with spots of white; scapulars, wing coverts, and tail black, beautifully glossed in some lights with green and purple inflections; on the lower part of the breast is a white bar, posteriorly to which is a black one; flanks yellowish ferruginous, barred and undulated with dusky; under tail coverts and quills sooty black; below white; bill and legs orange.

Fem.: dusky slate brown, with a space round the eye, a band round the bill, the throat, and belly white; breast dusky, marked with triangular spots of white; quills and tail as in the male; legs and bill dusky.

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| <i>Aia sponsa</i> | <i>Boie Isis.</i> 1826. |
| <i>Dendronessa sponsa</i> | <i>Faun. Bo. Am.</i> 2. 446. |
| <i>Anas sponsa</i> | <i>Linn. Syst.</i> 1. 207. |
| | <i>Gmel. Syst.</i> 1. 539. |
| | <i>Lath. Ind. Orn.</i> 2. 871. |
| <i>Anas Æstira</i> | <i>Briss. Orn.</i> 6. 351. <i>pl.</i> 32, <i>fig.</i> 2. |
| <i>Summer Duck</i> | <i>Catesb. Carol.</i> 1. <i>pl.</i> 97. |
| | <i>Edw. G'lea.</i> <i>p.</i> 101. |
| | <i>Lath. Gen. Syn.</i> 6. 546. |
| <i>Beau canard, Huppe</i> | <i>Buff. Ois.</i> 9. 254. |
| <i>Trachea</i> | <i>Mont. Orn. die, Sup. fig.</i> 5, <i>et nobis.</i> |

Inhabits America, from Hudson's Bay to Mexico and the Antilles, throughout the whole of which space it breeds, seldom frequenting the sea. It generally makes its nest in decayed trees hanging over the water, laying twelve or thirteen eggs.

This species is often kept in confinement in this country, and breeds freely, as well as its congener. The inferior larynx is that of the true wading duck, and much resembles in miniature that of the widgeon; it is, however, more expanded anteriorly, the two ends of the bulb being of equal size.

QUERQUEDULA JAVANENSIS.

Quer.—Capite viridi, maculâ ad basum rostri; gutture et fasciâ occipitali albis.

JAVA TEAL.

Head green, with a spot at the base of the bill; throat and patch extending to the occiput white.

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|-----------------------|-------------------|-------------------------|-------------------------------|
| <i>Length</i> | ^{IN.} 18 | <i>Tarsi</i> | ^{IN.} $1\frac{3}{4}$ |
| <i>Exp. al.</i> | 27 | <i>Middle toe</i> | 2 |
| <i>Bill</i> | $1\frac{1}{2}$ | | |

Head bright glossy green; spot behind the culmen of the bill, throat, and streak towards the back of the neck from the latter white; collar white; breast with each feather beautifully marked with lunules of black; vent coverts white undulated with black; wing spot purplish green, above which is a conspicuous spot of velvet black; tertiaries very long, with the shaft and a narrow edging exteriorly white, and the edge of the posterior or inner web grey; quill and tail feathers grey; upper and under tail coverts black; vent buff, anteriorly to which there is a band of black; feet and bill black.

Anas Jacanensis..... *Veill. En. Method. Orn.* 1. 160.
Sarcelle de l' Ile de Java..... *Buff. Ois. tom. xvii. p.* 395.

Inhabits Java. I have never seen but one specimen of this beautiful species; it is in Lord Derby's collection at Knowsley, and has been exhibited at one of the Zoological Society's evening meetings.

QUERQUEDULA GLOCITANS.

Quer. Mas.—Capite viridi, maculâ rotundatâ castaneâ ante oculari et post oculari ornato.
Quer. Fem.—Brunnea, marginibus pennarum saturatoribus.

BIMACULATED TEAL.

Male Teal, with the head green, ornamented with a rounded chesnut patch before and behind the eyes.

Fem. brown teal, with the margin of the feathers lighter.

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|---------------------|----------------------|-------------------|-----------------------------------|--------------------|-----------------------------|
| <i>Length</i> | ^{IN.} 15 | <i>Bill</i> | ^{IN.} 1 $\frac{7}{8}$ | <i>Tarsi</i> | ^{IN.} 1 9-20ths |
|---------------------|----------------------|-------------------|-----------------------------------|--------------------|-----------------------------|

Male: head and neck green, with a dark chesnut patch before and behind the eyes; the throat approaching to black; back and flanks white, undulated with black lines; breast and abdomen ferruginous, with a few black spots; wing coverts fuscous; speculum velvet black, bordered anteriorly with violaceous, posteriorly with white; quills brown, margined with lighter; bill, feet, and legs lead-coloured; the webs black.

Fem.: slightly smaller than the male; head and neck light ferruginous, with the crown and base of each feather darker; abdomen white; back and flanks fuscous ferruginous, with the base of each feather brown.

Anas glocitans..... *Pall. Acta Stock.* 1. 779, 40, *tab.* 33, *fig.* 1.
Gmel. Syst. 1. 526.
Lath. Ind. Orn. 862.
Querquedula glocitans..... *Vig. Lin. Trans. vol.* xiv. 559.
Gould, Birds of Europe.
Bimaculated Teal..... *Penn. Brit. Zool.* 2. 602.
Cunard Glousseur..... *Veill. En. Method. Orn.* 1. 126.

Said to inhabit Siberia and the neighbourhood of Lake Baikal. One or two specimens only have been met with in England.

QUERQUEDULA CRECCA.

Quer. Mas.—Capite colloque castaneis, fasciâ occipitali viridi.

Quer. Fem.—Brunnea, marginibus pennarum saturatoribus; subtus alba.

COMMON TEAL.

Teal, with the head and neck chesnut, with a green occipital fascia.

Fem. brown teal, with the margin of the feathers lighter; below white.

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|-------------------------|-----------|-----------------------------|---------|
| | IN. | | IN. |
| <i>Length</i> | 14½ | <i>Tarsi</i> | 1 1-6th |
| <i>Bill</i> | 1 5-12ths | <i>Middle toe</i> | 1 ½ |

Male: head, cheeks, and neck chesnut; from the eye to the occiput passes a band of metallic green, bordered by a stripe of yellowish; below white; the breast dotted with black; the scapulars, back, and flanks white undulated with black; wing coverts brown; quills hoary fuscous; speculum metallic green, bounded above and below by velvet black; lateral tail coverts with a band of black.

Fem.: brown, with the edge of the feathers lighter; below yellowish white; speculum green, without the black edging; crown brown.

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| <i>Querquedula crecca</i> | <i>Steph. Sh. Zool.</i> 12. 146. |
| <i>Anas crecca</i> | <i>Linn. Syst.</i> 1. 264. |
| | <i>Gmel. Syst.</i> 1. 532. |
| | <i>Lath. Ind. Orn.</i> 2. 872. |
| <i>Common Teal</i> | <i>Penn. Arct. Zool.</i> 2. 577. |
| <i>Green-winged Teal</i> | <i>Wils. Am. Orn.</i> 8. 106, pl. 70. fig. 40. |
| <i>Petite sarcelle</i> | <i>Buff. Ois.</i> 9. 265. |
| <i>Canard sarcelle d' Hiver</i> | <i>Temm. Man. d' Orn.</i> 2. 846. |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab. 12, fig. 1.</i> |

Breeds in most marshy lakes in the north of Europe, America, Asia, and the British Isles; migrates southwards during winter, when it frequents almost entirely fresh water. Mr. Selby, in his "Illustrations of British Ornithology," mentions that he is inclined to think that our indigenous broods seldom quit the immediate neighbourhood of the place in which they were bred. The nest is formed of grass, and it lays from eight to ten eggs of a whitish colour.

Trachea with the tube largest immediately below the glottis, then contracted, then expanded, and gradually lessening to the inferior larynx, which is similar in form to that of *Anas Boschas*.

QUERQUEDULA CAROLINENSIS.

Quer.—Precedenti similis, sed distingueri potest fasciâ albâ ante alis.

AMERICAN TEAL.

Quer. similar to *Q. crecca*, but distinguished from it by a white bar on each side of the breast.

| | | | | | |
|---------------------|-----|-------------------|-----------------|--------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 15 | <i>Bill</i> | 1 $\frac{2}{3}$ | <i>Tarsi</i> | 1 |

Precisely similar to *Q. crecca*, with the exception of the under tail coverts, which are black, and in having a white band on each side opposite the point of the wing.

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| <i>Anas Carolinensis</i> | <i>Gmel. Syst. Nat.</i> 1. 533. |
| | <i>Lath. Ind. Orn.</i> 2. 874. |
| | <i>Jard. Illus. Orn. pl.</i> |
| <i>American Teal</i> | <i>Penn. Arct. Zool.</i> 2. 584. |

Inhabits America, where it takes the place of the preceding species.

QUERQUEDULA FORMOSA.

Quer.—Vertice, gutture, fasciâque ab hoc ad oculos atris, utrinque albo marginato.

BAIKAL TEAL.

Teal, with the crown, throat, and a streak proceeding from the latter to the eye black, bounded on each side with white.

| | | | |
|---------------------|------------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 15 $\frac{1}{2}$ | <i>Tarsi</i> | 1 $\frac{1}{2}$ |
| <i>Bill</i> | 1 5-12ths | <i>Middle toe</i> | 1 4-5ths |

Male: crown and throat black, with each feather slightly tipped with ferruginous brown; from the latter proceeds a black waved streak to the eye, bounded on each side by a narrow one of white, and enclosing a patch of fawn-colour; from the bill through the eye proceeds a broad band of glossy green to the occiput, where it is broadest, and trifurcate below, the centre branch extending down to the back of the neck, the lateral ones curve to the fore neck, but do not meet, the whole bounded by a narrow edging of white; fore part of the neck bright reddish fawn colour, spotted with black; back brown; lower part of the neck behind black, thickly irrorated with white; flanks the same; belly white; quills and coverts brown; middle coverts tipped with brown; pri-

QUERQUEDULA FALCARIA.

Quer. Mas.—Capite brunneo; cingulo collari guttateque purpureis.

Quer. Fem.—Brunnea, marginibus pennarum suturationibus.

FALCATED TEAL.

Teal, with the head deep brown; ring round the neck and throat purple.

Fem. brown teal, with the margins of the feathers lighter.

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 17 | <i>Tarsi</i> | 1½ |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 2 |

Male: head and crown deep brown; ring round the neck and throat brassy purple; remainder of the neck and a spot behind the upper part of the base of the bill white; belly, breast, flanks, and upper part of the back white, each feather lunulated with ashy black; tail ashy; upper tail coverts and centre of the under ones black, laterally buff, anteriorly to which there is a black streak, then a patch of white; quills ashy brown; tertiaries long, inner webs brown grey, outer glossy green edged with light grey, the edging broader at the base; wing spot green; primary coverts light ashy brown, lightest on the edge.

Fem.: about half an inch shorter than the male; brown, each feather lunulated with darker; crown dark brown; neck light brown, streaked with dark brown; tertiaries long; wings and tail as in the male; coverts brown; belly light; legs and bill in both sexes lead coloured.

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| <i>Anas falcaria</i> | <i>Gmel. Syst. Nat.</i> 8. 521. |
| | <i>Lath. Ind. Orn.</i> 2. 860. |
| <i>Falcated Duck</i> | <i>Penn. Arct. Zool.</i> 2. 574. |
| | <i>Lath. Gen. Syn.</i> 6. 516. |
| <i>Anas falcaria</i> | <i>Steph. Sh. Zool.</i> vol. xii. p. 100. |

The specimens from which the above descriptions were taken are in the British Museum, and were brought home by R. Reeves, Esq. from China.

QUERQUEDULA ERYTHORHYNCHA.

Quer.—Brunnea, ptilis atris, tectrices majores speculoque æneis.

CRIMSON-BILLED DUCK.

Brown, with the upper coverts velvet black, the greater ones and speculum brassy green.

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|---------------------|-----|-------------------|-----|--------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 18 | <i>Bill</i> | 1½ | <i>Tarsi</i> | 1¼ |

Above brown, with the edges of the feathers brighter; throat inclining to grey; back, lesser wing coverts, and tail velvet black; below the upper tail coverts and flanks grey, the latter with two or three deep brown spots; the breast sometimes slightly waved with brown; the remainder of the wing beautiful æneous green, with the exception of the two outer quill feathers, which are black, and the terminal half of the secondaries, which are white; bill and legs bright red in the male, fuscous in the female; bill brown, with a red patch on each side at the base.

Anas Erythrorhyncha *Spix. N. Sp. avium.*

Inhabits Southern America.

We had an opportunity of dissecting this bird through the kindness of the Earl of Derby, who had a pair alive for some time.

The trachea and inferior larynx is that of a typical teal. It may, however, be distinguished from that of *Q. crecca* (which it in other respects resembles) by the bulb being more oblique, and swelling more in an upward direction.

The tube of the trachea in both sexes is acted upon by two pairs of muscles of voice, the first pair the usual sterno-tracheal ones; in the female the second pair diverge from the tube, where it penetrates the cavity of the chest, and are inserted into the membrane stretched between the *rami* of the *os furcatum* and the *coracoids*. In the male they diverge similarly, and are inserted in the *rami* of the *os furcatum*, having also a slight attachment along the internal surface of the membrane stretched between the *rami* of the *os furcatum*, which is not the case in the female.

QUERQUEDULA CRECCOIDES.

Quer.—Pallide brunnea-grisea, sparsa notataque dorso imo ptilisque fascis hic apice rufo, speculo nigro, fulvo marginato.

MOTTLED TEAL.

| | | | | | |
|---------------------|-----------------------|-------------------|----------------------|--------------------|----------------------|
| <i>Length</i> | ^{IN.} 16½ | <i>Bill</i> | ^{IN.} 1¾ | <i>Tarsi</i> | ^{IN.} 1¼ |
|---------------------|-----------------------|-------------------|----------------------|--------------------|----------------------|

The head and neck of this bird are finely marked with fuscous dots, those of the neck being mostly in transverse lines, thus forming several undulating fascia; the feathers of the upper part of the back are of a brownish grey, and are marked in the centre by oval fuscous spots; the scapular feathers are similarly marked by long central black strigæ, which in some lights are of a beautiful green; the lower part of the back is of a uniform fuscous colour; the upper wing coverts are fuscous, the apices of the lowest range of feathers being also terminated with rufous, which colour forms a narrow fascia across the wing immediately over the speculum; the external secondary quill feathers are black on their outside margin, and are terminated with light buff; the internal webs are fuscous on their outside webs, with a shade of deep green, and slightly margined with buff; the breast and middle of the abdomen are whitish, the feathers of the former being strongly marked with round black spots in the centre, those of the latter being more strongly marked, so as to exhibit irregular fasciæ; bill yellow, with a black apex.

Anas Creccoides, King..... *Zool. Jour.* 4. 99.

Inhabits the Straights of Magellan: a specimen is in the museum of the Zoological Society.

QUERQUEDULA CAPENSIS.

Quer.—Rostro coccineo; marginibus capituloque basali atris.

CAPE TEAL.

Teal, with the bill crimson; the margins and a band round the base black.

| | | | |
|---------------------|-----------------------|-----------------------|----------------------|
| <i>Length</i> | ^{IN.} 18½ | <i>Tarsi</i> | ^{IN.} 2½ |
| <i>Bill</i> | 1½ | <i>Middle toe</i> ... | 2¾ |

Light brown teal, with all the dorsal aspect with the feathers edged with lighter; those on the breast and under parts very light brown, with a lunule of darker on each feather; the throat

white; the head and neck spotted, and minutely streaked with dark and light brown; wing spot bright green, margined on every side but the upper with a band of white; wing coverts, quills, and tail blue slate-coloured, the latter with each feather edged with much lighter; legs reddish brown.

Female similar, but rather smaller.

Querquedula capensis Smith, *Cat. S. Afric. Mus.*

Inhabits Southern Africa, and brought home by Dr. Smith, by whom it will be figured in his forthcoming work on South African Zoology.

QUERQUEDULA HOTTENTOTA.

Quer. Mas.—Brunneus, marginibus pennarum saturatoribus; tectricibus caudæ juguloque pallidé brunneis, illo atro fasciato.

Quer. Fem.—Mari similis, sed tectricibus caudæ toto corpori similibus.

HOTTENTOT TEAL.

Male, brown teal, with the margins of the feathers lighter; the tail coverts and throat light brown; the latter fasciated with black.

Fem. like the male, but with the quill feathers like the rest of the body.

| | | | |
|-------------------------|-----------------------|-----------------------------|---------------------|
| <i>Length</i> | ^{IN.} 14½ | <i>Tarsi</i> | ^{IN.} 1 |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 1½ |

Male; amber brown, with the edges of the feathers lighter; the crown, occiput, and quills dark brown; chin, throat, cheeks, rump, and under tail coverts light brown, the latter narrowly barred with darker; breast and lower part of the neck and under surface darker than on the rump; the abdomen barred with black; speculum and secondaries bright brassy green, the former edged posteriorly with black, then with white; coverts brown, slightly glossed with brassy; tail dark brown.

Fem.: similar to the male, but with the markings generally not so distinct, and the whole plumage below lighter; legs in both sexes brown; bill lead coloured, with the nail horn colour.

Querquedula Hottentota Smith, *Cat. S. Afric. Mus.*

Brought home by Dr. Smith from the western coast of South Africa, near the Orange river: a specimen is also in our collection, but we are not aware from what locality.

CYANOPTERUS CIRCIA.

Cyan. Mas.—Undulatus brunneo et albo; ptilis azureis-cinereis.

Cyan. Fem.—Brunnea, marginibus pennarum suturatoribus.

GARGANEY TEAL.

Male teal, undulated with brown and white; lesser coverts blueish grey.

Fem. brown teal, with the margin of the feathers lighter; coverts as in the male.

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|-------------------------|-----|-----------------------------|----------|
| | IN. | | IN. |
| <i>Length</i> | 16½ | <i>Tarsi</i> | 1 1-10th |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 1½ |

Male: crown, back of the neck, cheeks, and sides of the neck brown, the latter inclining to chesnut in some specimens; a white stripe from the bill under each eye; lower part of the neck and breast whitish, marked with brown lunules; back brown, with the edges of the feathers lighter; scapulars brown, with a white stripe down the shaft of each; wing coverts blue grey; the rump and tail brown; below white, undulated with dark brown on the flanks; speculum green; bill, tarsi, and feet lead coloured; eyes brown.

Fem.: brown, each feather edged with lighter; throat white; below yellowish white; wings as in the male.

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| <i>Querquedula circia</i> | <i>Steph. Sh. Zool.</i> 12. 143. |
| <i>Anas circia</i> | <i>Linn. Syst.</i> 1. 204. |
| | <i>Gmel. Syst.</i> 1. 553. |
| | <i>Lath. Ind. Orn.</i> 2. 873. |
| <i>Anas Querquedula</i> | <i>Linn. Syst.</i> 1. 263-2. |
| | <i>Gmel. Syst.</i> 1. 531. |
| | <i>Raii Syn.</i> 148. 8. |
| <i>Garganey</i> | <i>Penn. Arct. Zool.</i> 2. 576. |
| | <i>Lath. Ind. Orn.</i> 6. 550. |
| <i>Le Sarcelle d'ete</i> | <i>Buff. Ois.</i> 9. 208. |
| <i>Le Sarcelle commun.</i> | <i>Buff. Ois.</i> 9. 260. |
| <i>Trachea</i> | <i>Linn. Trans. vol.</i> 4. <i>tab.</i> 13, <i>fig.</i> 2—3. |

Found over the whole of Asia, the northern part of Africa, and Europe; visits the British isles in May, frequenting fresh water; breeds in Holland; its nest is constructed of grass placed by the water side; lays from ten to twelve white eggs.

Trachea with the tube smaller about an inch below the glottis, then slightly swelled, and again slightly contracted about one inch above the inferior larynx, from which point it gradually expands to the end. The inferior larynx with an osseous bulb extending anteriorly and on both sides, and not swelling out so abruptly as in the preceding genus or among the true teal.

CYANOPTERUS FRETENSIS.

Cyan. Mas.—Gulâ colloque anteriore pallide vadiis; dorso, abdomineque, imis caudaque, albis, nigro fasciatis; ptilis cæruleis.

Cyan. Fem.—Gula colloque ut in mare; dorso imo ptilisque atro-cæruleis; abdomine ferrugineo, sparso et fasciato atro.

FASCIATED TEAL.

| | | | |
|-----------------------|----------------------|---------------------------|---------------------------|
| <i>Length</i> | ^{IN.} 14 | <i>Inner toe</i> | ^{IN.} 1 1-6th |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 1½ |
| <i>Tarsi</i> | 1 | <i>Outer toe</i> | 1 5-12ths |

Male Teal, with the back, breast, fore part of the neck, and cheeks light yellowish brown, the two former having in the centre of each feather a dark brown patch; flanks, abdomen, tail, and rump white, the former broadly and the latter narrowly barred transversely with black; vertex as far down as the eyes, and a streak down the back of the neck, deep brown; feet, legs, and bill blueish brown, the latter with a yellow patch on each side of the bill, extending beyond the nostrils; wing coverts slaty blue, the greater ones tipped with white; secondaries æneous green, also tipped with white; quills and tertiaries (which are long) dusky, the latter with the centre of each feather darker.

Female and young similar to the male, but with the abdomen and flanks ferruginous, irregularly barred and irrorated with dark brown; rump black; the bill without the yellow markings on the sides.

Anas fretensis, King *Zool. Proc. Dec. 14, 1830.*

Inhabits the Straits of Magellan and other localities on the western coast of South America.

CYANOPTERUS DISCORS.

Cyan.—Capite cinereo brunneo, lunulâ albâ ante oculos.

BLUE-WINGED TEAL.

Teal, with the head ashy brown; a large white lunule before the eye.

| | | | | | |
|---------------------|----------------------|-------------------|----------------------|--------------------|----------------------|
| <i>Length</i> | ^{IN.} 16 | <i>Bill</i> | ^{IN.} 1½ | <i>Tarsi</i> | ^{IN.} 1½ |
|---------------------|----------------------|-------------------|----------------------|--------------------|----------------------|

Head ashy brown, slightly glossed at the tip of each feather with brassy; crown darkest; between the eye and bill, and partially surrounding the former, a large lunate spot of white, the

horns projecting backwards; breast and neck ferruginous, beautifully spotted with dark brown; quills, tail, and back dark brown, the latter slightly lunated with ferruginous; under tail coverts deep black or brown, on the sides a patch of white; wing coverts bright blue, lower ones marked with a streak of white, then with one of green; anterior tertiaries with the outer webs blue; on the inner side of the shaft a streak of ferruginous; the remainder black.

Female: length 15 inches; wing coverts as in the male; tertiaries and remainder brown lunated with ferruginous; crown darker.

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| <i>Querquedula discors</i> | <i>Steph. in Sh. Zool. vol. 12. 149.</i> |
| | <i>Linn. Syst. Nat. 1. 205.</i> |
| | <i>Lath. Ind. Orn. 2. 854.</i> |
| <i>Sarcelle soucrourou</i> | <i>Buff. Pl. Enl. 966, mas.</i> |
| — <i>soucrouette</i> | 403, <i>fem.</i> |
| <i>White-faced Duck</i> | <i>Catesb. Carol. 1. 100, mas.</i> |
| <i>Blue-winged Teal</i> | 1. 99, <i>fem.</i> |

Inhabits the American continent, from the 58th parallel to Guiana and the West Indies.

CYANOPTERUS RAFFLESII.

Cyan.—Castaneo-ferrugineus, speculo viridi.

RAFFLES'S TEAL.

Deep reddish chesnut teal, with the speculum green.

| | | | |
|---------------------|-----|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 18 | <i>Tarsi</i> | 1 $\frac{1}{4}$ |
| <i>Bill</i> | 2 | <i>Middle toe</i> | 2 |

Deep reddish chesnut teal, with the crown and vent inclining to dark brown; each of the feathers on the back with black lunules; tertiaries black and blue, with the shaft buff; wing coverts light blue; speculum metallic green; quills and tail black.

Anas Rafflesii, King..... *Zool. Journ. 4. 97.*

First brought home by Capt. King from Chili; since which time we have received specimens from the same locality. Said by navigators to be exceedingly common on the west of South America.

RHYNCHASPIS RHYNCHOTIS.

Rhyn. Mas.—Ferrugineus; capite colloque superiore cæruleis; tectricibus caudæ nigris; speculo viridi.

Rhyn. Fem.—Brunnea, marginibus pennarum suturationibus; rostro pallido.

NEW HOLLAND SHOVELLER.

Male shoveller, with the head and upper part of the neck blue; under and upper tail coverts black; wing spot green.

Fem. shoveller, brown, each feather edged with lighter; bill horn colour.

| | | | |
|-------------------------|----------|-----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 | <i>Tarsi</i> | $1\frac{1}{4}$ |
| <i>Bill</i> | 1 2.5ths | <i>Middle toe</i> | $1\frac{1}{8}$ |

Male: head and neck, lesser coverts, and tertiaries light blue, some of the latter with a stripe on the inner side of the shaft white; bar behind the base of the bill on each side white; centre of the back, quills, and tail white, with a lunule near the tip and two spots on the shaft of each feather brown; wing spot bright brassy green, anterior to which is a white stripe; flanks, belly, and breast deep ferruginous, the former barred and dotted, and the latter undulated with brown; above the thighs on each side a white spot; under and upper tail coverts black; under wing coverts white; top of the head and back of the neck darkest; bill black; legs orange.

Fem.: brown, with the tip of each feather lighter; below lightest; lesser coverts slightly inclining to blue; bill and legs horn colour in the dried specimen.

Young: male nearly intermediate between the two; bill black; legs orange.

| | |
|---|-------------------------------------|
| <i>Anas Rhynchotis</i> | <i>Lath. Ind. Orn. App.</i> 1. |
| <i>Rhynchaspis Rhynchotis</i> | <i>Steph. in Sh. Zool.</i> 12. 123. |
| <i>New Holland Shoveller</i> | <i>Lath. Gen. Syn. Sup.</i> 359. |

Inhabits New Holland, and appears to be identical with specimens received from South America.

The bird described by Latham under the name of *Anas Rhynchotis* is the young. It is possible also that the white markings mentioned as present in our specimens of the old male, behind the base of the bill and down the fore neck, are not constant, but merely appear during the moult.

RHYNCHASPIS MACULATUS.

Rhyn.—Precedenti similis, sed corpore flavescente-ferrugineo, nigris maculis rotundatis ornatis; capite simili, nigro sparso.

SPOTTED SHOVELLER.

Shoveller like the preceding, but with the body yellowish-ferruginous, adorned with rounded black spots; head the same, sprinkled with black.

| | | | |
|---------------------|-----------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 | <i>Tarsi</i> | 1 $\frac{1}{4}$ |
| <i>Bill</i> | 2 3-10ths | <i>Middle toe</i> | 2 1-10th |

We have considerable doubts as to the validity of this species. The marks of distinction between it and *R. Rhynchotis* are the following: the nail on the bill is broader, the flattened space between the nostrils and behind them is also broader; the whole body is of a lighter colour, and spotted in the centre of each feather with round dots; the white spot behind the thighs is similar, but the admeasurements slightly differ. We suspect that this bird will eventually turn out to be the female of *Rhynchotis*; and that the birds we have described as female and young of that bird will turn out to be both young males.

Rhynchaspis maculatus..... *Gould in Jard. and Selb. Illus. Orn. p. 147.*

Mr. Gould received his bird from South America; ours was received from New Holland.

RHYNCHASPIS CLYPEATA.

Rhyn. Mas.—Capite colloque viridibus; ptilis cæruleis.

Rhyn. Fem.—Brunnea, marginibus pennarum suturatoribus.

COMMON SHOVELLER.

Male shoveller, with the head and neck green; the wing coverts blue.

Fem. shoveller, brown, with the margins of the feathers lighter.

| | | | |
|---------------------|-----------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 | <i>Tarsi</i> | 1 $\frac{3}{8}$ |
| <i>Bill</i> | 2 $\frac{2}{3}$ | <i>Middle toe</i> | 2 |

Male: head and neck glossy metallic green; throat black; breast, smaller scapulars, and greater wing coverts white; larger scapulars and lesser wing coverts blue, the former with a light

stripe down the centre of each feather; speculum green; quills and tail brown; the outer tail feathers elongated, pointed; below chestnut; bill fuscous red.

Fem.: brown, having the edges of all the feathers lighter; wing as in the male.

| | |
|-------------------------------------|--|
| <i>Rhynchaspis clypeata</i> | <i>Steph. Sh. Zool.</i> 12, 115. |
| <i>Anas clypeata</i> | <i>Linn. Syst.</i> 1, 209, 19. <i>Gmel. Syst.</i> 1, 518. <i>Lath. Ind. Orn.</i> 2, 856. |
| <i>Spathulea clypeata</i> | <i>Flem. Brit. An.</i> 123. |
| <i>Anas platyrhynchos</i> | <i>Raii Syn.</i> 144, 13. |
| <i>Shoveller</i> | <i>Penn. Arct. Zool.</i> 2 N. 489. <i>Penn. Brit. Zool.</i> 2, 596. |
| <i>Red-breasted Shoveller</i> | <i>Penn. Brit. Zool.</i> 2, 597. |
| <i>Souchet ou le rouge</i> | <i>Buff. Ois.</i> 9, 191. |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab.</i> 13, fig. 4, 5. |

Was found in the Deccan by Col. Sykes: one specimen has been brought home by Dr. Smith from South Africa. Generally inhabits Asia, Europe, America, and North Africa; breeds in Holland, and has occasionally bred in Norfolk, laying twelve eggs; little, however, is known of its nidification.

Trachea with the tube of nearly equal size; the inferior larynx bulbous, bulb projecting both before and on the left side, anteriorly slightly acuminate; the bronchiæ far apart.

RHYNCHASPIS CAPENSIS.

Rhyn.—Brunneus; subtus singulis pennis lunulâ centrali, apiceque leviter ferrugineis.

CAPE SHOVELLER.

Brown shoveller; below with a lunule, and the tip of each feather light ferruginous.

| | | | |
|---------------------|------------------------------------|-------------------------|-----------------------------------|
| <i>Length</i> | ^{IN.} 22 $\frac{1}{2}$ | <i>Tarsi</i> | ^{IN.} 1 $\frac{1}{2}$ |
| <i>Bill</i> | 2 $\frac{3}{4}$ | <i>Middle toe</i> | 2 $\frac{1}{2}$ |

Head and neck light brown, minutely spotted with dark brown; crown and slightly elongated feathers on the occiput darker; below dark sepia brown, each feather having its tip and a transverse lunule in the centre light brownish buff; the back brown, slightly glossed with greenish; greater quills and tail deep brown, the latter edged with lighter; secondaries with the outer webs metallic green; tertiaries with the outer webs blue; lesser wing coverts azure, the greater ones white, forming a band of that colour across the wing; bill black; legs reddish orange.

Rhynchaspis Capensis..... *Smith, Cat. S. African Mus.*

We are indebted to Dr. Smith for allowing us to take the above description from the specimens exhibited in the South African museum, of which he intends shortly to publish drawings.

MALACORHYNCHUS MEMBRINACEUS.

Mal. Mas.—Cinereus, maculá caryophyllacá post oculari.

Mal. Fem.—Mare similis, sed macula post ocularis caret.

MEMBRINACEOUS DUCK.

Male, ashy, with the side of the bill towards the tip membrinaceous; a pink spot behind the eye.

Fem. similar, but without the pink spot behind the eye.

| | | | | | |
|-------------------------|-----|-----------------------|-----|------------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 16½ | <i>Bill</i> | 2½ | <i>Tarsi</i> | 1½ |

Male: grey, transversely striped with brownish black; stripes broadest on the flanks; neck brown; a stripe round the eye and down the back of the neck dark brown; a little behind the eye a bright pink spot; back brown, transversely irrorated with lighter; rump black; tail coverts white; tail brown; under tail coverts fawn colour; quills dark brown; coverts light brown, except the tip of the primary coverts, which are white, forming a white wing spot; bill and legs brown, the former largely lobated.

Fem.: as above.

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|---|-------------------------------------|
| <i>Anas malacorhynchus</i> | <i>Gmel. Syst.</i> 1. 526. |
| | <i>Lath. Ind. Orn.</i> 2. 862. |
| <i>Anas membrinacca</i> | <i>Lath. Ind. Orn. App.</i> 11. |
| <i>Anas fuscata</i> | <i>Shaw N. Mis.</i> 17 pl. 697. |
| <i>Soft-billed Duck</i> | <i>Lath. Gen. Syn.</i> 6. 522. |
| <i>New Holland Duck</i> | <i>Lath Gen. Syn. Sup.</i> 11. 359. |
| <i>Rhynchaspis malacorhynchus</i> | <i>Steph. Sh. Zool.</i> 12. 123. |
| ————— <i>membrinacca</i> | <i>Steph Sh. Zool.</i> 12. 124. |

Inhabits New South Wales.

KTINORHYNCHUS STREPERA.

Kti. Mas.—Cinereus et albus; speculo atro; tectricibus castaneis.

Kti. Fem.—Brunnea, marginibus pennarum suturatoribus.

GADWALL.

Male, grey and white; speculum velvet black; primary coverts chesnut.

Fem. brown, with the margins of the feathers lighter.

| | | | | | |
|-------------------------|-----|-----------------------|----------------|------------------------|----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 21 | <i>Bill</i> | $1\frac{3}{4}$ | <i>Tarsi</i> | $1\frac{1}{2}$ |

Male: head and neck brownish, marked with dots of grey brown; upper part of the breast and lower part of the neck grey brown, each feather marked with a lunule of white; back the same, thickly barred with white; tertiaries grey, the edges light; speculum black, anterior to which there is a reddish chesnut patch formed by the greater primary coverts, posteriorly one of white; lower part and under tail coverts black; quills and tail grey; bill black; legs fuscous.

Fem.: with the speculum as in the male; remainder of the plumage as in the female of the common wild duck.

| | |
|---|--|
| <i>Chauliodus strepera</i> | <i>Gould, European Birds.</i> |
| <i>Anas strepera</i> | <i>Linn. Syst.</i> 1. 200. |
| | <i>Gmel. Syst.</i> 1. 520. |
| | <i>Lath. Ind. Orn.</i> 2. 859. |
| <i>Ktinorhynchus strepera</i> | <i>Nobis.</i> (See preface.) |
| <i>Gadwall</i> | <i>Penn. Arct. Zool.</i> 2. 575. |
| <i>Chipeau</i> | <i>Buff. Ois.</i> 9. 187, pl. 12. |
| <i>Trachea</i> | <i>Linn. Trans.</i> vol. 4, tab. 13, fig. 8. |

A very widely distributed species. We have received specimens from India, Africa, and America. It is also enumerated in the British lists, and is not uncommon in Holland, where it breeds in marshes among rushes, laying eight or nine ashy green eggs.

Tube of the trachea enlarged about one-third of its whole length from the lower extremity, and again contracted above the inferior larynx. Inferior larynx with a projection on the left side and before; anteriorly very slightly acuminate.

ANAS PÆCILORHYNCHA.

Anas.—Brunnea, marginibus pennarum suturioribus; rostro culmine ad basin et apice aurantiacis.

SPOTTED-BILLED DUCK.

Brown duck, with the edges of the feathers lighter; bill with the culmen at the base and tip orange.

| | | | | | |
|-------------------------|----------------------|-----------------------|-----------------------------------|------------------------|---------------------|
| <i>Length</i> | ^{IN.} 25 | <i>Bill</i> | ^{IN.} 2 $\frac{1}{4}$ | <i>Tarsi</i> | ^{IN.} 2 |
|-------------------------|----------------------|-----------------------|-----------------------------------|------------------------|---------------------|

Slaty brown, with the feathers on the breast, belly, and lower part of the neck broadly edged with yellowish white, those on the back narrowly so; crown as far as the eyes umber brown; neck white, with the centre of each feather dashed with brown; wing spot metallic green, bordered with velvet black, anterior to which there is a white stripe; exterior webs with some of the tertiaries white; bill black, with the tip for about a quarter of an inch and the upper part of the base orange; legs orange.

| | |
|---------------------------------------|----------------------------------|
| <i>Anas pæcilorhyncha</i> | <i>Gmel. Syst. Nat.</i> 1. 535. |
| | <i>Lath. Ind. Orn.</i> 2. 850. |
| | <i>Gray, Ind. Zool.</i> |
| <i>Mareca pæcilorhyncha</i> | <i>Steph. Sh. Zool.</i> 12. 134. |
| <i>Spotted-billed Duck</i> | <i>Lath. Gen. Syn.</i> 6. 487. |

Common in the East Indies and Ceylon.

ANAS SPECULARIS.

An.—Brunnea, maculâ magnâ et ovali utrinque ante oculos; rostro colloque superiore singulis albis.

BRONZE-WINGED DUCK.

Brown duck, with a large oval spot before the eyes; bill and the upper part of the neck surrounded by a collar of white.

| | | | |
|-------------------------|------------------------------------|-----------------------------|---------------------------------|
| <i>Length</i> | ^{IN.} 25 $\frac{1}{2}$ | <i>Inner toe</i> | ^{IN.} $\frac{7}{8}$ |
| <i>Bill</i> | 1 $\frac{7}{8}$ | <i>Middle toe</i> | 2 $\frac{1}{2}$ |
| <i>Tarsi</i> | 1 $\frac{7}{8}$ | <i>Outer toe</i> | 2 $\frac{1}{8}$ |

Head and neck umber brown, with a large oval spot of white between the eye and bill, placed

ANAS OBSCURA.

An.—Brunnea, speculo violaceo atro marginato.

DUSKY DUCK.

Brown duck, with the speculum violet margined with black.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 24 | <i>Tarsi</i> | $1\frac{3}{4}$ |
| <i>Bill</i> | $2\frac{1}{8}$ | <i>Middle toe</i> | $2\frac{1}{2}$ |

Male: crown, lower part of the neck, body, tail, and wings, entirely of a deep dusky brown, each feather edged with lighter; throat, cheeks, and upper part of the neck light brown, each feather having on its shaft a dark brown streak; speculum deep glossy violet margined with black; bill greenish, and formed similar to that of the mallard; legs and feet dusky yellow.

Female similar.

| | |
|---------------------------|--|
| <i>Anas obscura</i> | <i>Gmel. Syst. Nat.</i> 1. 541. |
| | <i>Lath. Ind. Orn.</i> 2. 871. |
| <i>Dusky Duck</i> | <i>Lath. Gen. Syn.</i> 6. 545. |
| | <i>Wils. Am. Orn.</i> 8. p. 141. pl. 1—11. |
| | <i>Penn. Arct. Zool.</i> N. 496. |

Inhabits America; occurs chiefly on the coasts of Florida, New England, and New Jersey, where it breeds in sequestered places on the marshes, laying eight or ten eggs similar to those of *A. Boschas*.

ANAS BOSCHAS.

An. Mas.—Capite colloque superiore viridibus; singulo collari albo.

An. Fem.—Brunnea, marginibus pennarum suturatioibus; speculo viridi.

WILD DUCK.

Male duck, with the head and upper part of the neck green; collar white.

Fem. brown duck, with the margins lighter; speculum green.

| | | | | | |
|---------------------|-----|-------------------|----------------|--------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 24 | <i>Bill</i> | $2\frac{1}{4}$ | <i>Tarsi</i> | 2 |

Male: head and upper part of the neck metallic green, below which is a white collar; breast vinaceous; back brown; scapulars and flanks white, undulated with black; speculum metallic

green, margined anteriorly and posteriorly with white; quills, rump, and tail coverts brown, in some lights greenish, middle tail feathers curling upwards; tail grey-white; bill yellow; legs orange.

Fem.: brown, with the edge of the feathers lighter; speculum similar to that of the male.

Var. A. *Anas adunca* (Linn.) — Hook-billed Duck.

This variety has the bill turned downwards.

Var. B. Penguin Duck.

The peculiar upright position of this variety when at rest and standing distinguishes it.

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|--------------------------------|---|
| <i>Anas Boschas</i> | <i>Linn. Syst.</i> 1. 205. |
| | <i>Gmel. Syst.</i> 1. 538. |
| | <i>Lath. Ind. Orn.</i> 2. 850. |
| <i>Wild Duck</i> | <i>Penn. Arct. Zool.</i> 2. 494. |
| <i>Le canard sauvage</i> | <i>Buff. Ois.</i> 9. 115. |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab. 12, fig. 10.</i> |

Inhabits universally the temperate regions of the northern hemisphere, and does not appear to be subject to any considerable migration; breeds commonly in all marshy districts, laying from ten to fifteen eggs of a greenish colour.

The trachea is of nearly equal diameter throughout; the inferior larynx is furnished on the left side with an osseous bulb; anteriorly slightly acuminate.

ANAS FLAVIROSTRIS.

An.—Cinereo-brunneo, rostro flavo, naribus maculá atrá cingentibus.

YELLOW-BILLED DUCK.

Cinereous-brown duck, with a yellow bill, and the nostrils surrounded by a black patch.

| | | | |
|---------------------|------------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 22 $\frac{1}{2}$ | <i>Tarsi</i> | 2 |
| <i>Bill</i> | 2 $\frac{1}{4}$ | <i>Middle toe</i> | 2 $\frac{1}{4}$ |

Slaty-brown duck, above with the edges of the feathers narrowly margined with lighter, below broadly; wing spot brassy green, surrounded anteriorly and posteriorly with a narrow streak of black, superiorly with one of the same colour, formed by the outer webs of the tertiaries, beyond the black streak posteriorly and anteriorly a narrow one of white; tail feathers pointed, slightly edged with light brown; bill yellow, with a black patch covering the nostrils; nail black; legs and feet brownish lead colour.

Anas flavirostris

Smith, Cat. S. Afric. Mus.

This new species is an inhabitant of the neighbourhood of the Cape of Good Hope. Specimens are in the South African Museum, and in the collection of the Zoological Society.

ANAS SPARSA.

An.—Brunnea, scapularibus remigibusque interioribus tribus vel duobus transversis et fasciis ferrugineis ornatis.

SPECKLED DUCK.

Brown duck, with the scapulars and tertiaries banded with three or four transverse fasciæ.

| | | | |
|---------------------|-----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | $23\frac{1}{2}$ | <i>Tarsi</i> | 2 |
| <i>Bill</i> | $1\frac{3}{4}$ | <i>Middle toe</i> | $2\frac{1}{2}$ |

Deep sepia brown duck, with the fore part of the neck and throat lighter, but thickly and minutely spotted with deep brown; scapulars and upper tertiaries each with one, two, or three bands of buff, on the former interrupted by the shaft and a small space on each side, which are of the same colour as the greater portion of the plumage, and on the latter merely extending over the outer webs; wing spot bright metallic green, bounded posteriorly and anteriorly first with a band of black, then with one of white; tail and tail coverts marked as the scapulars, but more obscurely; bill lead coloured; legs and feet orange, with the webs dusky.

Anas sparsa..... *Smith, Cat. S. Afric. Mus.*

Inhabits Southern Africa, and was brought to England by Dr. A. Smith, to whom we are indebted for permission to take the above description.

CARINA MOSCHATA.

Car.—Niger, ptilis albis.

MUSK DUCK.

Black, with the coverts white.

| | | | | | |
|---------------------|-----------------|-------------------|----------------|--------------------|----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | $32\frac{1}{2}$ | <i>Bill</i> | $2\frac{5}{8}$ | <i>Tarsi</i> | $2\frac{1}{2}$ |

Glossy black, with the wing coverts white; the bill in the male carunculated, less so in the female; legs black; caruncle red. In a domesticated state a greater or less quantity of white feathers make their appearance.

| | |
|---|---|
| <i>Anas moschata</i> | <i>Linn. Syst.</i> 1. 199. |
| | <i>Gmel. Syst. Nat.</i> 1. 515. |
| <i>Anas Sylvestris Braziliensis</i> | <i>Raii Syn.</i> 148, 150. |
| <i>Carina Sylvestris</i> | <i>Steph. Sh. Zool.</i> 12. 78. |
| <i>Trachea</i> | <i>Linn. Trans.</i> vol. 4, tab. 14, fig. 1—2, and tab. 16, fig. 56; vol. 15, tab. 15, fig. a. |

Supposed to have been originally natives of South America, but have now been domesticated in many parts of the world. In the tame varieties many of the feathers are white.

The tube of the trachea is of nearly equal size throughout; the inferior larynx is furnished on the left side with a compressed osseous bulb.

MICROPTERUS PATACHONICUS.

Mic.—Cinereus; subtus et macula post oculari albis

PATAGONIAN MICROPTERUS.

Cinereous micropterus; below and with a patch behind the eye white.

| | | | |
|---------------------|-----------------|------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 24 | <i>Inner toe</i> | 2 $\frac{1}{2}$ |
| <i>Bill</i> | 2 | <i>Outer toe</i> | 3 $\frac{1}{2}$ |
| <i>Tarsi</i> | 2 $\frac{3}{8}$ | <i>Hind toe</i> | 1 |

Dark grey, with the edges of the feathers on the flanks, head, back, wing coverts, and breast light chocolate; lower part of the breast, belly, abdomen, under tail coverts, and secondaries white; secondary coverts longer than the primary quills; tail long, with the feathers rather stiff; bill dusky green; legs and toes orange; thighs and a small triangular mark behind the eye white.

Micropterus Patachonicus, King

Proc. Zool. Soc. 1830, p. 15.

In the museum of the Zoological Society, brought by Capt. James from Pricket's Harbour.

MICROPTERUS BRACHYPTERUS.

Mic.—Cinereus, subtus albus; maculâ ferrugineâ gutture.

SHORT-WINGED MICROPTERUS.

Grey micropterus, with the belly white; a ferruginous patch on the throat.

| | | | | | |
|-------------------------|-----|-----------------------|-----|------------------------|-----|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 27 | <i>Bill</i> | 2 | <i>Tarsi</i> | 2½ |

Grey, with the head and neck lighter; a ferruginous tinge on the throat; belly and wing spot white; legs and bill orange; nail black.

Anas brachyptera *Lath. Syn.* 6. 439.

Voyage autour du monde Frey, p. 39.

Oiseaux grises, ou ois. de plein *Pernet Voy.* II. ch. xix. p. 21.

The specimen from which the above description was taken is in the museum of the Zoological Society, and was obtained from the Straits of Magellan; they also inhabit the Falkland and Staaten Islands. We have considerable doubts as to the propriety of making this and the preceding distinct species. Both are destitute of the powers of flight, merely using their wings to flapper over the surface of the sea. They are also bad divers, obtaining their living almost entirely by breaking shell-fish along the water-mark: hence the head is so strong, that Mr. Darwin informs us he had great difficulty in breaking one with his zoological hammer.

The tube of the trachea much resembles that of a true pochard; the inferior larynx approaches, however, nearer to that of those geese which have bulbs on that part than to any other form with which we are acquainted; consequently also to the wading ducks, from which it may be distinguished by being much stronger.

MELANITTA AMERICANA.

Mel. Mas.—Sequenti similis, sed tuberculâ ad basim rostri aurantiacâ.

AMERICAN SCOTER.

Male, duck similar to the following, but with the tubercle at the base of the bill entirely orange.

| | | | |
|-------------------------|-----|-----------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Middle toe</i> | 3 |
| <i>Bill</i> | 1¾ | <i>Outer toe</i> | 2¾ |
| <i>Tarsi</i> | 2¾ | <i>Inner toe</i> | 2¾ |

continent; breeds, like its congeners, on the coast in northern latitudes, making its nest near the water mark of grass, sea weed, and other rubbish, and near the time of hatching lines its nest with down from the body; lays from six to ten white eggs.

The trachea is very dissimilar from that of the two following species, having no bulb below the glottis, and the tube only enlarged to about twice its usual diameter in place of the inferior bulb; the inferior larynx is similar to that of its congeners. The trachea of the female is similar to that of the male, but not quite so much enlarged; both sexes have the bronchiæ large, and the tube acted upon by two pair of muscles, situated as in the velvet scoter.

MELANITTA PERSPICILLATA.

Mel. Mas.—Rostro aurantiaco, maculâ quadrangulari utrinque baso atro; speculo nullo.
Mel. Fem.—Brunnea, maculâ cinereâ utrinque ad basin rostri.

SURF DUCK.

Male scoter, with the bill orange, a quadrangular patch on each side of the bill at the base; no speculum.

Fem.: brown duck, with a cinereous patch on each side at the base of the bill.

| | | | |
|-------------------------|-----|-----------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Inner toe</i> | 2 |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 2½ |
| <i>Tarsi</i> | 1¾ | <i>Outer toe</i> | 2½ |

Male: bill orange, with a four-cornered diamond-shaped patch of black on each side at the base of the upper mandible; bill (raised at the base) short and thick; plumage in general dead black, slightly glossed on the sides of the neck, with a patch of white on the occiput, and another elongated one down the back of the neck; legs and toes orange, the webs dusky.

Fem.: dusky brown, lighter on the neck and belly; the raised portion of the bill not so prominent as in the male; an obscure patch behind the base of the bill on each side, and another elongated one between it and the occiput.

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| <i>Anas perspicillata</i> | <i>Linn. Syst.</i> 1. 261. |
| | <i>Gmel. Syst.</i> 1. 524. |
| <i>Oidemia perspicillata</i> | <i>Steph. Sh. Zool.</i> 12. 219. |
| | <i>Eyton, Hist. R. Brit. Birds,</i> 81. |
| <i>Black or Surf Duck</i> | <i>Wils. Am. Orn.</i> viii. p. 49. pl. 67. |
| <i>Black Duck</i> | <i>Edw. Glea.</i> p. 155. |
| <i>Macreuse a large bec Marchand</i> | <i>Buff. Ois.</i> 9. 244. |
| <i>Canard Marchand</i> | <i>Temm. Man.</i> 2. 853. |

Common in America along the coast, from the river St. Lawrence to Florida, and has also been occasionally met with in the Orkney and Shetland Isles; it almost exclusively inhabits the sea. The female of this species may be distinguished from that of *O. nigra*, which it somewhat resembles, by the superior length of the bill, and by the grey marking on the cheeks behind the eye, that colour in the above-mentioned bird being confined entirely to the throat. The following is Wilson's description of the trachea and anatomy of the bird: "On dissection the gullet was found to be gradually enlarged to the gizzard, which was altogether filled with broken shell-fish. There is a similar hard expansion at the commencement of the wind pipe, and another much larger about three quarters of an inch above, where it separates into the two lobes of the lungs; this last was larger than a Spanish hazel nut, flat on one side and convex on the other; the protuberance on each side of the bill communicated with the nostrils, and was hollow." This description agrees with that of the rest of the genus in general character.

MELANITTA FUSCA.

Mel.—Ater, speculo et maculá lunatá suboculari albis.

VELVET DUCK.

Black duck, with the speculum and a lunate mark under the eye white.

| | | | |
|---------------------|----------------------|-------------------------|----------------------------------|
| <i>Length</i> | ^{IN.} 20 | <i>Tarsi</i> | ^{IN.} $1\frac{3}{4}$ |
| <i>Bill</i> | $1\frac{7}{8}$ | <i>Middle toe</i> | $1\frac{3}{8}$ |

Male: entirely deep velvet black, with a lunate spot and a mark under the eye white; bill and legs orange, the former with a tubercle at the base; a space before it and the margins black; webs black.

Fem.: has the plumage above sooty black, below dirty grey; the tubercle at the base of the bill smaller than in the male.

Young similar to the female.

| | |
|---------------------------------------|---|
| <i>Melanitta fusca</i> | <i>Boie in Brehm. Hand. der Nat. aller, Vo. Deut.</i> 905. |
| <i>Anas fusca</i> | <i>Linn. Syst.</i> 1. 196. <i>Gmel. Syst.</i> 1. 507. <i>Lath. Ind. Orn.</i> 2. 848. |
| <i>Oidemia fusca</i> | <i>Flem. Brit. An.</i> 119. <i>Steph. Sh. Zool.</i> 12. 216. |
| <i>Velvet Duck</i> | <i>Penn. Arct. Zool.</i> 2. 272, pl. 196. |
| <i>Grand ou double macreuse</i> | <i>Buff. Ois.</i> 9. 242. |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab. 15, fig. 3, 4, 5, 6, 7;</i> <i>and vol. 16, tab. 21, fig. 2, 3.</i> |

Inhabits the arctic regions, migrating southwards in the winter, like several of the other known species of the genus, on both the American and European continents; breeds in the neighbourhood of Hudson's Bay, on the borders of fresh water lakes, laying eight or ten white eggs. On the commencement of incubation the males, like those of the eider, form themselves in large flocks and desert the females.

The trachea of this species is very curious: it has two bulbs on the tube, the lower one composed of tracheal rings firmly ossified together; the upper one, situated immediately below the glottis, instead of being composed like the lower one of tracheal rings, is separate from the trachea, which passes through it, communicating with it by an orifice on each side. The inferior larynx, unlike the diving ducks in general, is not bulbous; the trachea is acted upon by two pairs of muscles, the first the usual sterno-tracheal ones, the other (furculo-tracheal) have their attachment a little before the middle bulb. For a figure of this see Vol. 15, Part 21, of the "Linnæan Transactions," illustrative of a passage by Mr. Yarrell on the organs of voice in birds, and our own plate.

SOMATERIA SPECTABILIS.

Som. Mas.—Capite supra et occipite cinereis; genis viridibus; rostrum tuberculâ magnâ basali.

Som. Fem.—Sequenti similis, sed tuberculâ minore basali.

KING DUCK.

Male eider, with the head above and occiput cinereous; the cheeks green; the bill with a large tubercle at the base.

Fem. eider, like the following species, but with a smaller tubercle at the base of the bill.

| | | | |
|-------------------------|------------------|-----------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 24 $\frac{1}{2}$ | <i>Inner toe</i> | 1 $\frac{7}{8}$ |
| <i>Bill</i> | 1 1-6th | <i>Middle toe</i> | 2 $\frac{5}{8}$ |
| <i>Tarsi</i> | 1 5-6ths | <i>Outer toe</i> | 2 $\frac{5}{8}$ |

Male: with the crown and occiput light cinereous grey; cheeks light green; round the base of the bill a band, and on the chin a V shaped mark black; remainder of the neck, breast, and upper part of the back white, slightly tinged with purplish; lower part of the back, tail quills, tertiaries, scapulars, and under parts black; tail and greater wing coverts white; bill and legs red, the former with a large knob at the base, the top of which is covered with feathers.

Fem.: in colour resembling the female of the common eider; but can be distinguished by the knob at the base of the bill being larger.

| | |
|-------------------------------------|---|
| <i>Somateria spectabilis</i> | <i>Steph. Sh. Zool.</i> 12. 229. |
| <i>Anas spectabilis</i> | <i>Linn. Syst.</i> 1. 195. |
| | <i>Gmel. Syst.</i> 1. 907. |
| | <i>Lath. Ind. Orn.</i> 2. 845. |
| <i>Grey-headed Duck</i> | <i>Edw. Glea. pl.</i> 154. |
| <i>Anas freti Hudsonis</i> | <i>Briss. Orn.</i> 365. |
| <i>King Duck</i> | <i>Penn. Arct. Zool.</i> 2 N. 481. |
| <i>Le Canard a tete grise</i> | <i>Buff. Ois.</i> 9. 258. |
| <i>Trachea</i> | <i>Linn. Trans. col.</i> 15, <i>tab.</i> 15, c—d. |

Inhabits the same countries as the preceding; builds its nest on rocks and islands on the sea coast, formed of sea weed, laying five or six eggs scarcely to be distinguished from the preceding. By the Greenlanders this bird is considered a delicacy, particularly the knob at the base of the bill.

The trachea is not dissimilar in form from that of the common eider, but the enlargement at the inferior larynx is smaller. We much regret we have been unable to obtain one for dissection.

SOMATERIA ST. CUTHBERTI.

Som. Mas.—Capite supra occipiteque viridibus.

Som. Fem.—Brunnea, transversim lineata atro.

COMMON EIDER DUCK,

Male eider, with the head above and occiput green.

Fem. brown eider, transversely lineated with black.

| | | | |
|---------------------|---------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 24 | <i>Inner toe</i> | 2 $\frac{1}{8}$ |
| <i>Bill</i> | 2 1-6th | <i>Outer toe</i> | 2 $\frac{7}{8}$ |
| <i>Tarsi</i> | 2 | <i>Middle toe</i> | 2 $\frac{7}{8}$ |

Male: crown and occiput green; back, wing coverts, and remainder of the head and neck white, with a yellowish tinge; quills and tail grey below, with the secondaries and rump black; bill and legs black.

Fem.: light brown on the breast; a lunule of black on each feather near the tip dark brown, with the edges of the feathers lighter; belly obscure; lesser coverts, the back, tail, secondaries, and greater wing coverts grey brown; primaries dark brown, with the edges light grey brown; bill and legs black.

| | |
|---|------------------------------------|
| <i>Somateria mollissima</i> | <i>Steph. Sh. Zool.</i> 12. 224. |
| <i>Anas mollissima</i> | <i>Linn. Syst.</i> 1. 178. |
| | <i>Gmel. Syst.</i> 1. 511. |
| <i>Anas St. Cuthberti</i> | <i>Raii Syn.</i> 14. 1. |
| <i>Eider—St. Cuthbert's Eider</i> | <i>Penn. Arct. Zool.</i> 2 N. 480. |

- Oie a duret ou Eider*..... Buff. 9. 103, t. 6.
L'Eider *Vcill. En. Method. Orn.* 30. 119.
Trachea *Lin. Trans. vol. 12, tab. 30, fig. 1.*

Like its congener, an arctic species, seldom seen south of the 55th degree N. L. but in the parts within that on all three continents and the adjacent islands, where it breeds, building its nest of sea weeds, and laying four eggs of a greenish colour. The trachea of the male has the tube of nearly equal diameter throughout; the inferior larynx swells outwards in front, and has on the left side a small bulb; the left bronchia is the largest, and is dilated in the centre.

POLYSTICTA STELLERI.

- Poly. Mas.*—Albus, fronte occipiteque viridibus; collum cingulo atro.
Poly. Fem.—Ferruginea, atro et obscuro maculato, duabus maculis albis tectricibus.

WESTERN DUCK.

Male, white duck, with the forehead and occiput green, neck with a black collar.

Fem.: ferruginous duck, marked with black and dusky; with two white spots on the wing coverts.

Length 17 inches.

Male: chin, throat, fore part of the neck, and collar black; a black stripe extends from the collar down the neck to the back, which is also black; head sides and the upper part of the neck to the collar white; forehead and nape greenish; a black irregular patch behind the eyes, with a narrow band proceeding from it, and surrounding the orbits; breast and sides light ferruginous; vent and tail black, with the edges of the feathers lighter; a humeral spot black; quills dark brown; tertiaries (very long) black edged with light brown.

Fem.: ferruginous, marbled with dark and black, with two white spots upon the wing coverts, the feathers of which are straight and blackish. (*Nuttall.*)

- Anas dispar* *Gmel. Syst.* 1. 535.
Anas Stelleri..... *Gmel. Syst.* 1. 518.
Pull. Spic. Zool. v. p. 35, tab. 5.
Polysticta Stelleri *Eyton, Hist. R. Brit. Birds,* 79.
Macropus Stelleri *Nuttall, Orn.* 2. 451.
Fuligula Stelleri..... *Bonap. Syn.* 344.

First discovered by Steller in Kamschatka, and do not appear to stray far from their native place. A pair were shot in Oster Gothland, in Sweden, and are figured by Sparman. Another was killed in the British isles. Nothing is known of the anatomy of this beautiful species.

KAMPTORHYNCHUS LABRADORUS.

Kamp. Mas.—Dorso, primariis, collo, fasciâ occipitali, subtusque, atris.

Kamp. Fem.—Capite, mento, colloque cinereo; dorso alisque obscuris.

PIED DUCK.

Male duck, with the back, primaries, neck, occipital fascia, and below, black.

Fem. duck, with the head, chin, and neck cinereous; the back and wing dark,

| | | | |
|---------------------|-----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | $21\frac{1}{2}$ | <i>Outer toe</i> | $2\frac{3}{5}$ |
| <i>Bill</i> | $1\frac{5}{8}$ | <i>Middle toe</i> | $2\frac{1}{2}$ |
| <i>Tarsi</i> | $1\frac{1}{2}$ | <i>Inner toe</i> | 2 |

Male: head, neck, breast, scapulars, wing coverts, and secondaries white; crown, a collar round the neck, belly, back, quills, and a streak on the occiput, black.

Fem.: about one inch shorter than the male; head, chin, and neck ashy grey; back and wings brownish slate colour; below ashy; legs in both sexes deep brown, with the legs black; bill black, with the base and edges of the mandibles orange.

| | |
|-----------------------------------|--|
| <i>Fuligula Labrador</i> | <i>Bonap. Syn.</i> 337. |
| <i>Anas Labrador</i> | <i>Wils. Am. Orn. pl.</i> 69, <i>fig.</i> 6. |
| <i>Rhynchaspis Labrador</i> | <i>Steph. Sh. Zool.</i> 12. 121. |
| <i>Pied Duck</i> | <i>Penn. Arct. Zool.</i> 2. 282. |
| | <i>Lath. Gen. Syn.</i> iii. p. 497. |

Found most plentifully on the western side of the American continent, but occasionally also on the eastern. Nothing is known of its nidification.

Wilson gives the following description of the trachea: "The windpipe of the male measures ten inches in length, and has four enlargements, viz. one immediately below the mouth at the interval of an inch; it then bends largely down to the breast bone, to which it adheres by two strong muscles, and has at that place a third expansion; it then becomes flattened, and before it separates into the lungs has a fourth enlargement much greater than the former, which is bony and round, puffing out from the left side. The bill of this species differs much in form from any in the family, being broad and thin at the tip, and having the lamellæ more elongated.

CALLICHEN CARYOPHYLLACEUM.

Cal.—Fuscum, capite colloque caryophyllaceis.

PINK-HEADED POCHARD.

Fuscous pochard, with the head and neck pink.

| | | | |
|-------------------------|-----|-----------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 21 | <i>Bill</i> | 2½ |

Head and neck bright pink, the latter with a black streak down the back; lower part of the neck, flanks, back, and abdomen umber brown; speculum ferruginous; bill orange; legs lead coloured.

Anas caryophyllacea *Lath. Ind. Orn.* 2. 866.

Pink-headed Duck *Lath. Syn. Sup.* 1. 276.

Fuligula caryophyllacea *Steph. Sh. Zool.* 12. 207.

Inhabits several parts of India. Few specimens have been brought to this country: we only know of two at present existing; one is in our collection, the other in the British Museum; both were purchased at the sale of the late Col. Cobbe's collection.

CALLICHEN RUFINUM.

Cal. Mas.—Capite cristato, colloque anteriore castaneis; subtus obscurus, lateribus albis.

Cal. Fem.—Brunnea-cinerea, occipite obscuro.

RED-CRESTED POCHARD.

Male duck, with the head crested, and, together with the anterior part of the neck, chesnut; below obscure, with the flanks white.

Fem. cinereous brown duck, with the occiput dark.

| | | | |
|-------------------------|-----|-----------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 21 | <i>Outer toe</i> | 2½ |
| <i>Bill</i> | 2½ | <i>Middle toe</i> | 2½ |
| <i>Tarsi</i> | 1¾ | <i>Inner toe</i> | 1¾ |

Male: head and upper part of the neck chesnut, the former crested; lower part of the neck, breast, and belly dirty brownish black; sometimes with a few of the feathers slightly tipped with

white; back light brown; shoulders and a large spot on the flanks white; tail feathers and quills cinereous; rump black; bill red, with the nail whitish horn colour; legs and toes red; webs black.

Fem.: slightly smaller than the male; light cinereous brown, with the crown darker; the throat and sides of the neck dark cinereous; bill and legs reddish brown.

| | |
|-------------------------------------|---|
| <i>Callichen rufinus</i> | <i>Brehm. Hand. der. Nat. aller, Vo. Deut. 924.</i> |
| <i>Anas rufina</i> | <i>Gmel. Syst. 1. 541.</i> |
| | <i>Lath. Ind. Orn. 2. 870.</i> |
| <i>Anas capite rufo major</i> | <i>Raii Syn. 140.</i> |
| <i>Canard siffleur, Huppe</i> | <i>Buff. Ois. 9. 282.</i> |
| | <i>Temm. Mun. 2. 864.</i> |
| <i>Red-crested Pochard</i> | <i>Lath. Gen. Syn. 6. 554.</i> |
| <i>Mergoides rufina</i> | <i>Eyton, Hist. R. Brit. Birds, 77.</i> |
| <i>Trachea</i> | <i>Linn. Trans. Vol. 15, tab. 15, fig. 2.</i> |

Inhabits the eastern portions of the north of Europe, and migrates to the Caspian Sea, to Hungary, Austria, and Turkey, and the great lakes of Switzerland; never found on the sea. Such is the account Temminck gives of the bird before us; and we are not aware that any thing besides is known concerning it, either as regards its breeding places or nest. Col. Sykes says it is rare in the Deccan.

The trachea of this species has the inferior larynx similar to that of the true pochards; the tube, however, differs much, having two flattened bulbs as in the *Merganser*; the inferior one is placed nearer to the inferior larynx than in the genus *Mergus*.

FULIGULA VALISNERIA.

Fu. Mas.—Dorso albo atro undulato; collo castaneo; capistroque atro.

Fu. Fem.—Capite, collo, pectoreque obscuris; subtus alba.

CANVAS-BACKED POCHARD.

Male pochard, with the back white, barred with black; neck chesnut; collar black.

Fem. pochard, with the head, neck, and breast obscure; below white.

| | | | |
|---------------------|-------------------|-------------------------|--------------------------------|
| <i>Length</i> | ^{IN.} 24 | <i>Tarsi</i> | ^{IN.} 1 $\frac{5}{8}$ |
| <i>Bill</i> | 2 $\frac{3}{4}$ | <i>Middle toe</i> | ♂ 1-5th |

Male: a band round the base of the bill; top of the head, lower part of the neck and throat, rump, and tail coverts, black; head and neck reddish chesnut; back, scapulars, wing coverts, tip of the secondaries, and flanks white, barred with narrow bands of black and brown; primaries brown, darkest at their tips; belly white; bill and legs blackish brown.

Fem. somewhat smaller than the male; brown, with the sides of the head, neck, and breast ferruginous; scapulars and under plumage edged with the same; back and coverts brown, undulated with dirty white.

Anas valisneria..... *Wils.* 8. 103. *pl.* 70, *f.* 5.
Fuligula valisneria *Bonap. Syn. N.* 338.
Fawn. Bo. Am. 2 p. 451.
Steph. Sh. Zool. p. 196.

According to Dr. Richardson, this bird breeds in the fur countries from the 50th parallel to their most arctic limits. They arrive in the United States about the middle of October, frequenting the bay of Chesapeake, the sounds and bays of North Carolina, and the coast of Mexico. The canvas-backed duck may be distinguished from the following at once by its greater size and the superior length of the bill; it is said to be most delicious food. Of this, however, we have considerable doubts: none of the other species contained in this genus or even among the *Fuliginæ* are so.

FULIGULA FERINA.

Fu. Mas.—Capite, colloque, castaneis; nullo speculo.

Fu. Fem.—Brunnea; subtus alba.

RED-HEADED POCHARD.

Male pochard, with the head and neck chesnut; the speculum wanting.

Fem. brown: below white.

| | | | |
|---------------------|----------------------|-----------------------------|---------------------------|
| <i>Length</i> | ^{IN.} 19 | <i>Breadth of nail</i> | ^{IN.} 3-16ths |
| <i>Bill</i> | 1 $\frac{7}{8}$ | <i>Middle toe</i> | 2 $\frac{3}{4}$ |

Male: head and neck chesnut; breast, upper part of the back, and rump, black; remainder of the back, wing coverts, thighs, flanks, and scapulars, white undulated with black; quills and tail grey; bill and legs lead coloured, the former with the tip black.

Fem.: rather smaller than the male; head and neck reddish brown; below white; back similar to the male, but more obscure.

Young similar to the female.

| | |
|--|---|
| <i>Fuligula ferina</i> | <i>Steph. Sh. Zool.</i> 1. 193. |
| <i>Anas ferina</i> | <i>Linn. Syst.</i> 1. 203. |
| | <i>Gmel. Syst.</i> 1. 530. |
| | <i>Lath Ind. Orn.</i> 2. 862. |
| <i>Anas rufa</i> | <i>Gmel. Syst.</i> 515. |
| | <i>Lath. Ind. Orn.</i> 2. 863. |
| <i>Aythya ferina</i> | <i>Boie in Brehm. Hand. der Nat. aller, Vo.</i> |
| | <i>Deut.</i> 920. |
| <i>Nyroca ferina</i> | <i>Flem. Brit. An.</i> 121. |
| <i>Pochard or Red-headed Pochard</i> | <i>Penn. Arct. Zool.</i> 2. 491. |
| <i>Millouin</i> | <i>Buff. Ois.</i> 216. |
| <i>Le canard a cou roux</i> | <i>Veill. En. Meth. Orn.</i> 1. 132. |
| <i>Le millouin</i> | <i>Veill. En. Meth. Orn.</i> 1. 136. |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab. 14, fig. 3—4.</i> |

Common on the European and British coasts during winter. We have also received it from India. The sea appears to be its true habitation, but it is occasionally found frequenting fresh water, particularly in the breeding season, when it makes its nest on the borders of rivers, laying twelve eggs of a greenish white colour, and generally within the arctic circle.

The trachea of this and the two following species are so very similar that it can be only by a comparative description that we shall be able to make their distinctions understood. All have the tube of the trachea largest a little below the glottis; it is slightly contracted about one-third of its length from that part, again expanded, and again contracted immediately above the inferior larynx. The bulb in all is flattened, and mostly membranaceous, with merely just sufficient bone to stretch the membranes or tympanum. Two of the species, *F. cristata* and *F. ferina*, have a second swelling or small bulb entirely osseous on the right side, composed of enlarged rings of the lower part of the tube, through which the bronchia of that side passes; this bulb and the whole of the tracheal apparatus is smaller, as well as the tube shorter, in *F. cristata* than in *F. ferina*.

The trachea of *F. marilla* may be distinguished from the preceding by the inferior larynx being destitute of the bulb on the right side; in other respects it is similar.

FULIGULA AMERICANA.

Fu.—*Similis precedenti, sed rostrum ungue latiore.*

AMERICAN POCHARD.

Pochard like the preceding, but the bill with the nail broader.

| | | | |
|---------------------|------------------|-----------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 19 $\frac{1}{2}$ | <i>Breadth of nail</i> | $\frac{1}{4}$ |
| <i>Bill</i> | 1 $\frac{3}{4}$ | <i>Tarsi</i> | 1 $\frac{1}{2}$ |

| | |
|-------------------------------------|--|
| <i>White-faced Duck</i> | <i>Son. Brit. Mis. t. 62.</i> |
| <i>Le Milouian</i> | <i>Buff. Ois. 9. 221.</i> |
| | <i>Veill. En. Method. Orn. 1. 152.</i> |
| <i>Le canard a bec cercle</i> | <i>Veill. En. Method. Orn. 1. 144.</i> |
| <i>Trachea</i> | <i>Linn. Trans. vol. 4, tab. 14, fig. 5—6.</i> |

Met with in the same localities as *Fuligula ferina*, breeding near the arctic circle, and laying from five to eight greenish eggs.

FULIGULA AFFINIS.

Fu.—Precedenti similis, sed rostro brevior et ungue angustiore armato.

AMERICAN SCAUP.

Duck like the preceding, but with the bill shorter and armed with a narrower nail.

| | | | |
|---------------------|----------|---------------------------|---------|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Breadth of nail</i> .. | 1-5th |
| <i>Bill</i> | 1 3-5ths | <i>Tarsi</i> | 1 1-5th |

The above bird may be distinguished from the preceding in both sexes by the following comparative marks: total length less; bill shorter and not so broad; nail much narrower, and not so much rounded at its sides; tarsi shorter.

Scaup Duck of American authors.
Fuligula affinis nobis.

Inhabits North America.

This is another bird of which we have entertained considerable doubts as to the propriety of making into a species: the above distinctions, however, appear through all the specimens we have examined to be constant. It is a curious fact that most of the water ducks* (*Fuligulinae*) of North America and Europe should be all distinct, while those land ducks (*Anatinae*) and the mergansers (*Merginae*) should in a great measure be identical. We can only attribute it to their being endowed with a greater power of wing, and to the former (*Fuligulinae*) following the sea coast in their migrations, and probably performing it by shorter flights, consequently being less liable, if I may be allowed the expression, to lose their road.

It is, however, yet a question whether, if the theory we have advanced in the introductory chapter of this work prove true, they will not eventually take the rank of varieties.

* We have never examined the eiders of North America.

FULIGULA RUFITORQUES.

Fu. Mas.—Ater; subtus albus, lateribus cinereo undulatis; capistro castaneo.

Fu. Fem.—Brunnea, fronte subtusque albis.

RING-NECKED POCHARD.

Male, black duck; below white, the sides undulated with cinereous; collar chesnut.

Fem. brown duck, with the forehead and below white.

| | | | |
|---------------------|------------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 $\frac{1}{4}$ | <i>Inner toe</i> | 1 $\frac{3}{4}$ |
| <i>Bill</i> | 1 $\frac{7}{8}$ | <i>Outer toe</i> | 2 2-5ths |
| <i>Tarsi</i> | 1 $\frac{7}{8}$ | <i>Middle toe</i> | 2 3-10ths |

Male: head purplish black; back, neck, and breast purplish brown, glossed with green inflections; belly white; flanks mottled with black; tail grey brown; primary coverts light grey; bill and legs deep lead colour, the former crossed with a band of greenish behind the nail; the base also surrounded with a narrow band of the same colour; head slightly crested.

Fem.: upper plumage dark brown, edged on the top of the head, scapulars, and breast with chesnut; flanks chesnut; bill, throat, and belly greyish white, speckled with brown; vent dark brown.

Young similar to the female.

Fuligula rufitorques Bonap. Syn. p. 393, N. 341.

This species was found by Dr. Richardson in the fur countries during winter; they frequent the rivers and estuaries of North America.

The above bird appears to hold an intermediate station between *F. cristata* and *F. marilla*—the crest is smaller than in the former, and larger than in the latter. The female may be distinguished from the female of the latter by the greater extent of the triangular space at the upper part of the base of the bill, and from that of *Cristata* by its larger dimensions.

FULIGULA CRISTATA.

Fu. Mas.—Supra ater, capite cristato; subtus albus.

Fu. Fem.—Mare similis, sed minore cristâ.

TUFTED POCHARD.

Male pochard; above black, with the head crested; below white.

Female similar to the male, but with the crest smaller.

| | | | |
|-------------------------|----------------|-----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 13 | <i>Tarsi</i> | $1\frac{3}{8}$ |
| <i>Bill</i> | $2\frac{3}{8}$ | <i>Middle toe</i> | $2\frac{1}{4}$ |

Male: head and crest (which is long) black glossed with violet; back and upper part of the plumage glossy brown-black; the scapulars undulated with narrow bars of whitish; below, together with the speculum, white; bill lead-coloured, with the nail black; feet and legs black.

Fem.: similar to the male, but not so glossy, and with the crest smaller.

| | |
|------------------------------------|---|
| <i>Fuligula cristata</i> | <i>Steph. Sh. Zool.</i> 12. 190. |
| <i>Anas cristata</i> | <i>Raii Syn.</i> 142 <i>A.</i> |
| <i>Anas fuligula</i> | <i>Linn. Syst.</i> 1. 207. |
| | <i>Gmel. Syst.</i> 1. 542. |
| | <i>Lath. Ind. Orn.</i> 2. 869. |
| <i>Aythya cristata</i> | <i>Brehm. Hand. der. Nat. aller, Vo. Deut.</i> 916. |
| <i>Anas scandiaca</i> | <i>Gmel. Syst.</i> 1. 520. |
| | <i>Lath. Ind. Orn.</i> 2. 859. |
| <i>Tufted Duck</i> | <i>Penn. Arct. Zool.</i> 2. 573. |
| <i>Lapmark Duck</i> | <i>Penn. Arct. Zool.</i> 2. 576. |
| <i>Morillon</i> | <i>Buff. Ois.</i> 9. 227. |
| <i>Le canard brun</i> | <i>Buff. Ois.</i> 9. 252. |
| <i>Le canard acrete</i> | <i>Veill. En. Method. Orn.</i> 1. 143. |

A winter visitant in the British isles; is found also in Asia, migrating northwards to breed. In America this bird is not found, its place being supplied by the preceding species. Nothing is known of its nidification.

The trachea of the male in this species is furnished with two pair of muscles of voice, the first the usual sterno-tracheal ones, the second pair are furculo-tracheal, diverging from the tube at the point where it penetrates the cavity of the chest, and inserted between the rami of the os furcatum at the point from whence they branch to unite with the coracoids.

— NYROCA AUSTRALIS.

Ny.—Proximo similis, sed majore.

AUSTRALIAN POCHARD.

Duck like the next, but larger.

| | IN. | | IN. |
|-------------------------|-----|-----------------------------|-----|
| <i>Length</i> | 21 | <i>Outer toe</i> | 2½ |
| <i>Bill</i> | 17⅞ | <i>Middle toe</i> | 2½ |
| <i>Tarsi</i> | 1½ | <i>Inner toe</i> | 2 |

So extremely like *Nyroca Leucophthalmus*, that as far as colouring goes one description will serve. The greater size, much larger and robust bill, and the bill being deep lead coloured, with a fascia of lighter across just behind the nail, as well as being destitute of the white spot on the chin, serve to distinguish it.

Nyroca Australis Gould, MSS.

Our specimen was obtained from Mr. Gould, who received it from Australia.

NYROCA LEUCOPHTHALMUS.

Ny. Mas.—Ferrugineus; iridibus, speculo, mentoque maculâ, albis.

Ny. Fem.—Mare similis, sed obscurior.

WHITE-EYED DUCK.

Male, ferruginous duck; with the eyes, speculum, and patch on the chin, white.

Fem. like the male, but darker.

| | IN. | | IN. |
|---------------------------|-----|-----------------------------|-----|
| <i>Length</i> | 17½ | <i>Tarsi</i> | 1¼ |
| <i>Exp. alæ</i> | 26 | <i>Middle toe</i> | 2¼ |
| <i>Bill</i> | 1½ | <i>Inner toe</i> | 1½ |

Male: bright reddish chesnut, with a collar round the neck brown; speculum, a spot on the chin, and under parts pure white; the back and wings in some specimens inclining to brownish; bill and legs lead coloured; irides white.

Fem.: similar, but with the colours more obscure.





Limosa borealis

| | |
|----------------------------------|---|
| <i>Nyroca Leucoptalmus</i> | <i>Flem. Brit. An.</i> 121. |
| <i>Anas Africana</i> | <i>Gmel. Syst.</i> 1. 522. <i>Lath. Ind. Orn.</i> 2. 875. |
| <i>Anas Nyroca</i> | <i>Gmel. Syst.</i> 1. 542. <i>Lath. Ind. Orn.</i> 2. 869. |
| <i>Anas ferruginea</i> | <i>Gmel. Syst.</i> 1. 528. <i>Lath. Ind. Orn.</i> 2. 866. |
| <i>Aythya nyroca</i> | <i>Boie in Brehm. Hand. der. Nat. aller, Vo.</i> <i>Deut.</i> 918. |
| <i>African Teal</i> | <i>Lath. Syn.</i> 6. 555. |
| <i>Ferruginous Duck</i> | <i>Penn. Brit. Zool.</i> 2. 601. |

Rare as the occurrence of this bird is in the British isles, it is not uncommon in some parts of France, Holland, and Germany, and is found also in India and North America. Mons. Temminck informs us in his Manual that it constructs its nest by the sides of rivers and morasses, laying eight or ten white eggs slightly tinged with greenish.

The form of the tube and inferior larynx in this species will be best understood by consulting the plate. It is acted upon by two pairs of muscles, the first the usual sterno-tracheal ones, the others furculo-tracheal. It differs from that of the foregoing genus in having the tube much more enlarged.

NYROCA BRUNNEA.

Ny. Mas.—Obscurus, capite cristato; genis colloque inferiore castaneis; dorso brunneo.

Ny. Fem.—Mare similis, sed mento basoque rostri fasciâ cinctâ, genisque lineâ albis.

BROWN POCHARD.

Male, obscure duck, with the head slightly crested; the cheeks and lower parts of the neck chesnut; the back brown.

Fem. duck similar to the male, but with the chin and the base of the bill surrounded with a fascia; and the cheeks with a line white.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 | <i>Outer toe</i> | $2\frac{1}{4}$ |
| <i>Bill</i> | $1\frac{5}{8}$ | <i>Middle toe</i> | $2\frac{3}{8}$ |
| <i>Tarsi</i> | $1\frac{3}{8}$ | <i>Inner toe</i> | $1\frac{3}{4}$ |

Male: sooty black, with the head slightly crested and glossy; flanks and back inclining to olive brown, and speckled with light brown and white; wing spot white; cheeks deep chesnut, which colour extends for some distance down the neck; chin black; bill blueish lead colour; legs the same.

Fem. : as in the male, but with a circle round the base of the bill ; a line from the eye to the lower part of the throat, and the tips of all the feathers below white.

Ayroca brunnea nobis.

Specimens of this species are in our own collection, and were received from Southern Africa. Specimens are also in the South African Museum, brought home by Dr. Andrew Smith.

HARELDA GLACIALIS.

Ha. Mas.—Capite colloque albis ; maculâ auriculari brunneâ ornatus.

Ha. Fem.—Brunnea ; gutture maculâ albâ ornatâ.

LONG-TAILED DUCK.

Male duck, with the head and neck white ; with a brown auricular patch.

Fem. brown duck ; the throat with a white patch.

| | | | |
|-------------------------|----------------|-----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 22 | <i>Inner toe</i> | $1\frac{5}{8}$ |
| <i>Bill</i> | $1\frac{1}{8}$ | <i>Middle toe</i> | $2\frac{1}{4}$ |
| <i>Tarsi</i> | $1\frac{1}{4}$ | <i>Outer toe</i> | $2\frac{1}{4}$ |

Male ; head and neck white, with an auricular spot brown ; scapulars and tertiaries, abdomen, and outer tail feathers white ; breast, back, wing and middle tail feathers brown ; during summer the plumage becomes more obscure, and similar to that of the female ; middle tail feathers and tertiaries much elongated ; bill black, with a band of red ; legs and toes yellow, with the membranes dusky.

Fem. : without the long tail and tertiary feathers ; dark brown, darkest on the back, the edge of the feathers lightest ; throat with a large patch, and the under parts, light grey.

The young similar to the female.

| | |
|--|----------------------------------|
| <i>Harelda glacialis</i> | <i>Steph. Sh. Zool.</i> 12. 175. |
| <i>Anas glacialis</i> | <i>Linn. Syst.</i> 1. 203. |
| | <i>Gmel. Syst.</i> 1. 529. |
| | <i>Lath. Ind. Orn.</i> 2. 864. |
| <i>Anas hyemalis</i> | <i>Linn. Syst.</i> 202. 29. |
| | <i>Gmel. Syst.</i> 529. 29. |
| <i>Anas caudata harelda</i> | <i>Raii Syn.</i> 145. 14. |
| <i>Querquedula ferroensis</i> | <i>Briss. Orn.</i> 6. 466. |
| <i>Anas longicauda islandica</i> | <i>Briss. Orn.</i> 7. 299. |
| <i>Long-tailed Duck</i> | <i>Penn. Brit. Zool.</i> 2. 599. |

| | |
|----------------------------------|---|
| <i>Canard a longequeue</i> | <i>Buff. Ois.</i> 9. 202. |
| <i>Canard de midon</i> | <i>Buff. Pl. Enl.</i> 1008. <i>Veill. En. Method. Orn.</i> 1. 129. |
| <i>Sarcelle de ferroe</i> | <i>Buff. Ois.</i> 9. 278. |
| <i>L'Angletaske</i> | <i>Veill. En. Method. Orn.</i> 1. 134. |
| <i>Trachea</i> | <i>Mont. Orn. Dict. Sup. fig.</i> 12. <i>Linn. Trans. vol. 4, tab. 30, fig.</i> 3—4. |

An inhabitant of the arctic regions, not migrating farther south than the northern part of Scotland. Breeds on the sea coast, making its nest of grass and sea weed; lays generally about eight eggs of a blueish colour. We have given an account of the trachea under the genus *Harelda*.

CLANGULA HISTRIONICA.

Clang. Mas.—Capite atro; maculâ utrinque ante oculari auricularique albis.

Clang. Fem.—Brunnea; capite maculis albis obscuris ornatis mare similibus.

HARLEQUIN DUCK.

Male duck, with the head black; a spot on each side before the eyes and on the ears white.

Fem. brown duck, with marks on the head similar to the male, but obscure.

| | | | |
|---------------------|------------------|-------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 16 $\frac{1}{2}$ | <i>Outer toe</i> | 2 $\frac{1}{4}$ |
| <i>Bill</i> | 1 | <i>Inner toe</i> | 1 $\frac{3}{4}$ |
| <i>Tarsi</i> | 1 $\frac{1}{4}$ | <i>Middle toe</i> | 2 $\frac{3}{8}$ |

Male: crown black; between the base of the bill and the eye is a triangular patch of white, with the small end towards the bill, from the upper corner of which a streak varying in intensity proceeds over the eye to the occiput; back of the neck black, with an elongated white streak on each side; throat and upper part of the neck shining violet black; an auricular patch white; collar and a streak extending nearly from the point of one wing round the front of the breast to that of the other, wing coverts, and tertiaries white; breast, belly, and vent brown; tail and wings dark umber brown; wing spot purple; bill and legs lead coloured, tipped with red; irides hazel.

Fem.: brown, with the margins of the feathers paler; a spot between the base of the bill and the eye, and an auricular one, whitish; belly and vent white blotched with brown; rather smaller than the male.

| | |
|-----------------------------------|--|
| <i>Clangula Histriónica</i> | <i>Steph. Sh. Zool.</i> 1. 180. <i>Eyton, Hist. R. Brit. Birds,</i> 84. |
| <i>Anas Histriónica</i> | <i>Linn. Syst.</i> 1. 201. <i>Gmel. Syst.</i> 1. 534. |

| | |
|---|--|
| <i>Anas minuta</i> | <i>Linn. Syst.</i> 1. 204. |
| | <i>Gmel. Syst.</i> 1. 534. |
| <i>Anas torquata</i> | <i>Gmel. Syst.</i> 1. 514. |
| <i>Harlequin Duck</i> | <i>Penn. Arct. Zool.</i> 2. 490. |
| <i>Dusky and spotted Duck</i> | <i>Edw. Glea. pl.</i> 99. |
| <i>Le canard a collier de terre neuve</i> | <i>Buff. Ois.</i> 9. 250. |
| <i>Canard a collier ou histrion</i> | <i>Temm. Man.</i> 2. 878. |
| <i>La Sarcelle brun et blanche</i> | <i>Buff. Ois.</i> 9. 287. |
| <i>Le canard de terre neuve</i> | <i>Veill. En. Method. Orn.</i> |
| <i>Le canard histrion</i> | <i>Veill. En. Method. Orn.</i> 1. 146. |

Inhabits the northern regions of both the American and European continents. A few specimens have been occasionally killed in Orkney and the northern islands; migrates northwards to breed; the female lays ten white eggs.

CLANGULA ALBEOLA.

Clang. Mas.—Capite colloque atris; maculâ albâ suboculari occipite extendente.

Clang. Fem.—Atra-fusca, albâ maculâ genis.

SPIRIT DUCK.

Male duck, with the head and neck black; a white patch extending below the eye to the occiput.

Fem. sooty black duck, with a white patch on each side of the head.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 16 | <i>Tarsi</i> | $1\frac{3}{8}$ |
| <i>Bill</i> | $1\frac{1}{4}$ | <i>Middle toe</i> | |

Male: head and upper part of the neck rich purple green, with a large white patch extending from below the eye to the occiput; back and scapulars black; tail and quills hoary black; greater wing coverts white; secondaries black, above which is another white patch formed by the tertiary coverts; legs and toes orange; webs black; bill lead coloured.

Fem.: smaller than the male: head and plumage dark blackish brown; the fore part of the neck side of the breast, flanks, and vent feathers blackish grey; breast and belly white tinged with brownish orange; the white band on the ears and occiput much narrower than in the male, and obscure; lesser coverts and scapulars blackish brown; bill and feet brownish.

| | |
|--|--|
| <i>Anas albeola</i> | <i>Linn. Syst.</i> 1. 199. <i>Gmel. Syst.</i> 1. 517. <i>Lath. Ind. Orn.</i> 2. 866. |
| <i>Anas Bucephala</i> | <i>Linn. Syst.</i> 1. 200. <i>Gmel. Syst.</i> 1. 521. |
| <i>Anas hyberna</i> | <i>Briss. Orn.</i> 6. 349. |
| <i>Querquedula Ludoviciana</i> | <i>Briss. Orn.</i> 6. 349. |
| <i>Anas rustica</i> | <i>Linn. Syst.</i> 1. 201. <i>Gmel. Syst.</i> 1. 524. |
| <i>Sarcelle de la Caroline</i> | <i>Buff. Ois.</i> 9. 286. |
| <i>Sarcelle blanche et noir ou la religieuse</i> | <i>Buff. Ois.</i> 9. 284. |
| <i>Petit canard a grosse tete</i> | <i>Buff. Ois.</i> 9. 249. |
| <i>Buffle-headed Duck</i> | <i>Catesb. Carol.</i> 1. pl. 95. <i>Penn. Arct. Zool.</i> 2. 489. <i>Lath. Gen. Syn.</i> 6. 532. |
| <i>Little brown Duck</i> | <i>Catesb. Carol.</i> 1. pl. 98. <i>Lath. Gen. Syn.</i> 6. 534. |
| <i>Le canard Lhoora</i> | <i>Veill. En. Method. Orn.</i> 1. 134. |

An abundant species on the fresh water lakes of arctic America, where nidification is perfected, their nests are made in hollow trees contiguous to water. During autumn and winter they are found over a considerable portion of North America.

CLANGULA BARROVII.

Clang. Mas.—Capite colloque superiore atro; genis lunatâ fasciâ ornatis.

Clang. Fem.—Vulgari similis, sed singulo albo collo.

BARROW'S DUCK.

Male clangula, with the head and upper part of the neck black; the cheeks ornamented with a lunate fascia.

Fem. similar to the female of *Clangula vulgaris*, but with a white collar.

| | | | |
|---------------------|------------------------|-------------------------|----------------------|
| <i>Length</i> | ^{IN.} 22½. | <i>Middle toe</i> | ^{IN.} 2½ |
| <i>Bill</i> | 1 7-12ths | <i>Outer toe</i> | 1 5-12ths |
| <i>Tarsi</i> | 1 7-12ths | | |

Male: head and upper part of the neck black, with purple and metallic green inflections; a crescent-shaped patch from the gape to the crown; below, lesser wing coverts, tips of the scapulars, and greater coverts, together with the outer secondaries, white; lateral tail coverts brown; bill lead coloured; legs and feet orange, the webs black.

- Clangula chrysothalmus* *Steph. Sh. Zool.* 12. 182.
Canard garrot *Temm. Man.* 2. 870.
Golden eye *Penn. Arct. Zool.* 2. 276.
Trachea..... *Linn. Trans. vol. 4, tab. 15, fig. 1—5.*

Breeds in the arctic regions, but regularly migrates southwards during winter; is found commonly in Europe, frequenting both fresh and sea water, but more commonly the latter; during the breeding season, however, they are stated by travellers to frequent exclusively fresh water, making their nest on the shores of lakes and rivers in the fur countries, and laying from seven to ten white eggs.

The trachea has a large contractile bulb on the tube; the inferior larynx is not very dissimilar from that of the *Mergansers*; the tube is acted upon by two pairs of muscles of voice, the first of which are the usual sterno-tracheal ones, the second pair (which are furculo-tracheal) diverge from the tube at a little distance below the contractile bulb, and have their insertion on the rami of the os furcatum near the middle of each.

CLANGULA AMERICANA.

Clang. Mas.—*Clangula vulgari similis, sed majore.*

AMERICAN GOLDEN EYE.

Male clangula, similar to the common golden eye, but larger.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 21 | <i>Tarsi</i> | $\frac{1}{2}$ |
| <i>Bill</i> | $1\frac{1}{2}$ | <i>Middle toe</i> | $2\frac{3}{4}$ |

Very like the common golden eye of Europe, but larger, with the spot at the base of the bill more ovate, and the bill longer, broader, and stouter.

- Clangula Americana* *Bonap. MSS.*
Common Golden Eye *Nutt. Orn.* 2. 441.

It is even now doubtful whether or not many of the birds of North America are distinct from our own. There is, however, between many of them found enough of distinction for the practised eye of an ornithologist to say with certainty, this bird is North American—this European.

THALASSORNIS LEUCONOTUS.

Thal.—Corpore colloque ferrugineis; illo atro transversim fasciato, dorsoque imo albo.

FASCIATED DUCK.

Duck, with the body and neck ferruginous; the former transversely fasciated with black, and the lower part of the back white.

| | | | |
|------------------------|----------------|-------------------------|-----------------------|
| <i>Length</i> | IN. 18 | <i>Outer toe</i> | IN. $2\frac{5}{8}$ |
| <i>Bill</i> | $1\frac{5}{8}$ | <i>Middle toe</i> | $2\frac{3}{4}$ |
| <i>Tarsi</i> | $1\frac{3}{8}$ | <i>Inner toe</i> | 2 |

Head, upper part of the back, and flanks black; the tip and a bar across each feather dull brown; wing coverts black barred with ferruginous; neck light yellowish brown; belly rather darker; back and rump dirty white; tail coverts and tail black, the former tipped with light brown; feet and bill black; tail short; very old birds have a whitish spot on each side behind the base of the bill, and another smaller one on the chin.

Clangula leuconotus..... *Smith. Cat. S. Afric. Mus.*

In the museum of the Zoological Society, said to have been received from the Cape of Good Hope.

The bill in this species approaches in form to that of *Biziura*. Since we described the above, under another name, we have seen the specimens brought home by Dr. Smith from the Cape, and now exhibiting. As our specific appellation was not published, we have therefore adopted his.

BIZIURA LOBATA.

Biz. Mas.—Ater, albo transversim et minuté fasciatus; alis brunneis; mandibulá inferiore carunculá compressá.

Biz. Fem.—Mare similis. sed carunculá caret.

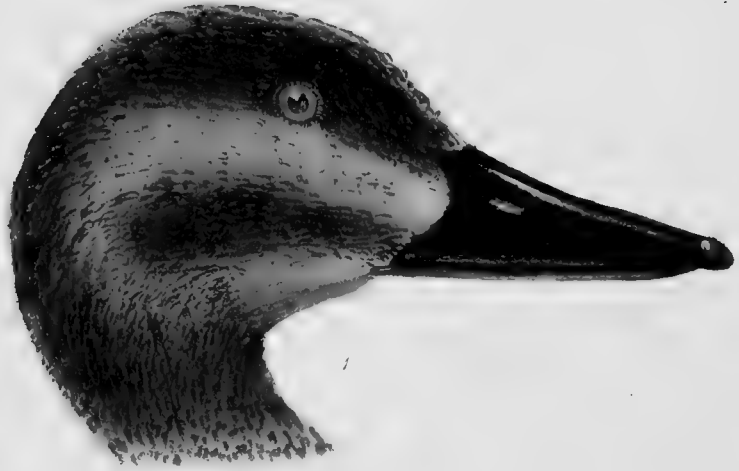
LOBATED DUCK.

Male, black duck, minutely and transversely lineated with white; wings brown; inferior mandibles with a compressed caruncle.

Fem. duck similar to the male, but without the caruncle.

| | | | |
|------------------------|----------------|-------------------------|----------------|
| <i>Length</i> | IN. 33 | <i>Inner toe</i> | IN. 3 |
| <i>Bill</i> | $1\frac{3}{4}$ | <i>Outer toe</i> | $3\frac{1}{2}$ |
| <i>Tarsi</i> | 2 | <i>Middle toe</i> | $3\frac{5}{8}$ |





† 1 *Ceryle Ubfasciata*
2 . . . *Dominica, fem*

Male: crown and upper part of the back of the neck black, occasionally speckled with whitish; back, lower part of the neck, flanks, rump, and under tail coverts deep glossy black, each feather transversely streaked with one or two narrow lines of white or light brown; wings and tail sooty black; remainder grey or silvery white; bill and legs lead coloured, the former with a large compressed caruncle on the lower mandible.

Fem.: smaller than the male, but in colouring similar; without the caruncle.

| | |
|-------------------------------------|--|
| <i>Biziura Novæ Hollandiæ</i> | <i>Steph. Sh. Zool.</i> 12. 222. |
| <i>Hydrobates lobatus</i> | <i>Temm. Pl. En. N.</i> 68. |
| <i>Anas lobata</i> | <i>Shar. Nat. Mis.</i> 8. pl. 255. |
| <i>Lobated Duck</i> | <i>Lath. Gen. Syn. Sup.</i> 2. p. 349. |
| <i>Le canard caroncule</i> | <i>Veill. En. Method. Orn.</i> 356. |

All that is known of the habits of this curious bird is contained in a short notice by Lieut. Breton, R. N. inserted in the Zoological Proceedings for 1834, p. 19, from which we extract the following: "He (Lieut. Breton) stated that these birds are so extremely rare that he saw only three of them during his various excursions, which extended over twelve hundred miles of country. He has never heard of any instance in which more than two were seen together. They are only met with on the rivers and in pools left in the otherwise dry beds of streams. It is extremely difficult to shoot on account of the readiness with which they dive. The instant the trigger is drawn the bird is under water."

ERISMATURA MACCOA.

Eris.—*Brunnea*, gutture lineâque infra oculos albis.

MACCOA DUCK.

Brown duck, with the throat and a streak below the eye dirty white.

| | | | |
|---------------------|----------------|------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 14 | <i>Tarsi</i> | $1\frac{3}{8}$ |
| <i>Bill</i> | $1\frac{1}{2}$ | <i>Outer toe</i> | $2\frac{1}{4}$ |

Back black barred with ferruginous; flanks brown barred with the same; tail brown; head dark brown, undulated with ferruginous; chin and streak from the bill below the eye to the occiput whitish grey; below silvery grey undulated with brown; bill lead coloured; legs with a tinge of greenish; speculum none.

Oxyura Maccoa

Smith, Cat. S. Afric. Mus.

A specimen is in our collection, brought home from the Indian Isles. Except from the difference in locality, we should have supposed this bird to have been the young of *Oxyura rubida*. Since writing the above we have seen a specimen brought home by Dr. Smith, and have adopted his name.

ERISMATURA FERRUGINEA.*Eris.*—Ferruginea, capite atro.

FERRUGINOUS DUCK.

Male, ferruginous duck, with the head black.

| | | | |
|-------------------------|------------------|-----------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 17 $\frac{1}{2}$ | <i>Tarsi</i> | 1 $\frac{1}{2}$ |
| <i>Bill</i> | 1 $\frac{7}{8}$ | <i>Centre toe</i> | 2 $\frac{3}{8}$ |

Male: deep ferruginous, with the head and upper part of the neck black; quills and tail brown; vent and belly silvery ash, tinged with ferruginous.

Closely allied to *Erismatura Australis*. The only specimen we have seen is in the British Museum, obtained from Chili.

ERISMATURA LEUCOCEPHALA.*Eris. Mas.*—Vertice atro; subtus castaneus; reliquo albo.*Eris. Fem.*—Mare similis, sed coloribus obscuris.

WHITE-HEADED DUCK.

Male duck, with the crown black; remainder of the head white; below chesnut.

Fem. similar, but with the markings obscure.

| | | | |
|-------------------------|-----------------|-----------------------------|-----------------|
| | IN. | | IN. |
| <i>Length</i> | 17 | <i>Outer toe</i> | 2 $\frac{3}{4}$ |
| <i>Bill</i> | 1 $\frac{3}{4}$ | <i>Centre toe</i> | 2 $\frac{7}{8}$ |
| <i>Tarsi</i> | 1 $\frac{3}{8}$ | <i>Inner toe</i> | 2 $\frac{1}{8}$ |

Male: crown black; remainder of the head pure white; body silvery brown, tinged with ferruginous on the breast, flanks, and back, on the latter irrorated with black; tail and wings brown; no wing spot; legs and bill lead coloured; the latter more taper at the base than is usual in the genus.

Fem.: similar to the male, but with the colours not so distinct.

| | |
|--------------------------------------|--------------------------------|
| <i>Anas leucocephala</i> | <i>Gmel. Syst.</i> 1. 516. |
| | <i>Lath. Ind. Orn.</i> 2. 858. |
| <i>Undina leucocephala</i> | <i>Gould, Birds of Europe.</i> |
| <i>Anas mersa</i> | <i>Gmel. Syst.</i> 1. 520. |

| | |
|------------------------------------|--|
| <i>White-headed Duck</i> | <i>Lath. Gen. Syn.</i> 6. 478. |
| <i>Ural Duck</i> | <i>Lath. Gen. Syn.</i> 6. 478. |
| <i>La Macreuse de Russie</i> | <i>Veill. En. Method. Orn.</i> 1. 140. |
| <i>Le canard Ural</i> | <i>Veill. En. Method. Orn.</i> 1. 127. |

Inhabits the eastern portions of Europe ; occasionally found during migration in Austria and Hungary.

ERISMATURA RUBIDA.

Eris. Mas.—Brunnea, capite supra, fronte, et occipite atris ; genis mentoque albis.

Eris. Fem.—Mare similis, sed coloribus obscuris.

RUDDY DUCK.

Male, brown duck, with the upper part of the head, the forehead, and occiput black ; cheeks and chin white.

Fem. like the male, but with the colours less distinct.

| | | | |
|---------------------|-----|-------------------------|-----|
| | IN. | | IN. |
| <i>Length</i> | 15 | <i>Outer toe</i> | 2½ |
| <i>Bill</i> | 1½ | <i>Middle toe</i> | 2½ |
| <i>Tarsi</i> | 1¼ | <i>Inner toe</i> | 2 |

Male: crown, head, and back of the neck black ; back and tail brown dotted with whitish ; wings brown ; throat and cheeks white ; flanks, breast, and lower surface also white tinged more or less with ferruginous ; bill lead coloured ; legs and feet brown ; irides hazel.

Fem. : similar to the male, but with the back part of the head and neck inclining to brown ; the throat and cheeks light slate colour.

Young similar to the female.

| | |
|--|--|
| <i>Erismatura rubida</i> | <i>Bonap. Cat. Am. and Europ. Birds.</i> |
| <i>Anas rubida</i> | <i>Wils. Am. Orn.</i> 8 p. 128, pl. 71, fig. 56. |
| <i>Fuligula (oxyjura) rubida</i> | <i>Bonap. Syn.</i> p. 390. N. 336. |
| <i>Fuligula rubida</i> | <i>Faun. Bo. Am.</i> 2. 455. |
| <i>Gymnura rubida</i> | <i>Nutt. Man. Orn.</i> 2. 426. |

Inhabits North America, retiring northwards to breed ; frequents fresh water in preference to the sea, according to Nuttall. When swimming they have a habit of carrying the tail so erect that it appears of the same height with the head and neck.

ERISMATURA AUSTRALIS.

Eris. Mas.—Capite colloque atris; corpore castaneo.

Eris. Fem.—Ferruginea, fasciata et punctata atro et brunneo.

AUSTRALIAN DUCK.

Male duck, with the head and neck black; the body chesnut.

Fem. ferruginous duck, fasciated and punctated with black and brown.

| | | | | | |
|---------------------|-----|-------------------|----------------|--------------------|----------------|
| | IN. | | IN. | | IN. |
| <i>Length</i> | 15 | <i>Bill</i> | $1\frac{7}{8}$ | <i>Tarsi</i> | $1\frac{1}{8}$ |

Male: with the head, throat, and neck black; below with the back dark chesnut; tail, wings, and rump black, the latter irrorated with ferruginous; under tail coverts silvery grey; bill, feet, and legs lead coloured.

Fem.: brown ferruginous, fasciated transversely with black and dark brown; throat light brown; under surface silvery grey, slightly tinged with brown; tail and wings brown.

Oxyura Australis, Gould Zool. Proc. 1836, p. 85.

Inhabits Australia. First sent to England by Lieut. Breton from Swan River. The specimens are in the collection of the Zoological Society.

ERISMATURA DOMINICA.

Eris. Mas.—Ferrugineus, capite anteriore atro; speculo albo.

Eris. Fem.—Brunnea, lineis albis infra et per oculos, occipite tendentibus; speculo mare simili.

DOMINICAN DUCK.

Male, ferruginous duck, with the head anteriorly black; the wing spot white.

Fem. brown duck, with a white streak through the eye and another below it, extending to the occiput; wing spot as in the male.

| | | | |
|---------------------|-----------------|-------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | $13\frac{1}{2}$ | <i>Outer toe</i> | $1\frac{3}{4}$ |
| <i>Bill</i> | $1\frac{1}{4}$ | <i>Middle toe</i> | 2 |
| <i>Tarsi</i> | 1 | <i>Inner toe</i> | $1\frac{1}{2}$ |

Male: fore part of the head sooty black; the hind part of the neck, back, scapulars, flanks, and rump ferruginous; wing coverts brown; quills ashy black, with the wing spot white; tail

black; throat, streak through the eye, and another below it, light ferruginous; bill and legs lead coloured.

Fem: with the back deep brown; flanks light brown, barred with darker; head deep brown, slightly undulated with ferruginous; under parts silvery grey, undulated with brown; a dusky white streak passes through the eye, and another below it; wing spot white; bill lead coloured; legs brown.

| | |
|---|--|
| <i>Anas Dominica</i> | <i>Linn. Syst.</i> 1. 201. |
| | <i>Gmel. Syst.</i> 1. 521. |
| | <i>Lath. Ind. Orn.</i> 2. 874. |
| <i>Fuligula Dominica</i> | <i>Steph. Sh. Zool.</i> 12. 203. |
| <i>Querquedula Dominicensis</i> | <i>Briss. Orn.</i> 6. 472. |
| <i>Anas spinosa</i> | <i>Gmel. Syst.</i> 1. 522. |
| | <i>Lath. Ind. Orn.</i> 2. 874. |
| <i>Anas Dominica</i> | <i>P. Max. Bat. Nat. Braz.</i> 4. 938. |
| <i>Sarcelle de la Guadeloupe</i> | <i>Buff. Pl. Enl.</i> 938. |
| <i>Sarcelle a queue epineuse de Cayenne</i> | <i>Buff. Pl. Enl.</i> 968. |
| <i>Spinous-tailed Duck</i> | <i>Lath. Gen. Syn.</i> 6. 554. |

A female specimen is in the British Museum. Both male and female are in our own collection, obtained from Jamaica. It also, according to Prince Maximilian, inhabits Brazil.

MERGUS MERGANSER.

Mer. Mas.—Capite colloque superiore viridibus; scapularibus primoribusque atris; corpore subtus albo.

Mer. Fem.—Capite rufo; corpore subtus cinerascenti-albo.

COMMON MERGANSER.

Male mer. with the head and upper part of the neck green; the scapulars and primaries black; below white.

Female, with the head rufous; below ashy white.

| | | | |
|---------------------|----------------|-------------------------|----------------|
| | ^{IN.} | | ^{IN.} |
| <i>Length</i> | 29 | <i>Tarsi</i> | $1\frac{3}{4}$ |
| <i>Bill</i> | 2 | <i>Middle toe</i> | $2\frac{3}{4}$ |

Male: head and neck deep glossy green, the former crested; upper part of the back and scapulars black; lower part of the back, tail, and secondary coverts, hoary grey; quills and secondaries brown; tertiaries white, beautifully edged with black; bill red, with the margins and culmen black; legs, feet, and webs, orange; irides hazel.

Fem.: head and upper part of the neck rufous brown, the former crested on the occiput; throat white; lower part of the neck, breast, flanks, and thighs, whitish ash; belly and abdomen yellowish white; above dark ash; feet, bill, and legs as in the male, but not so bright.

Young similar to the female.

| | |
|---|--|
| <i>Mergus Merganser</i> | <i>Linn. Syst.</i> 1. 208. |
| | <i>Raii Syn.</i> 1. 34. <i>A.</i> 1. |
| | <i>Gmel. Syst.</i> 1. 544. |
| | <i>Briss. Orn.</i> 6. 231. <i>t.</i> 32. |
| | <i>Lath. Ind. Orn.</i> 2. 828. |
| | <i>Wils. Am. Orn.</i> <i>pl.</i> 68. |
| <i>Merganser Raii</i> | <i>Steph. Shaw Zool.</i> 12. 161. |
| <i>Mergus castor</i> | <i>Linn. Syst.</i> 1. 209. |
| ————— | <i>Gmel. Syst.</i> 1. 545. |
| ————— | <i>Lath. Ind. Orn.</i> 2. 829. |
| <i>Mergus ruficapillus</i> | <i>Gmel. Syst.</i> 1. 545. |
| <i>Mergus serratus longirostris</i> | <i>Raii Syn.</i> 1. 34. <i>A.</i> 2. |
| <i>Goosecander</i> | <i>Penn. Arct. Zool.</i> 2 <i>N.</i> 465. |
| ————— | <i>Lath. Syn.</i> 6. 418. |
| <i>Dundiver</i> | <i>Penn. Arct. Zool.</i> 2. 465. |
| <i>Le Harle</i> | <i>Buff. Ois.</i> 8. 267. |
| ————— femelle | <i>Buff. Ois.</i> 8. 236. |
| <i>Le Bievre</i> | <i>Veill. En. Method. Orn.</i> 1. 103. |
| <i>Le Harle</i> | <i>Veill. En. Method. Orn.</i> 1. 101. |
| <i>Trachea</i> | <i>Linn. Trans.</i> <i>vol.</i> 15, <i>tab.</i> 15, <i>fig.</i> h. |

Inhabits the neighbourhood of the arctic circle, breeding in Iceland, Siberia, Kamschatka, and the fur countries, making its nest of grass near the water, and laying from ten to fourteen eggs of a yellowish colour. During winter, in hard weather, these birds migrate southwards, and are found over considerable portions of the continents of Europe, Asia, and America. We have also received them from Peru.

The trachea in the male has two enlargements on the tube, each of which are compressed, and composed of alternating semi-lunar plates.

The inferior larynx is very large and strong, projects most on the left side, but slightly before, behind, and on the right side. The bronchiæ are far apart, the left the largest; it does not differ in form from that of *M. serrator*, which we have figured.

MERGUS SERRATOR.

Mer. Mas.—Capite cristato, hâc colloque superiore viridibus; collo inferiore capistro albo.

Mer. Fem.—Capite cristato, hâc colloque superiore rufis, collo inferiore cinereo; ventre albo; speculoque fasciâ atrâ diviso.

RED-BREASTED MERGANSER.

Male mer. with the head crested, and the upper part of the neck green; the inferior part with a white collar.

Fem. mer. with the head crested, together with the upper part of the neck rufous; the inferior part cinereous; below white; speculum divided by a black bar.

| | | | |
|-----------------------|----------------|---------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 20 | <i>Inner toe</i> | 2 |
| <i>Bill</i> | $2\frac{5}{8}$ | <i>Middle toe</i> | $2\frac{5}{8}$ |
| <i>Tarsi</i> | $2\frac{1}{8}$ | <i>Outer toe</i> | $2\frac{1}{2}$ |

Male: head and upper part of the neck glossy greenish black, the former crested; middle of the neck with a white collar; lower part of the neck and breast ferruginous, spotted with black; upper part of the back, scapulars, and sides of the breast black; wing coverts white, with a black bar across the larger ones; tail grey; flanks and lower part of the back white, undulated with narrow black lines; below white; irides reddish; bill orange, with the culmen black.

Fem.: head and crest brown; remainder of the neck greyish brown; secondaries, abdomen, and lower part of the breast white.

Young similar to the female.

| | |
|---|--|
| <i>Mergus serrator</i> | <i>Linn. Syst.</i> 1. 208. |
| | <i>Gmel. Syst.</i> 1. 545. |
| | <i>Lath. Ind. Orn.</i> 2. 829. |
| <i>Mergus serrator leucomelas</i> | <i>Gmel. Syst.</i> 1. 546. |
| <i>Mergus serratus</i> | <i>Gmel. Syst.</i> 1. 546 <i>A.</i> |
| ——— <i>niger</i> | <i>Gmel. Syst.</i> 1. 546 <i>B.</i> |
| ——— <i>cristatus</i> | <i>Briss. Orn.</i> 6. 237. 2. <i>t.</i> 23. |
| <i>Red-breasted Merganser</i> | <i>Penn. Arct. Zool.</i> 2. 466. |
| | <i>Lath. Gen. Syn.</i> 6. 423. |
| <i>Le Harle, Huppe</i> | <i>Buff. Ois.</i> 8. 273. |
| <i>Harle a manteau noir</i> | <i>Buff. Ois.</i> 8. 277. |
| <i>Harle, Huppe</i> | <i>Temm. Man. Orn.</i> 2. <i>p.</i> 884. |
| <i>Trachea</i> | <i>Linn. Trans. vol.</i> 4, <i>tab.</i> 16, <i>fig.</i> 1—2. |

Inhabits nearly the same countries as the preceding; but does not extend so far southwards; breeds in the neighbourhood of the arctic circle and in the highlands of Scotland, on the borders of fresh water lakes, making its nest of dried herbage lined with down stripped from its own body; lays from eight to twelve eggs of a brownish yellow colour.

The trachea in the male of this species differs from that of the last, in having only one enlargement on the tube (in other respects similar), and in the left bronchia being much larger than the right. The comparatively smaller size of this bird at once distinguishes it from the preceding.

MERGUS BRAZILIANUS.

Mer.—Niger, capite colloque viridi-æneis.

BRAZILIAN MERGANSER.

Black merganser, with the head and neck brassy green.

| | | | | | |
|-----------------------------|---------------------|--------------------|----------------------------------|-------------------------|----------------------------------|
| <i>Length of bill</i> | ^{IN.} 2 | <i>Tarsi</i> | ^{IN.} $1\frac{3}{4}$ | <i>Middle toe</i> | ^{IN.} $2\frac{1}{4}$ |
|-----------------------------|---------------------|--------------------|----------------------------------|-------------------------|----------------------------------|

Merganser, with the head and neck glossy green; the occiput with a long pendent crest the same; the whole of the back, tail, and wings sooty black; wing spot white, divided by a black streak; under surface and the lower part of the neck brown, the latter, with the flanks, minutely spotted and barred with white; the abdomen broadly so; bill black; legs and feet orange, with the webs dusky.

Mergus Brazilianus..... *Veill. Gal. des Oiseaux*, 2. 209.

Le Harle a huit brins..... *Dict. d' Hist. Nat.* 2d edit. 14. 222.

In the collection of the Zoological Society; evidently a young bird.

MERGUS CUCULLATUS.

Mer. Mas.—Capite atro cristato; cristâ albâ, et maculâ triangulari notatâ.

Mer. Fem.—Brunnea, capite cristato; gutture albo.

HOODED MERGANSER.

Male mer. with the head crested black; crest with a large triangular patch of white.

Fem. brown merganser, with the head crested; the throat white.

| | | | |
|-------------------------|----------------|-----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 19 | <i>Inner toe</i> | $1\frac{1}{2}$ |
| <i>Bill</i> | $1\frac{5}{8}$ | <i>Middle toe</i> | 2 |
| <i>Tarsi</i> | $1\frac{1}{8}$ | | |

Male: head and neck glossy black, with purple and green inflections, the former largely crested with long silky feathers; crest marked with a fan-shaped patch of white, the small end placed towards the eye, a little behind it, and extending backwards nearly to the edge of the hood; breast and under surface white, the former with two bands of velvet black, tapering to a point in front of the wings; quills and tertiaries deep brown, the latter with white shafts and dark edges; tail dark brown; back black; flanks dark chesnut, with narrow transverse undulated bars of black or brown; irides yellow; bill red.

Fem.: with the crest smaller than in the male, and the feathers not so numerous; neck, back, head, crest, and wings umber brown, varying in intensity; throat white; lower part of the neck light umber brown; belly white; feet and legs in both sexes red.

Young similar to the female in colouring, but the males may be distinguished by the crest being larger.

| | |
|--|---|
| <i>Mergus cucullatus</i> | <i>Linn. Syst.</i> 1. 207. |
| | <i>Gmel. Syst.</i> 1. 544. |
| | <i>Lath. Ind. Orn.</i> 2. 830. |
| | <i>Eyton, Hist. R. Brit. Birds,</i> 75. |
| | <i>Aud. Am. Orn.</i> 3. 246. |
| <i>Mergus fuscus</i> | <i>Lath. Ind. Orn.</i> 2. 802. |
| <i>Hooded merganser</i> | <i>Penn. Arct. Zool.</i> 2. 467. |
| | <i>Lath. Gen. Syn.</i> 6. 426. pl. ci. |
| <i>Round-crested Duck</i> | <i>Catesb. Carol.</i> 1. pl. 94. |
| <i>Brown merganser</i> | <i>Penn. Arct. Zool.</i> 2d Sup. 74. |
| <i>Le Harle couronne</i> | <i>Buff. Ois.</i> 8. 280. |
| | <i>Veill. En. Method. Orn.</i> 1. 103. |
| <i>Le Harle a queue fourchue</i> | <i>Veill. En. Method. Orn.</i> 1. 105. |

Rare in Europe; one or two specimens have, however, been killed in the British isles. North America is its true habitat, over the whole of which it appears during winter to be found; as spring approaches, the greater portion of them retire to the north, though some remain and breed in Pennsylvania, Kentucky, and the intermediate district. It builds in holes of trees and rocks where it can find them; but in districts devoid of such localities builds on the ground on the borders of lakes, laying from six to ten white eggs.

MERGUS ALBELLUS.

Mer. Mas.—Supra albus, genis et occipite atris; capite cristato.

Mer. Fem.—Subtus alba, genis et occipite rufis; capite vix cristato.

WHITE SMEW.

Male mer. above white, with the cheeks and occiput black; head crested.

Fem. mer. below white, with the cheeks and occiput red; the head slightly crested.

| | | | |
|------------------------|----------------|----------------------------|----------------|
| | IN. | | IN. |
| <i>Length</i> | 17 | <i>Outer toe</i> | 2 |
| <i>Bill</i> | $1\frac{3}{4}$ | <i>Middle toe</i> | $2\frac{1}{8}$ |
| <i>Tarsi</i> | $1\frac{1}{2}$ | <i>Inner toe</i> | $1\frac{3}{4}$ |

Male: above and below white, with a large patch on each side of the head, and another one down the back of the neck, black; crest white; on the upper part of the breast on each side a bar of black, not meeting in front; coverts, primaries, and secondaries black; scapulars white, edged on their outer webs with black; tail, rump, and upper tail coverts grey; bill and legs lead coloured.

Fem.: throat, neck, belly, and abdomen white; the breast, back, tail, and upper tail coverts ash coloured; wings grey, with the outer webs of the scapulars white.

Young similar to the female.

| | |
|--|---|
| <i>Mergus albellus</i> | <i>Linn. Syst.</i> 1. 209. <i>Gmel. Syst.</i> 1. 547. <i>Lath. Ind. Orn.</i> 2. 831. <i>Steph. Sh. Zool.</i> 12. 157. <i>Wils. Am. Orn.</i> 8. 136. <i>pl.</i> 71, <i>fig.</i> 7. |
| <i>Mergus minutus</i> | <i>Linn. Syst.</i> 1. 209. <i>Lath. Ind. Orn.</i> 2. 832. |
| <i>Mergus Asiaticus</i> | <i>Gmel. Syst.</i> 1. 548. |
| ——— <i>stellatus</i> | <i>Briss. Orn.</i> 6. 252. <i>pl.</i> 6. |
| <i>Smer</i> | <i>Penn. Arct. Zool.</i> 2. 559. <i>Lath. Gen. Syn.</i> 6. 428. |
| <i>Blue merganser</i> | <i>Penn. Arct. Zool.</i> 2. <i>Sup.</i> 74. |
| <i>Le petit harle ou la piette</i> | <i>Buff. Ois.</i> 8. 275. |
| <i>Le piette</i> | <i>Veill. En. Method. Orn.</i> 1. 104. |
| <i>Le harle etoile</i> | <i>Buff. Ois.</i> 8. 278. <i>Veill. En. Method. Orn.</i> 1. 105. |
| <i>Trachea</i> | <i>Linn. Trans. vol.</i> 4, <i>tab.</i> 10, <i>fig.</i> 3—4. |

Found in Europe, America, and Asia, but does not migrate far southwards; breeds in Siberia, Kamschatka, Greenland, and Iceland, generally on the banks of fresh water rivers or lakes, laying from ten to twelve yellowish eggs. The female and young of this species may be distinguished from those of the hooded merganser by the shortness and stoutness of the bill, and by the serratures not being pointed backwards, and more resembling the lamellæ of the true ducks. The tube of the trachea has one enlargement towards the middle, and continues of large diameter to the inferior larynx, which differs in form from that of the other mergansers, the greatest diameter being transverse instead of vertical; in other respects it is similar.

APPENDIX.

MUCH additional evidence in favour of the theory we have advanced having been brought forward in the second volume of Dr. Prichard's Researches into the Physical History of Man, we have formed the following Table, in order to shew the geographical distribution of the *Anatide*, and consequently those species which will, perhaps, some time or other, be accounted varieties.

M. signifies migrant; S. M. and W. M. summer and winter migrants; S. stationary; O. V. occasional visitant.

| NAME. | Caucasian Range. | Mongolian Range. | Esquimaux Range. | Ethiopian Range. | American Range. | Malay Range. |
|----------------------------|------------------|------------------|------------------|------------------|-----------------|--------------|
| Choristopus semipalmatus | .. | .. | .. | .. | .. | S. |
| Plectropterus Gambensis | .. | .. | .. | S. | .. | .... |
| Cercopsis Novæ Hollandiæ | .. | .. | .. | .. | .. | S. |
| Cleophaga Magellanica | .. | .. | .. | .. | S. | .... |
| Sandvicensis | .. | .. | .. | .. | S. | .... |
| Bernicla Antarctica | .. | .. | .. | .. | S.? | S.? |
| jubata | .. | .. | .. | .. | .. | S. |
| brenta | W. M. | .. | S. M. | .. | .. | .... |
| leucopsis | W. M. | .. | S. M. | .. | .. | .... |
| ruficollis | O. V. | S. | .. | .. | .. | .... |
| Cheniscus Madagascariensis | .. | .. | .. | S. | .. | .... |
| Coromandeliana | .. | S.? | .. | .. | .. | S.? |
| Anser ferus | W. M. | W. M. | S. M. | .. | W. M. | .... |
| erythropus | W. M. | S. M. | S. M. | .. | .. | .... |
| melanopterus | .. | .. | .. | .. | S. | .... |
| hyperboreas | W. M. | W. M. | S. M. | .. | .. | .... |
| Indica | .. | S. | .. | .. | .. | .... |
| Canadensis | .. | .. | S. M. | .. | W. M. | .... |
| Hutchinsii | .. | .. | S. M. | .. | W. M. | .... |
| cygnoides | .. | S.? | .. | .. | .. | .... |
| Cygnus olor | .. | S. | .. | .. | .. | .... |
| atratus | .. | .. | .. | .. | .. | S. |
| nigricollis | .. | .. | .. | .. | S. | .... |
| Bewickii | W. M. | .. | S. M. | .. | W. M. | .... |
| Americanus | .. | .. | S. M. | .. | W. M. | .... |
| buccinator | .. | .. | S. M. | .. | W. M. | .... |
| immutabilis | W. M. | .. | S. M. | .. | .. | .... |
| anatoides | .. | .. | .. | .. | S. | .... |
| ferus | W. M. | .. | S. M. | .. | W. M. | .... |
| Sarkidiornis regia | .. | S. | .. | .. | .. | .... |
| Africanus | .. | .. | .. | S. | .. | .... |
| Chenalopex Ægyptiaca | O. V. | .. | .. | S. | .. | .... |
| cana | .. | .. | .. | S. | .. | .... |
| Tadorna bellonii | S. | .. | .. | .. | .. | .... |
| radjah | .. | .. | .. | .. | .. | S. |
| Casarka rutila | O. V. | S. | .. | .. | .. | .... |
| tadonoides | .. | .. | .. | .. | .. | S. |
| castanea | .. | .. | .. | .. | .. | S. |
| Dendrocygna viduata | .. | .. | .. | S.? | .. | .... |
| autumnalis | .. | S. | .. | .. | .. | O. V. |
| arcuata | .. | S. | .. | .. | .. | S. |
| arborea | .. | S. | .. | .. | .. | .... |

APPENDIX.

| NAME. | Caucasian Range. | Mongolian Range. | Esquimaux Range. | Ethiopian Range. | American Range. | Malay Range. |
|----------------------------|------------------|------------------|------------------|------------------|-----------------|--------------|
| Leptotarsis Eytoni | .. | .. | .. | .. | .. | S. |
| Dafila acuta | W. M. | W. M.? | S. M. | S.? | S.? | .. |
| — pyrogaster | .. | .. | .. | .. | S. | .. |
| — urophasianus | .. | .. | .. | .. | S. | .. |
| — marmorata | O.V. | S. | .. | .. | .. | .. |
| Pæcilonitta Bahamensis | .. | .. | .. | .. | S. | .. |
| — erythrorhyncha | .. | .. | .. | S. | .. | .. |
| Mareca fistularis | W. M. | .. | S. M. | S.? | W. M. | .. |
| — Americana | .. | .. | .. | .. | S. | .. |
| — castanea | .. | .. | .. | .. | .. | S. |
| — Chiloensis | .. | .. | .. | .. | S. | .. |
| Aia sponsa | .. | S. | .. | .. | S. M. | S.? |
| — galericulata | .. | S. | .. | .. | .. | .. |
| Querquedula creccoides | .. | .. | .. | .. | S. | .. |
| — Hottentota | .. | .. | .. | S. | .. | .. |
| — erythrorhyncha | .. | .. | .. | .. | S. | .. |
| — falcaria | .. | S. | .. | .. | .. | .. |
| — glocitans | O.V. | S. | .. | .. | .. | .. |
| — Javanensis | .. | .. | .. | .. | .. | S.? |
| — Manillensis | .. | S. | .. | .. | .. | .. |
| — formosa | .. | S. | .. | .. | .. | .. |
| — crecca | S. | S. | .. | .. | S. M. | .. |
| — Carolinensis | .. | .. | .. | .. | S. | .. |
| — Capensis | .. | .. | .. | S. | .. | .. |
| Cyanopterus circia | S. M. | S. | .. | S.? | .. | .. |
| — fretensis | .. | .. | .. | .. | S. | .. |
| — discors | .. | .. | .. | .. | S. | .. |
| — Rafflesii | .. | .. | .. | .. | S. | .. |
| Rhynchaspis clypeata | W. M. | W. M. | .. | O.V. | S. | .. |
| — rhynchotis | .. | .. | .. | .. | S. | S. |
| — maculata | .. | .. | .. | .. | S. | S. |
| — Capensis | .. | .. | .. | S. | .. | .. |
| Malacorhynchus membrinacea | .. | .. | .. | .. | .. | S. |
| Chaulelasmus strepera | W. M. | S.? | .. | S.? | S. | O.V. |
| Anas boschas | S. | S. | S. M. | O.V. | S. | .. |
| — obscura | .. | .. | .. | .. | S. | .. |
| — superciliosa | .. | .. | .. | .. | .. | S. |
| — specularis | .. | .. | .. | .. | S. | .. |
| — pæcilorhyncha | .. | S. | .. | .. | .. | O.V. |
| — sparsa | .. | .. | .. | S. | .. | .. |
| — flavirostris | .. | .. | .. | S. | .. | .. |
| Carina moschata | .. | .. | .. | .. | S. | .. |
| Micropterus patachonicus | .. | .. | .. | .. | S. | .. |
| — brachyptera | .. | .. | .. | .. | S. | .. |
| Melanitta fusca | W. M. | .. | S. M. | .. | S. | .. |
| — Americana | O.V. | .. | S. M. | .. | S. | .. |
| — nigra | W. M. | .. | S. M. | .. | .. | .. |
| — perspicillata | O.V. | .. | S. M. | .. | S. | .. |
| Somateria mollissima | S. | .. | S.? | .. | S.? | .. |
| — spectabilis | S. | .. | S.? | .. | S.? | .. |
| Polysticta Stelleri | O.V. | S. | .. | .. | .. | .. |
| Kamptorhynchus Labradorus | .. | .. | .. | .. | S. | .. |
| Callichen rufina | S. | S. | .. | .. | .. | .. |
| — caryophylacea | .. | S. | .. | .. | .. | S. |
| Fuligula ferina | W. M. | S. | S. M. | .. | .. | .. |
| — falisneria | .. | .. | S. M.? | .. | S. | .. |
| — erythrocephala | .. | .. | S. M.? | .. | S. | .. |
| — marilla | W. M. | .. | S. M. | .. | .. | .. |
| — cristata | W. M. | .. | S. M. | .. | .. | .. |
| — rufitorques | .. | .. | S. M.? | .. | S. | .. |
| — affinis | .. | .. | S. M.? | .. | S. | .. |
| Nyroca brunnea | .. | .. | .. | S. | .. | .. |
| — leucophthalmus | S. | S. | .. | S. | .. | .. |

APPENDIX.

| NAME. | Caucasian Range. | Mongolian Range. | Esquimaux Range. | Ethiopian Range. | American Range. | Malay Range. |
|-------------------------|------------------|------------------|------------------|------------------|-----------------|--------------|
| Nyroca Australis | ..... | ..... | ..... | ..... | ..... | S. |
| Harelda glacialis | W. M. | ..... | S. M. | ..... | W. M. | ..... |
| Clangula vulgaris | W. M. | ..... | S. M. | ..... | ..... | ..... |
| —— Americana | ..... | ..... | S. M. | ..... | W. M. | ..... |
| —— Barrovii | O.V. | ..... | S. M. | ..... | W. M. | ..... |
| —— albeola | ..... | ..... | S. M. | ..... | W. M. | ..... |
| —— histrionica | O.V. | ..... | S. M. | ..... | W. M. | ..... |
| Thalassornis leuconotus | ..... | ..... | ..... | S. | ..... | ..... |
| Biziura lobata | ..... | ..... | ..... | ..... | ..... | S. |
| Erismatura Maccoa | ..... | ..... | ..... | S. | ..... | ..... |
| —— Dominica | ..... | ..... | ..... | ..... | S. | ..... |
| —— Australis | ..... | ..... | ..... | ..... | ..... | S. |
| —— rubida | ..... | ..... | ..... | ..... | S. | ..... |
| —— leucocephala | O.V. | S. | ..... | ..... | ..... | ..... |
| —— ferruginea | ..... | ..... | ..... | ..... | S. | ..... |
| Mergus albellus | W. M. | S. | S. M. | ..... | ..... | ..... |
| —— cucullatus | O.V. | ..... | S. M. | ..... | W. M. | ..... |
| —— serrator | S. | S. | S. M. | ..... | W. M. | ..... |
| —— Brazilianus | ..... | ..... | ..... | ..... | S. | ..... |
| —— merganser | W. M. | W. M. | S. M. | ..... | W. M. | ..... |

APPENDIX, No. 2.

In the following appendix we have given the admeasurements of the intestinal canal and number of vertebræ in all the species throughout the family *Anatidæ*, where we have been able to obtain them: the former, as a specific character, is subject to very great variation, an increase in age invariably producing a more lengthened measurement. The numbering of vertebræ in birds generally is very difficult: the mode in which we have proceeded, though differing from other authors, has at all events the advantage of simplification. We consider all those vertebræ anterior to the ribs, and not having any attachment to them, cervical; the dorsal are those anterior to the pelvic bones, having ribs attached to them; the sacral are those anchylosed together, and immediately succeeding the dorsal,—to some of these ribs are attached, either true or false; the numbering of those, where this is the case, we have shewn by the smaller and last number in the column headed No. of sacral vertebræ; so that, in order to ascertain the true number, the smaller one must be added to the greater. The caudal vertebræ are those posterior to and not anchylosed to the sacral.—In the numbering of the false ribs we have shewn their position by two figures, the first referring to those anterior to the true ones, the latter to those placed posteriorly to them.

N. B. The admeasurements are given in inches.

| NAME. | Length of intestine from gizzard to anus. | Ditto ditto from anus to caeca. | Ditto of caeca. | No. of cervical vertebræ. | Ditto of dorsal. | Ditto of sacral. | Ditto of caudal. | Total number of vertebræ. | True ribs. | False ribs. |
|-------------------------------------|---|---------------------------------|------------------|---------------------------|------------------|------------------|------------------|---------------------------|------------|-------------|
| Plectropterus Gambensis, F. | 76 | 4 | 5 $\frac{3}{4}$ | | | | | | | |
| Bernicla Brenta | | | | 18 | 6 | 13 3 | 7 | 47 | 7 | 2 1 |
| Anser segetum, F. | 85 | 7 | 13 | 18 | 6 | 14 3 | 6 | 47 | 7 | 1 1 |
| — cygnoides | | | | 18 | 7 | 15 3 | 6 | 49 | 7 | 1 0 |
| Cygnus Bewickii, M. | 143 | 10 | 14 $\frac{1}{2}$ | | | | | | | |
| — atratus, F. | 114 | 7 | 11 | 23 | 6 | 16 4 | 8 | 57 | 8 | 2 1 |
| — olor | | | | | | | | | | |
| — ferus, F. | 127 | 9 $\frac{1}{2}$ | 11 | 23 | 6 | 15 4 | 7 | 55 | 8 | 2 1 |
| Tadorna bellonii, M. | 123 | 4 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 16 | 6 | 13 3 | 7 | 45 | 6 | 2 1 |
| Dafila caudacuta, M. | 74 | 4 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 16 | 6 | 14 3 | 6 | | 6 | 2 1 |
| Mareca fistularis, M. | 59 | 3 $\frac{1}{2}$ | 9 | 14 | 6 | 12 3 | 7 | 42 | 6 | 2 1 |
| Aia sponsa | 40 | 3 | 3 $\frac{1}{4}$ | | | | | | | |
| Querquedula erythrorhyncha, M. | 31 $\frac{1}{3}$ | 2 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | | | | | | | |
| — crecca, M. | 30 | 2 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | | | | | | | |
| — F. | 48 | 2 $\frac{1}{2}$ | 5 | 14 | 7 | 13 3 | 6 | 43 | 6 | 2 1 |
| — F. | 50 | 3 $\frac{1}{2}$ | 5 $\frac{1}{2}$ | | | | | | | |
| Cyanopterus circa | | | | | | | | | | |
| Rhynchaspis clypeata, M. | 89 | 4 | 5 $\frac{1}{2}$ | 14 | 6 | 14 3 | 6 | 43 | 6 | 2 1 |
| — F. | 83 | 3 $\frac{3}{4}$ | 3 $\frac{1}{2}$ | | | | | | | |
| Chaulelasmus strepera | | | | 14 | 7 | 13 3 | 7 | 44 | 7 | 2 1 |
| Anas boschas, M. | 84 | 4 | 9 | 14 | 6 | 14 3 | 7 | 44 | 7 | 2 1 |
| — F. | 79 | 3 $\frac{1}{2}$ | 6 $\frac{1}{2}$ | | | | | | | |
| Carina moschata, M. | 78 | 7 | 6 $\frac{1}{2}$ | 13 | 6 | 12 3 | 8 | 42 | 6 | 2 1 |
| Melanitta nigra, F. | 62 | 5 | 1 | 12 | 8 | 16 3 | 7 | 46 | 7 | 2 1 |
| Fuligula Gesneri, M. | 49 | 3 $\frac{1}{2}$ | 6 | 15 | 7 | 13 3 | 8 | 46 | 7 | 2 1 |
| — marilla, M. | 69 | 5 | 6 | 13 | 7 | 16 3 | 7 | 46 | 7 | 2 1 |
| — cristata, M. | 77 | 4 | 4 $\frac{1}{2}$ | 15 | 7 | 14 3 | 7 | 46 | 7 | 2 1 |
| — F. | 80 | 4 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | | | | | | | |
| Nyroca leucothalmus, M. | 43 | 2 | 4 | 16 | 7 | 15 3 | 6 | 47 | 7 | 2 1 |
| — F. | 37 $\frac{1}{3}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | | | | | | | |
| Harelda glacialis | | | | 14 | 7 | 14 3 | 7 | 45 | | |
| Clangula vulgaris, M. | 54 | 4 | 2 $\frac{1}{2}$ | 14 | 7 | 15 3 | 6 | 45 | 7 | 2 1 |
| — F. | 49 | 4 | 3 | | | | | | | |
| — histrionica | | | | 14 | 7 | 17 3 | 7 | 46 | | |
| Mergus serrator, F. | 55 | 4 $\frac{1}{2}$ | 1 | 14 | 7 | 15 3 | 7 | 46 | | |
| — merganser, M. | 79 | 4 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 14 | 7 | 13 3 | 7 | 44 | 7 | 2 1 |
| — F. | 66 $\frac{1}{3}$ | 6 | 1 $\frac{1}{2}$ | | | | | | | |
| — albellus, F. | 53 | 3 $\frac{1}{2}$ | 1 $\frac{3}{4}$ | 14 | 7 | 14 3 | 7 | 45 | 7 | 3 1 |

SUPPLEMENT.

ADDITIONAL CHARACTERS OF AIA.

Ext. Char.—Lingua subobtusa, ad apicem appendiculata, ad latera unâ ordine setarum, et supra has setas quatuoribus spinis instructa.

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