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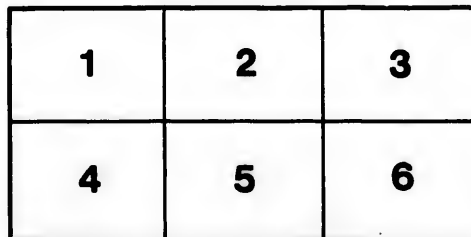
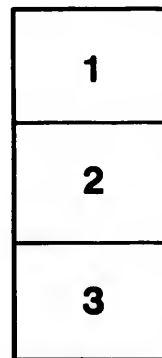
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THE
NATURAL HISTORY
OF
B I R D S.

FROM THE FRENCH OF THE
COUNT DE BUFFON

ILLUSTRATED WITH ENGRAVINGS;
AND A
PREFACE, NOTES, AND ADDITIONS,
BY THE TRANSLATOR.

IN NINE VOLUMES.

VOL. II.

L O N D O N :
PRINTED FOR A. STRAHAN, AND T. CADELL IN THE STRAND;
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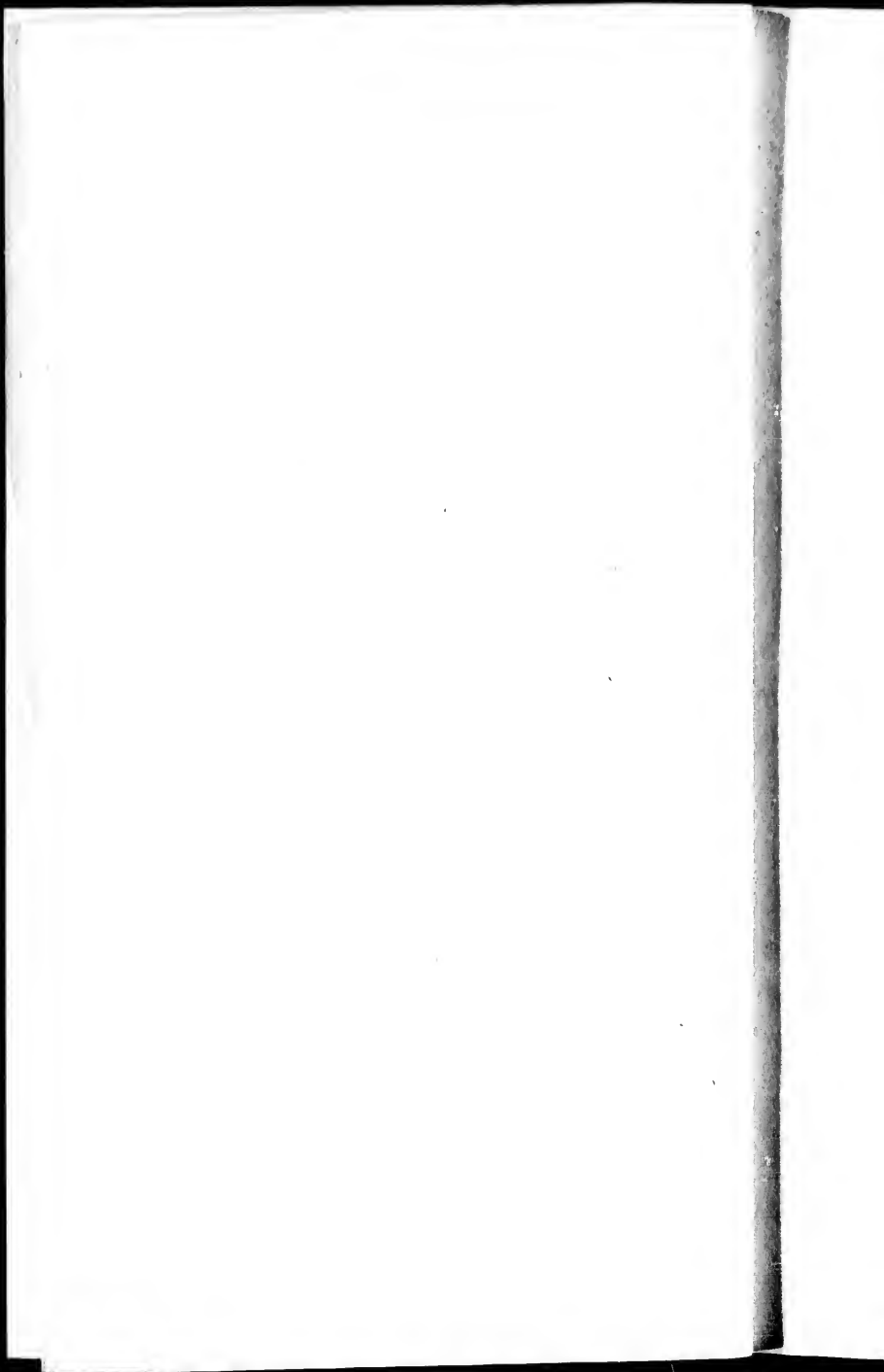
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THE BUSTARD.

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G R E A T B U S T A R D .

L'Outarde, Buff.

*Otis * tarda, All the Naturalists.*

WHEN we undertake to clear up the history of an animal, our first business is to examine, with a critical eye, the various names which it has received in different languages, and at different times; and to endeavour, as much as possible, to distinguish the several species to which these have been applied. This is the only way of reaping benefit from the knowledge acquired by the ancients, and of connecting it usefully with the discoveries of the moderns; and consequently, the only way of

* In Greek, *Ωλι*; In Latin, *Avis tarda*; or Slow bird: and from this the Italian name *starda* is evidently formed. And may not the old French term *bistarde*, and the English *bustard*, be only a corruption of *avis tarda*? The German appellation *trappe*, is of the same origin with the English verb *to trape*, and alludes to its heavy sluggish pace.

VOL. II.

B

moderns;

making real progress in Natural History. For how could, I shall not say one man, but a whole generation, or even a succession of generations, complete the history of a single animal? Almost all animals fear man and fly from him. The character of supremacy, which the Most High has stamped on his brow, inspires them with terror rather than respect. They shrink from his eye; they suspect his snares, and they dread his arms. Even those that are able to defend themselves by their strength, or resist an attack by their bulk, retire into deserts for which we disdain to contend, or entrench in the fastnesses of impenetrable forests. The small animals, secure in escaping our vigilance by their diminutive size, and emboldened by their weakness itself, live in the midst of us, in spite of our endeavours to extirpate them, feed at our expence, and sometimes even prey on our own substance, though not on that account better known. Among the great number of intermediate classes included between these two extremes, some dig for themselves subterraneous retreats, some plunge into the depths of the ocean, others disappear in the aerial expanse, but all of them fly from the tyrant of Nature. How then is it possible, in a short space of time to view all the animals in all the situations necessary for discovering completely their instincts, their dispositions, their habits, and in a word, the principal facts of their

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their history. It is well to collect at great expense numerous series of these animals, to preserve carefully their external coat, to add their skeletons artfully combined, to give each individual its proper attitude and native air, but all this only represents the surface of nature dead and inanimate. If some monarch would adopt the truly grand idea, of contributing to the advancement of this beautiful part of science, by forming vast collections, and assembling, under the eyes of observers, a great number of living species, we should still acquire but imperfect ideas. Most animals, intimidated by the presence of man, teased with his observations, and further tormented by the uneasiness inseparable from captivity, would exhibit manners that are altered, constrained, and hardly worthy the attention of a philosopher, who admires Nature only when free, independent, or even wild.

To study animals with accuracy then, we ought to observe them in the savage state, to accompany them into the retreats which they have chosen for themselves, to follow them into the deep caverns, to attend them on the frightful precipices, where they enjoy unbounded liberty. Nor should we be perceived by them while we contemplate their habits; for the eye of an observer, if not concealed from their view, would, in some measure, disconcert their motions. But there are few animals, especially of the winged tribe, that

can be thus surveyed: it requires a succession of ages, and innumerable fortunate occurrences, to ascertain all the necessary facts; and it needs the closest attention to refer each observation to its proper subject, and consequently to avoid the confusion of names. Without these precautions the most profound ignorance should be preferred to a pretended science, which at bottom is but a web of uncertainty and error. The Great Bustard is a striking instance. The Greeks named it *Otis*; and Aristotle mentions it by this name in three places*; and his description perfectly agrees with our Great Bustard. But the Latins, deceived probably by the resemblance of the words, confounded it with *otus*, which is a nocturnal bird. Pliny, after properly saying that the bird named *otis* by the Greeks, is called *avis tarda* in Spain, which character applies to the Great Bustard, subjoins, that its flesh has a rank taste †, which agrees with the *otus*, according to Aristotle and to fact, but has no reference to the Great Bustard; and this mistake can be the more easily supposed, since

* Hist. Anim. lib. ii. 17.; lib. v. 6.; lib. ix. 33.

† Pliny's words are: "Proximæ eis sunt, quas Hispania aves tardas appellat, Græcia otidas, damnatas cibis. Emissa enim ossibus medulla, odoris tædium sequitur." Next to these (he was speaking of the black grouse) we may rank what are termed in Spain the *slow birds*, and in Greece, the *otides*, which are rejected as food; for as soon as the marrow is detached from the bones, a loathsome smell is exhaled. Lib. x. 22.

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Pliny, in the following chapter, evidently confounds the *otis* with the *otus*; that is, the Great Bustard with the Eared Owl.

Alexander the Myndian, as quoted by Athenæus *, falls into the same error, ascribing to the *otus* or *otis*, which he takes for the same individual bird, the circumstance of having hairy feet; which is true of the *otus*, or eared owl; in which, as in most of the nocturnal birds, the legs and feet are covered with hair, or rather clothed to the nails with feathers, that are parted into threads; and not to the *otis*, which is our Great Bustard; and in which, not only the foot, but the lower part of the leg, immediately over the tarsus, is quite bare.

Sigismundus Gelenius, having found in Hefychius the name of *Ραφίς*, the meaning of which was not ascertained, has bestowed it, from mere fancy, on the Great Bustard †; and since his time, Mæhring and Brisson have, without assigning their reasons, applied it to the Dodo.

The modern Jews have arbitrarily taken the Hebrew word *anapha*, which denoted a kind of kite, to signify the Great Bustard ‡.

Brisson gives the word *Ωτις* for the Greek name of the Great Bustard, according to Belon; but afterwards adopts *οτιδα*, from Aldrovandus. He does not advert that *οτιδα* is the accusative

* Hist. Nat. lib. ix.

† In Lexico Symphono.

‡ Paul Faugius, *apud Gesnerum*.

of *wtis*, and consequently is the same individual name. It is just as if he had said, that some call it *tarda*, and others *tardam*.

Schwenckfeld pretends that the *tetrix*, noticed by Aristotle *, and which was the *ourax* of the Athenians, is also our Great Bustard. But what little Aristotle mentions with respect to the *tetrix*, does not apply to the Great Bustard. The *tetrix* builds its nest among low plants, and the Great Bustard among growing corn; which Aristotle probably did not mean to include in the general expression, "low plants." Secondly, This great philosopher explains himself in this manner: "The birds which fly little, as the partridges and quails, do not construct nests, but lay their eggs on the ground, on small heaps of leaves which they gather; the lark and *tetrix* do the same." The least attention to this passage will convince us, that it alludes to those tardy birds which fly little; and that the lark and *tetrix* are mentioned, because they nestle on the ground like these, though apparently more agile, since the lark is of the number. If Aristotle had meant our Great Bustard by the name *tetrix*, he would certainly have ranged it as a sluggish bird with the partridges and quails, and not with the larks, which, from their lofty flight, have merited, according to Schwenckfeld himself, the epithet of *cœlipetes*.

* Hist. Anim. lib. vi. 1.

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Longolius * and Gesner † are both of opinion, that the *tetrax* of the poet Nemesianus is nothing but the Great Bustard; and it must be allowed that these nearly resemble each other in size ‡ and in plumage §. But these analogies are not sufficient to fix the identity of the species; and the less so, as I find, by comparing what Nemesianus relates of his *tetrax*, with what we know of our Great Bustard, two distinct differences: 1. The *tetrax* appears tame from stupidity, and heedlessly falls into the very snare which has been laid for it ||; but the Great Bustard is intimidated at the approach of man, and quickly flies out of his view ¶. 2. The *tetrax* built its nest at the foot of the Apennines; whereas Aldrovandus, who was an Italian, assures us positively, that the Great Bustards are never seen in Italy, except when they are driven thither by a gust of wind **. It is

* Dialog. de Avibus.

† De Avibus, lib. iii.

‡ “ Tarpeia est custos arcis non corpore major.”—The sentinel of the Tarpeian rock (the goose) is not larger.

§ “ Persimiles cineri dorsum maculosaque terga

“ Inficiunt pullæ cacabantis imagine notæ.”—

Ash-coloured marks stain the shoulders (perhaps the neck) and speckled back, as in the partridge.

|| “ Cum pedicas nesti sibi contemplaverit aditans

“ Immemor ipse sui tamen in dispendia currit.”

¶ “ Neque hominem ad se appropinquantem sustinent, sed cum eum longinquo cernunt statim fugam capeffunt.”

WILLOUGHBY.

** Italia nostra has aves nisi forte ventorum turbine advectas non habet. ALDROV. tom. ii.

true, indeed, that Willoughby suspects they are not rare in that country; because, when he passed through Modena, he saw one in the market. But I should conceive that a single Great Bustard brought to market in such a city as Modena, agrees better with the assertion of Aldrovandus than with the conjecture of Willoughby.

Perrault imputes to Aristotle the story that the *otidis* of Scythia does not sit on its eggs like other birds, but covers them with a hare's or fox's skin, concealing them at the root of a tree, on whose top it is perched. Yet Aristotle does not apply this at all to the Great Bustard, but only to a certain Scythian bird, probably a bird of prey, which could tear off the skins of hares and foxes, and which was only of the size of a Bustard, as Pliny and Gaza * translate it; besides, however little Aristotle was acquainted with the Bustard, he could not fail to know that it never perches.

The compounded name *trapp-gantz*, which the Germans have bestowed on this bird, has given rise to other mistakes. *Trappen* signifies to walk; and custom has connected to its derivatives the accessory idea of tardiness, in the same manner as in the case of the Latin word *gradatim* and the Italian *andante*; and hence the epithet *trapp* can, with propriety, be applied to the Bustard, which, when not pursued, walks slow-

* In Scythia avis magnitudine *otidis* binos parit, in leporina pelle semper in cacuminibus ramorum suspenfa.

Hist. Nat. lib. x. 33.

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ly and heavily. The application would still be just, though we did not affix the notion of sluggishness; since to describe a bird with the habit of walking, contains an implication that it seldom flies.

With respect to the word *gantx*, it may admit of a double acceptation. Here it ought perhaps to be written, as I have done, with a final *x*; and then it signifies *much*, and marks the superlative: but if it be written *gans* with an *s*, it means a *goose*. Some authors, taking the word in the last sense, have translated it by the Latin *anser trappus*, and misled by this interpretation, have alleged that the Great Bustard is an aquatic bird which delights in marshes*. Aldrovandus himself, though informed by a Dutch physician of the ambiguity of the word, and though inclined to give it the same meaning that I do, has yet made Belon say, in his Latin translation of the passage, that the Great Bustard is fond of wet situations; and yet that naturalist affirms directly the contrary †. This error has produced another; and they have applied the name of *Great Bustard* to a bird that is really aquatic, to the black and white goose which is found in Canada,

* *Sylvaticus apud Gesnerum.*

† “The nature of the Bustard is to live in spacious plains, like the ostrich, avoiding water above all things. It does not haunt wet places, since it remains among the ridges after rain, or it visits the pools only to drink.”

and

and in several parts of North America *. It was undoubtedly from the same mistake, that Gesner received the figure of a palmipede bird from Scotland by the name of *Gustard*, which is in that country the real name of Great Bustard †, and which Gesner derives from *tarde*, slow, and *gufs* or *goose*, which has the same signification in Dutch and English. Here then is a bird which is entirely confined to the land, converted into an aquatic bird; and this strange metamorphosis has been occasioned by the equivocal meaning of words alone. Those who have ventured to justify or palliate the name of *anser trap-pus*, or *trapp gans*, have been obliged to say, some of them, that these fly in flocks like the geese ‡; others, that they are of the same size ||; as if these circumstances were sufficient to discriminate a species. For the same reason, the vultures and wood-grouse might be classed together. But I need not insist on an absurdity; I hasten to close this list of errors and this criticism, which may already be considered as rather tedious, though I am convinced that it is necessary.

Belon pretends that the *tetrax alter* of Pliny § was the Great Bustard; but there is no foundation for this opinion, since Pliny mentions the

* Charlevoix, Lade, Theodat, and the Lettres Edifiantes.

† *Gustard* in old Scotch, is the same it would seem as *bustard*, and was probably a corruption of that word.

‡ Longolius, *apud Gesnerum*.

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§ Hist. Nat. lib. x. 22.

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avis tarda in the same place. It is true, that Belon, supporting this error by another, asserts, that the *avis tarda* of the Spaniards and the *otis* of the Greeks mean the owl. But he ought to have proved: 1. That the Great Bustard inhabits lofty mountains, as Pliny affirms of the *tetras alter*, (*gignunt eos Alpes*,) which contradicts the assertions of all the naturalists with respect to this bird, except Barrere *. 2. That the owl, and not the Great Bustard, has really been known in Spain by the name of *avis tarda*, and in Greek by that of *otis*; but this is totally inadmissible, as it is contrary to the testimony of almost all writers. What may have deceived Belon is, that Pliny mentions his second *tetras* as one of the largest birds after the ostrich, which, according to Belon, is true only of the Great Bustard. But we shall find in the sequel, that the wood-grouse sometimes exceeds in bulk the Great Bustard; and since Pliny subjoins, that the flesh of this *avis tarda* has a rank taste, which corresponds much better with the *otus*, the long-eared owl, than with the *otis*, the Great Bustard, Belon should have suspected that the naturalist confounds here the *otis* with the *otus*, as I have before remarked; and that he ascribes to the same species the qualities of two species widely different from each

* Barrere admits two sorts of Bustards in Europe; but he is the only person that has represented them as inhabitants of the Pyrennees. The author was born at Rouffillon, and referred to his native mountains all the animals bred in the adjacent provinces.

other,

other, though expressed in his compilation by nearly similar names; but he was not entitled to conclude that the *avis tarda* was really the long-eared owl.

The same Belon would believe, that his *edicnemus* was an *ostardeau*, or *stone-curlew*; and indeed this bird has only three toes, all of them anterior, like the Great Bustard; but its bill is widely different, the tarsus thicker, the neck shorter, and it seems to have more analogy to the plover than to the Great Bustard. But we shall afterwards consider this subject more fully.

Finally, We may observe that some authors, deceived probably by the resemblance of words, have confounded the name *sarda*, which in Italian signifies a bustard, with the name *sarna*, which in the same language signifies a partridge.

From these discussions we may conclude, that the *otis* of the Greeks, and not *otus*, is our Great Bustard; that the name *Παφος* has been applied to it from inattention, as it has afterwards been to the dodo; that that of *anapba*, given by the modern Jews, belonged formerly to the kite; that the *avis tarda* of Pliny, or rather of the Spaniards in the time of Pliny, was so called on account of its slowness, and not as Nyphus would have it, because it was late before it was known at Rome (*tardus*); that it is neither the *tetrix* of Aristotle, nor the *tetrax* of the poet Nemesianus, nor the Scythian bird mentioned by Aristotle

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Aristotle in his History of Animals, nor the *tetrus alter* of Pliny, nor an aquatic bird; and lastly, that it is the *starda*, and not the *starna*, of the Italians*.

To perceive the importance of this investigation, we need only figure in our imaginations the strange and ridiculous idea which a beginner would form of the Great Bustard, who had collected indiscriminately and with blind confidence all that has been ascribed to this bird by authors, or rather to the different names by which it is

* I shall here collect the various names bestowed on this bird by different authors:

Otis, Tarda, Bistarda, Gefn. and Charleton.

Otis, five Tarda, Johnston.

Otis, seu Tarda avis, Aldrov.

Otis, Græcis; *Tarda*, Iliodoro; *Bistarda*, Alberto, Rzaczynski.

Otis, Tarda, Sibbaldi Scotia Illustrata. Will. and Ray.

Tarda Recentiorum, Schwen.

Tarda, Klein.

Tarda Pyrenaica, maculis nigricantibus, marginibus pennarum roseis, Barrere.

Tetrax, seu Tarax Nemesiani, Longolius.

Tetraon, Schwenck. Charleton, and Klein.

Tetrix, Ourax, Aristotelis, Schwenck.

Erythronaon, Olai Magni. Schwenck, Charleton, and Klein.

Anser trappa, Rzaczyn.

In Hebrew, *Albabari*, Gefn. and Aldrov. *Anapba*, Paulus Fagius.

In Greek, *O'ri*, *Ω'ri*, *O'vri*, Gefn.

In Italian, *Starad*.

In German, *Trapp*, Gefn. Rzaczynski, & Frisch; *Acker-trapp*, Gefn. *Trappe*, Schwenck. and Rzaczyn; *Acker-trappe*, Schwenck.

In Flemish, *Trap-gans*, Gefn. *Trapp-gans*, Shwenck.

In Swedish, *Trapp*.

In Polish, *Drop*, or *Trop*, Rzaczynski.

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distinguished in their works : at one time a diurnal bird, at another a nocturnal ; sometimes an inhabitant of the mountains, at other times an inhabitant of the plains ; sometimes a native of Europe, at other times a native of America ; now a land bird, then an aquatic one ; sometimes granivorous, at other times carnivorous ; sometimes extremely large, at other times very small : in a word, a monster and a chimæra. But, to discriminate the true qualities, it is necessary, as we have done, to draw a critical comparison between the descriptions of former naturalists.

But we have dwelt long enough on words ; it is now time to proceed to things. Gesner exults in being the first who perceived that the Great Bustard might be referred to the gallinaceous class. It is true indeed, that it resembles this class in its bill and its weight ; but it differs in its thickness ; in its legs, which have three toes ; in the shape of its tail ; in the lower part of its legs being naked ; in the great aperture of its ears ; in the beards of feathers which hang under its chin, in place of those fleshy membranes with which the gallinaceous tribes are furnished ; not to mention the difference of the internal structure.

Aldrovandus is not more fortunate in his conjectures, when he takes the frugivorous eagle, mentioned by Ælian *, for a Bustard, because of

* Lib. x. According to Ælian, this eagle was called the *Eagle of Jupiter*. It was still more a frugivorous bird than the Bustard, which eats earth-worms ; for the eagle destroyed no living creature.

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its size : as if the attribute of magnitude were alone sufficient to constitute the idea of an eagle. It appears to me much more probable, that Ælian meant the great vulture, which is a bird of prey, as well as the eagle, and even stronger than the common eagle, and which feeds on grain in cases of necessity. I opened one of these birds which had been wounded by a shot, and which had passed several days in fields of growing corn, and I found nothing in the stomach but a green liquor, which was evidently half-digested herbage.

We can more easily trace the characters of the Great Bustard in the *tetrax* of Athenæus, which is larger than the biggest cocks, (and we know that some of these are of a prodigious size in Asia,) has only three toes on the feet, has beards hanging on each side of the bill, a mailed plumage, a deep cry, and whose flesh has the taste like that of the ostrich, which resembles the Great Bustard in many other respects *. But this *tetrax* cannot be the Great Bustard, since, according to Athenæus, it is a bird nowhere mentioned in the writings of Aristotle ; whereas this philosopher speaks of the Great Bustard in several places.

We might also suspect with Perrault, that those partridges of India mentioned by Strabo as equal to the goose in size, are a species of Bustards.

* " Otis avis fidipes est, tribus insistens digitis, magnitudine gallinæ majoris, capite oblongo, oculis amplis, rostro acuto, linguâ ossæ, gracili collo." GESNER.

The

The male is distinguished from the female by the colours of its plumage, which are differently distributed and more vivid; by those beards of feathers which hang from both sides of the neck, which it is surprising that Perrault has not mentioned, and with which Albin has improperly ornamented the figure of the male; by its size, which is almost double that of the female, a greater disproportion than has been remarked in any other species.

Belon, and some others who were not acquainted with the cassowary, the touyon, the dodo, or perhaps the great vulture, considered the Great Bustard as a bird of the second magnitude, and as the largest next to the ostrich. But the pelican, which was not known to them, is much larger, according to Perrault. Perhaps, however, Belon only saw a large Bustard and a small pelican; and in that case, his mistake will be the same with that of many others, the asserting with respect to species, what is true but of an individual.

Edwards accuses Willoughby of being grossly deceived, and of drawing Albin, who copied him, into the same error, in asserting that the Great Bustard is sixty inches in length, from the point of the bill to the end of the tail. In fact, those which I have measured were only three feet and a half; and such was that of Brisson. The one examined by Edwards, was three feet and a half long, or three feet nine inches from the point

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of the bill to the extremity of the tail. In the *British Zoology*, it is stated at four English feet. The expansion of the wings varies more than one half in different subjects. It is reckoned seven feet four inches by Edwards, nine feet by the authors of the *British Zoology*, and four French feet by Perrault, who declares that he never examined the males, which are always larger than the females.

The weight of this bird admits of considerable variations; some are only ten pounds, others twenty-seven or even thirty. But it also varies in its proportions; and the individuals of the species seem not all formed after the same model. Perrault observed some whose neck was longer, and others where it was shorter, than the legs; some whose bill was more pointed, others whose ears were shaded with longer feathers; and all of them had a much longer neck and legs than those examined by Gesner and Aldrovandus. In the subjects described by Edwards, there were on each side of the neck two naked spots, of a violet colour, but which appeared covered with feathers, when the neck was much extended; a circumstance that has been remarked by no other observers. Finally, Klein mentions that the Great Bustards in Poland are not exactly like to those in France and in England; and indeed we find, by comparing the descriptions, some differences in the colours of the plumage, in the bill, &c.

In general, the Great Bustard is distinguished from the ostrich, the cassowary, the touyon, and the dodo, by the circumstance, that its wings, though little proportioned to its mass, are yet able to raise it from the ground, and support it for some time in the air; whereas these four birds are totally incapable of flying. It is also discriminated from all the others by its size; its feet, which are furnished with three toes, that are parted and without membranes; its bill resembling that of the dodo; its rose-coloured down, and the nakedness of the lower part of the feet; not indeed by any one of these characters, but by the conjunction of them all.

The wing consists of twenty-six quills, according to Brisson; and of thirty-two or thirty-three, according to Edwards, who perhaps includes those of the false wing. The only thing I have to remark on these quills, and which can hardly be perceived from the inspecting of the figure, is that, at the third, fourth, fifth, and sixth feathers of each wing, the exterior webs become at once shorter, and consequently these quills are narrower, where they project from under the coverts.

The quills of the tail amount to twenty, and the two middle ones differ from all the rest.

Perrault * imputes to Belon the asserting that the upper part of the wings of the Great Bustard

* Memoires pour servir a l'Histoire des Animaux.

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is white, contrary to the observations of the academicians, and to what is commonly remarked in these birds, in which there is more white on the belly and the under part of the body, and more brown and other colours on the back and wings. But I am inclined to think, that Belon may be easily justified on this head; for he says exactly what the academicians do, that *the Great Bustard is white under the belly and below the wings*; and when he describes the upper part of the wings as black, he undoubtedly means those quills of the wing which are next the body, and which are really over the wing when it is closed and the bird in an erect posture. But in this sense the assertion is true, and conformable to the description of Edwards, where the twenty-sixth quill, and those that follow, inclusive to the thirtieth, are perfectly white.

Perrault has made a more accurate observation. It is, that some feathers of the Great Bustard are covered with down, not only at their base, but even at their extremity; so that the middle of the feather, which consists of close connected webs, is situated between two parts, where there is no down. But what is very remarkable, the down at the origin of all these feathers, except the quills at the end of the wing, is of a bright red, approaching to rose colour, which is a character common to the Great and the Small Bustard. The end of the quill is also of the same colour.

The foot, or rather the *tarsus*, and the lower part of the foot, which articulates with the *tarsus*, are covered with very small scales, those of the toes being long narrow tablets; they are all of a grey colour, and sheathed with a cuticle which it casts like the slough of a serpent.

The nails are short and convex, both above and below, like those of the eagle, termed *Hæliætos* by Belon; so that a section perpendicular to their axis, would be nearly circular.

Salerne was mistaken, in asserting, that the Great Bustard, on the contrary, had nails concave below.

Under the feet, we can perceive behind a callous prominence, which serves instead of a heel*.

The breast is thick and round †; the width of the aperture of the ears is probably subject to variations; for Belon found, that it was larger in the Great Bustard than in any other land bird ‡, while the academicians could perceive nothing unusual. These apertures are concealed under the feathers; and internally we discovered two ducts, one of which may be traced into the bill, and the other leads to the brain.

In the palate and the lower part of the bill there are situated, under the membrane that covers

* Belon and Gesner.

† Belon.

‡ "One may easily put the tip of the finger in the passage."

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vers these parts, several glands which open into the cavity of the bill by very distinct mouths*.

The tongue is fleshy without; and within it is furnished with a cartilaginous nut, fixed to the *os hyoides*, as in most birds; its sides are beset with points, that consist of a substance intermediate between membrane and cartilage. The tongue is hard, and terminates in a point; but is not forked, as alleged by Linnæus, who, with others, has undoubtedly been misled by a wrong punctuation in Aldrovandus †.

Under the tongue, appears a kind of sac, containing about seven English pints, and which Dr. Douglas, who first discovered it, supposes to be a reservoir, which the bird fills with water, to serve as a supply, while it wanders in the midst of those vast and parched plains which it naturally prefers. But this singular reservoir is peculiar to the male ‡, and I suspect has given rise to a mistake of Aristotle's. That great naturalist asserts, that the œsophagus of the Great Bustard is wide through its whole length ||; but the moderns, and particularly the academicians, have observed,

Belon.

Lingua ferrata, utrimque acuta. The *utrimque* ought to be separated from *acuta*, and joined to *ferrata*. It is only a translation of Belon: "Sa langue est dentelee de chaque côté, pointue et dure par le bout."—Its tongue is indented on each side (*utrimque*), pointed and hard at the tip.

Edwards.

Hist. Anim. lib. ii. cap. ult.

that it enlarges only as it approaches the gizzard*. Both these assertions, which seem to be contradictory, may yet be reconciled, if we suppose that Aristotle, or the observers who were employed to collect the facts for the composition of his History of Animals, had mistaken for the œsophagus that bag, or reservoir, which is really very broad through its whole extent.

The true œsophagus, where it expands, is beset with glands regularly arranged. The gizzard, which comes next, (for there is no craw,) is about four inches long and three inches broad: it is as hard as that of ordinary hens; which is not owing, as in these, to the thickness of the fleshy part, which is here very thin, but to the internal membrane, which is extremely hard and thick, and folded and interwoven in various directions, so as to increase much the bulk of the gizzard.

This internal membrane appears not to be continuous, but only connected closely to that of the œsophagus. Further, this is white, while the internal membrane of the gizzard is yellow like gold †.

The length of the intestines is about four feet exclusive of the *cæcum*; the internal coat of the *ileon* is striped with longitudinal folds, and marked at its end with some transverse wrinkles ‡.

* Gesner, Aldrovandus, and Perrault.

† Perrault, partie ii.

‡ Ibidem,

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The two *cæca* take their rise about seven inches from the *anus*, and stretch forwards. According to Gesner, they are unequal in all their dimensions; the narrowest is the longest, and bears to the others the ratio of six to five. Perrault says only, that the right one, which measures about a foot, is a little longer than the left.

Near an inch from the *anus*, the intestine contracts and then expands, forming a bag, which could admit an egg, and into which are inserted the ureters and the *vas deferens*. This intestinal bag, called Fabricius's purse *, has also its *cæcum*, two inches long and three inches broad; and the hole by which they communicate is covered by a fold of the internal membrane, which serves for a valve †.

It follows from these observations, that the Great Bustard, far from having several stomachs, and a great extent of intestines, like the ruminating animals, has, on the contrary, a very short and narrow alimentary canal, and which is furnished with only a single ventricle. The opinion of those, therefore, who pretend that this bird ruminates, would be refuted by this circumstance alone ‡. Nor can we believe with Albert, that the Great Bustard is carnivorous, that it feeds on dead bodies, and even wages

* From the name of *Fabricius of Aquapendente*, who first observed it.

† Perrault.

‡ Athenæus, Eustachius.

war against the feeble kinds of game; and that it never eats herbage or grain but in cases of extreme want: far less ought we to conclude from these suppositions, that the bill and claws are hooked. These errors, collected by Albert from a passage of Aristotle which is misunderstood, have been admitted by Gesner, with some modifications, but rejected by all the other naturalists*.

The Great Bustard is a granivorous bird; it lives on herbs, grain, and every kind of seed; on the leaves of coleworts, of dandelions, of turnips, of mouse-ear, of vetches, of smallage, of carrots, and even on hay, and on those large worms which, during the summer, swarm before sun-rise on downs. In the depth of winter, and when the ground is covered with snow, they feed on the bark of trees; and at all times, they swallow small stones, or even bits of metal, like the ostrich. The academicians, on opening the stomach of one of the Great Bustards which they observed, found it filled partly with stones, some of which were of the size of a nut, and partly with *doubloons*, to the number of ninety, all worn and polished where they were exposed to the attrition, but without the least appearance of erosion.

Willoughby found in the stomach of these birds, which were killed in the harvest season,

* Pennant, and others.

three or four grains of barley, with a large quantity of hemlock seed; which indicates a decided preference, and shews that these seeds would make the best bait for ensnaring them.

The liver is very large; the gall-bladder, the pancreas, the number of pancreatic ducts, their insertion, and that of the hepatic and cystic ducts, are liable to some variation in different subjects.

The testicles are shaped like a small white almond, and pretty firm; the *vas deferens* is inserted in the lower part of the sac of the *rectum*, as I have already mentioned; and, on the upper margin of the *anus*, we find a small appendix, which supplies the place of a yard.

To these anatomical observations, Perrault adds this remark: That among all the subjects dissected by the academicians, not a single female occurred; but we have already anticipated, at the article of the ostrich, what reflections we should here make.

In the pairing season, the male struts round the female, and spreads his tail into a sort of wheel*.

The eggs are not so large as those of a goose; they are of a pale olive brown, sprinkled with small dark spots, in which respect their colour bears a great resemblance to that of the plumage.

* Klein and Gesner.

This bird does not build any nest, but only scrapes a hole in the ground*, and drops into it two eggs, which it hatches for thirty days, as usual with large birds, according to Aristotle †. When the anxious mother dreads the visits of the sportsmen, she takes her eggs under her wings, (it is not described how,) and transports them to a safe place ‡. She commonly chooses fields of corn in the ear, from an instinct which prompts all animals to bring forth their young in situations that supply the proper food. Klein pretends, that she prefers oats as having the shortest stalks, and that while she sits on her eggs, her head is so elevated as to glance along the plain and notice what is going forward. But this assertion agrees neither with the general opinion of naturalists, nor with the instinct of the Great Bustard, which, as it is wild and timid, must seek for safety rather by concealing itself in tall corn, than by over-topping it, in order to observe the sportsmen at a distance, and incur the danger of being itself discovered.

She sometimes leaves her eggs in quest of food, and if, during her short absence, one handle or even breathe on them, it is said that she perceives it on her return, and abandons them.

The Great Bustard, though a very large bird, is excessively timorous, and seems neither

* British Zoology.

† Hist. Anim. lib. vi.

‡ Klein.

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conscious of its strength, nor animated by the proper spirit of exerting it. Sometimes they assemble, to the number of fifty or sixty; but they gain as little confidence from their multitude, as from their strength or their size; the slightest appearance of danger, or rather the least novelty, alarms them; and they can hardly provide for their safety, but by flight. Dogs they dread most, especially as these are generally used to hunt them; but they are also afraid of the fox, the pole-cat, and every other animal, however small, which has courage to attack them. They shrink from the fierce animals, and even the birds of prey. So dastardly they are, that, though only slightly hurt, they die through fear, rather than from the effect of their wounds*. Yet Klein asserts that they are sometimes irritated, and inflate a loose skin, which hangs below the neck. If we believe the ancients, the Great Bustard has no less affection to the horse, than antipathy to the dog †. As soon as the timorous bird perceives that noble animal, it flies to meet him, and generally places itself under his feet ‡. If we admit this sympathy between such different animals, we might explain the fact, by saying, that the Great Bustard finds in horse-dung some grains that are half-digested, and which prove a resource when pressed by hunger.

* Gesner.

† Oppian, *de Aucupio*.‡ Plutarch, *de Soc. Animal*.

When

When it is hunted it runs exceedingly fast, and sometimes proceeds several miles without the least interruption *. But as it with difficulty takes wing, and never unless assisted carried by a favourable wind, and as it cannot perch on account of its weight, or by reason of the want of a hind toe, with which it might cling on a branch and support itself; we may admit, on the testimony of both the ancients and moderns †, that it can be caught by grey-hounds. It is also chased by a bird of prey ‡; or nets are spread, into which it will be decoyed by leading out a horse, or by merely disguising one's self in a horse's skin §. Every kind of snare, how artless soever, must succeed, if it is true, as Ælian affirms, that in the kingdom of Pontus, the foxes attract them by lying on the ground, raising their tail, and moving it like the neck of a bird; the Bustards, he says, mistake this object for one of their own species, advance to it without hesitation, and become the prey of the insidious animal. But this implies much subtlety in the fox, much stupidity in the Bustard, and perhaps more credulity in the writer.

I have already mentioned, that these birds sometimes flock together, to the number of fifty or sixty: this happens in Great Britain, espe-

* British Zoology.

† Xenophon, Ælian, Albin, Frisch, &c.

‡ Aldrovandus.

§ Athenæus.

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cially in autumn; they spread over the turnip-fields and commit great havock*. In France, they are observed to arrive and retire regularly in the spring and autumn, but in smaller flocks; and they seldom halt, except on the most elevated spots. They have also been remarked on their passage through Burgundy, Champagne, and Lorraine.

The Great Bustard is found in Lybia, near Alexandria, according to Plutarch †; in Syria, in Greece, in Spain, in France, in the plains of Poitou and Champagne ‡; in the open countries situated on the east and south of Great Britain, from Dorsetshire to the Mers and Lothians in Scotland §; in the Netherlands and Germany ||; in the Ukraine and Poland; where, according to Rzacyński, it passes the winter in the midst of the snow. The authors of the British Zoology affirm, that these birds seldom leave the place where they were bred, and that their greatest excursions never exceed twenty or thirty miles; but Aldrovandus asserts that, towards

* British Zoology. Longolius says, that the gardeners have great antipathy to the Bustard, on account of their destroying the turnips. "Nec ullam pestem odere magis olitores, nam rapis ventrem fulcit, nec mediocri prædâ contentus esse solet." LONGOLIUS *apud Aldrov.*

† Unless the *otis* be confounded with *otus*, which happens so frequently.

‡ Salerne.

§ British Zoology, *Aldrovandus*.

|| Frisch says, that the Bustard is the largest of the native fowls in Germany.

the end of autumn, they arrive in flocks in Holland, and limit their haunts to the fields remote from cities and inhabited places. Linnæus says, that they travel into Holland and England. Aristotle also mentions their migrations *; but this point requires to be elucidated by more accurate observations.

Aldrovandus accuses Gesner of a kind of contradiction on this subject; that he affirms, that the Great Bustard migrates with the quails †, though he had mentioned before that they never leave Switzerland, and are sometimes caught in that country during winter ‡. But these assertions may be reconciled, if we admit, with the authors of the British Zoology, that this bird only *flits*. Besides, those found in Switzerland are few and straggling, and such as by no means represent the species; and is there any proof that those which are sometimes caught at Zurich in the winter, are the same individuals that lived in the country during the summer?

What appears most certain is, that the Great Bustard is but rarely found in mountainous or populous countries; as in Switzerland, Tyrol, Italy, many provinces of Spain, France, Eng-

* Hist. Anim. lib. viii.

† " Otidem de quâ scribo avolare puto cum coturnicibus, sed corporis gravitate impeditum, perseverare non posse, & in locis proximis remanere."

‡ " Otis magna, si ea est quam vulgo Trappum vocant, non avolat nisi fallor ex nostris regionibus (& si Helvetiæ rara est,) & hieme etiam interdum capitur apud nos." GESNER, *ibid.*

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land, and Germany; and that when it does occur, this happens generally in the winter*. But though it can live in cold countries, and, according to some authors, is a bird of passage, it would seem that it has never migrated into America by the north; for though the accounts of travellers are filled with Bustards found in the New Continent, it is easy to perceive that these pretended Bustards are aquatic birds, as I have before remarked, and entirely different from that which we at present consider. Barrere mentions, indeed, in his Essay on Ornithology, a cinereous Bustard of America, which he says he observed; but in the first place, it does not appear that he had seen it in America, since he takes no notice of it in his account of Equinoctial France; in the second place, he is the only one, except Klein, who speaks of an American Bustard; and that of Klein, the

* "Memini ter quaterque apud nos captum, & in Rhætia circa Curiam, Decembri & Januario mensibus, nec apud nos, nec illic a quoquam agnitum." GESNER.

"The Bustard is seldom seen in Orleans, and only in winter during snow." SALERNE, *Ornithologie*.

"A person of indisputed credit," subjoins Salerne, "told me, that one day, when the fields were covered with snow, one of his servants found, in the morning, thirty bustards half-frozen, which he brought into the house, and that they were taken for turkies that had been shut out, and were not discovered till their warmth was recruited."

I recollect to have seen two myself at two different times in a part of Burgundy that is fertile in grain, but mountainous; but this was always in the winter season, and while snow was lying on the ground.

macucagua

macucagua of Marcgrave, has not the characters that belong to the genus, since there are four toes on each foot, and the lower part of the leg is feathered to its articulation with the *tarsus*; it wants the tail, and bears scarcely any relation to the Great Bustard, unless that it is heavy, and never flies or perches. With respect to Barrere, his authority is not so great in natural history, that his testimony can outweigh that of all others. And, finally, his cinereous American Bustard is probably the female of the African Bustard, which, according to Linnæus*, is of an ash-colour.

It will be perhaps asked, how a bird, which, though bulky, is furnished with wings, and sometimes makes use of them, has never migrated into America by the straits on the north, as many quadrupeds have done? I would answer, that though it flies, this is only when it is pursued; that it never makes a distant excursion, and, according to the remark of Belon has an aversion to water, and therefore could never venture to cross the wide expanse of the ocean; for, though the continents approach each other towards the north, the interval is still prodigious, compared with the short and tardy flight of the Bustard.

The Great Bustard may then be considered as a bird appropriated to the ancient continent

* The *Otis Afra* of Linnæus.

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but attached to no particular climate; it inhabits the burning sands of Lybia, and the frozen shores of the Baltic, and occurs in all the intermediate countries.

Its flesh is excellent. That of the young ones, after being kept a short time, is remarkably delicate; and if some writers have maintained the contrary, this arises from their confounding *otis* with *otus*, as I have before observed. I know not why Hippocrates forbids persons subject to the falling sickness to taste it. Pliny recommends the fat of the Bustard to allay the pain in the breasts after child-birth. The quills of this bird, like those of the goose and the swan, are used for writing; and anglers are eager to fix them to their hooks, because they believe that the little black spots with which they are mottled, will appear to the fish as so many little flies, and attract them by this deception. [A]

[A] The specific character of the Great Bustard, *Otis-tarda*: "The head and neck of the male is tufted on both sides." It is ranged in the order of the *Gallinæ*.

M

The LITTLE BUSTARD*.

La Petite Outarde, vulgairement *La Canepetière*, Buff.

Otis-tetrax, Linn. Gmel. Mull. and Bor.

Otis Minor, Briff. Ray, and Will.

Tarda Nana, Klein.

Tetrax, Belon and Aldrov.

Gallina pratensis, Cet.

The French Field Duck, Albin:

THIS bird is distinguished from the Great Bustard only by some variations in the colours of its plumage, and in being much smaller. Like the Great Bustard, also, it has received the epithet of duck (*cane*), though it has no analogy to that aquatic bird, and is never found near streams or marshes. Belon pretends that this name has been applied, because it squats on the ground as the ducks do in the water †; and Salerne imagines that it is on account of its resembling in some measure the wild duck, and flying in the same manner. But these etymological conjectures are vague and uncertain; they rest on a single point of analogy, and are inconsistent with each other; and the name is therefore apt to convey a false idea. The epi-

* The name given by Buffon, Pennant, Edward, and Latham.

† *Cane-terre*, changed into *canepetière*.

thet which we have adopted is not liable to the same objections.

Belon supposes that this bird is the *tetrax* of Athenæus; resting his opinion on a passage of the ancient, where it is compared, in point of size, to the *spermologus* *, which he takes for the *freux*, a kind of large crow; but Aldrovandus affirms, on the contrary, that the *spermologus* is a species of sparrow, and consequently cannot signify the Little Bustard: and Willoughby even asserts that this bird had no name among the ancients.

Aldrovandus too informs us, that the fishers at Rome gave the name of *stella*, for what reason he does not know, to a bird which at first he took for the Little Bustard, but afterwards, on more minute inspection, he discovered to be different. Yet, notwithstanding this express declaration, Ray and Salerne say, that the Little Bustard and the *stella avis* of Aldrovandus appear to be the same species, and Brisson places it without hesitation among the synonyms; he seems even to allege that Charleton and Willoughby had the same idea, though these authors have been very attentive not to confound the

"The *tetrax*," says Alexander Myndius, "is a bird of the bulk of the *spermologus*, of the colour of potters clay, variegated with some dirty spots and great white lines: it lives on fruits, and after it has young, it utters a cry that consists of four parts." ATHENÆUS, lib. ix.

two kinds of birds, which it is most probable they had never seen*. On the other hand, Barrere, classing it with the rail, bestows on it the name of *ortygometra melina*, and gives it a fourth toe to each foot; so true is it, that the multiplicity of systems, without increasing our real knowledge, only serves to give birth to new errors.

This bird is a real Bustard, as I have said, but formed on a smaller scale; and for this reason Klein terms it *tarda nana*, *dwarf bustard*. Its length, from the point of the bill to the end of the nails, is eighteen inches, or it is less than half that of the Great Bustard. This measure will serve as a standard of comparison, from which all the other dimensions may be deduced; but we must not conclude with Ray, that its bulk is to that of the Great Bustard as one to two; it is as the cubes of these numbers, or as one to eight. It is nearly the size of a pheasant †, and it has, like the Great Bustard, only three toes on each foot. The lower part of its leg is naked, the bill is similar to that of the gallinaceous tribe,

* Charleton makes two different species; the ninth, of his *physiavori*, which is the Little Bustard; and the tenth, which is the *aciv stella*. In the former he copies Belon, and in the latter he refers to Johnston. Willoughby keeps the names of *stella* and *canepetiere* entirely distinct.

† "To have an idea of the Little Bustard, conceive a quail much spotted, and as large as a middling pheasant." BELON.

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and there is a rose-coloured down under all the feathers on the body ; but it has two *pennæ* fewer in the tail, one more in each of the wings ; and when these are closed, the last ones stretch almost as far as the first, or those most remote from the body. Further, the male has not those beards of feathers as the male of the great species ; and Klein adds, that its plumage is not so beautiful as that of the female, contrary to what is most usually remarked in other birds. Excepting these slight differences, the two species are perfectly analogous ; they have the same shape, the same internal disposition of parts, the same instincts, the same habits ; and it would seem that the small one was produced from the egg of the large, when it had not force sufficient to effect a complete developement.

The male is distinguished from the female by a double white collar, and by some other varieties in point of colour ; but the plumage on the upper part of the body is almost the same in both sexes, and, as Belon has remarked, is much less liable to vary in different individuals.

According to Salerne, they have a particular call in the love season, which begins in May. It is the sound, *broo* or *proo*, which they repeat the whole night, and are heard at a great distance. The males fight obstinately, and contend for the dominion of a certain tract ; one male takes a number of females under his protection, and the

place of their amours is trodden like a barn floor.

The female lays, in the month of June, three, four, or even five eggs, which are extremely beautiful, and of a shining green. When the young are hatched, she leads them as a hen does her chickens. They begin to fly about the middle of August; and when they hear a noise, they lie flat on the ground, and suffer themselves to be crushed, rather than stir from the spot*.

The males are caught in snares, into which they are decoyed by a stuffed female, whose cry is imitated. They are often hunted by means of the falcon; but in general it is difficult to get near them, for they are always on the watch on some rising spot in fields of oats; though never, it is said, among those of rye or wheat. Towards the close of the summer season they prepare to quit the country, and are then observed to assemble in flocks, and the young ones are no longer distinguishable now from the old †.

According to Belon, they feed like those of the great species on herbs and grain, and also on ants, beetles, and small flies; but Salerne maintains that they live chiefly on insects, and only

* Salerne. That writer does not quote his authorities. There is some reason to suspect that he confounds the *tetrax*, or woodcock, with the *tetrax*, or Little Bustard; especially as he is the only naturalist who describes minutely the amours of the Little Bustard.

† Salerne.

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eat sometimes in the spring the most tender leaves of the sow-thistle.

The Little Bustard is not dispersed through so wide a range as the large species. Linnæus says, that it is found in Europe, and particularly in France. This assertion is rather vague; since there are some extensive countries in Europe, and even large provinces in France, where it is unknown. We may refer the climates of Sweden and Poland to the number of such as are unfavourable to its nature; for Linnæus takes no notice of it in his *Fauna Succica*, nor Rzaczynski in his Natural History of Poland; and Klein never saw more than one at Dantzic, and it came from the *menagerie* of the Margrave of Baden.

Nor can it be more common in Germany; since Frisch, who undertakes to describe and figure the birds in that country, and who is minute on the subject of the Great Bustard, never mentions a word of this species; and Scwenckfeld never names it.

Gefner only inserts its name in the list of those birds which he had never seen; and what indeed shews this is, that he supposes its feet are hairy as those of *Attagas*, which affords a suspicion that it is at least very rare in Switzerland.

The authors of the British Zoology, whose view it was to take notice of no animal but what was British, or at least of British origin, conceive, that they would not have conformed to their

their plan, if they had described a Little Bustard that was killed in Cornwall; but which they consider as a stray bird, and by no means a native of Great Britain. So totally unknown is it in that country, that a specimen being presented to the Royal Society, none of the members then present could recognise it, and they were obliged to apply to Edwards to discover its species*.

On the other hand, Belon informs us, that, in his time, neither the ambassadors from Venice, Ferrara, and the Pope's dominions, to whom he shewed one, nor any in their train, could decide what it was, and that some of them even took it for a pheasant. From this circumstance he properly infers that it must be at least very uncommon in Italy; and the conclusion is still very probable, though Ray, in passing through Modena, saw one in the market. We may therefore reckon Poland, Sweden, Great Britain, Germany, Switzerland, and Italy, as countries where the Little Bustard is not found. It is even likely that the range is confined within narrower limits and that France is the region peculiar to this bird, and the only climate suited to its nature for the French naturalists describe it the best, and all the others, except Klein, who saw one, merely copy Belon. Nor must we conclude that the Little Bustard is equally common in every part of France; there are large provinces in the kingdom where it is never seen. Salerne informs us

* Edwards' Gleanings.

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that it is pretty common in Beauce (where it is only a bird of passage); that it arrives about the middle of April, and retires on the approach of winter: he subjoins, that it delights in poor stony lands, and from this circumstance it derives the epithet of *canepetrace*, or *rock duck*. It also occurs in Berri, where it receives a similar name*. It must be common in Maine and Normandy; since Belon, judging of the other provinces from these with which he was best acquainted, asserts, that *there is not a peasant in the country who does not know its name*.

The Little Bustard is naturally cunning and suspicious; infomuch that it has given rise to a proverb. When it is apprehensive of danger, it immediately quits the spot, and, keeping close to the ground, flies swiftly 200 or 300 paces forward, and then runs so fast that a man can hardly overtake it †.

The flesh of the Little Bustard is black, and is excellent food. Klein assures us, that the eggs of the female in his possession were very palatable, and that the flesh was better than that of the female of the black grouse.

Its internal structure is nearly the same, according to Belon, as that of the common granivorous birds. [A]

* *Canepetratte*.

† Belon.

[A] Specific character of the Little Bustard, *otis-tetrax*:—"Its head and throat smooth." Latham adds, that "it is variegated with black rufous and white, and the under surface white."

It is frequent in the southern plains of Russia, and even penetrates into Great Tartary; but it is never found in Siberia.

M

FOREIGN BIRDS

THAT ARE

ANALOGOUS TO THE BUSTARDS.

I.

The LOHONG, or CRESTED ARABIAN
BUSTARD.—*Buff.*

Otis Arabs, Linn. Gmel. Briss. and Klein.
The Arabian Bustard, Lath. and Edw.

THE bird which the Arabians call *Lobong*, and which Edwards first figured and described, is nearly the size of our Great Bustard, and, like it, has three toes on each foot, turned the same way, only rather shorter; the feet, the bill, and the neck are longer; and, on the whole, it is rather more taper-shaped.

The plumage on the upper part of the body is browner, and similar to that of the woodcock; or it is tawny and radiated with deep brown with white spots, in the form of a crescent, on its wings. The lower part of the body is white, as also the margin of the upper part of the wing. The crown of the head, the throat,

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and the fore side of the neck, are marked with transverse bars of a dull brown on a cinereous ground. The lower part of the leg, the bill, and the feet, are of a bright brown, and yellowish; the tail droops like that of the partridge, and is stained with a cross black bar; the great quills of the wing and the crest are also of the same colour.

This crest forms a remarkable character in the Arabian Bustard; it is pointed, directed backwards, and much inclined to the horizon: from its base it sends off two black lines, of which the longer one passes over the eye, and makes a kind of eye-lid; the other, which is much shorter, stretches under the eye, but does not reach it; the eye is black, and placed in a white space.

When we take a profile view of this crest at a little distance, we might fancy that we see ears pretty close to the head, and leaning backwards; and as the Arabian Bustard was undoubtedly better known to the Greeks than ours, it is probable that they named it *otis*, on account of these kind of ears, in the same way that they have called the long-eared owl *otus* or *otos*, by reason of two similar tufts which distinguish that species of nocturnal birds.

An individual of this kind, which was brought from Moka, lived several years at London, in the possession of Sir Hans Sloane; but Edwards, who has given us a coloured figure of it, has preserved no account of its dispositions, its habits,

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habits, or even of its manner of feeding; he ought at least to have not confounded it with the gallinaceous tribes, from which it differs so widely, as I have shewn in the article of the Great Bustard. [A]

[A] Linnæus characterises the Arabian Bustard *Ovis Arabs*, by its "erect tufted ears." It inhabits Arabia Felix, and penetrates in Asia as far as the Caspian Sea.

II.

The AFRICAN BUSTARD.—*Buff.*

Ovis Afra, Gmel.

Ovis Atra, Linn.

The White-eared Bustard, Lath.

THIS is what Linnæus makes his fourth species; it differs from the Arabian Bustard by the colours of its plumage, the black predominating; but the back is cinereous, and the ears white.

In the male the bill and feet are yellow, the crown of the head ash-coloured, and the exterior margin of the wings white; but the female is entirely cinereous, except the belly and thighs, which are black, as in the Indian Bustard.

This bird is found in Ethiopia, according to Linnæus; and it is extremely probable that the

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one mentioned by the navigator Le Maire, by the name of *flying ostrich* of Senegal, is the same; for though the account given by him be short, it partly coincides and is entirely consistent with the description of the naturalist. Its plumage is grey and black, its flesh delicious, and its size is nearly the same with that of the swan. Our conjecture receives additional force from the testimony of Adanson; that intelligent naturalist having killed one of these flying ostriches at Senegal, and examined it narrowly, assures us, that, in many respects, it is analogous to the European Bustard, but differs in the colour of its plumage, which is generally of a grey-ash in the greater length of its neck, and also by a kind of crest on the back of the head.

This crest is evidently what Linnæus calls the *ears*, and the grey-ash colour is exactly that of the female; and as these are the principal characters by which the African Bustard of Linnæus and the flying ostrich of Senegal are distinguished from the European Bustard, it would seem that we may conclude that they have a great analogy: and for the same reason we may apply to both what is observed with respect to each individual; for example, that they are nearly as large as our bustard, and have a longer neck. The last mentioned circumstance, noticed by Adanson, is a point of resemblance to the Arabian Bustard, which inhabits almost the same climate; and nothing to the contrary can be inferred from the silence

III

silence of Linnæus, since he gives no measurement at all of the African Bustard. With regard to bulk, Le Maire makes that of the flying ostrich equal to that of the swan; and Adanson represents it as the same with that of the European Bustard: since, while he mentions that the resemblance is complete in many respects, and states the principal differences, he omits that of the size; and also as Ethiopia or Abyssinia, which is the native region of the African Bustard, and Senegal, which is that of the flying ostrich, though widely differing in longitude, are of the same climate; I conceive that there is great probability that these two birds belong to the same identical species. [A]

[A] The specific character of the African Bustard, *Otis Afra*, is:—"That it is black, its back cinereous, its ears white." It is called *korr-haen* by the Dutch at the Cape of Good Hope. Sparrman says, that it artfully conceals itself till one comes pretty near it, when it suddenly soars almost perpendicularly aloft, with a sharp quavering scream, *korrh, korrh*, which gives the alarm to the animals in its neighbourhood.

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The CHURGE or MIDDLE INDIAN
BUSTARD.—*Buff.**Otis Bengalenfis*, Gmel.*Pluvialis Bengalenfis major*, Briff.*Indian Bustard*, Edw. and Lath.

THIS Bustard is not only smaller than the European, the African, or the Arabian species, but it is taller and more slender. It is twenty inches high, from the crown of the head to the plane on which it stands; its neck seems to be shorter in proportion to its feet; but in other respects it is entirely analogous to the Common Bustard. It has three separate toes on each foot; the lower part of the leg is not feathered; the bill is somewhat hooked, though more elongated. I am at a loss to conceive why Brisson referred it to the genus of plovers.

The distinguishing character between the plovers and the bustards consists, according to that naturalist, in the form of the bill; which, in the latter, is an arched cone, and in the former it is straight, and enlarged near the extremity. But in the Indian plover the bill is curved rather than straight, and not at all swelling near the point as in the plovers; at least so

it is represented in a figure of Edwards, which Briffon allows to be exact. I may add, that this property is more remarkable than in the Arabian Bustard of Edwards, the accuracy of which figure is also admitted by Briffon; and yet he has not hesitated to class it with the bustards.

We need only cast a glance on the figure of the Indian Bustard, and compare it with those of the plovers, to be convinced that it differs totally in its appearance and proportions: its neck is longer, its wings shorter, and its shape more expanded; and besides, it is four times the bulk of the largest plover, whose extreme length is only sixteen inches, while that of the Indian Bustard is twenty-six*.

Black, fulvous, white, and grey, are the predominant colours of its plumage, as in the European Bustard; but they are differently distributed. The black is spread on the crown of the head, on the neck, the thighs, and the lower part of the body; a bright yellow occupies the sides of the head and the circuit of the eyes; a browner yellow, and one more shaded with black, stains the back, the tail, that part of the wings next the back, and the top of the breast, where it forms a broad belt on a dark

* This is consistent with the measure I have stated above, that it is twenty inches from the crown of the head to the plane which it stands; for the bill and toes are not then taken into account.

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ground; the white appears on the coverts of the wings farthest from the back, and white mixed with black on the intermediate space; the deepest gray is laid on the eye-lids, the extremity of the longest quills of the wing*, of some of the middle and shortest ones, and on some of their coverts; lastly, the brightest gray, which verges on white, is spread on the bill and the feet.

This bird is a native of Bengal, where it is called *Cburge*. We may remark, that the climate of Bengal is nearly the same with that of Arabia, Abyssinia, and Senegal, where the two preceding Bustards are found; and we may term it the *Middle Bustard*, because it holds the intermediate rank between the large and the small species. [A]

* As in some of the European Bustards. PERRAULT.

[A] Specific character of the Indian Bustard, *Otis Bengalensis*:

"It is black; the space about the eyes dusky; the back, the rump, and the tail, dusky, but glossed."

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IV.

The HOUBARA, or LITTLE-CRESTED
AFRICAN BUSTARD.—*Buff.**Ouis-Houbara*, Gmel.*The Ruffed Bustard*, Lath.

WE have found, among the Great Bustards that some are crested and others not; and we shall discover that the same distinction prevails in the Little Bustards. That which the people of Barbary call *Houbara*, is actually decorated with a crest or ruff. Dr. Shaw, who gives us a figure of it, asserts positively, that it has the shape and plumage of the Great Bustard but is much smaller, not exceeding the size of capon; for this single reason, that intelligent traveller, who was certainly not acquainted with the little species which inhabits France, finds fault with Golius for translating the word *Houbaary* by Bustard.

It lives like ours on vegetable substances and insects, and generally inhabits the borders of the desert.

Though Dr. Shaw takes no notice of the ruff in his description, there is one in the figure which he refers to; and it appears bending backwards and pendant. It is formed by long feathers

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thers which rise from the neck; and which, as in the domestic cock, bristle when the bird is irritated.

“ It is curious,” says Dr. Shaw, “ to observe, when it apprehends the attack of a rapacious bird, the turnings and windings, the marches and countermarches which it performs; in a word, the evasions and stratagems which it makes to elude its enemy.”

This learned traveller subjoins, that it furnishes an excellent medicine for fore-eyes; and that, for this reason, its gall, and a certain substance found in its stomach, are sometimes sold at a very high price. [A]

[A] Specific character of the Ruffed Bustard, *Otis-Hovbara*: Yellowish, the feathers of the neck very long, whitish, and striated with black; the quills of the wings large and black, and marked near the middle with a black spot.”

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The RHAAD, another SMALL-CRESTED
AFRICAN BUSTARD.—*Buff.**Otis-Rhaad*, Gmel.*The Rhaad Bustard*, Lath.

THE Rhaad is distinguished from the Little Bustard of France by its crest, and from the Houbaara of Africa by the defect of the ruff. It is however of the same size with the latter; its head is black; its crest deep blue; the upper part of the body and the wings yellow, spotted with brown; the tail of a brighter brown, radiated transversely with black; the belly white and the bill strong, as well as the legs.

The Little Rhaad differs from the Great one by its size, (being no larger than a common hen), by some varieties in the plumage, and by the want of a crest. But it may still possibly be of the same species with the other, and differ only by its sex. My reasons for this conjecture are these: 1. It inhabits the same climate, and is called by the same name. 2. In almost all birds except the carnivorous kinds, the male seems to have more power of development, which appears in their greater height, the strength of the muscles, and in certain excrescences, as fleshy membrane

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membranes, spurs, &c. or by tufts, crests, and ruffs, which proceed, as it were, from the luxuriancy of organization, and even by the brightness of the colours of their plumage.

At any rate, both the Great and the Little Rhaad are termed *Saf-saf*. *Rbaad* signifies thunder in the African language, and is expressive of the noise that these birds make in springing from the ground. *Saf-saf* denotes the rustling of their wings when flying*. [A]

* Shaw's Travels.

[A] Specific character of the Rhaad:—"There is a crest on the back of the head in the male, of sky-blue; the head black; the upper-side of the body and the wings yellow, spotted with dusky colour; the abdomen white, the tail duskiſh, with black transverse streaks." It is gregarious and granivorous in habit.

The C O C K.

*Le Coq, Buff.**Phasianus Gallus* *, Gmel.

THIS bird, though a domestic, and the most common of all, is still, perhaps, not sufficiently known. Most persons, if we except the few who bestow particular attention on the productions of Nature, need some information with respect to the peculiarities of its external form, and of its internal structure; its habits, original and acquired; the differences occasioned by sex, climate, or food; and concerning the various races which sooner or later have branched from the primitive stock.

But if the Cock be too little known by the bulk of men, what embarrassment must it give to the methodical naturalist, who is never satisfied till he refer every object to his classes and genera? If he adopts the number of toes as the foundation of his system, he will range it with the birds that have four. But what place will

* In Greek, it was called *Αλεκτρυς*, from *α, priv.* & *Αλεκτροι*, a cough, on account of its early crowing.

In Latin, *Gallus*: in Spanish and Italian, *Gallo*: in German, *Han*: in Polish, *Kur*, or *Kogut*: in Swedish, *Hoens*, or *Tupt*.

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he assign to the hen with five toes, which is undoubtedly of the gallinaceous tribe, and of an ancient family; since it can be traced to the time of Columella, who mentions it as a generous breed *? If he forms the Cock into a separate genus, distinguished by the singular shape of its tail, where will he place the Cock that has no rump, and consequently no tail, but which still belongs to the same family? If he admits that the legs clothed with plumage to the heels, is a generic character, will he not be puzzled in classing the rough-footed Cock, which is feathered to the origin of the toes, and the Japanese Cock, which is feathered as far as the nails? Lastly, If he would refer the gallinaceous birds to the granivorous tribe, and infer, from the number and structure of their stomachs and intestines, that they were destined to feed on grain and vegetable substances, how will he account for the fondness which they discover for earth-worms and minced-meat, whether raw or cooked? But perhaps, while he imagines that the long intestines and double stomachs in poultry prove that they are granivorous birds, he would also conclude, from the hooked shape of their bill, they are also vermivorous, or even carnivorous. What absurdities and contradictions! Such are the feeble efforts of a little

* " They are reckoned the most noble which have five toes."

COLUMELLA, lib. viii. 2.

mind, which being unable to comprehend the extension and grandeur of the universe, endeavours to confine it within the trammels of system! And to what trifling and vague speculations do these attempts give rise? For our parts, we shall not attempt to connect the birds by a scientific chain; we shall only join those together that seem the most analogous; but we shall endeavour to mark their characteristic features, and note particularly the leading facts in their history.

The Cock is a heavy bird, whose gait is composed and slow. His wings are very short, and hence he flies seldom, and sometimes his screams indicate the violence of the effort. He crows either in the night or day, but not regularly at certain hours; and his note differs widely from that of the female. Some hens make a kind of crowing, though fainter and not so distinctly articulated. He scrapes the ground to seek his food, and swallows, with the grains, little pebbles, which rather assist digestion. He drinks, by taking a little water into his bill, and raising his head at each draught. He sleeps oftentimes with one foot in the air*, and his head covered by the wing on the same side. In its natural situation, the body is nearly parallel to the

* The thigh on which the body rests is commonly more fleshy than the other; and our epicures know well how to distinguish them.

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ground, and so is the bill; the neck rises vertically, the forehead is ornamented with a red fleshy comb, and the under-part of the bill with a double pendant of the same colour and substance; this however is neither flesh nor membrane, but of a peculiar nature, different from every thing else.

In both sexes the nostrils are situated on either side of the upper mandible, and the ears on either side of the head, and below each ear a white piece of skin is spread. The feet have commonly four toes, sometimes five, but always three of them placed behind. The feathers rise two and two from each shaft; a remarkable character, which has been noticed by few naturalists. The tail is nearly straight, but admits of a small elevation and depression. In those gallinaceous tribes where it is single, it consists of fourteen feathers, which are parted into two unequal planes that join at their upper margin, making an angle more or less acute. But what distinguishes the male is, that the two feathers in the middle of the tail are much longer than the rest, and are bent into an arch; that the feathers of the tail and rump are long and narrow, and that the feet are armed with spurs. It is indeed true, that some hens also have spurs, but this rarely occurs; and in such hens there are many other points of resemblance to the male; their comb and tail are arched the same way; they imitate the crowing of the cock, and would even attempt

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attempt to perform his office *. But we should be mistaken, were we to infer that they are hermaphrodites; they are unfit for procreation, and averse to the male embrace; we must regard them as imperfect degenerate individuals, wherein the sexual character is obliterated.

A good Cock is one whose eyes sparkle with fire, who has boldness in his demeanour, and freedom in his motions, and all whose proportions display force. Such a bird would not indeed strike terror into a lion, as has often been said and written, but would command the love of the females, and place himself at the head of a numerous flock of hens. To spare him, he ought not to be allowed more than twelve or fifteen. Columella recommends that these should not exceed five; but, though the Cock should have fifty a-day, it is said † that he would not neglect one. Yet no one can be certain that all his embraces are efficacious, and sufficient to fecundate the eggs of the female. His lust seems to be as fiery as his gratifications are frequent. In the morning, the first thing he does, after he is let out from his roost, is to tread his hens. Food seems to him only a secondary want; and if he is deprived for some time of the company of his family, he makes his addresses to the first female that he meets

* Arist. Hist. Anim. lib. ix. 49.

† Aldrovandus.

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though of a very different species *, and even courts the first male that occurs. The first fact is mentioned by Aristotle; the second is proved by an observation of Edwards †; and by a law mentioned by Plutarch, in which it was enacted, that a Cock convicted of this unnatural act, should be burnt alive ‡.

The hens must be selected for the Cock, if we would have a genuine race; but if we want to vary and improve the species, the breed must be crossed. This observation did not escape the ancients: Columella expressly mentions, that the best poultry is produced by the union of a Cock of a foreign family with the ordinary hens; and we find in Athenæus, that this idea was improved, a cock-pheasant being given to the common hens ||.

In every case we ought to chuse those hens which have a lively eye, a flowing red comb, and

* A cross-breed is produced between a Cock and the hen-partridge, which through time grows like the female.

ARISTOTLE, lib. ix. 49.

† Having shut up three or four Cocks in a place where they could have no commerce with any hen, they soon laid aside their former animosity; and, instead of fighting, each tried the other, though none seemed willing to submit. *Preface to the Gleanings.*

‡ In his treatise on the question, "Whether brutes reason?"

|| *De Re Rustica*, lib. viii. 2. Longolius describes the method of associating the cock-pheasant with common hens. *GESNER de Avibus.* I am assured that the Guinea Cock also treads the hens, if educated together, but that the breed are rather barren.

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have no spurs. The proportions of their body are in general more slender than the males; yet their feathers are broader, and their legs shorter. Sagacious farmers prefer black hens, because they are more prolific than the white, and more easily escape the piercing sight of the birds of rapine which hover near the farm-yard.

The Cock is extremely watchful of his females, and even filled with inquietude and anxiety; he hardly ever loses sight of them; he leads them, defends them, and threatens them with his menaces; collects them together when they straggle, and never eats till he has the pleasure of seeing them feeding around him. To judge from the different inflexions of his voice, and the various significant gestures which he makes, we cannot doubt but these are a species of language that serves to communicate his sentiments. When he loses them, he utters his griefs. Though as jealous as he is amorous, he abuses not his wives, but turns his rage against his rivals. When another Cock is presented, he allows no time for seduction; he instantly rushes forward, his eyes flashing fire, and his feathers bristled, and makes a furious attack on his rival, and fights obstinately till one or the other fall, or the interloper leaves the field. The desire of possession, ever excessive, not only prompts him to drive away every rival, but to remove the most inoffensive obstacles; he beats off and sometimes kills the chickens, that he may enjoy the mother more at his ease. Is

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his appetite the sole cause of his furious jealousy? In the midst of a submissive seraglio, how can he apprehend any bounds to his gratification? But how ardent soever be his passions, he seems to be more averse to share the pleasures than eager to taste them; and as his powers are greater, so his jealousy is more excusable and better founded than that of other sultans. Like them also, he has his favourite female, whom he courts with greater assiduity, and on whom he bestows his favours as often nearly as on all the rest together.

What proves that in Cocks jealousy is a passion founded on reflection is, that many of them are perpetually fighting with each other in the court-yard, while they never attack the capons, at least if these are not in the habit of following the hens.

Man, who is dexterous in drawing amusement from every quarter, has learnt to set into action that invincible antipathy which Nature has implanted in one Cock to another. So much have they fostered this native hatred, that the battles of two domestic birds have become spectacles fit to attract the curiosity of people even in polished society; and at the same time, these have been considered as the means of calling forth or maintaining that precious ferocity, which, they say, the source of heroism. Formerly, and even at present in more than one country, men of all ranks crowd to these grotesque combats,

bats, divide into parties, grow heated for the fortune of their favourite Cock, heighten the interest of the exhibition by the most extravagant bets; and the fate of families is decided by the last stroke of the victorious bird. Such was anciently the madness of the Rhodians, the Tangers, and the people of Pergamus*; and such at present is that of the Chinese †, of the inhabitants of the Philippine islands, of Java, of the isthmus of America, and of some other nations in both continents ‡.

But Cocks are not the only birds that have been thus abused: the Athenians, who allotted one day in the year || to cock-fighting, employed quails likewise for the same diversion; and even at present the Chinese breed for that purpose certain small birds resembling quails or linnets. The mode of fighting varies according to the different schools where they are formed, and the different weapons, offensive or defensive, with which they are armed; but it is curious that

* Pliny, lib. x. c. i.

† Gemelli Careri, Ancient Accounts of India and China.

‡ Navarrette, *Description de la Chine*.

|| When Themistocles was about to give battle to the Persians, observing his troops dispirited, he pointed to two Cocks that were fighting: "See," said he, "the unshaken courage of these animals; yet they have no other motive than the love of victory." "But you fight for your household gods, the tombs of your fathers, and your liberty." These few words revived the courage of the army, and Themistocles gained the victory. It was in memory of this event that the Athenians instituted a kind of festival, which was celebrated by cock-fighting. ÆLIAN.

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the Rhodian Cocks, though larger, stronger, and better fighters than the others, were not so ardent for the females, and had only three hens, instead of fifteen or twenty; whether because their fire was extinguished in the constrained solitude in which they were accustomed to live, or because their rage, being too often roused, had stifled in them the softer passions, which, however, were at first the principle of their courage and the source of their hostile disposition. The males of that breed were therefore less vigorous, and the females less prolific and more indolent, both in laying eggs and watching their chickens.—So successful has Art been in degrading Nature! and so unfavourable are the talents for war to the business of propagation!

Hens need not the embrace of the Cock to procure eggs; these are continually detached from the bunch in the ovarium, which grows independent of the union with the male. As they enlarge, they acquire maturity, separate from their calyx and pedicle, pass through the whole length of the *oviductus*, and in their road assimilate, by a certain power that they possess, the lymph with which the duct is filled, and form it into their white, their coats, and their shell. There they remain till the sensible and elastic fibres being stretched and stimulated by these substances, which have now become foreign, contract and extrude them, the large end being foremost according to Aristotle.

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These eggs are all that the prolific quality of the female can produce alone and unassisted; she exudes an organized body, indeed, susceptible of a kind of life, but not a living animal similar to the mother, and in its turn capable of continuing the race. This requires the union of the male, and intimate mixture of the feminal liquors of both sexes; but when once this has taken place, its effects are durable. Dr. Harvey observed, that the egg of a hen, which had been separated twenty days from the Cock, was not less prolific than one laid newly after treading, and that the embryo was not on that account more advanced, and required the same length of incubation; a certain proof that heat alone cannot produce or promote the development of the chick, but that the egg must be formed, or at least placed where it can perspire, in order that the embryo inclosed may be susceptible of incubation, otherwise all the eggs which remain in the oviduct twenty-one days after fecundation would hatch, since they would have the proper time and heat; and, in this case, hens would be sometimes oviparous, sometimes viviparous*.

The mean weight of the egg of an ordinary hen is one ounce six grains. If we open it care-

* I know of no person, except Dr. Michael Lyzeruts, who saw a viviparous hen. But the instances would be frequent, if hens were only required to hatch a fecundated egg. *German Ephemerid* Dec. ii. an. 4. Append. obs. 28.

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fully, we may perceive, immediately under the shell, a common membrane which lines the whole of the inner cavity; then, the external white, which has the form of this cavity; next, the internal white, which is rounder than the preceding; and lastly, in the centre of this white, we find the yolk, which is spherical. All these different parts are inclosed, each in its proper membrane; and all the membranes are connected together at the *chalazæ* *, or cords, which form the two poles of the yolk. The little lenticular vesicle, called the *cicatricula* †, appears very near its equator, and is firmly attached to the surface ‡.

With respect to its external form, it is too well known to need any description; but it is often altered by accidents, which it is easy to account

* So called from $\chi\alpha\lambda\alpha\zeta\alpha$, a hail-stone, on account of the similarity of appearance.

† i. e. a little scar. It is a yellowish white round spot, and when examined, it appears composed of several different coloured circles.

‡ Bellini, misled by his experiments, or rather by the consequences which he drew from them, fancied, and made many believe, that if fresh eggs were hardened in boiling water, the *cicatricula* left the surface of the yolk, and retired to the centre; but when eggs that had been set under the hen were hardened in the same way, the *cicatricula* remained constantly attached to the surface. The philosophers at Turin repeated and varied the experiments, but found, that in all eggs, whether new-laid or such as had undergone a partial incubation, the *cicatricula* continued to adhere to the surface of the hardened yolk; and that the white substance which Bellini saw at the centre was quite different, and was seasoned by too much or too little boiling.

for from the history of the egg itself and its formation.

It is not uncommon to find two yolks included in the same shell. This happens when two eggs alike formed are detached at the same time from the *ovarium* and pass together through the oviduct, forming their white without parting, and become invested with the same external coat.

If by any accident, which may easily be supposed, an egg that has been some time disengaged from the *ovarium*, is checked in its growth, and when formed as much as it can be, comes within the sphere of action of another vigorous egg, it will coalesce with it, and form an egg within an egg*.

In the same manner, we may conceive how a pin, or any other substance, which has penetrated as far as the oviduct, will be found inclosed within † an egg.

Some hens lay eggs that have no shell; whether from the defect of the proper substance for forming the shell, or because they are extruded from the oviduct before their complete maturity, these never produce chickens; and this happens, it is said, to hens that are too fat. The opposite circumstances occasion the eggs to have thick shells, or even double shells. Some retain the pedicle by which they are fixed to the *ovarium*; others are bent into the form of a cro-

* Collection Academique.

† Idem.

cent; others are shaped like a pear; some have had on their shells the impressions even of a sun, a comet *, an eclipse, or whatever has operated powerfully on the imagination; nay, some have appeared luminous. What has been real in the alterations in the shape of the egg, and the marks on the surface, must be ascribed to the different pressures which it receives while the shell is still soft and pliant, and yet of such a consistence as to retain the impressions. It will be more difficult to account for the luminous appearance † of some eggs. A German doctor observed such under a white hen which had been fecundated, he says, by a very vigorous Cock. We cannot deny the possibility of the fact; but, as it is single, it would be prudent to repeat the observation before we venture to explain it.

With regard to the pretended Cocks eggs that have no yolk, and include, as the vulgar imagine, a serpent ‡, they are nothing else but the immature productions of an infant hen, or the last sort of one exhausted by excessive fecundity; finally, they are imperfect eggs that have lost their yolks in the oviduct, either from accident or from the wrong conformation of the parts, and that have still retained their cords or *chalaæ*, which the lovers of the marvellous have fancied inverted into a serpent. M. de la Peyronie has

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put this beyond all doubt, by the dissection of a hen which laid such eggs; but neither M. de la Peyronie nor Thomas Bartholin, who dissected these pretended oviparous Cocks, could discover eggs, or ovaria, or any thing analogous*.

Hens lay through the whole year, except the time of moulting, which generally lasts six weeks or two months, about the end of autumn and the beginning of the winter. This moulting is nothing but the shedding of the old feathers, which are detached like the old leaves of trees and the antlers of stags, being excluded by the growth of the new. The Cocks also suffer this renovation; but it is remarkable that the new feathers sometimes assume a different colour. One of our observers has noticed this fact in a hen and a cock, and every person may remark it in many other kinds of birds, particularly in those that are brought from Bengal, which change their tints at almost every moulting; and, in general, the colours of the first feathers, in by far the greatest number of birds, are different from what they afterwards become.

The ordinary fecundity of hens is limited to the laying an egg each day. There are some, it is said, in Samogitia †, Malacca ††, and other places that lay twice a-day. Aristotle mentions certain hens of Illyria, which laid so often as thrice

* Collection Academique.

† Rzacyński, *Nat. Hist. Poland.*

‡ Bontekoc, *Voyage aux Indes Orientales.*

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lay; and it is probable that these were the same with the Adrian or Adriatic hens, of which he speaks in another place, and which were noted for their prolific quality. Some add, that there is a peculiar mode of feeding common hens, which gives them this prodigious fecundity. Heat is very favourable; hens can be brought to lay in winter by keeping them in a stable, where there is always warm dung on which they can sit.

As soon as an egg is laid it begins to perspire, and loses every day some grains of its weight by the evaporation of the more volatile juices in proportion, it thickens, hardens, and dries; or it contracts an offensive smell, and becomes totally unfit for hatching. The art of long preserving eggs consists in checking the perspiration *, by covering the shell completely with a coat of any kind of grease shortly after it is laid. By this single precaution we can preserve them for several months, and even years, in a condition for eating, and capable of being hatched, and, in a word, retaining all the properties of fresh eggs †. The inhabitants of Tonquin keep them in a kind of

* The *Journal Economique* for the month of March 1755 mentions three eggs, fit for eating, found in Italy, in the heart of a wall built 300 years ago. This fact is the more incredible, as a coat of mortar would not be sufficient to preserve an egg; and as the thickest walls dry in every part, the transpiration through the shell would not be prevented.

† *Pratique de l'art de faire celer le poulets.*

XXI

paste made of sifted ashes and brine; other Indians in oil*; varnish is also proper, when the eggs are intended for the table; but grease is equally fit for this purpose, and is much better for preserving eggs that are to be hatched, because it can be more easily separated than the varnish, and the coating must be completely detached in order that the incubation succeed; for whatever obstructs the perspiration prevents also the development of the chick †.

I have said, that the union of the Cock was necessary to the fecundation of the eggs; and this fact is founded on long and constant experience. But the details of this act, so essential in the history of animals, have been too slightly observed. It is indeed known, that the male organ is double, and is only the two paps which terminate the spermatic vessels, where they are inserted in the gut; that the female *vulva* is placed over the *anus*, and not under as in the quadrupeds ‡: that he advances to his female with an oblique quickened pace, dropping his wings, like the turkey, and even partly spreading his tail, uttering a certain expressive murmur with a trembling motion, and with all the signs

* Tavernier.

† This assertion seems to require some modification. The ingenious Dr. Mead of Edinburgh rubbed the obtuse ends of eighteen eggs, and yet they all succeeded in hatching.

Comparative Anatomy, p. 94

‡ Rhedi.—*Collection Academique*.

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 of ardent desire ; that he darts upon the hen, who receives him, bending her legs, squatting on the ground, and laying aside the two fans of feathers which compose her tail ; that then he seizes with his bill the crest or tuft on the head of the female, either by way of caressing her, or of keeping his balance ; that he bends the hind part of his body, where his double yard is lodged, and applies it briskly where the corresponding orifice is placed ; that this copulation lasts the shorter time the oftener it is repeated, and that the Cock seems to boast of his performance by flapping his wings, and by a kind of crowing of joy or victory ; that he has testicles, and that his seminal liquor is contained, like that of the quadrupeds, in spermatic vessels. I have ascertained, by my own observations, that the semen of the hen is lodged in the *cicatricula* of each egg, as that of the female quadrupeds is included in the glandular bodies of the testicles ; but I am uncertain whether the double *penis* of the Cock, or only one of them, penetrates the female orifice, and even whether there is a real insertion or only a strong compression or mere contact. It is not yet known what must be the precise condition of an egg in order to its fecundation, nor to what distance the male influence can extend.—In a word, notwithstanding the infinite number of experiments and observations that have been made on this subject, we still remain

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 Anatomy, p. 94

main unacquainted with some of the principal circumstances of the impregnation.

Its first known effect is the dilation of the *cicatricula*, and the formation of the chick in its cavity; for it is this *cicatricula* which contains the true germ, and occurs in eggs whether fertile or not, and even in those pretended Cock's eggs which I have already spoken of*; but it is smaller in the eggs that are not fecundated. Malpighi, having examined fertile eggs that were newly laid and before they were covered, discovered in the centre of the *cicatricula* a speck swimming in a liquor, in the midst of which he could trace the rudiments of a chick distinctly formed; but the *cicatricula* of barren eggs, produced by the hen alone without the intercourse of the male, shewed merely a small shapeless globule, furnished with appendices filled with a thick juice, though surrounded with several concentric circles; and he could perceive no embryo of an animal. The intimate and complete organization of a shapeless mass is only the instantaneous effect of the mixture of the two seminal liquors; it requires but a moment for Nature to give the first form to this transparent

* De la Peyronie observed in one of these eggs a round yellow spot, of a line in diameter, but without any sensible thickness situated on the membrane that adheres to the shell. It is probable that the yellow colour was, in this case, occasioned by the dispersion of the yolk, which was found in dissection; the membrane which contained the yolk, perhaps, stuck to that next the shell.

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glareous substance, and to diffuse the principle of life through all its points; she requires time and conspiring circumstances to finish the rude sketch. She has entrusted this charge chiefly to the mother, by inspiring the instinct of covering the eggs. In most hens this propensity is felt as strongly, and marked by as significant signs as copulation, to which it succeeds in the order of nature, and even though it is not excited by the presence of an egg. A hen that has just laid, is kindled with transports that are communicated to others which are only mere spectators, and they all join in the repeated clamorous bursts of joy; either because the sudden cessation of the pains of delivery is always accompanied with a lively pleasure, or that the mother then anticipates all the delights of progeny. Whatever be the cause, certain it is, that when she has laid twenty-five or thirty eggs, she deliberately prepares to sit on them. If they be continually taken from her, she will perhaps lay twice or thrice as many, and become exhausted by the mere excess of fecundity. But the time at last comes, when she is driven by the force of instinct to seek to hatch, and expresses her wants by a particular sort of clucking, and by certain unambiguous motions and attitudes. If she cannot find her own eggs, she will readily cover those of any other hen, or those of the female of any other species, or even balls of stone or chalk. She will continue still to sit, after

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after every thing is removed, waste herself in vain plaints and idle movements *. If she is successful in her search, and finds eggs that are either real or resembling such in a retired and convenient spot, she immediately seats herself on them, covers them with her wings, fosters a genial warmth, and constantly changes them gently to heat all the parts equally. She is so intent in her occupation, as to neglect food and drink. One would almost say, that she perceives the importance of her employment; she omits no care, overlooks no precaution, to complete the existence of the little incipient beings, and to guard against the dangers that threaten †. It may perhaps be worthy of remark, that the condition of a sitting hen, however insipid it appears to us, is perhaps not a tedious situation, but a state of continual joy, the more delicious as it is the more choice; so much has Nature connected raptures with whatever relates to the multiplication of her creatures!

The effect of incubation is confined merely to the developement of the embryo of the

* A hen may be put off the brooding by often dipping her posteriors in cold water.

† Noise is sometimes injurious to the brood. A whole hatch made in a black-smith's shop was attacked by vertigos.

Collection Academique.

A singular circumstance lately came under my observation:—a brooding hen having perceived a hole made in one of her eggs was filled with rage; but after her passion was somewhat abated she deliberately closed up the wound with mud and feathers. The

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chick, which, as we have already said, exists already formed in the *cicatricula* of the fecundated egg. The following is nearly the order in which this developement is made, or rather as it appears to the observer; and as I have elsewhere given a pretty full account of the facts relating to this subject, I shall only repeat the more important circumstances.

At the end of five or six hours, the head of the chick is distinctly seen joined to the dorsal spine, swimming in the liquor, with which the speck in the centre of the *cicatricula* is filled; and towards the close of the first day, the head is already bent back by its enlargement.

On the second day are perceived the first traces of the *vertebræ*, which are like small globules disposed on the two sides of the middle of the spine; the wings and umbilical vessels also begin to appear, distinguished by their dull colour; the neck and breast are unfolded, and the head constantly increases; the outlines of the eyes, and the three encircling coats, as well as the spine and membranes, are now seen. The life of the foetus is decided; the heart beats, and the blood circulates.

On the third day, the whole is more distinct and expanded. It is remarkable, that the heart hangs out of the breast, and beats three times in succession; once, in receiving from the auricle the blood contained in the veins; a second time, in discharging it into the arteries; and a third time,

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time, in forcing it into the umbilical vessels; and this motion continues for twenty-four hours after the embryo has been separated from the white of its egg. We also discover the veins and arteries on the vesicles of the brain, and the rudiments of the spinal marrow beginning to extend along the *vertebræ*. Lastly, we see the whole fœtus enveloped in a part of the surrounding liquor which has acquired a greater consistence than the rest.

On the fourth day the eyes are considerably advanced; we can distinguish the pupil, the crystalline lens, and the vitreous humour. We also perceive in the head five vesicles filled with a fluid which, approaching each other, and gradually coalescing on the following days, form at last the brain invested with its coats. The wings grow, the thighs begin to appear, and the body to acquire bulk. On the fifth day the whole body is covered with an unctuous flesh; the heart is confined by a very thin membrane, which spreads over the chest; and the umbilical vessels rise out of the abdomen*.

The sixth day the spinal marrow, being divided into two parts, continues to stretch along the trunk; the liver, which was before whitish

* The vessels which spread in the yolk of the egg, and which are consequently without the abdomen, soon retire into the cavity according to the remark of Steno. *Collection Academique.*

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is now become of a dusky colour ; the heart beats with its two ventricles ; the body of the chick is covered with a skin, and even the feathers begin to sprout.

It is easy, on the seventh day, to distinguish the bill ; the brain, the wings, the thighs, and the legs, have acquired their perfect shape ; the two ventricles of the heart appear like two bubbles, contiguous and joined above to the substance of the auricles. Two successive motions are observed in the ventricles, as well as in the auricles, which resemble two separate hearts.

About the end of the ninth day the lungs appear, and are of a whitish colour. On the tenth day the muscles of the wings are completely formed, and the feathers continue to shoot. It is not till the eleventh day that we perceive the arterics, which were before at a distance from the heart, cohere to it ; and this organ is now perfect and united into two ventricles.

The following days are spent in the farther expansion of the parts, which continues till the chick breaks its shell ; and this happens commonly the twenty-first day, sometimes the eighteenth, and at others, the twenty-seventh.

All this train of phænomena, which presents so interesting a spectacle to the observer, is the effect of incubation by a hen ; and human industry has found it not beneath its notice to imitate the process. Formerly, the rude peasants

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peasants of Egypt, and in our own times philosophers, have succeeded in hatching eggs, as well as the most careful sitter, and have given birth to amazing numbers at once. The whole secret consists in keeping the eggs at a temperature which nearly corresponds to the warmth of the hen, and in preventing every kind of humidity and pernicious exhalations, such as those of charcoal, burning fuel, and even that of tainted eggs. By observing these two conditions, and being attentive in repeatedly shifting the eggs, and varying the place of the oven or stove where the baskets are placed, so that not only each egg, but every part of it may enjoy alike the requisite heat, we shall succeed in hatching millions of chickens.

Every kind of heat is favourable; nor is the warmth of the hen better than that of any other animal, not even excepting man*, nor than the solar or terrestrial fires, or the heat of a bed of oak-bark or dung. The essential point is to be able to regulate the heat; to increase or diminish at pleasure. We can always know the degree by means of good thermometers placed in different parts within the oven or stove; we

* When Livia was pregnant, she cherished an egg in her bosom, with a view of foretelling the sex of her expected child from that of the chicken which would be hatched. It was a cock, and she had a boy. The augurs turned the accident to their advantage, and endeavoured to convince the incredulous of the reality of their art. But what was better proved is, that the heat of the human body is sufficient for the incubation of eggs.

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can preserve the heat, by stopping the openings and shutting the registers of the lid; we can augment it with warm ashes, if it be an oven, or by adding wood, if a stove; or using chaling-dishes, if it be a bed; and we can diminish it, by opening the registers to give access to the external air, or at least by introducing into the oven cold bodies, &c.

But, whatever attention be bestowed in regulating the furnace, it is hardly possible to maintain constantly, and without interruption, the 32^d * degree of heat, which is that of the hen. Fortunately, this limit is not very determined; and a heat varying from the 38th † to the 44th ‡ degree, is found to occasion no inconvenience. But it is to be observed, that the excess is more to be dreaded than the defect, and that a few hours at the 38th degree, or even the 36° §, is more injurious than some days at 24°. And a proof that a still less heat would occasion no inconvenience is, that a partridge's nest being discovered in a meadow that was mowing, they were kept in the shade for thirty-six hours, (no hen being found during that time to cover them,) and yet they all hatched at the end of three days, except those which were opened to perceive what condition they were in. They were indeed very far ad-

* 104°, Fahrenheit.

† 117²/₂, F.

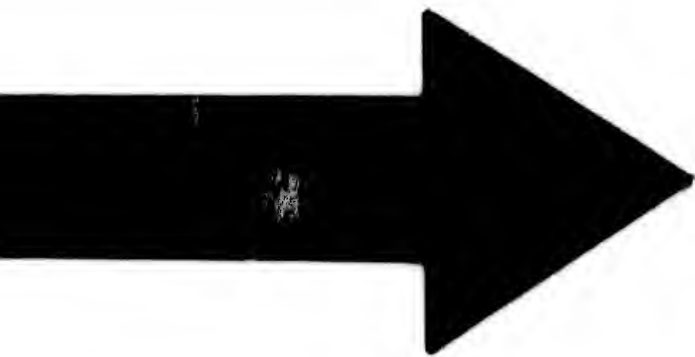
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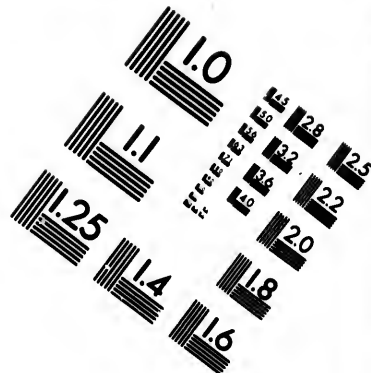
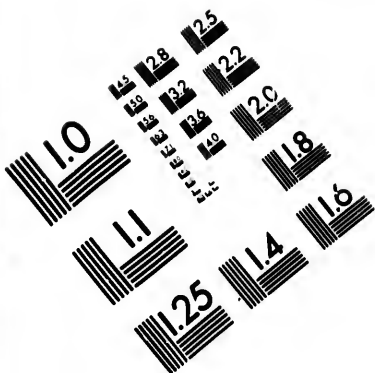
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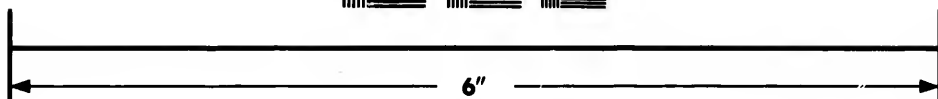
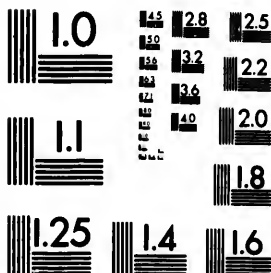
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vanced, and it undoubtedly required a greater degree of heat at the beginning than near the close of the incubation, when the heat of the little chick was almost alone sufficient for its developement.

With regard to humidity, as it is very hurtful to the progress of incubation, we must be furnished with certain means of discovering whether it has penetrated into the oven, and be able to expel it, if it has penetrated, and prevent its return.

The hygrometer, which is the simplest and fittest for estimating the humidity of the air in these sorts of ovens, is a cold egg introduced and kept some time, till it acquire a proper heat. If, at the end of a quarter of an hour or more, the egg is covered with a light dew, such as that formed by the breath on polished glass, or what falls on the outside of a tumbler in which a freezing mixture is made, this is a proof that the air of the oven is too humid; and the more so, the longer time the moisture takes to dissipate. This happens chiefly in a tan-bed, and in dung composts inclosed in a confined place. The best way to remedy this inconvenience is to renew the air, where it is close, by means of currents produced by opposite windows; or, instead of these, by fixing ventilators proportioned to the space. Sometimes the mere perspiration of the immense number of eggs occasions an excess of humidity in the oven itself: in this case

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greater near the t of the r its de-
 the baskets with the eggs ought to be taken out, for a few minutes, every two or three days, and fanned with a hat, waving it in different directions.

But it is not enough that the moisture which collects within the oven be expelled; we must prevent the entrance of humidity from without, by lining the inside with sheet-lead, good cement, plaster, a proper mixture of pitch and tar, or at least by spreading it over with several coats of oil, and allowing this to dry, and gluing on the interior surface stripes of bladder or of grey paper.

To these few easy practical operations is reduced the whole art of artificial incubation; and hence are deduced the structure and dimensions of the ovens or stoves, the number, shape, and distribution of the baskets, and all the little manoeuvres which the circumstances require, or the occasion suggests, which have been described with a profusion of words, but which we shall comprise in a few lines, without omitting anything essential.

The simplest oven is a cask lined within with lined paper, and stopped at the head with a cover which joins into it, and which is perforated in the middle by a large opening, that shuts with a grooved lid, to allow an opportunity of examining the oven. There are several other small holes round this, which serve as registers to regulate the heat, and which can also be stopped with

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with grooved covers. This cask is buried three-fourths of its height in warm dung. In the inside there are placed, one above another, at proper distances, two or three wide-ribbed baskets, in each of which two rows of eggs are piled, taking care that the upper layer be thinner than the lower, so that this may be easily seen through the other. Small holes may be made if we chuse, in the centre of each basket; and well-graduated thermometers suspended there and others placed in different parts of the circumference. Thus the requisite heat may be maintained, and the chickens ushered into life.

If we would be economical of heat, and draw utility from what is commonly lost, we may employ, for artificial incubation, that of the ovens for bakers and pastry-cooks, of forges and glass-houses, and even that of a chamber stove, or a kitchen-grate, constantly keeping in mind that the success will depend chiefly on the equal distribution of heat, and the total exclusion of humidity.

When the ovens are large and well-managed they exclude thousands of chickens at a time. This profusion would be rather inconvenient in a climate like ours, if we had not as well discovered a method of rearing the brood independently of the assistance of the hen, as of hatching them without her incubation. This consists in a more or less perfect imitation of the

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er in which the mother treats her young after
 they have emerged from the shell.

We shall easily conceive, that the mother
 which shews so strong an inclination to cover
 her eggs, sits on them with such unre-
 sitting assiduity, and takes so lively a con-
 cern for embryos that have yet no being, will
 not cool in her attachment after her chickens
 are hatched. Her affection is heightened by the
 sight of these little creatures, that owe to her
 their existence; it is every day increased by the
 repetition of cares which their feebleness re-
 quires. Continually employed in watching

over them, she seeks food, merely to satisfy their
 pressing wants. If she cannot find it, she
 scrapes the earth with her nails to extract the
 nourishment concealed in its bosom, and freely
 bestows it on her young. She recalls them when
 they wander, spreads her wings over them to
 defend them against the inclemency of the wea-
 ther, and broods a second time. She enters
 into these tender concerns with so much ardour
 and anxiety, that her health is visibly impaired,
 she can be distinguished from every other
 bird by her ruffled feathers, her trailing wings:
 the hoarseness of her voice, and the different
 motions, are all expressive of her situation, and
 speak solicitude and maternal affection.

But if she neglects herself in preserving her
 young, she exposes herself to every danger in
 her defence. If a sparrow-hawk appear in the

air, this mother, so feeble, so timid, and which in every other circumstance would consult her safety by flight, becomes intrepid, from the warmth of attachment, darts before the dreaded talon, and by her repeated cries, the clapping her wings, and her undaunted resolution, she often intimidates the rapacious bird, which, repulsed by the unexpected resistance, retires to seek easier prey. She then seems to possess all the qualities of a generous mind; but what reflects no less honour on her instinct is, that she has been made to sit on ducks eggs, and those of any other water-fowl, her affection is no less ardent for these strangers than for her own progeny. She does not perceive that she is only their nurse, and not their mother; and when, directed by nature, they plunge into the neighbouring stream, it is amusing to observe the astonishment, uneasiness, and vexation of the poor nurse, who fancies she is still a mother; impelled on the one hand by the desire of following them into the midst of the water, and checked on the other by the invincible repugnance to that element, teasing herself with fruitless bustling along the margin, trembling and forlorn, beholding her family in imminent danger, and not daring to afford them help.

It would be impossible to supply all the duties of the hen in raising her young, if the same degree of attention were required, and equal affection with that of the mother.

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 ut what resistance of the hen herself. If they be hatched
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 ks eggs, in a stove, heated to the same degree with the
 affection hens for incubation, and only let out five or six
 man for h times a-day to eat in open air, and especially to
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 vexation ood. If the incubation be performed in sum-
 still a me er, they are kept in the stove only three or four
 y the defe ys; and in all seasons they are brought out
 of the wate the stove only to be put into the crib, which
 acible repu a kind of square cage, shut with a front of
 herself wa ating made of iron wire, or simple netting, and
 n, tremblin osed above with a hinged lid. In this cage
 nminent da e chickens are fed; but after they have eaten
 help. ough, and taken sufficient exercise, they must
 y all the r sheltered so as to allow them to enjoy warmth
 young, if d repose. Hence the chickens that are led by
 uired, and air mother are accustomed to assemble under
 another. V e covert of her wings. For this purpose Rea-

mur contrived an *artificial mother*; this is a box formed of sheep skin, the bottom of which is square, and the upper part sloped like the top of a desk. He places this box on one of the ends of the crib, in such a situation that the chickens may enter easily, and walk round the three sides at least; he warms it below by means of a fire stove, which he refreshes occasionally. The inclination of the cover of this kind of desk allows the chickens to place themselves according to their different sizes; but as they have a practice especially when they are cold, of pressing together, and even climbing on each other, and in this crowd the weak and small ones run the risk of being smothered, this *artificial mother* is kept open at both ends, or rather both ends are covered with a net which the least chicken can remove, so as easily to escape when it feels it is too much squeezed; and it can then, by going round to the other hole, chuse a less dangerous place. Reamur endeavours to avoid even this inconvenience by another precaution, which is to keep the cover sloped so low as to prevent the chickens from climbing on each other; and he raises it gradually as they grow. He improves still on this idea, by dividing his largest cribs into two, by means of a transverse partition, so as to be able to separate the chickens of different sizes. He even places the cribs on wheels, that they may be easily transported; for they must be brought into a chamber always in the eve-

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gs, and even during the day-time when the weather is bad; and in winter this chamber must be warmed. But when it is neither cold nor rainy, the cribs ought to be exposed to the open air and the sun, only taking the precaution of sheltering them from the wind. The doors may even be left open, and the chickens will soon learn to come out to scrape the dung, peck the tender grass, and return to their food, or to recover their warmth under their artificial mother. If we would not hazard their entering at will, we may place at the end of their crib an ordinary hen-crib, which, communicating with the first, will allow them a considerable space to roam in, and at the same time prevent accidents.

But the more we confine them, the more regular we ought to be in giving them food. Besides millet-seeds, yolks of eggs, soup, and crumbs of bread, young poultry are fond of rape-seed, hemp-seed, and other small grains of that kind; rye, beans, lentils, rice, shelled barley and oats, hopped turkey beans, and buck-wheat. It is proper, and even oeconomic, to burst most of these in boiling water, before we offer them; this saving amounts to a fifth on the wheat, two thirds on the barley, one half on the turkey beans, and nothing on the oats and buck-wheat. It would even be a loss to soak the barley; but this is what the chickens shew the most indifference for. Lastly, after they have grown, we

may give them every thing that we eat ourselves, except bitter almonds * and coffee-beans †. Every kind of chopped flesh, whether raw or boiled, but particularly earth-worms, are proper; they discover so great a liking for this sort of food, that one would imagine that they are carnivorous, and perhaps nothing is wanting to them, as well as to many others, but a hooked bill and claws, to constitute them real birds of prey.

It must however be admitted, that poultry differ from birds of prey, no less by their mode of digestion and the structure of their stomach, than by their bill and their nails. In these the stomach is membranous, and digestion is effected by means of a solvent, which varies in different species, but the action of which is well ascertained ‡; whereas the gallinaceous tribe may be considered as having three stomachs; *viz.*

1. The craw, which is a kind of membranous bag, where the grains are first macerated and begin to be reduced to a pap: 2. The widest part of the canal, lying between the craw and the gizzard, but nearest the last; it is lined with a

* *Ephemerides des Curieux de la Nature*, Dec. 1. an. 3. obs. 99.

† “Two chickens being fed, the one on burnt coffee from the islands, the other on fresh coffee, they both grew consumptive and died, the one on the eighth day, and the other on the tenth, after having eaten three ounces of coffee. Their feet and legs were swelled, and the gall-bladder as large as that of a turkey cock.”

Memoires de l'Academie Royale des Sciences, année 1746, p. 101.

‡ *Memoires de l'Academie Royale des Sciences*, an. 1753, p. 266.

ourselves, number of small glands, which furnish a liquor
 s †. Eve- hat the food imbibes in its passage : 3. Lastly,
 or boiled, The gizzard, which yields a liquor that is mani-
 ber ; they festly acid, since the internal coat, being soaked
 of food, n water, becomes an excellent runnet for curd-
 are carnig- ing milk. This third stomach completes, by the
 g to them, powerful action of its muscles, what had only been
 ooked bill- begun in the two first. The force of its fibres is
 ls of prey, greater than could be conceived ; in less than
 at poultry, our hours a ball of glass, which could sustain
 heir mode, pressure of four pounds, is reduced to an im-
 r stomach, palpable powder. In forty-eight hours, several
 these the, tubes of glass, four lines in diameter and one
 is effected, ne thick, were divided longitudinally into two
 n different, inds of rents ; and, at the end of that time, all
 well ascer- he sharp edges were ground down, and the po-
 t- ribe may sh destroyed, particularly on the convex part.
 achs ; viz. The gizzard was also able to flatten tubes of
 membranous, nned iron, and, in the space of twenty-four
 ted and be- ours, to crush seventeen nuts ; and this was
 widest part, fected by repeated compressions and alternate
 w and the, trition, the mechanism of which it is difficult
 ned with a, to perceive. Reaumur, who made several trials
 . an. 3. obs. 99, to discover it, never could distinguish but once
 coffee from the, ny considerable motions in that part. He
 consumptive and, w in a capon the gizzard, of which he had
 the teeth, affe- ough into view portions, contracting and sink-
 and legs were, g, and again swelling ; he observed a kind of
 turkey cock. 11, eshy chords which formed on the surface, or ra-
 se 1746, p. 101, ther appeared to be forming, because he made in-
 ces, an. 1751, sions between them which separated them ; and
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all these motions appeared to be propagated in waves, and very slowly.

What proves that, in gallinaceous birds, digestion is performed chiefly by the action of the muscles of the gizzard, and not by the power of any solvent, is, that if one of these be made to swallow a small lead tube, open at both ends, but so thick as to resist the compression of the gizzard, and into which a grain of barley be introduced, the tube will be found in the space of two days to have lost considerably of its weight; but the grain inclosed, though it were boiled and shelled, will then be discovered to be somewhat swelled, but as little altered as if it had been left the same time in another place equally humid, whereas the same grain, and others that are much harder, if not protected by a tube, would be digested in much less time.

One circumstance which may assist the action of the gizzard is, that birds keep the cavity as full as possible, and thus the four muscles of which it consists are thrown into play. When grain is wanting, they cramb it with herbage, and even small flints, the hardness and roughness of which contribute to bruise the grain against which they are incessantly rubbed. I say by their roughness; for, when they are polished, they quickly pass through the body, and those with rugged surfaces only remain. They are the more numerous in the gizzard the scarcer the food is, and they continue in it a longer

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time than any other substance, whether digestible or indigestible.

We shall not be surpris'd that the inner coat of this stomach is strong enough to resist the reaction of so many hard bodies on which it constantly grinds, if we consider that it is really very thick, and of a substance analogous to horn. Besides, we know that bits of wood and leather, which are rubbed with an extremely hard powder to polish bodies, last for a very long time.

We may also suppose that this membrane is renewed in the same manner as the callous skin of labourers hands.

But though the small stones may assist digestion, it is not asserted that the granivorous birds have a decided view in swallowing them. Redi having shut up two capons, with water and little pebbles for their food; they drank much water, and died; the one in twenty days, the other in twenty-four, and both of them without having swallowed a single stone. Redi found many in the gizzard, but these were what had been swallowed before.

The organs that are destined for respiration, consist of lungs, similar to those of the land animals, with ten air cells, eight of which are within the breast, and communicate directly with the lungs; and two larger ones in the lower belly, and which communicate with the eight preceding. When in inspiration the thorax is dilated, the air enters by the larynx into the lungs, thence into

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into the eight upper air cells, which dilating inhale that also of the two cells of the lower belly, and these suffer a proportional collapse. When, on the contrary, the lungs and upper cells, contracting during expiration, press the air included in their cavity, it escapes partly through the larynx, and partly returns from the eight cells in the breast into the two in the lower belly, which then dilate by a mechanism nearly analogous to that of a double bellows. But this is not the proper place to explain the mechanism; it will be sufficient to observe, that in those birds which never fly, as the cassowary, the ostrich, &c. and in those that fly tardily, such as the gallinaceous tribe, the fourth cell on each side is the smallest*.

All these differences in the structure necessarily imply many others, not to speak of the membranous tubes that are observed in some birds. Duverney has shewn, from an experiment made on a living cock, that the voice in these birds is formed not near the larynx, as in the quadrupeds, but below the *trachea arteria*, near the forking, at which place Perrault perceived an internal larynx. Herissant observed, in the principal bronchial vessels of the lungs, semilunar membranes placed transversely one above another, in such a manner that they only occupied the half of the cavity of these vessels, and allow-

* *Mémoires pour servir à l'Histoire des Animaux.*

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* *Mémoire*
page 191.

ed the air a free passage through the other half; and he justly concludes, that these membranes must contribute to the formation of the voice, though their assistance is not so essential as that of the ossæous coat of the crescent, which terminates a considerable cavity above the superior and internal part of the breast, and which has also some communication with the upper air cells. This anatomist affirms, that he has ascertained, by repeated trials, that if this coat be perforated, the voice is immediately impaired, and can be restored only by closing the hole accurately to prevent the escape of the air*.

After observing such wide differences in the conformation of the organs of the voice, will it not appear singular, that birds, with a tongue of cartilage, and lips of horn, should imitate our songs, and even our speech, more easily than those among the quadrupeds that resemble man the most? So difficult it is to judge of the use of the parts from their mere structure, and so true, that the modification of the voice and of sounds depends almost entirely on the sensibility of the ear.

The intestinal canal is very long in the galinaceous tribe, and exceeds about five times that of the animal, reckoning from the point of the bill to the *anus*. We find two *cæca*, about six inches in length, which take their rise where the

* *Memoires de l'Academie Royale des Sciences, année 1753, page 191.*

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colon joins the *ileon*; the *rectum* widens towards its extremity, and forms a common receptacle, into which the solid and fluid excrements are separately discharged, and from which they are ejected together, though not intimately mixed. The organs characteristic of the sexes are also perceived; viz. in hens, the *vulva* or orifice of the *oviductus*, and in Cocks the two yards, that is, the paps of the two spermatic vessels. The *vulva*, as we have before mentioned, is placed above the *anus*, and consequently the disposition of these parts which obtains in quadrupeds is reversed.

It was known in the time of Aristotle, that the Cock had testicles concealed within its body. The ancients even ascribed to this situation the fiery passion of the male for the female, who is less ardent, they alleged, because the ovarium being placed near the diaphragm, is more apt to be cooled by the accession of the air respired*. But the testicles are not so exclusively appropriated to the male as not to be found in the females of some species of birds, as in the little bustard, and perhaps in the great bustard †. Sometimes the male has only one, but generally two; the bulk of these kinds of glands is far from being proportioned to that of the bird. In the eagle, they are only of the size of peas; in

* Aristotle *de Partibus Animalium*, lib. iv. 5.

† Histoire de l'Academie Royale des Sciences, année 1756, P. 44.

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Cock of four months old, they are as large as olives. The bulk varies not only between one species and another, but between different individuals of the same species, and is most expanded in the season of love. But how diminutive soever be their size, they produce mighty effects in the animal œconomy, as is evinced by the wonderful changes effected by their extirpation. This operation is commonly performed when the bird is three or four months old. After emasculation it grows plumper, and its flesh becomes more juicy and delicate; and when subjected to a chemical analysis, yields different products from what it would have given before castration*. The capon is no longer liable to moult; in the same manner as the buck, when degraded from his sex, never casts his antlers. The note is altered, his voice is broken, and seldom heard: treated roughly by the Cocks, with disdain by the females, deprived of all the appetites related to generation, it is not only excluded from the society of its equals, but excluded, as it were, from its species. It is an idle military out-cast, all whose powers are directed to itself, and whose sole object is its individual

* The extract of the lean of a capon is somewhat less than the sixth part of its total weight; whereas it amounts to one twelfth in a pullet, and rather more than one seventh in a Cock. Besides, the extract of Cock's flesh is very dry, while it is difficult to separate the humidity from that of a capon.

Memoires de l'Acad. Royale des Sciences, année 1730, p. 231.

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preservation: to eat, to sleep, to fatten, are its principal employments, and constitute the sum of its wants. But, by a little attention, we can draw advantage from its weakness, and even its consequent docility, by giving it useful habits. For instance, we can teach it to rear and tend young chickens. For this purpose it must be kept some days in a dark place, only bringing it out at regular hours to feed, and accustoming it gradually to the sight and company of a few chickens that are pretty stout; it will soon contract a fondness for them, and will lead them with as much affection and assiduity as their mother. It will even conduct a greater number than a hen; for its wings spread and afford more shelter; and the hen, freed from its toil and solicitude, will soon begin again to lay; and thus the capon, though condemned to sterility, will still contribute indirectly to the preservation and multiplication of its species.

So great a change produced in the character of the capon, by a cause so weak and apparently so inadequate to the effect, is the more remarkable, as it is confirmed by an immense number of trials which men have made on other species, and have even dared to extend to their brethren of the human race.

The Cock has been the subject of another experiment that is far less cruel, but perhaps not less important for the science of physiology:

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s, after cutting the comb* as usual, to substitute in its stead one of the young spurs which has just begun to shoot; thus engrafted, it gradually strikes root into the flesh, thence extracts its nourishment, and often grows more luxuriantly than it would in its natural place. Some have attained to two inches and a half in length, and more than three lines and a half in diameter at the base; sometimes they are twisted round like the horns of a ram, at other times bent backwards like those of a he-goat †.

This is a kind of animal engrafting, the success of which would appear very doubtful when first tried, but from which, since the success is known, it is astonishing that no practical information has been derived. In general, the destructive experiments have been more studied, and pursued with more ardour, than those which are directed to preservation; because man is in order of pleasure and expence, than the acquisition of knowledge and the exercise of beneficence. Chickens are not hatched with that crest and those reddish membranes which distinguish them from other birds. It is a month after they have left the shell before these parts begin to unfold; at two months old, the young

* The reason why the capon's comb is cut is, that, after emasculation, it does not stand erect but becomes pendulous, and would therefore prove inconvenient by hiding an eye.

† Anciens Memoires de l'Academie Royale des Sciences, t. xi. p. 48. Journal Economique, Mars 1761, p. 120.

XVI

Cocks crow, and fight with one another. They feel that they must hate each other, though the source of their dislike has yet no existence. It is commonly five or six months before they shew any passion for the hens, and that they begin to lay. In both sexes, the complete term of their growth is a year, or fifteen months. The young hens, it is said, lay more; but the old ones are better fitters. This period of their growth would imply that the ordinary extent of their life does not exceed seven or eight years, if the same proportion subsisted in birds as in quadrupeds. But we have seen that this is much longer; a Cock will live twenty years in the domestic condition, and perhaps thirty years in the state of liberty. Unfortunately for them, we have no interest in suffering them to reach to a great age. The hens and capons that are destined for the table, never enjoy above one year's existence; and most of them have only one season. Those which are selected for the multiplication of the species, become soon exhausted, and none are permitted to finish the period assigned by nature; so that it is a singular accident, that cocks have ever been seen to die of age.

Poultry can subsist in all places under the protection of man, and accordingly they are spread over the whole inhabited world. The better sort of people breed hens in Iceland

* Horrebow's Description of Iceland.

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where they lay as in other parts; and the warm countries abound with them. But, according to Dr. Thomas Hyde *, Persia is the native region of Cocks; there they are numerous, and held in great estimation, especially by certain dervises, who consider them as living clocks; and it is well known that a clock is the soul of every society of dervises.

Dampier says, that he saw and killed, in the islands of Poulocondor, wild Cocks, that were not larger than our crows; and whose crow was much like that of our dunghill Cocks, only shriller. In another part he adds, that there are some in the island of Timor, and at St. Jago, one of the Cape de Verd islands. Gemelli Carreri relates that he observed some in the Philippines; and Merolla asserts that there are wild hens in the kingdom of Congo, which are more beautiful, and have a more delicate flavour, than our domestic kind; but that the Negroes set little value on these birds.

From their native climate, wheresoever it be, these birds have spread over the extent of the ancient Continent, from China to Cape Verd; and from the Southern Ocean to the Seas of the North. These migrations were performed in remote ages, far beyond the reach of historical

* *Historia Religionis veterum Persarum.* Observe, however, that the art of fattening capons was introduced by the Armenian merchants into Persia from Europe, as appears from Tavernier.

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tradition. But their settlement in the New World seems to be a much more recent event. The historian of the Incas informs us, that there were none at Peru before its conquest, and that after a residence of more than thirty years, the hens could not be habituated to hatch in the valley of Cusco. Coreal positively asserts, that poultry were introduced by the Spaniards into Brazil, and that the inhabitants of that country would eat none of them, and looked upon their eggs as a kind of poison. Nor, according to the testimony of F. Charlevoix, had the natives of St. Domingo any; and Oviedo considers it as a certain fact, that they were carried from Europe to America. Acosta indeed maintains the opposite opinion, that hens existed in Peru before the arrival of the Spaniards; and alleges as a proof, that the natives call the bird, in their language, *gualpa*, and its egg *ponto*. But the antiquity of the word is not sufficient to establish that of the thing denoted; for it is easy to conceive, that savages, the first time they saw a strange bird, would naturally give it a name, either from its resemblance to some bird with which they were acquainted, or from some other analogy. What would determine me in favour of the first opinion is, the conformity to the law of the climate. This law, though it cannot be applied in general to birds, especially those which are vigorous on the wing, and to which all countries are open, yet regulates those which,

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which, like the poultry, being bulky and having an aversion to water, can neither waft their course through the air like the birds that soar, nor cross the seas, nor even the large rivers, like the quadrupeds that swim, and would therefore be for ever excluded, but for the interference of man, from those countries which are separated by an immense ocean. The Cock is then an animal which belongs peculiarly to the Ancient Continent, and ought to be added to the list that I have given, of all those animals which existed not in the New World before it was discovered.

In proportion as hens are removed from their native region, and accustomed to another climate and different food, they must suffer some alteration in their shape, or rather in the parts most susceptible of change. Hence undoubtedly those varieties that constitute the different breeds which I am to describe; varieties which are constantly perpetuated in each climate, whether from the continued action of the same causes that produced them at first, or from the attention that is paid in matching the individuals selected for propagation.

It is to be wished that we could here form, as in the case of the dog, a kind of genealogical tree of all families of the Cock, which would point out the primitive stock, and its different branches, and represent the various orders of alterations and changes corresponding to its dif-

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ferent states. But this would require more accurate and more minute accounts than those in our possession. I shall therefore content myself with giving my opinion in regard to the hen of our own climate, and shall endeavour to examine into it's origin; but previous to this inquiry, I shall enumerate the foreign breeds that have been described by naturalists, or only mentioned by travellers.

1. *The Common Cock.* That of our own climate.

2. *The Crested Cock.* It is distinguished from the Common Cock by a tuft of feathers rising on the head, and by its comb, which is generally smaller; probably because the food, instead of being spent on the comb alone, is partly distributed to nourish the feathers. Some travellers assert that the Mexican poultry are crested; these, as well as all the rest on the continent of America, have been introduced from the ancient continent. The breed of the crested hens is that which the curious have most cultivated, and what generally happens when things are closely examined, they have observed a great number of differences, particularly in the colours of their plumage; which serve to distinguish a multitude of races, that are the more esteemed in proportion to the beauty and rareness of their tints. Such are the gold and silver ones; the black-crested white ones; the white-crested black ones; the agate, the chamois, and

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the slaty; those with fish-scales, and the er-
 mined; the widow-hen, which has small white
 tears sprinkled on a fallow ground; the flame-
 coloured; the stony sort, whose plumage has a
 white ground spotted with black, chamois,
 slaty, or golden, &c. But I suspect that these
 differences are not so invariable, or so deeply
 impressed, as to constitute real distinct species,
 as some curious people pretend, who assert that
 many of the above breeds never intermix.

3. *The Wild Cock of Asia.* This is undoubt-
 edly what approaches the nearest to the original
 stock of our common kind; for never being fet-
 tered by man, or thwarted in the choice of its food
 or mode of life, what could ever alter its native
 purity? It is neither the largest nor the smallest
 of its species, but is intermediate between the
 extremes. It is found, as we have already
 observed, in many countries of Asia, in Africa,
 and in the Cape de Verd islands. We have no
 description of it so complete as to enable us to
 compare it with our Cock. I must here recom-
 mend to travellers who have an opportunity of
 seeing this wild breed, to inquire if they con-
 struct nests, and in what manner. Lottinger,
 physician of Strasburg, who has made many
 important observations on birds; informs me,
 that our hens, when left to themselves, build
 nests, and with as much care as the par-
 tridges.

4. *The Acoho, or Madagascar Cock.* This species is very small, and the eggs still less in proportion, for the birds can hatch thirty at a time*.

5. *The Dwarf Hen of Java.* It is of the size of a pigeon †; probably the Little English Hen, which is still smaller than the Dwarf Hen of France, is of the same kind. We may, perhaps, add the Small Hen of Pegu, which travellers describe as not larger than a middle-sized turtle; its feet scaly, and its plumage beautiful.

6. *The Hen of the Isthmus of Darien.* It is smaller than the common sort; has a circle of feathers round its legs, an exceeding thick tail, which it carries erect, and it crows before break-of-day.

7. *Cambogia Hens.* Carried by the Spaniards from that kingdom into the Philippines. Their feet are so short that their wings trail on the ground. It is very like the Dwarf Hen of France, or perhaps that Dwarf Hen that is reared in Brittany, on account of its fecundity, and which constantly hops in its gait.

8. *The Bantam Cock.* It has much resemblance to the Rough-footed Cock of France. Its feet are covered with feathers, but only on the

* Histoire Generale des Voyages, tom. viii.

† Collection Academique, partie etrangere, tom. iii.

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outside. The plumage of the legs is very long, and forms a sort of boots which reach a considerable way beyond the claws. It is courageous, and resolutely fights with one stronger than itself. Its iris is red. I have been informed that most of this breed have no tuft. There is a large kind of rough-footed Cocks that comes from England, and another smaller, termed the *English Dwarf Cock*; which is of a fine gold colour, with a double comb.

There is still another sort of dwarfs, which exceeds not the size of a common pigeon, and whose plumage is sometimes white, sometimes mixed with white and gold colour.

9. The Dutch speak of another kind of Cocks peculiar to the island of Java, where they are seldom reared but for fighting; they call it the *Half-Hen of Java*. According to Willoughby, it carries its tail nearly like the turkey. To this family we must refer those singular hens of Java, mentioned by Mandello, which resemble the common and Indian kinds, and that fight desperately with each other like cocks. The Sieur Fournier informs me, that one of this species is still living at Paris; it has, according to him, neither comb nor ruff; the head is simple like that of the pheasant. This hen is very high on its legs; its tail is long and pointed, and the feathers of unequal length; and in general, the colour of the feathers is auburn, like those of the vulture.

10. *The*

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10. *The English Cock* is not larger than the Dwarf Cock, but is much taller than our Common Cock, and this is what principally distinguishes it. We may also class with it the *Xolo* *, a kind of Philippine Cock, which has very long legs. Besides the English Cock excels the French in fighting; it has rather a tuft than a crest; its neck and bill are more slender; and above the nostrils there are two fleshy protuberances, which are red like the comb.

11. *The Turkish Cock* is remarkable only for its fine plumage.

12. *The Hamburg Cock*, named also *the Velvet Brceches*, because its thighs and belly are of a soft black. Its demeanour is grave and stately; its iris is yellow, and its eyes are encircled with a ring of brown feathers, from which rises a black tuft that covers the ears. There are other feathers nearly like these behind the comb and beneath the barbils, and broad round black spots on the breast. His legs and feet are of a lead colour, excepting the sole of the foot, which is yellowish.

13. *The Frizzled Cock*, whose feathers have a reversed position. They are found in Java, Japan, and the whole of the south of Asia. This bird belongs more peculiarly to the warm countries; for chickens of this breed are extremely sensible to cold, and can hardly support that

* Gemelli Carreri.

of our climate that their white, black

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* Dampier.

of our climate. The *Sieur Fournier* assures me, that their plumage assumes all sorts of colours, white, black, silvery, golden, and slate tints.

14. *The Silky Hen of Japan.* The feathers are white, and their webs are parted, and pretty much resemble hair. Its feet are clothed with plumage on the outside, as far as the nail of the outer toe. This breed is found in Japan, China, and in some other countries of Asia. To propagate it in all its purity, requires that both the parents be covered with down.

15. *The Negro Cock* has its comb, barbils, epidermis, and periosteum absolutely black. Its plumage also is generally black, but sometimes white. It is found in the Philippines, in Java, Delhi, and at St. Jago, one of the Cape de Verd islands. *Becman* affirms that most of the birds in the last mentioned place have bones as black as jet, and a skin black like that of a negroe*. If this fact be true, we must impute it to the tinging quality of their food. We know the effects of madder, and other plants of that genus, and we are informed, that in England the veal is whitened by feeding the calves with grain and other soft aliments, mixed with a certain earth or chalk found in the county of Bedford †. It would therefore be curious to discover at St. Jago, among the different substances which these birds eat, that which tinges the *periosteum* black. This negroe hen is also known in France, and pro-

* Dampier.

† Journal Economique, Mai 1754.

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pagates there; but as its flesh, after being dressed, is black and unpalatable, it is not likely that the race will be multiplied. When it crosses the breed with others, varieties of different colours are produced, but which commonly retain the comb and the ruffs, or black barbils; and even the membrane that forms the little ear is tinged with a blackish hue on the outside.

16. *The Rumpless Cock, or the Persian Cock* of some authors. Most of the hens and Cocks in Virginia have no rump, and yet they are undoubtedly of the English breed. The inhabitants of that colony affirm, that when these birds are imported, they soon lose the rump*. If this be admitted as a fact, the variety in question ought to be called *Virginian*, and not *Persian Cocks*; especially as they were unknown to the ancients, and the moderns have not noticed them till after the discovery of America. We have mentioned that the European dogs, which have pendulous ears, lose their voice, and that their ears become erect, when they are carried into tropical climates. This singular change, produced by the excessive heat of those torrid regions, is not however so great as the loss of the rump and tail in the gallinaceous tribe. But it appears to me much more curious, that as these two tribes of animals are the most domestic of all, and therefore the widest removed from the

* Philosophical Transactions for 1693, No. 206.

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natural condition, so there is breed of dogs without a tail, as there is of Cocks without a rump. Several years ago, I was shewn one of these dogs that had been whelped without a tail, but which I then conceived to be a degraded individual, a monster; and for that reason I took no notice of it in the history of the canine genus. I have again considered the subject, and I am now confident that it is a constant and invariable race, like that of the Rumpless Cock. This breed of Cocks has a blue bill and feet; a single or double comb, but no crest; the plumage is variegated with all the colours; and the Sieur Fournier assures me, that when it couples with the ordinary kind, a half-rumped sort are produced, with six feathers in the tail instead of twelve.—This may be true, but I can hardly believe it.

17. *The Hen with five toes* is, as we have said, a powerful objection to the system of classification founded on the number of toes. This kind has five on each foot, three before and two behind; there are even some individuals that have six.

18. *The Hens of Sansevara.* The eggs of this sort are sold in Persia for three or four crowns a piece; and the Persians amuse themselves in striking them against one another, as a kind of play. In that country there are also Cocks much more beautiful and larger, which are sold so high as 300 crowns*.

* Tavernier.

19. *The*

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19. *The Cock of Caux, or of Padua.* Its distinguishing character is its magnitude. Its comb is often double, and in the shape of a crown; and there is a kind of tuft, which is more conspicuous in the hens. Their voice is strong, hollow, raucous, and their weight is from eight to ten pounds. To this fine breed we may refer the large Cocks of Rhodes, Persia *, Pegu †, the bulky hens of Bahia, which do not begin to be covered with feathers till they have attained half their size ‡. It is well known that the hens of Caux are not so soon feathered as the ordinary sort.

It may be observed, that a great number of birds, mentioned by travellers by the names of Cock and Hen, are of a quite different species. Such are the *patonardes* or *palonardes* found near the Great Bank, and which are so fond of cods liver ||; the Cock and hen of Muscovy, which are the male and female grouse; the red hen of Peru, which is like the pheasant; that large tufted hen of New Guinea, whose plumage is of an azure blue, which has a pigeon's bill and feet like those of the common poultry, and which nestles in trees §, and is probably the Banda pheasant;

* Chardin.

† Recueil des Voyages qui ont servi à l'Etablissement de la Compagnie des Indes, tome iii. p. 71.

‡ Dampier's New Voyage.

|| Recueil des Voyages du Nord, tome iii. p. 15.

§ Histoire generale des Voyages, tome xi. p. 230.

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fant; the hen of Damietta, which has a red bill and feet, a small spot on the head of the same colour, and plumage of a violet blue, and which must be considered as a great water-fowl; the hen of the Delta, the rich colours of whose plumage Thevenot extols, but which differs from the common sort, not only by the shape of its bill and tail, but by its natural habits, since it is fond of marshes; the Pharaoh hen, which the same traveller affirms is not inferior to a fat hazel grouse; the hens of Corea, which have a tail three feet long, &c.

Amidst the immense number of different breeds of the gallinaceous tribe, how shall we determine the original stock? So many circumstances have operated, so many accidents have concurred; the attention, and even the whim of man have so much multiplied the varieties, that it appears extremely difficult to trace them to their source. The Wild Cocks found in the warm countries of Asia may indeed be considered as the primeval stem in those regions. But as in our temperate climates there is no wild bird that perfectly resembles the Domestic Cock, we are at a loss on which of the varieties to confer the priority. The pheasant, the grouse, the woodhen, are the only birds in the state of nature which are analogous to our poultry; but it is uncertain if they would ever intermix, and have prolific progeny; and they have constituted distinct and separate species from the most

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remote times. Besides, they want the combs, the spurs, and the pendulous membranes of the gallinaceous tribe. If we exclude all the foreign and wild kinds, we shall greatly diminish the number of varieties, and the differences will be found to be slight. The hens of Caux are almost double the bulk of the ordinary sort; the English Cock, though exactly like the French, has much longer legs and feet; others differ only in the length of their feathers; others in the number of their toes; others are distinguished by the beauty and singularity of their colours, as the Turkish and Hamburgh hen: and of these six varieties, to which the common breed may be reduced, three are to be ascribed to the influence of the climate; that of Hamburgh, that of Turkey, and that of England; perhaps also the fourth and fifth, for the hen of Caux most probably came from Italy, since it is also called the *hen of Padua*, and the hen with five toes was known in Italy in the time of Columella. Thus there only remain the Common Cock and the Crested Cock as the natural breed of our country, and even in these the two sexes admit of all the variety of colour. The constant character of the tuft seems to mark an improved species; that is, one better kept and better fed; and consequently the common breed, which has no tuft, must be the true parent of our poultry. It would appear that the primitive colour was white, and that all the intermediate shades be-

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tween it and black were successively assumed. What seems to corroborate this conjecture is, an analogy which no person has yet remarked, that the colour of the egg generally resembles that of the plumage of the bird. Thus a raven's eggs are of a green brown, spotted with black; those of the kestrel are red; those of the cassowary dark green; those of the black crow are of a still duller brown than those of the raven; those of the variegated magpie are also variegated and spotted; those of the great cinereous shrike, spotted with grey; those of the woodchat, spotted with red; those of the goatsucker, mottled with bluish and brown spots on a cloudy whitish ground; those of the sparrow, cinereous entirely, covered with chestnut spots on a grey ground; those of the blackbird, blackish blue; those of the grouse, whitish spotted with yellow; those of the pintados, speckled like their plumage, with white round spots, &c. In short, there seems to be an invariable relation subsisting between the colour of the egg and that of the plumage. The tints are indeed much more dilute on the eggs, and in most of them the white predominates; but white is also in most cases the prevailing colour of the plumage, especially in females: and since hens of all colours, white, black, grey, tawney, and mottled, have white eggs, there is reason to conclude, that if they had remained in the state of nature, white would at least have predominated in their plumage. Domestication

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has introduced various shades on the feathers ; but as these are only accidental and superficial, they have not been able to penetrate internally, or operate any change in the eggs. [A]

[A] Specific character of the Cock, *Pheasantus-Gallus* :—" Has a compressed caruncle on its top ; a double one on its cheek ; its ears naked, its tail compressed and rising." Linnæus reckons up fourteen varieties : 1. The Common Cock, *Gallus domesticus* : 2. The Copped Cock, *Gallus cristatus* : 3. The Five-toed Cock, *Gallus pentadactylus* : 4. The Crisped Cock, *Gallus crispus* : 5. The Persian Cock, or Rumkin, *Gallus ecaudatus* : 6. The Creeper or Dwarf Cock, *Gallus pumilio* : 7. The Bantam Cock, *Gallus pumillus* : 8. The Rough-footed Cock, *Gallus plumipes* : 9. The Turkish Cock, *Gallus Turcicus* : 10. The Padua Cock, *Gallus Patavinus* : 11. The Mozambic Cock, or Blackamoor, *Gallus Morio* : 12. The Black Cock, *Gallus niger* : 13. The Tuberous Cock, *Gallus tophaceus* : 14. The Woolly Cock, *Gallus lanatus*.

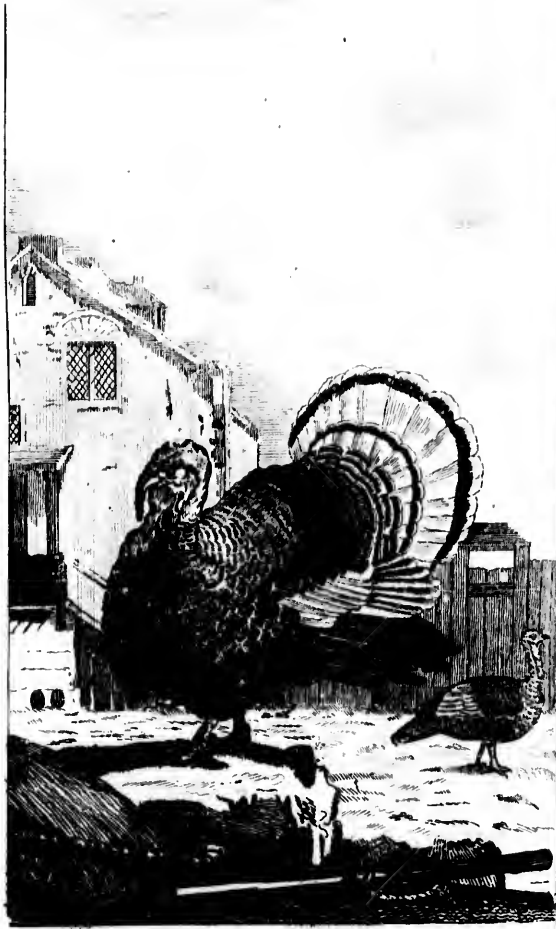
The 12th and 13th varieties were discovered by Gmelin and Pallas : the former is a native of Persia, and has a blackish skin ; the latter has a swelling comb.

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IF the Cock be the most useful bird in our court-yards, the Turkey is the most distinguished, by its bulk, by the shape of its head, and certain natural habits possessed by few species. Its head is very small in proportion to its body, and is destitute of the usual decoration; for it is almost entirely featherless, and, together with a part of the neck, is only covered with a bluish skin, beset with red fleshy *papillæ* on the fore part of the neck, and whitish *papillæ* on the hind part of the head, with some small straggling black hairs, and a few feathers still more rare on the arch of the neck, and which are thicker in the lower part, a circumstance which has not been noticed by naturalists. From the base of the bill, a kind of red fleshy caruncle falls

* As the Turkey was unknown before the discovery of America, it has no name in the ancient languages. The Spaniards called it *Pavon de las Indias*, i. e. *the Peacock of the Indies*, because it spreads its tail like a Peacock. The Italians term it *Gallo d'India*; the Germans, *Indianisch Han*; the Poles, *Indytk*; and the Swedes, *Kalkon*.

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loosely over a third part of the neck, which at first sight appears single; but when examined is found to be composed of a double membrane. A fleshy protuberance, of a conical shape and furrowed with deep transverse wrinkles, rises from the bottom of the upper mandible. This protuberance is scarcely more than an inch long in its natural state of contraction; that is, when the Turkey, seeing no objects but those to which it is accustomed, and feeling no inward agitation, walks calmly seeking its food. But, on any unusual appearance, especially in the season of love, this bird, which in its ordinary state is humble and tame, swells with instant rage; its head and neck become inflated, the conical protuberance expands, and descends two or three inches lower than the bill, which it entirely covers. All these fleshy parts assume at the same time a deeper red; it bristles up the feathers on its neck and back, spreads its tail like a fan, while its wings drop and even trail on the ground. In this attitude, he sometimes struts around his female, making a dull sound, produced by the air escaping from the breast through the bill, and followed by a long gabbling noise. Sometimes he leaves his female to attack those who disturb him. In both these cases, his motions are composed; but they become rapid the instant he utters the dull sound which we have mentioned. He vents a shrill scream, which every body knows, which intermits from time to time, and

which

which he chooses, by tones. He which action male, or point of displeasure, and it is obtruded at the inflamed and laceration, strikes with the utmost tenderness he cannot endure. It is a curious conical caruncle when the bird is relaxed, is relaxed. Some Turkeys with black and rusty yellow feathers, which are the greater number with a little white on those which face of the wing and among the breast, there are occasioned by according to As they grow and the reflection people imagine

which he may be made to repeat as often as one choofes, by whiffling, or by forming any sharp tones. He then begins again to wheel round, which action, according as it is directed to his female, or pointed at the object that has provoked his difpleafure, expreffes attachment or marks rage: and it is obferved, that his fits are the moft violent at the fight of red clothes; he is then inflamed and becomes furious; rushes on the perfon, ftrikes with his bill, and exerts himfelf to the utmoft to remove an object whose prefence he cannot endure.

It is a curious and very fingular fact, that the conical caruncle, which lengthens and is relaxed when the bird is agitated by the violence of paffion, is relaxed in the fame manner after death.

Some Turkeys are white, others variegated with black and white, others with white and rufty yellow, others are of an uniform grey, which are the moft uncommon of all. But in the greater number the plumage verges on black, with a little white near the ends of the feathers: thofe which cover the back and the upper furface of the wings are fquare at the extremities; and among thofe of the rump, and even of the breaft, there are fome with rainbow colours, occafioned by the different rays being reflected according to the various degrees of incidence. As they grow older the tints become more gloffy, and the reflections more diverfified. Many people imagine that white Turkeys are the hardi-

est; and, for this reason, that breed is preferred in some provinces: there are numerous flocks in Pertois in Champaign.

The naturalists have reckoned twenty-eight quills in each wing, and eighteen in the tail. But what is much more striking, and what will readily distinguish this species from any other yet known, is a lock of hard black hair, five or six inches long, which, in our temperate climates, rises from the lower part of the neck in the grown male Turkey on the second year, and sometimes about the end of the first; and before it appears, the place where it emerges is marked by a fleshy prominence. Linnæus says, that this hair does not sprout till the third year in the Turkeys bred in Sweden. If the fact be certain, it would follow that this production is the slower in proportion to the rigour of the climate; and indeed one of the principal effects of cold is, to check every sort of growth. This lock of hair is the foundation of the epithet of bearded, (*pectore barbato,*) which has been applied to the Turkey; an expression in every respect improper, for it does not grow from the breast, but from the lower part of the neck; and, besides, it is not sufficient that there are hairs; they ought never to receive the name of beard, unless they rise from the chin, as in Edwards's bearded vulture.

We should form an inaccurate idea of the tail of the Turkey-cock, if we imagined that all the

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feathers of which it is composed can equally be spread like a fan. In fact, he has two tails, an upper and an under one; the first consists of eighteen broad feathers inserted round the rump, and which are erected when the bird struts about; the second, or lower one, is formed of others which are not so broad, and remains always in a horizontal position. The male is also distinguished by a spur on each foot, which is of various lengths, but always shorter and softer than in common cocks.

In the female, not only the spurs, and the lock of hair hanging from the lower part of the neck, are wanting, but also the conical caruncle is shorter, and admits of no extension; both this caruncle barbil, and the glandulous flesh that sheaths the head, are of a paler red; she is smaller also, and has less expression, less resolution, and less vigour of action; her cry is only a plaintive accent; she never stirs but to seek food or to fly before danger: finally, she cannot perform the strutting evolutions, not because she has not the double tail of the male, but on account of the want of the *elevator* muscles which erect the very large feathers that compose the upper fan.

In the male, as in the female, the nostrils are situated in the upper mandible; the ears are placed behind the eyes, thickly covered, and, as it were, darkened by a multitude of little divided feathers, pointed in different directions.

It will readily be supposed, that the best Cock is the strongest, the liveliest, and the most vigorous in all his movements. Five or six females may be entrusted to his care. If there are several males, they will fight with each other, but not with the furious obstinacy of ordinary cocks; these even attack Turkies which are double their size, and kill them in the combat. The subjects of the contention are equally compliant to the males of both species, if, as Sperling says, the Turkey-cock, when deprived of his females, pays his addresses to the common hens; and the Turkey-hens, in the absence of their males, offer their favours to the ordinary cock, and eagerly solicit his potent embrace*.

The battles which the Turkey-cocks fight among themselves are far less vigorous; the vanquished does not always fly from the field of battle, and sometimes he is even preferred by the females. It has been observed, that though a white Turkey was beat by a black one, all the chickens were white.

The Turkies perform copulation nearly in the same way as ordinary cocks, only it lasts longer. Hence, perhaps, the reason that the male is not equal to so many females, and is sooner worn out. I have already mentioned, on the authority of Sperling, that he sometimes

* *Zoologia Physica*, p. 367.

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mixes with common hens; the same author asserts, that when his females are taken from him, he not only couples with the pea-hen (which may happen), but also with the ducks (which seems to me to be less probable).

The Turkey-hen is not so prolific as the common hen. She must, from time to time, be fed with hemp-seed, oats, and buck-wheat, to make her lay: and after all, she seldom has more than one hatch of fifteen eggs a-year. When she has two, which is very uncommon, the first is about the end of winter, and the second in the month of August. The eggs are white, with some small spots of reddish-yellow; and their structure is nearly the same as in those of the common hen. The Turkey-hen will also hatch the eggs of all sorts of birds. We may know when she wants to sit, for she remains in the nest; and in order to fix her attachment, the place must be dry, with a good aspect, according to the season, and not too much exposed; for instinct leads her to conceal herself with the greatest care when she covers.

Those of a year old are generally the best sitters, and they are so intent, that they would die upon their eggs from mere inanition, if we were not at pains to remove them once a-day, and give them food and drink. This passion for hatching is so powerful and so durable, that they sometimes have two nests in succession, without the least interruption; but, in such

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such cases, they must be supported by richer food. The cock has a very opposite instinct; for if he sees the female covering, he breaks the eggs, which he regards, probably, as an obstacle to his pleasures*; and for this reason it is, perhaps; that the female is so industrious in concealing her nest.

After the full time, when the young Turkeys are about to burst into day, they pierce with their bill the shell of the egg in which they are inclosed; but it is sometimes so hard, that they would perish if not assisted by crushing it; and this must be effected with great caution, following as closely as possible the natural process. If roughly handled in their tender moments, if suffered to endure hunger, or if exposed to inclement weather, though they may survive for the time, they will pine away and soon perish. Cold, rain, and even dew, occasions lingering sickness; the rays of a bright sun strike them with instant death; and sometimes they are crushed even under the feet of their mother: such are the dangers which threaten the life of this delicate bird. This cause, joined to the inferior fecundity of the Turkey-hens in Europe, is the reason why this species is much less numerous than that of the common poultry.

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* Sperling. *Ibid.*

* Journal E
† *Id. ibiden*

richer dry place, where there is spread a broad layer of dung well trodden; and when we would bring them out into the open air, we should do it by degrees, and chuse the finest days.

The young Turkies instinctively prefer picking out of the hand, to feeding in any other way. We judge by their chirping when they want to eat, which is frequent. They ought to be presented with food four or five times a-day; their first nourishment should be wine and water, which must be blown into their bill, and afterwards a few crumbs of bread may be mixed with it. On the fourth day, eggs spoiled in hatching may be given, beat up with bits of bread; and these addled eggs, whether they be hens or Turkies, are found to afford a salutary nourishment*. Towards the tenth or twelfth day, the eggs are omitted, and in their stead are used chopped nettles mixed with millet, or with the flour of Turkey beans, of barley, of wheat, or of buck-wheat; or at least, if we would save the grain without hurting the brood, with curdled milk, burdock, a little stinking camomile, nettle-seed, and bran. Afterwards, it will be sufficient to give them all sorts of decayed fruits cut into bits †, especially the berries of brambles and of white mulberries, &c. When we perceive them having a languishing appear-

* Journal Economique, *Sept* 1757, p. 69—73.

† *Id. ibidem.*

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ance, we must dip their bills into wine, to make them drink a little, and at the same time oblige them to swallow a grain of pepper. Sometimes they appear benumbed and motionless, when they have been overtaken by a cold rain; and they would infallibly die, if we were not careful to wrap them in warm rags, and blow repeatedly into them warm air through their bill. They must be visited from time to time to pierce the small bladders that collect under the tongue and about the rump, and to give them rust-water; it is even recommended to bathe their head with this water, to prevent certain diseases to which they are subject; but in that case, it must be wiped and dried very carefully; for it is well known that humidity of every kind is hurtful to Turkeys in their tender age.

The mother leads them with the same solicitude that the hen leads her chickens; she warms them under her wings with the same affection, and protects them with the same courage. It would seem that tenderness for her offspring gives quickness to her sight; she descries a bird of prey at a prodigious distance, when it is yet invisible to every other eye. As soon as she perceives her dreaded enemy, she vents her fears by a scream that spreads terror through the whole brood; each little Turkey seeks refuge under a bush, or squats in the herbage, and the mother keeps them in that situation by her cries.

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so long as danger is impending; but when her apprehensions are removed, she informs them by a different note, and calls them from their concealments to assemble round her.

When the Turkies are newly hatched their head is shaded with a kind of down, but they have still no glandulous flesh or barbils. It requires six weeks or two months till these parts develope, or, as it is vulgarly said, before the Turkies *put forth the red* *. This is as critical a period with them as that of dentition is with children; and then especially wine ought to be mixed with their ordinary food to strengthen them. A short while before this they have begun to perch.

It is seldom that Turkies are subjected to castration as ordinary cocks are; they fatten very well without suffering that operation, and their flesh is no less delicate: another proof that their temperament is not so hot as that of common poultry.

When they have grown hardy, they leave their mother, or rather they are abandoned by her. The more tender and delicate they were in their infancy, they become in time the more robust and the more capable of supporting the inclemency of the weather. They are fond of perching in open air, and thus pass whole nights in the rigours of winter; sometimes resting on

* *Pousser le rouge.*

YUL

one foot and drawing up the other to keep it warm, as it were, under the ventral feathers; at other times, on the contrary, crouching on the branch, and keeping their bodies in equilibrium. They lay their head under the wing when they go to sleep, and, during their repose, the motion of respiration is very perceptible.

The best way of training Turkeys after they are grown stout is, to allow them to ramble in the fields where nettles, and other plants which they are fond of, are plentiful, or to admit them into the orchards when the fruit begins to drop, &c. But we must be attentive to restrain them from those pastures that bear plants hurtful to them, such as the great fox-glove with red flowers; this plant is a real poison to Turkeys; those that eat it are thrown into a kind of intoxication, vertigoes, and convulsions, and when the quantity is large they languish and die. We cannot therefore be too careful in extirpating this noxious plant from those places where Turkeys are raised*.

We should also be careful, especially in their early infancy, not to suffer them to go abroad in the morning till the sun has dried the dew, and to shut them up before the fall of the evening damps; they must likewise be confined

* Histoire de l'Academie Royale des Sciences des Paris, *année* 1748, p. 84.

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in the shade during the violent heats of the summer's day. Each evening, when they return to roost, they must be fed on paste of grain, or on some other food, except in harvest, when they have gathered enough in the fields. As they are extremely timid, they are easily led; the very shadow of a switch is sufficient to drive large flocks, and they will often run from an animal that is much smaller and much weaker than themselves. There are occasions, however, when they discover courage, especially in their defence against the assaults of pole-cats, and other foes of the poultry. Sometimes even they surround a hare in his seat, and strive to kill him by striking with their bill*.

They have different tones, and different inflexions of voice, according to their age, their sex, and the various passions by which they are influenced; their pace is slow, their flight tardy; they drink, eat, and swallow small pebbles nearly as the cocks do, and have also a double stomach, that is, a craw and a gizzard; but, as they are much larger, the muscles of the gizzard are also much stronger.

The length of the intestines is nearly quadruple that of the bird, reckoning from the tip of the bill to the end of the rump; they have two *cæca*, both turned forwards, and which, taken together, constitute more than a fourth of

* Salerne

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the whole alimentary canal; these take their rise near the extremity, and the excrements contained in their cavity differ but little from those included within the *colon* and *rectum*; these excrements do not remain at all in the common *cloaca*, as the urine, and that white sediment which is always found where the urine passes, and they have consistence enough to receive shape in their extrusion from the *anus*.

The parts of generation are nearly the same in Turkeys as in common cocks; but they seem to be much less vigorous in their performance. The males are not so ardent for the females; their embraces are less frequent and less expeditious; and the females, at least in our climate, lay much later, and have much fewer eggs.

As the eyes of birds have in some respects a different organization from those of man and of quadrupeds, it may be proper to mention the chief distinctions. Besides the upper and under eye-lids, the Turkeys, as well as most other birds, have still a third, called the internal eye-lid, *membrana nictitans*, which draws itself back into the shape of a crescent in the large angle of the eye, and whose quick and frequent twinklings are effected by a curious muscular contrivance. The upper eye-lid is almost entirely immoveable, but the lower can shut the eye by rising to the upper, which scarcely ever happens, except when the animal is asleep. These two eye-lids have each a lachrymal point, but

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* Memoires de
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† *Id.* année 17

no cartilaginous margins; the *cornea* is transparent, encircled by an osseous ring, consisting of about fifteen scales overlapping each other like the tiles of a roof. The crystalline lens is harder than in man, but softer than in the quadrupeds or fishes*, and its posterior surface is the most convex †. Lastly, the optic nerve sends off, between the retina and the choroid coat, a black membrane of a rhomboidal figure, consisting of parallel fibres, which stretch through the vitreous humour, and are attached sometimes directly to the interior angle of the crystalline capsule, and sometimes are connected by the intervention of a filament branching from it. It is to this subtle and transparent membrane that the academicians have given the name of *bourse*, though it has scarcely any resemblance to that in the Turkey, and still less in the cock, the goose, the duck, the pigeon, &c.; and its use, according to Petit, is to absorb the rays of light that come from the lateral objects, and which, intermingling with the others, would render vision obscure ‡. However this may be, certain it is, that the organ of sight is more complex in birds than in quadrupeds; and as we have before shewn that this sense is possessed by the feathered race in a higher degree than what obtains in other animals, we must

* *Memoires de l'Academie Royale des Sciences, année 1726.*
83.

† *Id. année 1730. p. 10.*

‡ *Id. année 1735, p. 123.*

ascribe the superiority to its difference of structure, and to its more perfect organization; but to state the precise effect would require a more profound study of comparative anatomy and of the animal œconomy.

If we compare the relations of travellers, we cannot hesitate to conclude, that Turkeys are natives of America and of the adjacent islands; and that before the discovery of the New Continent, there existed none in the Old.

Father du Tertre observes, that the Antilles are their congenial abode; and that, if a little care be bestowed, they will there hatch three or four times in the year*. But it is a general principle, that all animals multiply fastest and grow largest and stoutest in their original residence: and this is exactly what takes place with regard to the Turkeys in America. Immense numbers, we are told by the Jesuit missionaries, inhabit near the river Illinois †; flocks of an hundred, sometimes even of two hundred, are seen at once. They are much larger than those in Europe, and weigh even thirty-six pounds: Josselin affirms, that some are sixty pounds ‡. They are no less plentiful in Canada (where, according to Fathers Theodat and Recollet, the savages call them *Ondettoutouques*), in Mexico, in New England, in the vast country watered by the Mississippi, and in the

* Histoire Generale des Antilles, tome ii. p. 266.

† Lettres Edifiantes, xxiii. p. 237.

‡ New England Rarities, p. 8.

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Brazils, where they pass by the name of *Arignanouffou* *. Dr. Hans Sloane saw some in Jamaica; and he remarks, that in almost all these countries they are in the wild state, and swarm at some distance from the plantations, and but gradually retire from the encroachments of the European settlers.

But if most travellers and observers agree that Turkeys are natives of America, especially of the northern part of that continent, they are no less unanimous in opinion that there are extremely few or none of these birds in the whole of Asia.

Gemelli Careri informs us, that not only there were none originally in the Philippine Islands, but that those introduced by the Spaniards from Mexico did not thrive.

Father du Halde assures us, that none are to be found in the empire of China, except what have been carried thither †. It is true, indeed, that this Jesuit supposes in the same place, that these birds are common in the East Indies; but it would seem that this is only a supposition founded on report; whereas he was an eye-witness of the fact that he relates with respect to China.

Father de Bourzes, another Jesuit, says, that there are none in the kingdom of Madura, which lies in the peninsula on this side of the Ganges; and he therefore concludes, with probability, that

* Voyage au Bresil, recueilli par de Lery, p. 171.

† Histoire Generale des Voyages, tome vi. p. 487.

XVI

it is the West Indies that have given name to this bird*.

Dampier saw none at Mindanao †; Chardin and Tavernier, who travelled over Asia, affirm positively, that there are no Turkies in the whole of that vast country ‡. According to Tavernier, the Armenians introduced them into Persia, where however they have not succeeded well; the Dutch carried them to Batavia, where they have thrived exceedingly.

Finally, Bosman and some other travellers tell us, that if Turkies be ever seen in the country of Congo, on the Gold Coast, at Senegal, or in other parts of Africa, it is only at the factories and with strangers, the natives making little use of them. According to the same travellers, their Turkies are evidently descended from those carried thither by the Portuguese and other Europeans, along with other poultry ||.

I will not dissemble, that Aldrovandus, Gesner, Belon, and Ray, have affirmed that Turkies were natives of Africa or of the East Indies; and though their opinion on this subject is at present little regarded, I conceive that it is a duty which I owe to these great names not to reject it without some discussion.

* *Indian Cock*. See his letter of the 21st September 1713; among the *Lettres Edifiantes*.

† *New Voyage*, vol. i.

‡ *Voyages de Chardin*, tome ii. p. 29. *Voyages de Tavernier*, tome ii. p. 22.

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Aldrovandus has attempted to prove at great length, that Turkeys are the *Meleagrides* of the ancients, or the African or Numidian Hens, whose plumage was covered with round spots, like drops (*Gallinæ Numidicæ guttatæ*); but it is evident, and every body is now agreed on the subject, that these are really our *pintados*, which indeed come from Africa, but which are quite different from Turkeys. It would therefore be needless to dwell more particularly on the opinion of Aldrovandus, which in fact carries its refutation along with it; and yet Linnæus seems inclined to perpetuate or renew the error, by applying to the Turkey the name of *Meleagris*.

Ray, who maintains that Turkeys have derived their origin from Africa or the East Indies, seems to have suffered himself to be deceived by names. That of the bird of *Numidia*, which he adopts, implies an African descent; that of *Turkey* and the *Bird of Calcut*, denotes an Asiatic extraction. But no proof can be drawn from the name bestowed by ill-informed people, or even the scientific term imposed by philosophers, who are not always exempted from prejudices. Besides, Ray himself admits with Dr. Sloane, that these birds delight in the warm countries of America, and here multiply prodigiously*.

With regard to Gesner, he admits indeed that most of the ancients, and among others Aristotle

* Synopsis Avium, Append. p. 182.

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and Pliny, were totally unacquainted with Turkies; but he supposes that in the following quotation Ælian had them in view: "India," says this ancient, "produces a sort of very large cocks, whose comb is not red like that of ours, but so rich and variegated as to resemble a crown of flowers; the feathers of the tail are not arched nor bent into circles, but flat, and when they are not erected, they trail like those of the peacock; their plumage is of an emerald colour."

But it does not appear that this passage relates to Turkey Cocks; for, 1. The size does not prove the point, it being well known that in Asia, and especially in Persia and Arabia, the common cocks are exceedingly large.

2. This comb, composed of various colours, is alone sufficient to overturn the opinion, since Turkies have never any comb; and what is here described is not a tuft of feathers, but a real comb, similar to that of the ordinary cock, though of a different colour.

3. The manner it holds its tail, resembling the peacock, is equally inconclusive; for Ælian positively says, that the bird which he is describing carries its tail like the peacock, *when it does not erect it*; and if there had been an erection, accompanied with a wheeling motion, Ælian would not have omitted a character so singular, and which forms so striking a resemblance to the peacock.

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4. Lastly, The emerald colour of the plumage is not sufficient to decide whether the description refers to the Turkey, though some of its feathers have that tinge, and in certain situations reflect that sort of light, since many other birds have the same properties.

Nor does Belon seem to rest his opinion on better foundation, when he attempts to discover Turkies in the writings of the ancients. Columella had said in his treatise *De re rustica*: *Africana est meleagridi similis, nisi quod rutilam galeam et cristam capite gerit, quæ utraque in meleagride sunt cærulea**. "The African hen is like the meleagris, only its tuft and comb are red, but in the other both are cærulean." Belon takes this *African hen* for the pintado, and the meleagris for the Turkey; but it is evident from the passage itself, that Columella speaks here only of two varieties of the same species; since the two birds mentioned are perfectly alike, except in colour, which is liable to vary in the same species, especially in that of the pintado, of which in the males the membranous appendices that hang on both sides of the cheeks are of a blue colour, while in the female the same parts are red. Besides, is it likely that Columella, wishing to distinguish two species so remote from each other as the pintado and the Turkey,

* Lib. viii. 2.

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would be contented in selecting a slight difference of colour, instead of marking obvious and striking characters?

But if the attempts of Belon to bestow on Turkies, from the authority of Columella, an African origin, are without foundation, his success is not greater, when he seeks, from the following passage of Ptolemy, to give them an Asiatic origin:—"Triglyphon,, Regia, where "the common cocks are said to be bearded." This Triglyphon is situated indeed beyond the Ganges; but there is no reason to believe that these bearded cocks are Turkies; for, 1. The very existence of these cocks is uncertain, resting merely on hearsay. 2. This description cannot refer to Turkies, since, as I have before observed, the word *beard*, applied to a bird, can mean only a tuft of feathers, or hairs, placed under the bill, not the lock of stiff hair which the Turkies have on the under part of the neck. 3. Ptolemy was an astronomer and geographer, and not a naturalist; and it is evident that he wished to render his charts more interesting, by introducing, and not always with judgment, accounts of the peculiarities of each country. In the very same page he speaks of three islands of satyrs, whose inhabitants had tails; and he tells us, that the Manioles are ten islands situated nearly in the same climate, where loadstone abounds so much, that iron cannot be employed in the construction of ships,

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because of the danger of their being attracted and held by the magnetic force. But these human tails, though asserted by several travellers, and by the Jesuit missionaries, according to Gemelli Careri, are at least very doubtful; and the mountains of loadstone, or rather their effects on the iron of vessels, are no less so: so that little confidence can be put in facts mingled with such uncertain relations. 4. Lastly, Ptolemy, in the place above quoted, speaks expressly of ordinary cocks, which cannot be confounded with Turkey-cocks, neither in their external form, their plumage, their cry, their natural habits, the colour of their eggs, nor the time of incubation, &c. It is true that Scaliger, while he admits that the meleagris of Athenæus, or rather of Clytus, who is quoted by Athenæus, was an Ætolian bird that loved wet situations, which was averse to hatching, and whose flesh had a marshy taste, none of which characters belong to the Turkey; which is not an inhabitant of Ætolia, which avoids watery spots, which has the greatest affection to its young, and whose flesh has a delicate flavour; yet still maintains that the meleagris is the Turkey. But the anatomists of the Academy of Sciences, who were at first of the same opinion, have, after examining the subject with more attention, ascertained and proved that the pintado was the real *meleagris* of the ancients. In short, we must

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must consider it as an established point, that Athenæus, or Clytus, Ælian, Columella, and Ptolemy, have no more spoken of Turkies than Aristotle or Pliny; and that these birds were totally unknown to the ancients.

Nor can we find the least mention of the Turkey in any modern work, written prior to the discovery of America. A popular tradition refers the period of its first introduction into France to the sixteenth century, in the reign of Francis I.; for this was the time when Admiral Chabot lived. The authors of the British Zoology state it as a well-known fact, that they were introduced into England in the time of Henry VIII. the contemporary of Francis I.; which agrees exactly with our opinion. For America having been discovered by Christopher Columbus towards the end of the fifteenth century, and these sovereigns having ascended the throne about the beginning of the sixteenth century, it is natural to suppose, that the Turkies brought from the New World would under their reigns be regarded as novelties in France and England. This is confirmed too by the express testimony of J. Sperling, who wrote before 1660; he affirms, that they had been introduced from the New Indies into Europe more than a century prior to his time*.

Every thing, therefore, concurs to prove that the Turkies are natives of America. As they are

* Zoologia Physica, p. 366.

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heavy birds, and cannot rise on the wing, or swim, it would be impossible for them to cross the ocean which separates the two continents. They are in the same situation with the quadrupeds, which, without the assistance of man, would not have been dispersed through the Old and New Worlds. This reflection gives additional weight to the testimony of travellers, who assure us, that they have never seen Wild Turkeys either in Africa or Asia, and that none are found there but such as are domestic, and brought from other parts*.

This

* The Honourable Daines Barrington has published an Essay, in which he attempts to prove, that the Turkey was known before the discovery of America. He examines the Comte de Buffon's arguments, and endeavours to invalidate or refute them; but his objections are entirely inconclusive. If the Turkey had been introduced into Spain by Columbus, it would have been called, says Mr. Barrington, *the Mexican bird*, and not *pago*, or *pavo*. Cardinal Perron, who died in 1620, relates, that the Indian Cocks had prodigiously multiplied, and were driven like flocks of sheep from Languedoc into Spain: therefore, says Mr. B. the Turkey must have been introduced first into France. These conjectures are so vague as to merit no particular discussion; and when Mr. B. asserts, that Sperring means one hundred and one years, by the expression "*Ante centum, & quod excurrit annos.*" he seems not to have attended to grammar. That phrase is classical, and means indefinitely some time more than a century: nor will the word *excurrit* admit of any other interpretation.

Mr. Barrington proceeds: "The Spanish term is not *pavon* " *de las Indias*, as M. Buffon states, but simply *pavo*, and for-
" merly *pago*. If, moreover, the name were *pavon de las Indias*,
" it would not signify the West Indies, as in all the European lan-
" guages the addition of *Western* is necessary." But this assertion
is too hasty: did not the King of Spain, after the discovery of
America,

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This determination of the natal region of the Turkey leads to the decision of another question, which, at first sight, seems to have no connection with it. J. Sperling affirms, in his *Zoologica Physica*, p. 369, that the Turkey is a monster (he means an hybrid) produced by the union of the two species, that of the peacock and of the ordinary cock; but as it is ascertained that the Turkey is of American extraction, it could not be bred by the intercourse of two Asiatic species; and what completely decides the point is, that no Wild Turkeys are found through the whole extent of Asia, though they abound in the forests of America. But it will be said, what means the term *gallopavus*, which has so long been applied to the Turkey? Nothing is simpler: the Turkey was a foreign bird which had no name in any of the European languages; and as it bore several striking resemblances to the common cock and the peacock, a compound word was formed expressive of these analogies. Sperling and others would have us believe that it is really the cross-breed of these two species; yet the inter-

America, assume the title of *Indiæ Rex*, and not *Indiæ Occidentalis*, or *Indiarum*?

I must add, that the opinion of the Comte de Buffon concerning the native climate of the Turkey, is admitted by the ingenious and respectable naturalist Mr. Pennant, who has adduced several new arguments in support of it. Linnæus, Gmelin, and Latham, entertain the same idea.

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mixture consists entirely in the names.—So dangerous it is to bestow upon animals compounded epithets, which are always ambiguous.

Edwards mentions another hybrid produced between the Turkey and the pheasant*. The individual which he describes was shot in the woods near Hanford in Dorsetshire, where it was seen in the month of October 1759, with two or three other birds of the same kind. It was of a middle-size between the pheasant and the Turkey, its wings extending thirty-two inches; a small tuft of pretty long black feathers rose on the base of the upper mandible; the head was not bare like that of the Turkey, but covered with little short feathers; the eyes were surrounded with a circle of red skin, but not so broad as in the pheasant. It is not said whether this bird could spread the large feathers of the tail into the wheel-shape; it only appears from the figure, that it carried the tail in the same way as the Turkey generally does. It must also be observed, that this tail is composed of sixteen quills, as in the grouse; while that of the Turkey and of the pheasant consists of eighteen; also each feather on the body shot double from the same root, the one ranch stiff and broad, the other small and covered with down, a character which belongs

* Gleanings.

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neither to the pheasant nor the Turkey. If this bird was really a hybrid, it ought to have had, like other hybrids, 1st, The characters common to the two primitive species; 2dly, The qualities intermediate between the extremes; a circumstance that in this case does not take place, since this individual had a character not to be found in either (the double feathers), and wanted others that occur in both (the eighteen quills of the tail). Indeed, if it be insisted that it was hybridous, we should more reasonably infer, that it was produced by the union of the Turkey with the grouse; which, as I have remarked, has no more than sixteen feathers in the tail, but has the double feathers.

The Wild Turkeys differ not from the domestic sort, except that they are much larger and blacker; they have the same dispositions, the same natural habits, and the same stupidity. They perch in the woods on the dry branches, and when one falls by a shot, the rest are not intimidated by the report, but all continue secure in the same position. According to Fernandez, their flesh, though pleasant to eat, is harder and not so delicate as that of the Tame Turkeys; but they are twice as large. The Mexican name of the male is *bucxolotl*, and that of the female *cibuatotolin*. Albin tells us, that many English gentlemen amuse themselves in breeding Wild Turkeys, and that these birds thrive very well in small woods, parks, or other inclosures.

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The Crested Turkey is only a variety of the common kind, similar to what occurs among the ordinary cocks. It is sometimes black, sometimes white. That described by Albin was of the usual size; its feet flesh-coloured, the upper part of the body deep brown; the breast, belly, thighs, and tail, white; and also the feathers that form the tuft. In other respects it resembled exactly the ordinary kind; it had the spongy and glandulous flesh which covers the head and arch of the neck, and the lock of hard hair rising (apparently) from the breast, and the short spurs on each foot; it also bore the same singular antipathy to scarlet, &c. [A]

[A] Specific character of the Turkey, *Meleagris Gallopavo* :

The caruncle of the head is extended to the forehead and the throat; the breast of the male is bearded." The Wild Turkeys are of a dingy uniform colour; and seldom weigh more than thirty pounds. They are now very rare in the old settlements of North America; yet some occur in Virginia within 150 miles of the coast. Beyond the ridge of Apalachian mountains they are frequent; and flocks of several hundreds are seen near the Mississippi and Ohio. They roost in the great swamps, but spend the whole day among the dry woods, searching for red acorns and various sorts of berries. They grow very fat in the spring. When surprised, they run with prodigious speed; but if hotly pursued, they take wing and perch on the summit of the next tall tree. The Indians make fans of the Turkeys tails; and also weave the inner webs of their feathers with hemp, or the rind of the mulberry-tree, into an elegant sort of clothing.

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The GUINEA PINTADO*.

La Pintade, Buff.

Numida Meleagris, Linn. Gmel. &c.

Gallus & *Gallina Guineensis*, Ray and Will.

The Guinea Hen, Ray.

WE must not, like Ray, confound this with the Pintado mentioned by Dampier, which is a sea-bird, equal to the duck in size, having very long wings, and skimming along the surface of the water: these characters are all widely different from those of the real Pintado, which is a land-bird, with short wings, and whose flight is laborious and slow.

It was known, and accurately described, by the ancients. Aristotle mentions it only once in his History of Animals; he calls it *Meleagris* and says that its eggs are marked with imbricated spots †.

Varro takes notice of it by the name of *African Hen*; and he tells us, that it was a large bird.

* In Greek and Latin, *Meleagris*: in modern Italian, *Gallina di Numidia*: in German, *Perl-huhn*, or *Pearl-hen*. In Congo it has the name *Quetélé*.

† Lib. vi. 11.



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* *Grandes, var*
Lib. iii. 9.

† *Africa Galli*
Lib. x. 26.

‡ Lib. x. 52.

§ Lib. x. 48.

|| *Africana Galli*
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¶ *Memoires p*
dressé par M. Perr

VOL. II.

with variegated plumage, and a round back, that was very uncommon at Rome*.

Pliny gives the same account, and seems merely to copy Varro; unless we ascribe the sameness of their descriptions to the identity of the object †. He repeats also what Aristotle had said with regard to their eggs ‡; and he adds, that the Pintado of Numidia was most esteemed §, and hence he bestows the name of Numidian Hen on the whole species.

Columella admitted two sorts, which were perfectly alike, except that the one had blue barbils and the other red. This difference seemed so important to the ancients, that they formed two species, denoted by distinct names. They called the one, which had red barbils, *Meleagris*; the other, which had blue barbils, the *African Hen* ||; not adverting that the former is the female, and the latter the male of the same identical species, as the academicians have found ¶.

* *Grandes, variae, gibberae quas Meleagrides appellant Graeci.*
Lib. iii. 9.

† *Africae Gallinarum genus, gibberum, variis sparsum plumis.*
Lib. x. 26.

‡ Lib. x. 52.

§ Lib. x. 48. "quam plerique Numidicam dicunt."

|| *Africana Gallina est Meleagridi similis nisi quod rutilam paleam cristam capite gerit, quae utraque sunt in Meleagride caerulea.*

COLUMELLA de Re Rusticâ, lib. xiii. 2.

¶ Memoires pour servir a l'Histoire Naturelle des Animaux, dressé par M. Perrault. *Deuxieme Partie*, p. 82.

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However, it appears that the Pintado which was anciently reared with so much care at Rome, was afterwards entirely lost in Europe. We can discover no trace of it in the writings of the middle ages; and we find it only begun to be spoken of, after the Europeans had visited the western coasts of Africa, in their voyages to India by the Cape of Good Hope*. But not only have they diffused these birds through Europe, but transported them into America; and the Pintados have suffered various alterations in their external qualities from the influence of different climates. Nor must we be surprised that the moderns, both the naturalists and travellers, have multiplied the divisions of the breeds still more than the ancients.

Frisch distinguishes, like Columella, the Pintado with red barbils from that with blue barbils; but he states several other differences. According to him, the latter, which is found only in Italy, is unpalatable food, small, fond of wet places, and careless about its young; the two last features also mark the *Mcleagris* mentioned by Clytus of Miletus. "They delight," says he, "in marshes, and discover little attacks

* "As Guinea is a country from which merchants have imported many articles formerly unknown to the French, so its hens would also have remained unknown, had they not been brought over sea. But they are now so frequently kept by the great lords in our provinces, as to be reckoned common."

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ment to their progeny, which the priests are obliged to watch over with care;—"but," he subjoins, "their size is equal to that of a hen of the finest breed*." It appears too, from Pliny, that this naturalist considered the Meleagris as an aquatic bird †. That with red barbils is, on the contrary, according to Frisch, larger than a pheasant, prefers a dry situation, and is assiduous in its attention to its young, &c.

Dampier informs us, that in the island of May, one of the Cape de Verd islands, there are Pintados, of which the flesh is of an uncommon whiteness; and others, of which it is black; but that in all of them it is tender and delicate. Father Labat gives the same account. This difference, if the fact be true, would appear to be the more considerable, as it cannot be imputed to the change of climate; since the Pintados on this island, which is near the African shore, may be considered as in their native residence; at least unless we assert that the same causes which tinge with black the skin and *periosteum* of most of the birds in the islands of St. Jago, darken also the flesh of the Pintados in the neighbouring island of May.

* See Athenæus, lib. xiv. 26.

† "Mnesias calls a place in Africa, Sicyone; and a river, Crathis; which rises out of a lake where the birds termed *Meleagrides* & *Penelopa* haunt." Lib. xxxvii. 2.

YUL

Father Charlevoix pretends that there is at St. Domingo a species smaller than the ordinary sort *. But these are probably the chefnut Pintados, bred from such as were introduced by the Castilians soon after the conquest of the island. These having become wild, and as it were naturalized in the country, have experienced the baneful influence of that climate; which, as I have elsewhere shewn, has a tendency to enfeeble, to contract, and to degrade the animal tribes. It is worth observing, that this breed, originally from Guinea, and transported to America, where it had once been reduced to the domestic state, but suffered to grow wild, could not afterwards be reclaimed to its former condition; and that the planters in St. Domingo have been obliged to import tame ones from Africa, to propagate in their farmyards †. Is it from living in a more desert and wilder country, inhabited by savages, that the chefnut Pintados have become savage themselves? or is it because they have been frightened away by European hunters, especially the French, who, according to Father Margat the Jesuit, have destroyed vast numbers of them ‡?

Marcgrave saw some with crests, that came from Sierra Leona, and which had about the

* History of the Spanish island of St. Domingo.

† Lettres Edifiantes; xx.

‡ *Ibidem.*

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neck a kind of membranous collar, of a bluish cinereous colour *; and this is one of those varieties which I call primitive, and which deserve the more attention, as they are anterior to every change of climate.

The Jesuit Margat, who admits no special difference between the African Hen and the Meleagris of the ancients, says, that they have two kinds in regard to colour at St. Domingo; in some, black and white spots are disposed in the form of rhomboids; in others, the plumage is of a deeper ash-grey. He adds, that they all have white below the belly, and on the underside, and at the tips of the wings.

Lastly, Brisson considers the whiteness of the plumage of the breast observed on the Pintados at Jamaica, as constituting a distinct variety; and he characterises it by this epithet, (*pectore albo*;) which, as we have just seen, belongs as much to the Pintados of St. Domingo as to those of Jamaica.

But besides the differences which have been regarded by naturalists as a sufficient foundation for admitting several races of Pintados, I can perceive many others, in comparing the descriptions and figures published by different authors, which shew little permanency, either in the

* "The head was covered with a roundish crest, much divided, and consisting of elegant black feathers."

Hist. Naturalis Brasiliensis.

YUL

internal mould of the bird, or in the impression of the exterior form; but, on the contrary, a great disposition to be affected by foreign influences.

In the Pintado of Frisch and some others*, the casque and the feet are whitish, the forehead, the circle of the eyes, the sides of the head and neck, in its upper part, are white, spotted with ash-grey. That of Frisch has besides, under the throat, a red spot in the shape of a crescent, and lower down a very broad black collar, the silky filaments on the *occiput* few, and not a single white quill in the wings; which form so many diversities, in which the Pintados of these authors differ from ours.

In Marcgrave's specimen, the bill was yellow in that of Brisson, it was red at the base, horn coloured near the tip. The academicians found on some a small tuft at the origin of the beak consisting of twelve or fifteen stiff threads, about four inches long, which did not occur in those of Sierra Leona, mentioned above.

Dr. Caius says, that in the female the head is entirely black, and that this is the only distinction between it and the male †.

* "The cock and hen," says Belon, "have the same markings on the feathers, and whiteness about the eyes, and red below." "At the sides of the head white." MARCGRAVE.
 "The head is clothed," says the Jesuit Margat, "by a sponge rough, wrinkled skin, whose colour is whitish blue."

† *Apud Gesnerum.*

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Aldrovandus asserts, on the contrary, that the head of the female has the same colours with that of the male, but that its casque is less elevated and more obtuse.

Roberts affirms, that it has not the casque at all *.

Dampier and Labat maintain, that they never saw those red barbils and caruncles which border the nostrils in the male †.

Barrere tells us, that these parts are of a paler colour than in the male, and that the silky hairs of the *occiput* are thinner, such apparently as represented in Frisch's figure.

Lastly, the academicians found in some individuals these filaments on the *occiput* rising an inch, so that they formed a kind of tuft behind the head.

It would be difficult, from all these varieties, to select those that are so deeply and so permanently stamped, as to constitute distinct races; and as we cannot doubt but that they are very recent, it will perhaps be safest to regard them as the effects produced by domestication, change of climate, nature of the food, &c.; and without introducing them into the description, to mark the limits of the variations to which certain qualities of the Pintado are subject, and to

* Voyage to the Cape de Verd islands.

† New Voyage.—It is probable that the short and very bright red crest, mentioned by Father Charlevoix, is nothing but these caruncles.

YUL

endeavour, as much as possible, to ascend to those causes, of which the continued operation has at last imprinted constant characters, and formed distinct species.

In one circumstance, the Pintado bears a striking resemblance to the turkey; viz. it has no feathers on the head, nor on the arch of the neck. This has induced several ornithologists, as Belon, Gesner, Aldrovandus, and Klein, to take the turkey for the Meleagris of the ancients. But not to mention the numberless points of difference between these two species*, we need only refer to the proofs by which it was decided that the turkey was peculiar to America, and could never migrate into the ancient continent.

Briffon seems also to have mistaken, when, from a quotation of Kolben †, he inserted *Knor-baan*

* The Meleagris was, according to the ancients, as large as a good hen, and it had a fleshy tubercle on the head; its plumage was marked with white spots like lentils, but larger; there were two barbils attached to the upper mandible, the tail was pendulous, the back round, there were membranes between the toes, and no spurs at the feet: it delighted in marshes, had no tenderness for its young. These characters are entirely different from those of the turkey, which, on the other hand, has many properties not to be found in the description of the Meleagris; particularly the bunch of hairs that hangs under the neck, and his manner of displaying his tail, and of pacing around his female.

† "A bird which belongs properly to the Cape," says the traveller, "is the *Knor-bahn*, or *Coq-knor*. It is the sentinel of the other birds; it informs them, when it sees a man approach, " by a scream resembling the sound of the word *crac*, and which

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baan in the list of the names of the Pintado. I agree with Briffon, that the figure given by this traveller is only copied from that of the African Hen of Marcgrave; he must also allow that it would be hard to admit a bird peculiar to the Cape of Good Hope to be the Pintado, which is spread through the whole of Africa, and less common at that promontory than in other parts of the country; still more difficult will it be to reconcile the short black bill, the crown of feathers, the red which is intermixed with the colours of the wings and of the body, and the quality which Kolben ascribes to his *Knor-baan*, that it lays only two eggs.

The plumage of the Pintado, though not decorated with rich and dazzling colours, is remarkably beautiful. It is of a bluish-grey ground, sprinkled with considerable regularity, with white roundish speckles, resembling pearls. Hence some of the moderns have bestowed on this bird the name of *Pearled Hen* *; and the ancients applied the epithets *varia* and *guttata* †. Such, at least, was the plumage in its native climate; but since it has been carried into other

“ it repeats very loud. It is as large as a common hen; its bill
 “ is short and black, like the feathers on its crown; the plumage
 “ of the wings and body is mixed with red, white, and cine-
 “ reous; the legs are yellow, and the wings small. It frequents
 “ solitary places, and builds its nest in the bushes; it lays
 “ two eggs; its flesh is not much esteemed, though it is very
 “ good.”

* Frisch.

† Martial's Epigrams.

countries,

YUL

countries, it has assumed more of the white. Thus the Pintados at Jamaica and St. Domingo are white on the breast; and Edwards mentions some entirely white*. The whiteness of the breast, therefore, which Brisson considers as the character of a variety, is only an alteration begun in the natural colour, or rather it is the shade between that colour and complete whiteness.

The feathers on the middle part of the neck are very short near its arch, where they are entirely wanting. From that part they gradually lengthen unto the breast, and there they are three inches long †.

These feathers are of a downy texture from their root to near their middle, and this part is covered by the tips of the feathers in the preceding row, consisting of stiff webs interwoven with each other.

It has short wings and a pendulous tail, like that of the partridge, which, joined to the arrangement of its feathers, makes it look as if it were hunch-backed (*Genus Gibberum*, PLIN.); but this appearance is false, and no vestige remains when the bird is plucked ‡.

The size is nearly that of an ordinary hen, but the shape is like that of the partridge; hence

* Gleanings, *Part Third*.

† Memoires pour servir l'Histoire des Animaux, *Partie II*, p. 81.

‡ Lettres Edifiantes, *Recueil-xx*.

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it has been called the Newfoundland Partridge*. But it is of a taller form, and its neck longer, and more slender near the arch.

The barbils which rise from the upper mandible have no invariable form, being oval in some, and square or triangular in others; they are red in the female, and bluish in the male; and, according to the academicians and Brisson, it is this circumstance alone which distinguishes the two sexes. But other authors, as we have already seen, have assigned different marks drawn from the colours of the plumage †, of the barbils ‡, the callous tubercle on the head §, the caruncles of the nostrils ||, the size of the body ¶, the silky threads of the *occiput*, &c. **, whether these differences really result from the sex, or by a logical error, which is but too common, the accidental properties of the individual have been regarded as sexual.

Behind the barbils, we perceive on the sides of the head the very small orifice of the ears, which in most birds is concealed by feathers, but in this is exposed. But what is peculiar to the Pintado is, a callous bump, or a kind of casque, which rises on its head, and which Belon improperly compares to the tubercle, or

* Belon.

† Caius *apud Gesnerum*.

‡ Columella, Frisch, Dampier, &c.

§ Aldrovandus, Roberts, Barrere, Dalechamp, &c.

|| Barrere, Labat, Dampier, &c.

¶ Frisch.

** Frisch, Barrere, &c.

rather

YUL

rather to the horn of the *giraffe* *. It resembles in shape the reverse of the dural cap of the Doge of Venice, or this cap placed with its back towards the front. Its colour varies in different subjects, from white to reddish, passing through the intermediate shades of yellow and brown †. Its interior surface is like that of hard callous flesh, and it is covered with a dry wrinkled skin, which extends over the *occiput*, and on the sides of the head, but is furrowed where the eyes are placed. Those naturalists who deal in final causes, have asserted, that this is a real helmet, bestowed on the Pintados as a defensive armour, to protect them against the attacks which they make on each other, because they are quarrelsome birds, and have a strong bill and a delicate skull.

The eyes are large and covered; the upper eye-lid has long black hairs bent upwards, and the crystalline lens is more convex at the anterior than at the posterior surface.

Perrault affirms, that the bill is like that of the common hen; the Jesuit Margat makes it thrice as large, very hard, and pointed; the claws are also sharper, according to Labat. But

* It was on account of this tubercle that Linnæus termed the Pintado, in the sixth edition, *Hm with a HORN*Y top; and in his tenth edition, *Pheasant with a CALLOUS* top.

† It is whitish in Frisch; wax-coloured, according to Belon; brown, according to Marcgrave; tawny-brown, according to Perrault; and reddish in the *Planches Enluménées*.

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all agree, both ancients and moderns, in saying that the feet have no spurs.

There is a remarkable difference which occurs between the ordinary hen and the Pintado; that the intestines of the latter are much shorter in proportion, not exceeding three feet, according to the academicians, exclusive of the *cæca*, which are each six inches, and widen as they extend from their origin, and receive, like the other intestines, vessels from the mesentery. The largest of all is the *duodenum*, which is eight lines in diameter. The gizzard is like that of the common hen; and also contains numbers of small pebbles, and sometimes even nothing else; probably when the animal, dying of a languishing distemper, has passed the close of its life without eating at all.

The inner membrane of the gizzard is full of wrinkles; it adheres loosely to the nervous coat, and is of a substance analogous to horn.

The craw, when inflated, is about the size of a tennis ball; the duct, which joins it to the gizzard, is of a harder and whiter substance than what precedes the craw, and does not present near so many distinct vessels.

The *œsophagus* descends along the neck, to the right of the *trachea-arteria*; because, no doubt, the neck, which, as I have already said, is very long, bending oftener forwards than sideways, the *œsophagus* pressed by the *trachea-arteria*, whose rings are entirely osseous, has
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here, as in most of the birds, been pushed to that side where there is least resistance.

These birds are subject to schirrous concretions in the liver, and even in the kidney. Some have been found without any gall-bladder; but in this case the hepatic branch was very thick. Others have occurred with only one testicle; in general, it seems that the internal parts are no less liable to changes than the exterior and superficial parts.

The heart is more pointed than common in birds*; the lungs are of the ordinary shape. It has however been observed in some subjects, that, on blowing into the *trachea-arteria* to inflate the lungs and air-cells, the *pericardium*, which appeared more than ordinarily flaccid, swelled with the lungs †.

I shall add another anatomical remark, which has perhaps some connection with the habit of crying and the clamorous notes of the Pintado; it is, that the *trachea-arteria* receives in the cavity of the thorax two small muscular chords of an inch long, and two-thirds of a line broad, which are inserted on each side ‡.

The Pintado is an exceedingly noisy bird, and for this reason Brown has termed it *Gallus clamosus* §. Its cry is sharp, and by its con-

* Memoires pour servir a l'Hist. Nat. des Animaux.

† Histoire de l'Academie des Sciences, tome i. p. 153.

‡ Memoires pour servir a l'Hist. Nat. des Animaux.

§ Natural History of Jamaica.

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tinuance, becomes so troublesome, that, though the flesh is very delicate, and much superior to that of ordinary poultry, most of the American planters have given over breeding it*.

The Greeks had a word appropriated to denote the screaming of the Pintado †. Ælian observes, that the Meleagris utters a sound resembling that of its name. Dr. Caius says, that its cry is like that of the partridge, though not so loud. Belon tells us, that it is analogous to the chirping of young chickens lately hatched; but at the same time he positively affirms, that it is unlike that of ordinary hens. I cannot conceive why Aldrovandus and Salerne assert the contrary.

The Pintado is a lively, restless, and turbulent bird, that dislikes to remain in the same place, and contrives to become master of the poultry-yard. It can intimidate even the turkies; for, though much smaller, it gains the ascendancy over them by the mere dint of petulance. "The Pintado," says Father Margat, "wheels sometimes round, gives twenty strokes with his bill, before these heavy birds are roused to defence." The Hens of Numidia seem to have the same mode of fighting which the historian Sallust imputes to the cavalry of that country. "Their charge is sudden and irre-

* Lettres Edifiantes, *Recueil* xx.

† Καγκυζῖν, according to Pollux. *Gesner*.—That word signifies also to laugh loud.

"gular;

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“gular; if they meet with resistance, they retreat, but in an instant they renew the attack*.” To this example we might add many others, tending to prove the influence of climate on the instincts of the animals, as well as on the national genius of the inhabitants. The elephant joins to strength and industry, a slavish disposition; the camel is laborious, patient, and sober; and, in those enervating regions, even the dog forgets to bite.

Ælian relates, that in a certain island the Meleagris is respected by the birds of prey †; but I presume that in every country of the world, these would rather attack other fowls, whose bill is not so strong, whose head is not protected by a casque, and who are not so well acquainted with the art of defence.

The Pintado is one of those birds which seek, by weltering in the dust, to rid themselves of insects. They also scrape the ground like common hens, and roam in numerous flocks. Bodies of two or three hundred together are sometimes seen in the Isle of May; and the inhabitants hunt them with a greyhound, and without other weapons than sticks ‡. But, according to Belon, they run very fast, keeping their head elevated like the camelopard.

* Lettres Edifiantes, *Recueil* xx.

† *Historia Animalium*, lib. v. 27.

‡ Dampier and Brue.

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‡ Gesner, *Frisc*
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VOL. II.

They perch at night to sleep, and sometimes during the day, on the walls of inclosures, on hedges, and even on the roofs of houses, and on trees. They are at great pains, Belon adds, in providing their food; and, indeed, considering the length of their intestines, they must consume more than ordinary fowls, and be subject to more frequent calls of hunger*.

It appears from the concurrence of the ancients † and moderns ‡, which is also corroborated by the semi-membranes which connect the toes, that the Pintado is partly an aquatic bird. Accordingly, those from Guinea, which have recovered their liberty in St. Domingo, and obey the impulse of nature alone, prefer the swamps and moist situations §.

If they be trained when young, they soon become tame. Brue relates, that when he was at the coast of Senegal, he received, as a present from a princess of that country, two Pintados, a male and a female, both of which were so familiar that they would come to eat on his

* De Seve observed, in throwing some bread to Pintados, that when one of them happened to take a bit larger than it could immediately swallow, it hurried away with it out of the reach of the other fowls, and hid it in the dunghill, or in the earth, and sometime afterwards returned and ate it.

† Pliny, *Historia Naturalis*, lib. xxxvii. 2. and Clitus of Miletus, in Athenæus.

‡ Gesner, Frisch, — *Lettres Edifiantes*.

§ *Lettres Edifiantes*. — “ I entered,” says Adanson, “ a little thicket near a marsh, where flocks of Pintados were gathered.”

They

171

plate; and that when they were at liberty to fly about the beach, they returned regularly to the ship, when the dinner or supper bell rung. Moore says, that they are as wild as the pheasants are in England*; but I suspect he never saw pheasants so tame as Brue's Pintados. And what proves that the Pintados are not very wild is, that they receive the food which is offered them the moment after they are caught.

The Pintado lays and hatches nearly like the ordinary hen; but its fecundity appears to be not the same in different climates, or at least that this is much greater in the domestic condition, where food is more abundant, than in the savage state, which affords but a scanty subsistence. I have been informed that it is wild in the Isle of France, and there lays ten or twelve eggs on the ground in the woods; whereas those that are domestic in St. Domingo, and seek the hedges and bushes to deposit their eggs, lay 100, or 150, provided that one be left constantly in the nest.

These eggs are smaller in proportion than those of an ordinary hen, and their shell is much harder. But there is a remarkable difference between those of the domestic Pintados and those of the wild sort; the latter are marked with small round spots like those on their plum-

* *Hist. Gen. des Voyages*, tome iii. p. 319.

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age; and this circumstance has not been overlooked by Aristotle; but those of the former are at first of a pretty bright red, which afterwards fades, and at last runs into the faint colour of a dried rose. If this fact be true, as I have been assured by Fournier, who has raised many of these birds, we must conclude that the influence of domestication penetrates here so deeply, as to change not only the colours of the plumage, as we have already seen, but even those of the matter which forms the shell of the eggs; and as this does not happen in other species, there is reason to conclude that the nature of the Pintado is not so fixed and invariable as that of other birds.

Is the Pintado watchful or not of its brood? This is a problem that has not yet been solved. Belon replies without qualification in the affirmative*. Frisch is of the same opinion with regard to his great species, which delights in dry situations, but affirms that the contrary is true of the small species, which prefers marshes. But most authors impute to them a degree of indifference for their offspring; the Jesuit Margat informs us, that at St. Domingo they are not suffered to cover their eggs, because they discover so little attachment, and so often abandon their young †. The planters give their

* "They are very prolific, and careful in rearing their young." *History of Birds.*

† *Lettres Éléantes.*

YUL

eggs to be hatched, he says, under turkies or common hens.

I can find nothing with respect to the time of incubation; but if we judge from the size of the bird, and from our knowledge of other species to which it is most analogous, we may allow three weeks, more or less, according to the heat of the season or climate, and the assiduity of the sitter, &c.

In their first infancy, the young Pintados have neither the barbles nor the casque; they resemble the red partridges in their plumage, and the colour of their feet and bill, and it is difficult to distinguish the young males from the old females*; for in all these species, the maturity of the females corresponds to the infancy of the males.

The young Pintados are very tender, and being natives of the burning climates of Africa, are with difficulty reared in our northern countries. According to Father Margat, they feed at St. Domingo, as well as the old ones, on millet. At the Isle of May, they subsist on the grasshoppers and worms, which they find themselves by scraping the ground with their nails †; and Frisch says, that they live on all sorts of grain and insects.

The Pintado cock breeds also with the common hen. But it is a kind of artificial union,

* I have this fact from Fournier, who was mentioned above.

† Dampier and Labat.

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* Fournier.
‡ Aublet.

which requires attention to bring about. They must be bred together from their infancy; and the hybridous intercourse gives birth to a bastard progeny of an imperfect structure, and disavowed, as it were, by nature. Their eggs are destitute of the prolific power, and the race is extinguished in the death of the individuals*.

The Pintados that are raised in our poultry-yards have an excellent flavour, in no respect inferior to that of partridges; but the wild or chestnut sort of St. Domingo have the most exquisite relish, and exceed the delicacy of the pheasant. The eggs of the Pintado too are a very agreeable food.

We have seen that the Pintado is of African origin; and hence all the names that have been bestowed on it: hen of Africa, of Numidia, the foreign hen, that of Barbary, of Tunis, of Mauritania, of Lybia, of Guinea, of Egypt, of Pharaoh, and even of Jerusalem. Some Mahometans called them Jerusalem hens, and sold them to the Christians for whatever price they chose to demand †; but these perceiving the fraud, retaliated on the good Musulmen by offering them under the name of Mecca hens.

They are found in the isles of France and Bourbon ‡, where they have been introduced

* Fournier.

† Longolius, *apud Gesnerum*.

‡ Aublet.

YUL

at a late period, but have since multiplied extremely*. They are known at Madagascar † by the name of *acanques*, and at Congo by that of *quetèle* ‡; they are very common in Guinea §, on the Gold Coast, where they are kept tame only in the district of Acra ||; at Sierra-Leona ¶, at Senegal **, in the island of Goree, in the Cape de Verd islands ††, in Barbary, in Egypt, in Arabia ††, in Syria §§; we are not informed whether they occur in the island of Madeira, or in the Canaries. Gentil tells us, that he saw Pintado hens at Java ||||; but it is uncertain if they were tame or wild: I should rather suppose that they were domestic, and carried from Africa to Asia, as they have been transported from Europe to America. But as these birds were accustomed to a hot climate, they could not support the intense cold that reigns on the frozen shores of the Baltic: and Linnæus never mentions them in his *Fauna Suecica*. Klein seems to speak but from the report of

* Voyage Autour du Monde de la Barbinais le Gentil, tome II. p. 603.

† François Cauche, Relation de Madagascar.

‡ Maregrave.

§ Margat.

|| Voyage de Barbot.

¶ Marcgrave.

** Adanson's Voyage to Senegal.

†† Dampier's Voyage round the World.

‡‡ Strabo. *Lib.* xvi.

§§ "The most distant part of Syria breeds Pintados."

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|||| Voyage round the World.

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|| *Pintade*, from

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another person; and we are informed that at the beginning of the present century they were rare even in England*.

Varro says, that in his time the African hens, (it is thus he names the Pintados,) were sold for a high price at Rome, on account of their scarcity †. They were much more common in Greece in the age of Pausanias; since this author positively asserts, that the meleagris, with the common goose, was what persons who were not in easy circumstances, generally presented at an offering in the solemn mysteries of Isis. But we must not therefore infer, that the Pintados were natives of Greece; for, according to Athenæus, the Æolians were the first Greeks who were possessed of these birds. Yet I conceive that some trace of a regular migration may be discovered from the battles that were annually fought with these birds in Bœotia, on the tomb of Meleager; which are mentioned both by the naturalists and mythologists ‡. Hence the name of Meleagris §, as that of Pintado || has been be-

* Edwards's Gleanings. † De Re Rusticâ, lib. iii. 9.

‡ Pliny, lib. x. 26.

§ According to the fable, the sisters of Meleager, having gone distracted through excessive grief at their brother's death, were turned into these birds, which still bear the tears sprinkled on their plumage.

|| *Peintade*, from *peindre*, which, in French, signifies to paint.

YUL

stowed, on account of the beautiful distribution of the colours with which their plumage is painted. [A]

[A] Specific character of the Pintado, *Numidia Meleagris*:
"Has a double caruncle at the chaps, no fold at the throat."
Mr. Pennant makes it appear that the Pintados had been early introduced into Britain; at least prior to the year 1277. But they seem to have been much neglected, on account of the difficulty of rearing them; for they occur not in our ancient bills of fare.

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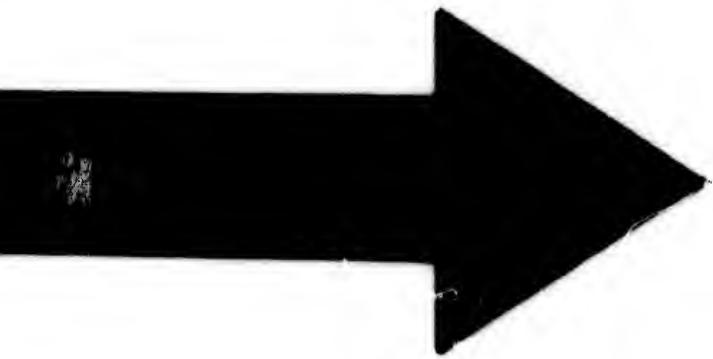
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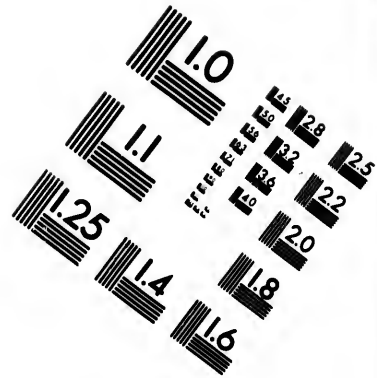
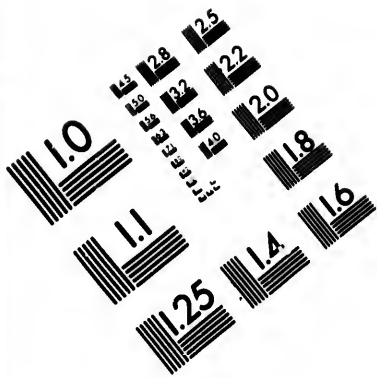
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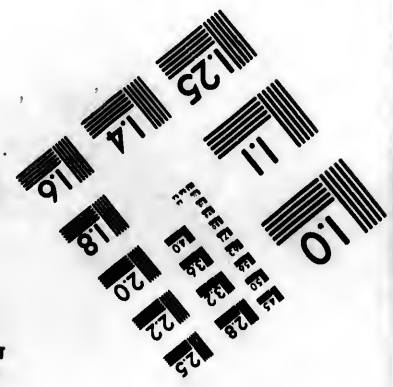
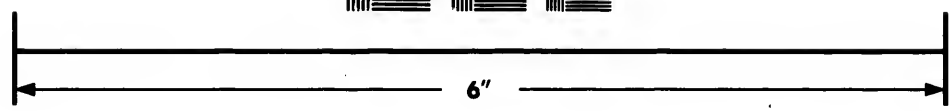
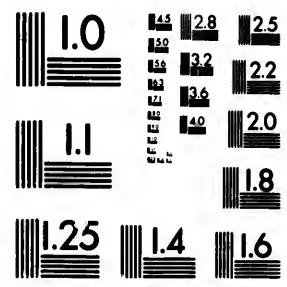
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The WOOD GROUS.

Le Tétraz, ou le Grande Coq de Bruyere *, Buff.

Tetrao-Urogallus †, Linn. Gmel, &c. &c.

Urogallus Major, Briss. Klein, and Gerini.

The Capcaze, Sibbald, Scot. Illust.

The Cock of the Wood, or Mountain, Ray, Will. and Alb.

IF we were to judge of things by their names only, we should take this bird for a wild cock or a pheasant; for in many countries, particularly in Italy, it is called Wild Cock †, *gallo alpestre*, *selvatico* §. In other places, it is termed the *Noisy Pheasant*, and the *Wild Pheasant*. But it differs from the pheasant in its tail, which is of another shape, and only half the length; in the number of great feathers that compose it; in the extent of its wings compared

* *i. e.* The Great Heath-Cock.

† In Greek, *τετραξ*, which was probably formed from *τετρυνος*, the participle middle of the verb *τετρα*, to make a creeking noise, alluding to the whirring cry of the Grouse. The word *τετραξ*, a-kin to the former, seems to have been in use, and hence the Latin *Tetrao*. *Auer*, in old German, signifies *sky* or *wild*, and the Grouse was therefore termed *Auer-hahn*, or Wild Hen, which was latinized into *Uro-gallus*. In Italian it is called *Gallo Cedrone*, or the Cedar Cock. In Polish it is named *Głuszec*; in Swedish, *Kjæder*; and in Norwegian, *Lieure*.

‡ Albin describes the male and female under the name of the *Black Cock and Hen* of the Muscovy mountains.

§ *i. e.* Mountain Cock, Wood Cock.

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YUL

with its other dimensions; and in the form of its feet, which are rough and without spurs, &c. Besides, though both these species of birds delight in forests, they are seldom found in the same spots; the pheasant, which shuns cold, fixes its residence in the woods that grow in the plains; while the Grouse prefers the chill exposure of the woods which crown the summits of lofty mountains. Hence the names of *Cock of the Mountain*, and *Cock of the Wood*.

Those who, with Gesner, and some others, would consider it as the original cock, can indeed find their conjecture on some analogies; the general shape of its body; the particular configuration of its bill; the red projecting skin above the eyes, the singular nature of its feathers, which are mostly double, and rise in pairs from the same root, a property which, according to Belon, is peculiar to the ordinary cock; and lastly, they have the same common habits, one male supplying several females, and these not building any nests, but sitting on their eggs with much assiduity, and showing a strong affection to their young after they are hatched. But if we consider that the Grouse has no membranes under its bill, and no spurs on its feet; that its feet are clothed with plumage, and its toes are edged with a kind of indenting; that there are two quills more in the tail; that this tail is not divided into two planes as in the ordinary cock, but can be displayed like a fan

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as in the turkey; that its bulk is quadruple that of the ordinary cock; that it is fond of cold countries, while the domestic fowls thrive best in temperate climates; that no instance was ever adduced of the intermixture of the breeds; and that their eggs are of a different colour: If to all these we add the proofs already given, that the ordinary cock is a native of the genial regions of Asia, where travellers have hardly ever seen the Grouse; we certainly cannot admit that these are the primitive stock, and we must impute it to an error occasioned, like many others, by the deceitful gloss of names.

Aristotle merely mentions a bird which he terms *tetrix*, and which the Athenians called *ourax*, (*ουραξ*); it is a bird, he says, which does not nestle on trees or on the ground, but among low creeping plants*. A little afterwards, he adds, that the *tetrix* does not make any nest, but drops its eggs on the ground like all the heavy birds, and covers them with stiff herbs. This short description manifestly applies to the Grouse, the female of which constructs no nest, but drops her eggs on moss, and when obliged to leave them, covers them carefully with leaves. Besides, the Latin word *tetrao*, which Pliny employs to signify the Grouse, has an evident analogy to the Greek *tetrix*, not to mention the resemblance which the Athenian *ourax* bears to the com-

* *Εν τοις χαμαιζελοις φύλοις*, Lib. vi. 1.

pound

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pound term *ourb-bahn* bestowed by the Germans, a coincidence which cannot with propriety be ascribed to chance.

But there is a circumstance which seems to shed some doubts on the identity of these birds. Pliny, describing his *tetrao* at some length, never takes notice of what Aristotle had said of the *tetrix*, which it is likely he would have done, if he had conceived these to be the same; unless the slight mention made by Aristotle had escaped the Roman naturalist.

With regard to the great *tetrax* of which Athenæus speaks*, it is certainly not our Grouse, since it has fleshy barbles like those of the cock, rising near the ears and descending below the bill; a character quite foreign to the Grouse, and which applies much better to the Meleagris or Numidian hen, which is our Pintado.

The little *tetrax* mentioned by the same author, is, according to him, an exceeding small bird; and this excludes all comparison with our Wood Grouse, which is one of the first magnitude.

In respect to the *tetrax* of the poet Nemesianus, who dwells on its stupidity, Gesner considers it as a species of bustard. But I discover a discriminating mark of resemblance to the meleagris in the colours of its plumage; the

* Lib. ix.

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ground is of an ash-gray, sprinkled with spots in the shape of drops *; a circumstance which has given the pintado the name of *Gallina Guttata* †.

But whatever be the force of these conjectures, it appears incontestably proved, that the two species of the *tetrao* of Pliny are really those of our Grouse: the fine shining black of their plumage; the flame-colour of their eye-brows; their residence in cold mountainous countries ‡; the delicacy of their flesh; these are properties that belong both to the Wood and Black Grouse. We can even distinguish in Pliny's description, the traces of a peculiarity that has been remarked by few moderns; *Moriuntur contumaciâ*, says this author, *spiritu revocato* §. This refers to a curious observation which Frisch has inserted in his history of this bird. That naturalist, not being able to find

* *Fragments of Books on Bird-catching*; ascribed by some to the Poet Nemesianus, who lived in the third century of the Christian era.

† *Et picta perdix, Numidicæque guttatae*. "And the painted partridge, and the speckled Numidian hens." MARTIAL. This is exactly the plumage of the two hens belonging to the Duke of Ferrara, of which Gesner says, in his account of the Pintado: "That they were entirely of a cinereous colour, with a whitish cast, and with black and round spots."

‡ "A glossy jet black becomes the *tetraones*, and a scarlet on the eye-brows.—They inhabit the Alps, and the region of the North."—PLINY, lib. x. 22. The *tetrao* seen by Belon on the lofty mountains of Crete, corresponds well to Pliny's description.

§ *i. e.* They die through obstinacy, recalling their breath.

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the tongue in a dead Grouse, opened the gizzard, and discovered that it retreated there with all its ligaments; and this must commonly happen, since it is the general opinion of sportsmen that the Grouse has no tongue. The same, perhaps, might be said of the Black Eagle mentioned by Pliny, and the Brazil bird of which Scaliger speaks, which was reckoned to have no tongue. This opinion might take its rise with credulous travellers, or unobservant hunters, who never viewed this bird except when expiring, or after death, and no person inspecting their gizzard.

The other species of *tetrao*, which Pliny describes at the same place, is much larger; since it exceeds the bustard, and even the vulture, which it resembles in plumage, and in point of size is inferior to the ostrich alone: besides, it is so unwieldy a bird, that it can be caught by the hand*. Belon asserts, that this species of *tetrao* is unknown to the moderns, who, according to him, have never seen any Wood Grouse larger, or even so large as the bustard, and there is room to doubt, whether the bird mentioned in this passage of Pliny by the names *Otis* and *Avis tarda*, was really our bustard, whose flesh has an excellent flavour, while the *avis tarda* of Pliny was very unpa-

* This is literally true of the Little Grouse, as we shall find in the following article.

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latable. But we must not, on this account, infer with Belon, that the great *tetrao* was no other than the *avis tarda*; since the Roman naturalist names both the *tetrao* and the *avis tarda* in the same passage, and compares them together as birds of different species.

After a mature consideration of the subject, I should rather conclude: 1. That the first *tetrao* of which Pliny speaks, is the small species of Grouse, to which what is here said more directly refers; 2. That his great *tetrao* is our Wood Grouse, which, without exaggeration, exceeds the bulk of the bustard. I myself weighed a large bustard, whose extreme length was three feet three inches, and the extent of whose wings was six feet and an half, and found it twelve pounds; but it is well known, and we shall afterwards have occasion to take notice of it, that some of the Wood Grouse weigh more.

The Wood Grouse has near four feet of alar extent. Its weight is generally twelve or fifteen pounds: Aldrovandus affirms, that he has seen some that were twenty-three pounds; but these were Bologna pounds, which contain each only ten ounces, and therefore twenty-three are not quite equal to fifteen pounds of sixteen ounces. The Black Cock of the Mountains of Muscovy, described by Albin, and which is really the Wood Grouse, weighed ten pounds without the feathers or entrails; and the same

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same author informs us, that the *lieures* of Norway, which is really the same bird, is as large as a bustard.

This bird scrapes the ground, like all the frugivorous tribe. Its bill is strong and sharp*; the tongue is pointed, and lodged in a proportional concavity in the palate. The feet are also firm, and clothed before with plumage; the claw is extremely wide, but, in other respects, both it and the gizzard are constructed as in the domestic cock: the coat of the gizzard has a velvet softness where the muscles are attached.

The Wood Grouse feeds on the leaves or tops of the pine, of the juniper, of the cedar, of the willow, of the white poplar, of the hazel, of the myrtle, of the bramble; on thistles, fir-cones, the leaves and flowers of buckwheat; on chichling vetch, millfoil, dandelion, trefoil, the vetch, and the choke-weed; especially when these plants are young and tender. When the seed begins to be formed, they leave the flowers, and only eat the leaves. They feed too, especially in their first year, on blackberries, beech-mast, and ants eggs. On the other hand, it has been observed, that many

* I know not what Longolius means, when he says that this bird has traces of barbils. Is there a kind of large grouse which have barbils, as there is among the small grouse; or does he allude to a certain disposition of the feathers representing, imperfectly, barbils, as he has done at the article of the Hare Grouse?

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plants prove poisonous to this bird; among others, lovage, celandine, wall-wort, lily of the valley, wheat, nettles, &c. *

On opening the gizzard of the Wood Grouse, small pebbles have been found, similar to those in common poultry; a certain proof that they do not confine themselves to the leaves and flowers which they pluck from the trees, but also feed on grains which they seek by scraping the ground. When they eat too many juniper-berries, their flesh, which otherwise is excellent, contracts an unpleasant taste; and according to the remark of Pliny, it loses its delicate flavour, if kept in cages or coops, where it is sometimes fed for curiosity †.

The female differs from the male only in its size and plumage, being smaller and not so black; besides, it excels the male in the beauty and variety of its colours; a circumstance which is uncommon in birds, and even in other animals. From not attending to this fact, Gesner has made the female another species of Grouse, by the name of *grygallus major*, formed from the German term *grugel-bahn*; for the same reason, he has made the female of the Black Grouse another species, which he calls *grygallus minor*. Yet he pretends that he did not fix these species till he had carefully examined all the individuals, except the *grygallus minor*, and was confident that he could

* Journal Economique, Mai 1765.

† Lib. x. 22.

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perceive characteristical differences. On the other hand, Schwenckfeld, whose residence was among mountains, and who observed the *gry-gallus* often and carefully, assures us, that it was the female Grou; but it must be admitted that in this species, and perhaps in many others, the plumage is subject to great diversity, arising from the age, the sex, the climate, and other circumstances. The one which we have caused to be engraved is somewhat crested. Brisson takes no notice of a crest in his description; and of the two figures given by Aldrovandus, the one is crested, the other not. Some pretend that the Grou, when young, has much white in its plumage*, which diminishes, as the bird grows old, and so regularly as to serve as a mark for distinguishing the age. It would even appear that the number of quills in the tail is not constant; for Linnæus makes it eighteen in his *Fauna Suecica*, and Brisson only sixteen in his *Ornithology*; and what is more extraordinary, Schwenckfeld, who saw and examined many of these birds, asserts that, both in the large and in the small species, the females have eighteen tail-feathers, and the male only twelve. It therefore follows, that every system which assumes, for its specific characters, differences so variable as are the colours and even the number of the feathers, will be liable to the great incon-

* When the bird displays its tail, the white forms a circle around it.

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venience of multiplying the species, (I should rather say, nominal species, or more properly new terms,) of oppressing the memory of beginners, and of giving them false ideas of things, and consequently that such a plan increases the difficulties in the study of nature.

It is false, what Encelius relates, that the male Grouse sitting on a tree, calls the females to him with loud cries, emits *semen* from his bill, which they swallow, and again discharge, and thus become impregnated. Nor is it true, that the part of the *semen* which is not gathered up by the females, forms serpents, precious stones, and pearls. It is mortifying to our pride to see the human mind afflicted with grovelling errors, or hurried into such extravagant follies. The Grouse couple like other birds; nor was Encelius unacquainted with the fact; but he insists that the embrace is mere dalliance, and that the deglutition of the *semen* is essential to propagation!

The male Grouse begins to be in season about the first of February; the fiery appetite is most intense towards the latter end of March, and continues till the leaves are expanded. During that period of love, each cock fixes his residence in a certain quarter, out of which he never removes. In the morning and evening he is observed walking backwards and forwards on the trunk of a large pine or other tree, his tail displayed, his wings trailing, his neck projecting, his head ruffled, and assuming all sorts of un-

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common postures; with such force is he impelled by the burning desires! He has a certain note with which he calls his females, who run under the tree where he lodges, from which he soon descends to taste the joys of love. This singular cry, which is very loud, and can be heard at a great distance, is perhaps the reason of the name which has been applied, of *noisy pheasant*. It begins with a kind of explosion, and expires in a sharp shrill note, resembling the sound produced by whetting a scythe. This noise vanishes and returns alternately, and after being repeated several times in the course of half an hour, it ends in explosion like the first*.

The Wood Grouse, which at other times is very shy, can easily be surpris'd in the season of love, especially when it is occupied with its call: it is then stunned with its own noise, or, if we chuse, so intoxicated, that it is neither scared by the sight of man, nor roused by the report of a fowling-piece. It sees nothing, it hears nothing, it is dissolved into extacy †; hence it has been said and even written, that the Grouse is deaf and blind. But almost all animals, not excepting man, are, in similar situations, absorbed in delight: all feel, in a certain degree, the rap-

* Journal Economique, April 1753.

† "It is so overgrown that it may be caught motionless on the ground." PLINY. What that naturalist imputes to its bulk may be referred with greater probability to heat, and intoxication of its passion.

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tures of maddening joys. But probably the Wood Grouse is more under the dominion of lust; for in Germany, the term *auerbahn* is bestowed on the lover, who neglects every other concern, and devotes himself entirely to the object of his passion *, and even applied to every person who discovers a stupid insensibility to his most important interests.

It will be readily conceived that the season when the Grouse is wholly occupied by the amorous passions, is the proper time for setting snares, or for hunting it. When I come to treat of the Small Black Grouse, I shall describe more particularly the precautions observed in this sport; I shall here only observe, that people are attentive in extirpating the old cocks, because these appropriate an extensive tract, and suffer no rivals to enter the region of their pleasures; and thus many females are deprived of the male influence, and produce addle eggs.

Some bird-catchers pretend, that before the Wood Grouse couple, they provide a clean even spot †. That such may occur I have no doubt, but I suspect that the Grouse show no foresight in choice. It is much more natural to suppose that these spots have been the habitual resort of the hen and her young, and that after two or three months they become more trodden and dirtier than the rest of the ground.

* Frisch.

† Gesner.

The least number of eggs which the female Wood Grouse commonly lays, is five or six; the greatest number, eight or nine. Schwenckfeld asserts, that their first hatch is eight, and the subsequent ones amount to twelve, fifteen, or even sixteen*. These eggs are white, spotted with yellow; and, according to the same author, they are larger than those of common hens. The female drops them in a dry spot on the moss, where it hatches them alone, without the assistance of the male †. When it is obliged to leave the eggs, it carefully strews them with leaves; and though it inherits a savage instinct, the love of progeny seems to blunt the sense of immediate danger, and it continues to sit after we have approached it, and can hardly be forced to forsake its eggs.

As soon as the young are hatched, they run nimbly, and even before the shell is completely detached. The mother leads them in the most careful and attentive manner; she goes with them into the woods, where she feeds them with ant eggs, black-berries, &c. They continue united through the rest of the year, till the return of the season of love, inspiring them with new appetites and inclinations, disperses the family; the males are the widest separated, never associating

* This gradation is conformable to the general observation of Aristotle; I suspect only that the number is over-rated.

† I have somewhere read that the time of incubation is twenty-eight days, which is probable, considering the bulk of the bird.

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with their own sex, and seldom mixing with the females but to satiate their lust.

The Wood Grouse delights, as we have already observed, in lofty mountains. But this is the case only in the milder latitudes; for in countries that are intensely cold, as Hudson's Bay, they prefer the plains and sheltered places; and in such situations, they enjoy, in those inclement regions, perhaps the same temperature as on the most elevated summits in the genial climes*. They inhabit the Alps, the Pyrenees, the mountains of Auvergne, of Savoy, of Switzerland, of Westphalia, of Swabia, of Muscovy, of Scotland, those of Greece and Italy, those of Norway, and even those in northern tracts of the continent of America. It is supposed that the breed is extinct in Ireland, where however they once resided †.

It is said that birds of prey are very destructive to them; either because they direct their assaults when the Wood Grouse is intoxicated with love, or growing fond of the superior delicacy of their flesh, they select them for their prey. [A]

* Hist. Gen. des Voyages, tome xiv.

† British Zoology.

[A] Specific character of the Wood Grouse, *Tetrao-Urogallus*: "Its tail is rounded, its axillary feathers white." Mr. Pennant, whose authority on this subject is unquestionable, assures us, that this bird is not found in America. It is now almost extinct in Scotland, being found only in the forests north of Lochness.

1711

The BLACK GROUS.

Le Petit Tetrax, ou Coq de Bruyere à Queue Fourchue *, Buff.
Tetrao-Tetrix, Linn. Gmel. &c. &c.

Urogallus Minor, Briff.

Gallus Scoticus Sylvestris, Aldrov.

The Black Cock, Sibbald. Scot. Illust.

The Heath-Cock, Black-Game, or Grouse †, Will.

SOME authors, as Rzacyński, have mistaken this bird for the *tetrax* of the poet Nemesianus. This oversight arose undoubtedly from not attending to what Nemesianus himself had mentioned, that it was of the bulk of a goose or a crane ‡; some other observers inform us, that the Black Grouse is scarcely larger than an ordinary cock, but only longer shaped; and the female, according to Ray, is smaller than a common hen.

Turner, speaking of his Moorish hen, so called, he says, not on account of its plumage, which

* i. e. The forked-tail Heath-cock.

† This bird has also been termed improperly a cock or pheasant: *Little Wild Cock (Petit Coq Savage)*; *Heath Cock (Coq de Bruyere)*; *Birch-Cock, &c. (Coq de Bouleau)*; *Black Pheasant (Faisan Noir)*; *Mountain Pheasant (Faisan de Montagne)*. In German, *Birkhan (Birch-Hen)*; in Swedish, *Orre*; the same with the old German *Eure*, mentioned before; in Norwegian, *Orrfugl (the Eure-bird)*.

‡ *Tarpeia est custos arcis non corpore major,*
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THE BLACKGROUSE.

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resembles that of the partridge, but on account of the colour of the male, which is black, ascribes to it a red flesh comb, with two barbils of the same colour and substance *. In this assertion Willoughby insists that he was mistaken. But it is difficult to conceive that Turner could fall into an error with respect to this bird, which inhabits his own country, and concerning a character that would be so easily noticed. On the other hand, admitting what Turner says, I should refer his Moorish hen to another species; or, if we chuse, to another sort of the Black Grouse, analogous to the first in its general structure and habits, but distinguished by its undivided tail and its flesh barbils; and what confirms me in this opinion is, that I find in Gesner, a bird by the name of *gallus sylvestris*, which has these properties; so that we may consider it as an individual of the same species with Turner's Moorish hen; especially, as in this species, the male is called the *black cock* in Scotland, (whence Gesner received his figure,) and the female *grey hen*; a circumstance which marks distinctly the difference of the plumage of the two sexes in this species of the Grouse.

The Black Grouse weighs three or four pounds. It bears a great resemblance to the Wood Grouse; it has red eye-lids, rough feet without spurs, indented toes, white spot on the wing, &c. But it is distinguished by two obvious characters; it

* See Gesner.

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is much smaller, and its tail is forked, the outer feathers being longer, the middle ones bent backwards. Besides, the male of the small species is of a deeper and more distinct black; the red glandulous skin above the eyes is broader, but subject to some variations in the same individuals at different times, as we shall find in the sequel.

The female is only two thirds of the size of the male*. Its tail is less forked, and the colours of its plumage are so different, that Gesner was induced to refer it to a distinct species, by the name of *grygallus minor*. This change in the colours of the plumage does not take place till after a certain age; the young males at first resemble their mother, and preserve the same appearance till the end of the autumn. Towards the close of that season, and during the winter, the plumage gradually acquires a deeper colour, till it becomes a bluish-black, which is permanent thenceforth, except the slight changes which I shall mention. 1. The blue increases somewhat with age: 2. At the end of three years, and not sooner, a white spot appears under the bill: 3. When they are very old, another spot of a variegated black spreads under the tail, where the feathers are all white †. Charleton, and some others add, that the number of white specks on the tail diminishes regularly with the age of the bird, so as to serve for a mark to discover it.

* British Zoology.

† Acts of Breslau, Nov. 1725.

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The naturalists who unanimously reckon twenty-six quills in the wing of the Black Grouse, do not agree so well with respect to the number of quills in the tail: Schwenckfeld allows eighteen to the female, and only twelve to the male. Willoughby, Albin, and Brisson, bestow sixteen on either sex. The two males preserved in the Royal Cabinet have each eighteen; viz. seven large ones on each side, and four in the middle much shorter. Must we ascribe these differences to a real variation in the number of quill-feathers; or are we to impute them to the inaccuracy or inattention of the observers?—The wings of the Black Grouse are short, and hence its flight is laborious, nor is it ever seen to rise high, or to pursue a distant course.

In both sexes the orifice of the ears is wide, the toes are connected by a membrane as high as the first articulation, and edged with indenting; their flesh is white, and of easy digestion; the tongue soft, beset with small points, and not parted; under the tongue is a glandulous substance; in the palate, a cavity corresponding exactly to the dimensions of the tongue; the craw is very large, the intestinal tube fifty-one inches long, and the appendices or *cæca* twenty-four; these fluted with six *striae* *.

The difference between the male and female is not confined to the surface; it penetrates even

* Willoughby and Schwenckfeld.

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to the interior organization. Dr. Waygand observes, that the bone of the *sternum* in the males, being held to the light, appears interwoven with a prodigious number of small ramifications of a red colour, which meander in every shape and in all directions, and form a curious and singular web; but that in the females the same bone has nothing analogous to these ramifications; it is besides very small, and of a whitish colour*.

This bird flies often in flocks, and perches on trees much like the pheasant †. It casts its feathers in the summer, and then conceals itself in luxuriant heath, or seeks for lodgment among fens ‡. It feeds chiefly on the leaves and buds of the birch, or on the berries that are the spontaneous production of Alpine tracts. Hence the French name *coq de bruyere*, or *beath-cock*; and the German of *birkban* or *birch-ben*. It also eats the catkins of the hazel, wheat, and other grains; in autumn, it has recourse to the acorns, bramble-berries, alder-buds, pine-cones, bilberries, and the berries of the spindle tree; in winter, it retires to the extensive forests, and subsists on juniper berries, or searches under the snow for the cranberries §. Sometimes it lives two or three months, in the rigour of winter, without

* Acts of Breslaw, as quoted above.

† British Zoology.

‡ Acts of Breslaw.

§ Schwenckfeld.—Rzacynski.—Willeghby, and the British Zoology.

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any food *; for in Norway it is said to pass the inclement season, torpid and motionless beneath the snow; in the same manner, as in the milder climates the bats, the dormice, the *lerots*, the shrew-mice, and the marmots, (if the fact be true) suffer a temporary suspension of the active powers †.

These birds are found in the mountainous tracts of the North of England and Scotland; in Norway, and the boreal provinces of Sweden; in the neighbourhood of Cologne; in the Swiss Alps; in Bugey, where, according to Hubert, they are called *grianots*; in Podolia; in Lithuania; in Samogitia; and particularly in Volhinia, and in the Ukraine, which includes the Palatinates of Kiovia and Breslaw, where a Polish noble, as Rzaczynski says, caught in one day, near the village of Kufmince, one hundred

* The author of the British Zoology remarks, that the white partridges which winter in the snow, have their legs better clothed with feathers, than the two species of Grouse which find shelter in the thick forests. But if the Grouse sleep beneath the snow, what becomes of this final cause, or rather what becomes of all that superficial sort of reasoning when examined by the light of philosophy?

† This puts me in mind of what is related in the book *De Mirabilibus*, ascribed to Aristotle, that certain birds in the kingdom of Pontus lay during the winter in such a state of torpor, that they might be plucked, and even stuck upon the spit, without shewing any feeling, and were not roused from their lethargy till they began to be roasted. If we strip this tale of the marvellous, it alludes to the same sort of torpor with that of the Grouse and Marmots, while the functions of the external senses are suspended for want of heat.

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and thirty brace, in a single drawing of the net.— We shall afterwards see the mode of catching them which is practised in Courland. These birds can hardly be reconciled to a different climate, or to their domestic state; almost all those which Marshal Saxe got from Sweden for his *menagerie* at Chambor, died of melancholy, without leaving posterity*.

The Black Grouse comes in season about the time when the willows begin to shoot, that is towards the end of the winter; the sportsmen readily discover it by the humidity of their excrements †. It is then that the males are observed to assemble by day-break, to the number of a hundred or more, in some place which is elevated, solitary, surrounded with marshes, or covered with heath, and this is the field of continual contention; they fight bitterly with each other, till the vanquished are driven to flight. The victors then seat themselves on the trunk of a tree, or on a rising spot of ground, their eyes flashing fire, their eye-brows swelled, their feathers bristled, their tail expanded like a fan; beating their wings and frisking with wild desire ‡, they invite their females by a call, which may be heard at half-a-mile's distance; the natural note which resembles the sound of the German word *frau* §, rises at this time one third, and is joined with another singular cry,

* Salerne. † Acts of Breslaw, Nov. 1725.

‡ Frisch.—British Zoology. § Salerne.

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or kind of noisy rattling of the gizzard *. The females in the neighbourhood answer to the voice of the males, by a cry peculiar to them, flock around their mates, and in the following days resort to the precise spot. According to Dr. Waygand, each cock has two or three hens, to which he is more particularly attached.

When the females are impregnated, they retire to lay their eggs in copses, which are thick and tall. They drop them on the ground, and, like all the large birds, are at little pains in constructing a nest. They lay six or seven eggs according to some †; from twelve to sixteen ‡; and even from twelve to twenty, according to others §; these are not so large as those of the domestic hens, but are somewhat longer shaped. Linnæus asserts, that the female Black Grouse loses its delicate flavour in the time of incubation. Schwenckfeld seems to insinuate that their season for laying is now deranged, since they have been molested by the sportsmen, and scared by the reports of the fowling-piece; and to the same causes he ascribes the extinction in Germany of many other beautiful species of birds.

As soon as the chickens are twelve or fifteen days old, they flap their wings, and essay to fly; but it is five or six weeks before they are able to rise from the ground, and then they perch on the

* Frisch. † British Zoology. ‡ Schwenckfeld.

§ Aqs of Breslaw.

trees with their mothers. This is the time to decoy them with a call *, to catch them in the net, or to shoot them. The mother mistaking this call for the chirping of her strayed young, runs to the place, and invites them by a particular cry, which she often repeats, like the domestic fowls in the same circumstances; she thus collects the whole covey, and all become devoted to the mercy of the sportsmen.

As they grow bigger, their plumage gradually assumes a black cast, and then they are not so easily decoyed; but when they have attained half their growth, the falcon is flown at them; and the proper time is about the close of autumn, when the trees have shed their leaves. In that season, the males select some spot, whither they repair every morning at sun-rise, and by a certain cry (especially when it is likely to be frost, or fine weather), they invite all other birds of the same species, of every age and of either sex. When assembled, they fly in flocks to the bushes; or if there is no snow on the ground, they disperse over the stubble fields, where barley, oats, or other such grain has been reaped. Then it is that birds of prey trained on purpose afford excellent sport.

Another method of catching this game is practised in Courland, Livonia, and Lithuania. They use a stuffed grouse, or an artificial bird made of

* This call is made of a bone of the Goshawk, which is filled with wax, and proper holes bored in it. BRESLAW'S *Act.*

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cloth of the proper colour, and stuffed with hay or tow, and this is termed in those countries, *balvane*. They fasten this *balvane* to the end of a stick, and place it on some birch-tree near the scene of their amours: the time for this sport is in the month of April. The birds gather round the *balvane*, and fight with each other in play; at last they engage in earnest, and are so much occupied in the violence of their contentions, that the sportsman, who is concealed near the spot in his hut, surprises them, and catches them, without being obliged to aim a single blow. Those caught in this way, he tames in the space of five or six days; so that they will come to eat out of his hand*. On the following year in the spring, they make use of those tame birds, instead of *balvanes*, to decoy the wild Black Grouse, which fall upon them, and fight with such fury as not to be scared by the report of a fowling-piece. Each morning they repair by day-break to the common rendezvous, and remain there till sun-rise, when they fly away and disperse through the forests and heaths in search of food. About three o'clock in the afternoon, they return to the same spot, and continue there till late in the evening. This is their regular course of life, especially in fair weather, during the season of love, which lasts three or four

* In this respect the Little Grouse differs widely from the Great Grouse, which, far from submitting to domestication, constantly rejects what is offered it to eat.

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weeks; but when it is rainy or cold, they are rather more retired.

The young Black Grouse have also their favourite spot of resort, where they assemble in flocks of forty or fifty at a time, and devote themselves to nearly the same amusements or occupations; their voice however is hoarser, and broken; and they do not leap with equal agility. Their meeting lasts only eight days, after which they join the old ones.

When the season of love is over, and consequently their assemblies less regular, new stratagems must be employed to decoy them near the hut where is the *balvane*. Several sportsmen on horseback enclose a circuit of variable extent, having the hut for its centre, and cracking their whips, they drive the Grouse from bush to bush, and so gradually contract the bounds, and, by means of a whistle, they inform the person who manages the *balvane* of their approach. The Grouse, when they shift from one bush to another, distinguish accurately those branches which are able to support them, not even excepting the vertical shoots, which bend with their weight into an horizontal situation; after alighting they listen attentively, stretching out their neck to learn if they are in a place of safety, and as soon as they have allayed their fears, they begin to pluck the tender buds. The dexterous sportsman then seizes the opportunity of placing his *balvane* on the neighbouring twigs, and

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fixing a cord, he pulls it from time to time, so as to imitate the waving motions of the Grouse, sitting on a flexible branch. Experience also instructs him to turn the head of the *balvanes* against the wind when it blows violently; but in still weather, he finds it best to place them opposite to each other. If the Grouse are driven straight towards his hut, he can discover by an easy observation, whether they will perch within his reach. If their flight is irregular, if they sometimes approach and sometimes retire, flapping their wings, he concludes, that perhaps the whole flock, or at least part of them, will alight near him. On the other hand, if they spring not far from his hut, and shoot in a rapid steady course, he is certain that they will push on to a distance. When the Grouse settle near the hut, the fowler is informed at least thrice by their repeated cries; he is then cautious not to fire upon them too suddenly; he remains still in his hut, and without making the least noise, allowing the birds time to examine their situation, and to quiet their apprehensions. When they are settled and begin to feed, he takes his aim steadily, and fires. But however numerous the flock be, though it even amount to fifty or a hundred, he can hardly expect to kill more than one or two at each shot; for these birds do not group together, but commonly perch on a separate tree, and hence straggling bushes are better for the sport than a thick forest. However, when there is no snow lying

XVI

lying on the ground, this amusement is sometimes taken in open stubble fields, the crops of oats, barley, buck-wheat, being led, the hut is covered with straw; there the sport is tolerably successful, except in severe weather, when these birds are dispersed and concealed. But the first fine day that succeeds makes them more easily caught; and a shooter, who has taken his station properly, can, without any assistance of horsemen, and with bird-calls alone, entice them to his hut with ease.

It is asserted that, when these birds fly in flocks, they are led by an old cock, who conducts them like an experienced chief, and teaches them to shun the decoys of the sportsmen; so that in this case it is exceedingly difficult to drive them to the *balvane*, and all that can be then expected is to intercept a few of the stragglers.

The proper time for the sport is from sun-rise to ten o'clock in the forenoon; and from one o'clock in the afternoon to four. But in autumn, when the air is still and close, it may be continued without interruption through the whole day; for the Grouse then seldom shift their place. And in this way, they may be chased from tree to tree, till near the winter solstice; about that time they grow more wild, shy, and cunning; they even change their accustomed haunt, unless they are confined by the rigours of the season.

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It is said to be a sign of fair weather, when the Grouse sit on the tops of the trees, and upon the young shoots; but if they descend to the lower branches, and squat, it forebodes an approaching storm. I should not take notice of these remarks of the sportsmen, if they did not correspond with the instincts of these birds, which, from what we have already seen, must be very susceptible of the impressions made by the varying state of the atmosphere, and whose sensibility in this respect may be supposed so great, consistently with probability, as to be affected by the change which decides the nature of the following day.

When the weather is excessively rainy, they retire for shelter into the closest and most bushy forests, and as they are tardy and laborious in their flight, they can sometimes be hunted down with dogs, which exhaust them, and catch them by speed of foot*.

In other countries, the Black Grouse is, according to Aldrovandus, caught with a noose; a net is also used, as has been already observed; but it would be curious to know the shape, dimensions, and construction of the one with which the Polish nobleman, of whom Rzaczyński speaks, caught two hundred and sixty at one time. [A]

* Breslaw's Acts for 1725. This unwieldiness has been remarked by Pliny; and was meant to apply both perhaps to the Great and the Small Grouse.

[A] Specific character of the Black Grouse, *Tetrao-Tetrix*: "Its tail is forked, its second wing-quills white near the base." Its

egg is yellowish, spotted with dark red. In Lapland, the Black Grouse is taken in snares; but formerly it was shot with arrows. The people of Siberia have a singular method for catching these birds during the winter. They lay a number of poles horizontally on forked sticks in the open birch forests, and set small bundles of corn on them. At a short distance they plant tall baskets shaped like an inverted cone, and place in the mouth of these a little wheel that turns freely on its axis. The Black Grouse are attracted by the corn, alight on the poles, and after a hasty repast, fly to the baskets, perch upon the rim of the wheel, which, giving way, precipitates them into the trap.

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I HAVE reasons for calling a bird to a Black Grouse by the name of Broa, as a bird of the Lapland, provided tail. *Wood-cock* It is true that the two are of the same colour of the *gallina fusca* to a nearness, but an erroneous view is quite different because he is removed, by the male to the fact is, entirely black, colour with a distance compared to the Black Cock that in other parts of the world. The only difference

BROAD-TAILED BLACK GROUS.

Le Petit Tetras a Queue pleine, Buff.

I HAVE, in the preceding article, stated the reasons which have induced me to refer this bird to a distinct family. Gesner speaks of it by the name of *Wood-cock*, (*gallus sylvestris*), as a bird having red barbils, and a broad undivided tail. He adds, that the male is called *Wood-cock* in Scotland, and the female *Grey-hen*. It is true indeed, that this author, conceiving that the two sexes cannot differ much in the colour of their plumage, translates *Grey-hen* by *gallina fusca* or *Dusky-hen*, in order to bring them to a nearer conformity; and resting on this erroneous version, he concludes that this species is quite distinct from the Moorish hen of Turner, because he imagines this bird is too widely removed, by the colour of its plumage, from the male to belong to the same family. But the fact is, that the male is almost always entirely black, and the female is nearly the same colour with the gray partridge; and this circumstance completely decides its identity with the Black Cock of Scotland; for even Gesner admits, that in other respects they are perfectly alike. The only difference that I can perceive is, that

the Scotch Black Cock has small red spots under the breast, the wings, and the thighs; but we have seen in the preceding article, that the young males which in the end become black, are at first of the colour of the mother, and perhaps the small red spots mentioned by Gesner, are only the traces of their infant plumage before they have acquired the deep jet.

I see no reason why Brisson should confound this tribe or variety, as he calls it, with the *tetrao*, dotted with white, of Linnæus*; since one of the characters of this bird, which is termed by the Swedes *rackle-bane*, is its having a forked-tail. Besides, Linnæus gives it no barbils, which, according to the figure and description of Gesner, belong to the other birds.

Nor can I see why Brisson, though he classes these two tribes together, makes only one variety of the forked-tail Black Grouse; since, besides the differences that have been just noticed, Linnæus expressly mentions, that his Grouse sprinkled with white, is more shy and wild, and has a quite different cry; which implies, I should imagine, characters* deeply impressed, and more permanent than what constitute a mere variety.

It would appear therefore more consistent to distinguish these into two species of Black Grouse; the one including the Scotch Black Cock, and Turner's Moorish Hen; and the other, characterized by the small white spots under the breast, and

* *Fauna Suecica*, No. 167.

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its different cry, would comprehend the Swedish *rackle-bane*. Thus we might reckon four species of the genus of Grouse. 1. The Wood Grouse: 2. The Forked-tail Black Grouse: 3. The *Racklan*, or *Racklebane*, of Sweden, described by Linnæus: 4. The Moorish Hen of Turner, or the Black Cock of Scotland; with flesh barbils on both sides of the bill, and with an uniform tail.— These four species are all natives of the northern climates, and reside either in forests of pine or of birch. The third only, or the Swedish *racklebane*, is the only one that might be considered as a variety of the Black Grouse, if Linnæus had not ascertained its having a different note.

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The BLACK GROUS WITH VARIABLE PLUMAGE.

Le Petit Tetras à Plumage variable, Buff.

THE Wood Grouse are common in Lapland, especially when the scarcity of provisions, or the excessive multiplication of their numbers, compels them to leave the forests of Sweden and Scandinavia, and advance into the polar tracts *. Yet they have never been found white in those frozen regions; the colour of their plumage seems to be fixed and permanent, and to resist the operation of cold. The same may be said of the Little or Black Grouse, which are frequent in Courland, and the north of Poland; but Dr. Weigandt, the Jesuit Rzaczynski, and Klein, affirm that there is in Courland another kind of the same, termed *White Grouse*, which, however, become white only in winter, and by the return of summer, acquire a reddish-brown colour, according to Dr. Weigandt; but a bluish-grey, according to Rzaczynski. These variations take place generally in both sexes; so that at all times the individuals have precisely

* Klein.

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the same colours. They do not perch on trees like the other Grouse, but delight in thick brushwood and heath; and generally select each year a certain spot, to which they commonly resort when dispersed by sportsmen, by birds of prey, or by the violence of a storm. If we hunt them, we ought, when they are first sprung, to observe carefully their place of shelter, since this will certainly be their rendezvous throughout the year; and it will be more difficult to spring them a second time, for they will rather squat on the ground, and endeavour to conceal themselves, in which case it will be easy to shoot them.

It appears, therefore, that they differ from the Black Grouse, not only by their colour, and by the uniformity which obtains between the male and female, but in their habits, since they never perch. They are also distinguished from the ptarmigans, because they inhabit not the lofty mountains, but reside in the woods and among the heaths; nor are their legs clothed to the toes with feathers. I must indeed confess, that I would rather have ranked it with the Red Grouse, did I not submit to the opinion of these three intelligent writers, who speak of a bird that is a native of their own country.

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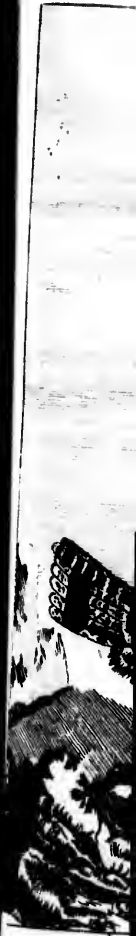
The HAZEL GROUS.

La Gelinotte, Buff.*Tetrao-Bonasia*, Linn. Gmel. &c.*Gallina Corylorum* *, Ray, Will. and Klein.

WHAT Varro has said concerning the Rustic or Wild Hen, applies so accurately to the Hazel Grouse, that Belon does not hesitate to conclude that they were the same. It was, according to Varro, a bird uncommonly rare at Rome; and so difficult to tame, that it could only be raised in cages, and seldom or never laid eggs in this state of captivity. Belon and Schwenckfeld say the same of the Hazel Grouse; the former conveys, in a few words, a precise notion of the bird, more distinct than could be given by a long description. "Suppose," says he, "that you saw a partridge bred by the crossing of the red with the grey, and having a few pheasants feathers, and you will have an idea of the Hazel Grouse."

The male is distinguished from the female by a very remarkable black spot under its throat and by its orbits, which are of a much deeper red. Their size is that of the *bartavelle*; the

* In German, *Hafel-huhn*; in Swedish, *Harfen*; in Polish, *Jarzabek*.



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extent of their wings is only twenty-one inches, and hence they fly slowly and laboriously, and a great effort is required to raise them from the ground: however, they run exceedingly fast*. They have twenty-four quills, that are almost all equal, in each wing, and sixteen in the tail. Schwenckfeld says, that there are only fifteen; but he is mistaken, and the less excusable, as there is perhaps not a single bird that has an odd number of tail quills. The tail is marked near its extremity by a broad blackish bar, interrupted only by the two middle quills. I should not take notice of that circumstance, were it not to confirm the remark of Willughby, that in most birds the two middle quills do not follow the distance of the lateral ones, but sometimes project beyond them, and sometimes extend not so far; so that in this case, the interruption of colour appears to depend on the difference of their position.—Like the other Grouse, their orbits are red; the toes indented on the sides, though more slightly; the nail of the middle toe, sharp and flat; the legs clothed with feathers before, but only as far as the middle of the tarsus; the gizzard muscular; the alimentary canal thirty inches and odd; the appendices or *cæca* thirteen or fourteen inches, striped with furrows †; the flesh white when dressed, but more so within than

* Gesner.

† Willughby.

without,

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without, and those who have examined it attentively pretend that they can distinguish four different colours; in the same manner as three different flavours are found in the bustards and common grouse. However, the flesh of the Hazel Grouse is excellent; and hence is derived, it is said, its Latin name *Bonasa*; and also the Hungarian appellation *Tschafarmadar*, or *Cæsar's Bird*, signifying that it was fit to be kept for the Emperor. It is indeed highly esteemed, and Gesner remarks that it is the only dish suffered to appear twice at princes' tables.

In the kingdom of Bohemia, it is as much eaten at Easter, as lamb in France; and it is customary to send it in presents from one person to another*.

The Hazel Grouse lives, both in summer and winter, on nearly the same food as that of the Common Grouse. We find in their stomach, in the summer, the berries of the service-tree, of the bilberry, the bramble, and the heath; the seeds of the Alpine elder, the pods of the *sal-tarella*, the catkins of the birch and of the hazel, &c.; and in winter, we meet with juniper berries, the buds of the birch, the tops of heath, fir, juniper, and of some other evergreens †. When the Hazel Grouse is kept in confinement, it may be fed with wheat, barley,

* Schwencckfeld.

† Ray, Schwencckfeld, and Rzaczynski.

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and other grain; but, like the Common Grouse, it does not long survive the loss of its liberty *; whether because it is shut up so closely as to affect its health, or that its savage, or rather generous nature, will not brook the slightest encroachment on its freedom.

The time of sport returns twice a-year, in spring and in autumn; but the latter season is the most favourable. They are attracted by the sound of bird-calls which imitate their note, and horses are led into the field, because it is a vulgar opinion, that the Hazel Grouse are fond of these animals †. It has also been remarked by the sportsmen, that if the cock be first caught, the hen seeks her mate with anxious solicitude, and returns several times to visit the spot, with other males in her train; but if the hen be first ensnared, the cock joins another family, and totally forgets his former attachments ‡. Certain it is, that when one of these birds is surprised and roused, it springs, making a loud noise, and, perching on a tree, it sits motionless and unconcerned, while the sportsman meditates its destruction. Commonly they settle on the centre of the tree, where the boughs part from the trunk.

As much has been said of the Hazel Grouse, many fables have been told: the most absurd

* Gefner and Schwenckfeld.

† Gefner.

‡ Ibid.

are those concerning its manner of propagating. Encelius, and others, assert that they copulate with their bills, that the cocks themselves lay when they grow old, and that their eggs being hatched by the toads, produce wild basilisks, in the same manner as the eggs of the common cocks, if hatched by toads, give birth to the domestic basilisks. And lest we should entertain suspicions with regard to these basilisks, Encelius describes one that he saw *; but unfortunately he neither tells us whether he beheld it emerge from the egg, or beheld this egg excluded by the male. Most of these absurdities take their rise from the misrepresentation of facts; and it is probable that the Hazel Grouse bill like the turtle doves, and toy with each other to raise the swell of love.

According to the opinion of sportsmen, the Hazel Grouse comes in season in the months of October and November; and at that time the males only are killed, being decoyed by a kind of whistling analogous to the shrill note of the females; they hasten to the spot, making a loud rustling noise with their wings, and are shot as soon as they alight.

The females, like other large birds, form their nest on the ground, and commonly conceal it under hazels, or below the shade of

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broad mountain fern. They commonly lay twelve or fifteen eggs, and sometimes even twenty, and these are somewhat larger than pigeons eggs *. They sit three weeks, and have seldom more than seven or eight young †, which run as soon as they are hatched, as usual in most of the short-winged birds. As soon as the young are able to fly, the parents remove from the tract where they bred; and being thus forsaken, they pair and disperse, to form new settlements, and in their turn to send off other colonies ‡.

The Hazel Grouse delight in forests, where they can find their proper sustenance, and conceal themselves from the rapacious birds, which they dread exceedingly, and perch, for shelter, on the low branches ||. Some affirm that they prefer the mountain forests; but they also inhabit the woods that grow in the plains, for they are plentiful in the neighbourhood of Nuremberg. They are frequent also in the woods that clothe the bottom of the Alps and the Apennines. They are found likewise in the mountain of Giants in Silesia, in Poland, &c. Anciently they were so numerous, according to Varro, in a little island in the Ligustic Sea, now the Gulph

* Schwenckfeld.

† Frisch.

‡ Gesner.

|| Ibid.

of Genoa, that it was called the *Island of the Hazel Grouse*. [A]

[A] Specific character of the Hazel Grouse, *Tetrao-Donaxia*. "Its tail-quills are cinereous, with black dots, and a black stripe; except the two intermediate." It is larger than the English partridge. It occurs in many parts of the north of Europe; in Russia, Siberia, and Lapland. It has a shrill piping note, and may be decoyed by imitating the sound.

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The SCOTCH HAZEL GROUS.

IF this bird be the same with the *Gallus palustris* of Gesner, as Brisson thinks, the figure which the German naturalist gives, must undoubtedly be very inaccurate, since no feathers are represented on the legs; and, on the other hand, red barbils appear under the bill. Is it not natural then to suspect that this figure belongs to a different bird? However, the *Woodcock*, or *Cock of the Marsh*, is excellent meat; and all that we know of its history is, that it delights in wet situations, as its name denotes. The Authors of the *British Zoology* suppose, that what Brisson takes for the *Scotch Hazel Grouse*, is really the *Ptarmigan* in its summer garb, and that its plumage becomes almost always white in winter. But if this were the case, it must also lose the feathers which cover the toes; for Brisson expressly notices, that it is only clothed to the origin of the toes, and the ptarmigan in the *British Zoology* is feathered even to the nails; besides, these two birds, as they are represented in the *Zoology*, and in Brisson's work, resemble each other neither in appearance nor structure. Brisson's *Scotch Hazel Grouse* is somewhat larger than ours, and its

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tail shorter; it resembles that of the Pyrenees in the length of its wings; its legs clothed before with feathers as far as the origin of the toes; in the length of the middle toe compared with those on the sides; and in the shortness of the hind toe: it differs, because its toes are not indented, and its tail has not the two long narrow feathers, which is the most obvious character of the Pyrenean Hazel Grouse. I need take no notice of the colours of the plumage, the figure will convey a clearer idea than any description; and besides, nothing is more uncertain, since they vary considerably in the same individual at different seasons.

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The PIN-TAILED GROUS.

La Ganga, vulgairement *La Gelinotte des Pyrenees* *, Buff.

Tetrao-Alcbata, Linn. Gmel. Klein, &c.

Bonasa Pyrenaica, Briff.

The Partridge of Damascus, Will. and Ray.

The Kitwiab, or *African Lagopus*, Shaw.

THOUGH there is a wide difference between words and things, it often happens in natural history, that the misapplication of terms is the source of multiplied mistakes; we have therefore made it an invariable rule, to discover, as much as possible, the true meaning of names.

Briffon, considering the Damascus or Syrian Partridge of Belon, as the same species with his Pyrenean Hazel Grouse, ranges it among the appellations bestowed in different languages on that tribe, and quotes Belon as his authority for the Greek name *Συροπερδριξ*. But he is mistaken in two points: First, Belon tells us himself, that the bird which he calls *the Damascus Partridge*, is a different species from what authors term *Syropedrix*, which has a black plumage and a

* i. e. The Ganga, commonly called the Pyrenean Ptarmigan. In Turkish, *Kata*; in Spanish, *Ganga*.



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red bill. Secondly, Brisson, writing the word in Greek characters, seems to insinuate that it is derived from that language, while Belon positively mentions that it is originally Latin. Lastly, it is difficult to conceive what led Brisson to consider the *ænas* of Aristotle as the same species with his Pyrenean Hazel Grouse; for Aristotle classes his *ænas*, which is the *vinago* of Gaza, with the pigeons, the turtles, and the ring-doves, (in which he is followed by all the Arabians,) and he expressly mentions that, like these birds, it only lays two eggs at a time. But we have already seen that the Hazel Grouse lays a much greater number; and consequently the *ænas* of Aristotle cannot be considered as the Pyrenean Hazel Grouse, and ought therefore to be referred to a different species.

Rondelet conceived, that the Greek word was not *οἰσας*, but ought to be read *ινας*, whose primitive signifies a *fibre* or *thread**; because the flesh is so fibrous and hard that it must be flead before it can be eaten. But if it were really the same bird with the Pyrenean Hazel Grouse, we might adopt the correction of Rondelet, and yet give to the word *inas* a more happy explanation, and more consistent with the genius of the Greek language, which paints whatever it would express; if we conceive it to denote the two threads or narrow feathers of the

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tail of the Pyrenean Hazel Grouse, and which is their characteristical distinction. But unfortunately Aristotle does not say a word concerning these threads, which had escaped his observation; nor does Belon take any notice of this circumstance in his description of the Damascus partridge. Besides, the name *οινος**, or *vinago*, is more suitable to this bird, as it arrives in Greece about the beginning of autumn, which is the season of vintage; for the same reason that in Burgundy a certain kind of thrushes are called by the people in that county *vinettes*.

It follows from what has been said, that the *Syropedrinx* of Belon, and the *οινος* of Aristotle, are not the Pyrenean Hazel or Pin-tailed Grouse, any more than the *alchata*, *alfuachab*, and the *filacotona*, which appear to be Arabian names, and certainly denote a bird of the pigeon kind.

On the other hand, the Syrian bird, which Edwards terms *the little beath-cock, with two thread-like feathers in the tail*, and which the Turks call *kata*, is really the same with the Pyrenean Hazel-Grouse. This author tells us, that Dr. Shaw names it *kittawiah*, and that he only gives three toes to each foot; but he alleges that the traveller has committed this oversight in not attending to the hind toe, which is hid under the plumage of the legs. Yet he had a little before mentioned, (and we readily

* From *οινος*, wine.

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perceive it from the figure,) that the fore-part only of the leg is covered with white feathers like hairs; and it is difficult to conceive how the hind toe could be concealed under the anterior plumage. It would be more natural to say, that it escaped Dr. Shaw's observation, by its diminutive size, for it is only two lines long. The two lateral toes are also very short compared with the middle one, and in them all, the edges are marked with small indentings, as in the common Grouse. The Pin-tailed or Pyrenean Hazel Grouse, seems therefore to be quite a distinct species from the true Hazel Grouse. For, 1. its wings are much broader in proportion to the rest of its body, and consequently it must fly smoothly and rapidly, and have habits different from those of tardy birds. 2. We learn from the observations of Dr. Ruffel, quoted by Edwards, that it flies in numerous flocks, and spends the greatest part of the year in the deserts of Syria, and does not venture near the city of Aleppo, except in the months of May and June, when it is obliged to resort to places where it can get water. We know too that the Hazel Grouse is a timorous bird, and never deems itself secure from the vultures talons, unless concealed in the most shady trees. The Pin-tailed Grouse, which the inhabitants of Catalonia call the *partridge of Garrira**, is nearly the bulk of the gray partridge;

* Barrere, *Ornithologia*.

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the orbits are black, nor are the eye-brows red or flame coloured; the bill is almost straight; the nostrils are placed at the base of the upper mandible, and joining the feathers which cover the face; the fore-part of the leg is feathered to the origin of the toes; the wings are of considerable length, and the shafts of the quills are black; the two quills in the middle of the tail are twice as long as the rest, and very narrow where they project; the lateral quills grow shorter and shorter until the last one. We may remark that of all these properties which characterise the pretended Hazel Grouse of the Pyrenees, there is not one which exactly agrees with the Hazel Grouse*.

The female is of the same size with the male, but differs by its plumage, the colours of which are fainter, and by the filaments in the tail, which are not so long. It appears that the male has a black spot under its throat, and that the female, instead of this, has three rings of the same colour, which encircle its neck like a collar.

I shall not attempt to describe the colours of the plumage; I shall only observe that they have a great affinity to those of the bird known at Montpellier by the name of *angel*, of which John Culmann communicated a description to Gesner †; but the two long feathers of the tail seem

* Edwards and Brisson.

† "The feathers are of a dusky colour inclining to black and yellowish, verging on rufous," says Gesner, speaking of the *angel*.

"Variegated

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seem to be omitted in this description, and also in the figure sent by Rondelet to Gesner, of this same bird, which he had taken for the *œnas* of Aristotle. In short, there seems to be reason to doubt the identity of these two species, notwithstanding their correspondence in the plumage and in the place of residence; unless we suppose that the subjects described by Culmann and designed by Rondelet were females, in which the threads of the tail were much shorter, and consequently less remarkable.

This species is found in most of the warm countries in the ancient continent; in Spain, in the south of France, in Italy, in Syria, in Turkey and Arabia, in Barbary, and even at Senegal; for the bird figured in the *Planches Enluminees* by the name of the Senegal Hazel Grouse, is only a variety, and somewhat smaller, but has the same long feathers or threads in the tail, the lateral quills become gradually shorter the farther they are placed from the middle, the wings are very long, the legs covered before with a white down, the mid-toe much longer than those near the sides, and the hind one exceedingly short; lastly, it has no red skin over the eyes, and differs from the Pin-tailed Grouse only in being rather smaller, and its plumage deeper tinged with reddish. It is therefore only

“ Variegated with olive, yellowish black, and rufous,” says Brisson, in his description of the Pyrenean Hazel Grouse.

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a variety of the same species, produced by the influence of climate; and what ought to shew that this bird is different from the Hazel Grouse, and should therefore be distinguished by a different name, is, that besides the disparity of figure, it always inhabits the warm countries, and never occurs in the cold or even the temperate climates; whereas the Hazel Grouse are rare except in chilly tracts.

It may be proper in this place to transcribe what Dr. Shaw informs us with respect to the *Kittawiab*, or Barbary Hazel Grouse, and which is all we know on the subject, that the reader may compare it with the Pin-tailed Grouse, or the Pyrenean Hazel Grouse, and judge if they are really two individuals of the same species.

“ The *Kittawiab* or *African Lagopus* *, (as we may call it,) is another bird of the gregarious and granivorous kind, which likewise wanteth the hinder toe. It frequenteth the most barren, as the *Rbaad* doth the most fertile parts of these countries, being in size and habit of body like the dove, short feathered feet also, as in some birds of that kind. The body is of a livid colour, spotted with black; the belly blackish; and upon the throat there is the figure of a half moon, in a beautiful yellow. The tip of each feather of the tail hath a white spot upon

* This name is improperly applied, since the bird is not feathered under the toes.

“ it,

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“ it, and the middle is long and pointed, as in the
 “ *Merops*. The flesh is of the same colour with
 “ the *Rbaad's*, red upon the breast, and white in
 “ the legs, agreeing further in being not only
 “ of an agreeable taste, but easy digestion.”
 Shaw's Travels, p. 253. [A]

[A] Specific character of the Pin-tailed Grouse, *Tetrao-Alleebata*. “ Above variegated, the two middle tail-quills twice as long and subulated.”

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The RED GROUSE*.

L' Attagas, Buff.

Tetrao-Lagopus, var. 3d. Gmel.

Bonasa Scotica, Briff.

Tetrao Scoticus, Lath.

Attagen, Fris.

The Moor-Cock, or *Moor-Fowl*, Sibb.

The Red-Game, *Gorcock*, or *Moor-Cock*, Will.

M

THIS is Belon's *francolin*, which we must not confound, as some ornithologists have done, with the *francolin* described by Olin. These are two birds widely different both in their form and in their habits: the last delights in plains and low situations; it has not the beautiful flame-coloured orbits, that give the other so distinguished an appearance; its neck is shorter and its body thicker; the feet reddish, furnished with spurs, and not feathered, as its toes are not webbed; in short, it bears no resemblance at all to the bird which we at present consider.

The ancients have said a great deal about the *attagas*, or *attagen* (for they use both names indifferently). Alexander the Myndian tells us in his commentary on Athenæus, that it was rather larger than a partridge, and its plumage, which was of a reddish ground, was mottled with se-

* In Greek, *Ατλαγας*; or *Ατλαγας*.

veral

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veral colours. Aristophanes had said nearly the same thing; but Aristotle, according to his commendable custom of marking the analogy between unknown objects and such as are common, compares its plumage to that of the woodcock (*σκολοπαξ*). Alexander the Myndian subjoins, that its wings are short, and its flight tardy; and Theophrastus remarks that, like the other heavy birds, as the partridge, the cock, the pheasant, &c. it is hatched without feathers, and can run as soon as it quits the shell. Like these also, it welters in the dust *, and feeds on fruits, devouring the berries and grain which it finds, sometimes eating the plants themselves, sometimes scraping the earth with its nails; and as it runs more than it flies, it was customary to hunt it with dogs, and this chase was successful †.

Pliny, Ælian, and others say, that these birds lose their cry with their liberty; and that, owing to the depression of their native faculties, they are very difficult to tame. Varro, however, instructs us how to breed them, and the mode is nearly the same with that of raising peacocks, pheasants, Guinea fowls, partridges, &c.

Pliny informs us, that this bird, which has been very rare, was become more common

* The ancients called these birds *Pulveratrices*, which roll in dust to rid themselves of the insects that torment them; in the same manner as the aquatic fowls seek to remove them by springing water on their wings.

† Oppian in *Ixenticis*. This author adds, that they are fond of stags, and, on the contrary, have an aversion to cocks.

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Hist. Nat. lib.

his time; that it was found in Spain, in Gaul, and on the Alps; but that those from Ionia were the most esteemed. In another place, he tells us, that there were none in the island of Crete. Aristophanes speaks of those found in the vicinity of Megara in Achaia. Cleopatra at Alexandria says, that those from Egypt were reckoned the most delicious by the epicures. Some there were also in Phrygia, according to Aulus Gellius, who describes it as an Asiatic bird. Apicius directs us how to cook the Red Grouse, which he joins with the partridge; and St. Jerome mentions it in his letters as a most exquisite dish*.

However, to judge whether the *attagen*, of the ancients is our Red Grouse, we must collect its history from the writings of the moderns, and form the comparison.

It appears that the word *attagen*, though with various corruptions, has generally been used by the modern authors who have written in Latin, the name of this bird †. It is true indeed, that some ornithologists, as Sibbald, Ray, Willughby, and Klein, have referred it to the *lagopus alpestris* of Linnaeus †; but, besides that Pliny only mentions it by the way, and so cursorily as to give no pre-

* "You smell of Grouse (*Attagen*), and yet boast of eating simple diet," said St. Jerome to an hypocrite, who pretended to live on a simple diet, but in private regaled himself with delicacies.

† *Atago*, *Astago*, *Atago*, *Atchemigi*, *Atacuigi*, *Tagenaricus*, *Tagi-*

are all words corrupted from *Attagen*. Gesner. Hist. Nat. lib. x. 48.

cise

cise idea, is it likely that this great naturalist, who had treated at great length on the *attagen* in the same chapter, would say a few words of it afterwards under another name, and without giving notice? This reflection is alone sufficient, in my opinion, to prove that the *attagen* of Pliny and his *lagopus altera* were different birds; and we shall afterwards know what they really were.

Gesner was told, that this bird is commonly called *franguello* at Bologna; but Aldrovandus, who was a native of that place, tells us, that the name *franguello* (*binguello*, according to Olina), was given commonly to the chaffinch, and which is evidently derived from the Latin *fringilla*. Olina subjoins, that in Italy, his *francolin*, which we have said is a bird different from ours, was generally named *franguellina*; a word corrupted from *frangolino*, and to which a feminine termination was added, to distinguish it from *fringuello*.

I know not why Albin, who has copied the description that Willughby gives of the *lagopus altera* of Pliny, has changed the name into *Cock of the Marsh*; unless because Tournefort says that the Samian *francolin* haunts marshes. But if we compare the descriptions with the figures, we shall readily perceive that the Samian *francolin* is entirely different from the bird which Albin, or his translator, has been pleased to term

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* Johnston,
† Aldrovandus

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Cock of the Marsh, since he had before applied the name of *francolin* to this Forked-tail Black Grouse. The Red Grouse is called *durax* or *alduragi* by the Arabians, and the English name is derived from the red colour of its orbits and plumage; some British naturalists have also termed it *perdrix asclepica* *.

This bird is larger than the *bartavelle*, and weighs about nineteen ounces; its eyes are arched with two very broad red orbits, formed by a fleshy membrane, rounded and pared above, and rising higher than the crown of the head; the nostrils are shaded with small feathers, which produce a fine effect; the plumage is mixed with red, black, and white. But the female has less of the red, and more of the white, than the male; the membrane of the orbits not so prominent, much less pared, and of a fainter red; in general, the colours of its plumage are more dilute †; besides, it has not those black feathers dotted with white, which in the male form the tuft on the head, and a kind of beard under the bill ‡.

In both sexes, the tail is nearly like that of the partridge, but rather longer; it consists of sixteen quills, the two middle ones variegated

* Johnston, Charleton, &c.

† British Zoology.

‡ Aldrovandus.

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with the same colours with those on the back, while the lateral are all black; the wings are very short, each containing twenty-four quills, of which the third reckoning from the tip of the wing is the longest; the legs are clothed with plumage to the toes, according to Brisson, and as far as the nails, according to Willughby; these nails are blackish, and also the bill; the toes of a deep-gray, edged with a narrow indented membranous belt. Belon tells us, that in his time *francolins* (that is Red Grouse) were brought from Venice, some of which had the plumage we have described, and others were entirely white, and were called in Italy by the same name. Except in the colour, the latter were exactly like the former; and on the other hand, they resembled so much the white partridge of Savoy, that Belon conceives them to belong to another species, which Pliny has termed the *lagopus altera*. According to this idea, which appears to me to be well founded, the *al-tagen* of the Roman naturalist would be our *variegated Red Grouse*; and the second species of the *lagopus* would correspond to the *White Altagas*, which is distinguished from the former by its white plumage, and from the first kind of *lagopus*, commonly termed the *White Partridge* by its size, and its legs, which are not feathered below.

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All these birds, according to Belon, live on seeds and insects: the authors of the British Zoology add, heath tops and mountain berries.

The Red Grouse is indeed an inhabitant of the elevated tracts. Willughby informs us, that it seldom ventures into the low country, nor even descends to the sloping sides of the mountain, but prefers to reside on the loftiest summits. It is found in the Pyrenees, the Alps, the mountains of Auvergne, of Dauphiné, of Switzerland, in Foix, Spain, England, Sicily, the canton of Vicenza, and in Lapland *. Lastly, it inhabits Olympus in Phrygia, where the modern Greeks call it *taginari* †, a word evidently derived from *ταγυαριος*, which occurs in Suidas, and is formed from *attagen* or *attagas*, which must be considered as the primitive.

Although this bird is naturally very shy, the secret of breeding them in cages has been discovered in the island of Cyprus, as formerly at Rome; at least, if the bird spoken of by Alexander Benedictus is the Red Grouse. What induces me to suspect this is, that the francolin figured in the CCXLVth plate of Edwards, which was certainly brought from Cyprus, is much more like the common sort, than that of Olinà, and we know that the last can be kept in cages ‡.

* Klein.

† Belon.

‡ Olinà.

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The domestic Red Grouse is larger than the wild, but this has a superior delicacy of flavour, and is preferred to the Partridge. At Rome, the *francolino* is called the Cardinal's dish*; however, it soon grows tainted, and cannot be sent to a great distance. The sportsmen take out its entrails the instant it is killed, and stuff it with fresh heath †. Pliny makes the same remark with regard to the *lagopus* ‡, and it must indeed be admitted, that these birds bear a great analogy to each other.

The Red Grouse breed in the spring; the female lays on the ground like all the large birds; the eggs are eight or ten, sharp at the one end, eighteen or twenty lines in length, and dotted with red-brown, except in one or two places about the small end. The incubation lasts twenty days; the young remain with the mother, and continue to follow her throughout the summer. By winter, they have almost attained their full size, and they unite into flocks of forty or fifty, and become completely wild. In their infancy, they are very subject to worms, or *lumbrici*, and sometimes they are observed to fly about with these hanging a foot from the *anus* §.

* Gesner. † Willughby. ‡ Lib. x. 48.

§ Willughby and Pennant. But have not these authors taken the protruded *penis* for a worm, as I have seen chicks deceived in that way in regard to ducks?

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If we compare the accounts of the moderns in regard to the Red Grouse, with what the ancients have said on the same subject, we find the former more accurate and full; yet we have still facts enough from which we may conclude the identity of that bird with the *attagen* of antiquity.

To conclude, though I have been at pains to remove the confusion in which this subject is involved, and to assign to each species the characters that have been indiscriminately bestowed, I cannot expect that I have been equally successful in clearing every point. The uncertainty which clouds our views, is owing entirely to that latitude in the use of names in which naturalists have indulged themselves, and which throws obstacles almost insurmountable on every attempt to connect our present information with the discoveries of past ages. [A]

[A] Specific character of the Red Grouse, *Tetrao Scoticus*, LATH.—“It is striated transversely with rufous and blackish; its six exterior tail-quills on either side, blackish.” Mr. Pennant thinks that this bird is peculiar to Britain. It occurs in Wales, and in the north of England, and is numerous in the Highlands of Scotland. Its egg is elongated; tawny, marked with irregular blood-coloured blotches, having dots interspersed.

The WHITE ATTAGAS.

IT is found in the mountains of Switzerland, and in those around Vicenza. I have nothing to add to what has been said in the preceding article, except that Gefner's second species of *lagopus* appears to be really one of these birds, though the white of its plumage is pure only on the belly and the wings, and is clouded with brown or black on the rest of the body: for we have already seen that the colour of the male is not so deep as that of the female; and we know that in most young birds, and particularly of this kind, it never acquires its due intensity till the second year. Also Gefner's description suits this species exactly; the eyebrows red, naked, curved, and prominent; the feet feathered as far as the nails, but not below; the bill short and black; the tail also short; its residing in the Swiss mountains, &c. I should imagine that this bird was really a White Attagas, a male, and young, weighing only fourteen ounces instead of nineteen, the usual bulk.

I would draw a similar conclusion with regard to Gefner's third species of *lagopus*, which seems to be the same with what the Jesuit

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Rzaczynski mentions by the Polish name *parowa*. In both, a part of the wings and belly is white, the back and the rest of the body of a variegated colour; their feet feathered; their flight laborious; their flesh excellent; and their size equal to that of an ordinary hen. Rzaczynski takes notice of two kinds; the one small, which I am at present considering; the other larger, and which is probably a species of the Hazel Grouse. This author subjoins, that both birds are found entirely white in the Palatinate of Novogorod. I do not class them with the Ptarmigan, as Brisson has done Gesner's second and third species of *lagopus*; because their feet are not feathered beneath, which is the most ancient and decided character.

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The PTARMIGAN*.

Le Lagopede, Buff.

Tetrao-Lagopus, Linn. Gmel. &c.

Lagopus, Pliny.

Tetrao Mutus, Martin.

White Game, Will.

THIS bird has been called the *White Partridge*, very improperly; since it is not a partridge, and is white only in winter, on account of the intense cold to which it is exposed during that season on the lofty mountains of the North, which it commonly inhabits. Aristotle, who was unacquainted with the Ptarmigan, knew that partridges, quails, swallows, sparrows, ravens, and even hares, stags, and bears, suffer, in similar situations, the same change of colour †. Scaliger adds the eagles, vultures, sparrow-hawks, kites, turtle-doves, and foxes ‡, and it would be easy to increase this list, by the names of many birds and quadrupeds on which cold can produce similar effects. We may therefore infer, that the white colour is not

* In Norwegian, *Rype*; in Iceland, the cock is called *Rypur karre*, and the hen, *Rinpa*.

† *De coloribus*, cap. vi. and *Hist. Anim.* lib. iii. 12.

‡ *Exercitationes in Cardanum*.

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permanent, and cannot be considered as a discriminating character of the Ptarmigan; especially as many species of the same genus, as the Little White Grouse, according to Rzaczynski* and Dr. Weygandt †, and the White Attagas, according to Belon, are liable to the same variations of colour. It is astonishing that Frisch was not informed, that his *White Mountain Francolin*, which is the Ptarmigan, is subject to this influence of cold; for if he was acquainted with this fact, it is equally strange that he has omitted to mention it. He only says, that he was told that no White Francolins could be met with in summer; and therefore he tells us, that they were sometimes found (in summer no doubt) with their wings and back brown, but which he had never seen. This was the place, therefore, where he ought to have added, that they are white only in winter, &c.

Aristotle, as I have already said, was unacquainted with the Ptarmigan; what demonstrates the assertion, is a passage in his Natural History, where he says, that the hare is the only animal whose feet are covered with fur on the sole; but, if he had known the fact, he would certainly not have omitted, in a place where he draws general comparisons, to mention a bird that is distinguished by the same property.

* *Aquarium Poloniae.*

† Breslaw's Acts, Nov. 1725.

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The name *Lagopus* is that which Pliny and other writers of antiquity have bestowed on this species of birds. The moderns have therefore committed an impropriety, when they have applied a word which marks the distinguishing character of the Ptarmigan to the nocturnal birds, whose feet are feathered above and not below*. Pliny adds, that it is as large as a pigeon, that it is white, that it is excellent, and that it resides on the summits of the Alps; lastly, that it is so wild that it can hardly be reduced to the domestic state; and he concludes with telling us, that its flesh soon runs into putrefaction.

The laborious accuracy of the moderns has completed this sketch of antiquity. They have noticed that glandulous skin which forms a sort of red eye-brows, but of a brighter colour in the male than in the female; it is also smaller in the latter, and the two black streaks are wanting on the head, which in the male stretch from the bottom of the bill to the eyes, and even extend near the ears. Except in this circumstance, the male and female are perfectly alike in their external form; and all that I shall afterwards mention on this subject will apply to both equally.

The snowy colour of the Ptarmigan is not spread over its whole body, but is stained even

* Belon, Willughby, and Klein.

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in winter. This exception obtains especially in the quills of the tail, which are black, with a little white at the point; nor does it appear from the description, that this colour tinges continually the same quills. Linnæus, in his *Fauna Suecica*, describes the middle ones as black; and in his *Systema Naturæ*, he says, with Brisson and Willughby, that these are white, and the lateral quills black. These naturalists seem not to have examined their specimens with sufficient accuracy. In the individual which I have caused to be figured, and in others which I have viewed, I found the tail composed of two rows of feathers, one over the other, the upper one entirely white, and the under one black, and each consisting of fourteen feathers*. Klein takes notice of a bird, which he received from Prussia on the 20th of January 1747, and which was perfectly white, except the bill, the lower part of the tail, and the shafts of six quills of the wings. The Lapland priest, Samuel Rheen, whom he quotes, says, that the Snow Fowl, or Ptarmigan, has not a single black feather, except the female, which has one of that colour in each wing. And the white partridge, of which Gefner speaks, was indeed entirely white, except round the ears, where

* These cannot be counted exactly without plucking, as we have one, above and below the rump; it was in this way that we ascertained that there were fourteen white above, and as many black below.

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there were some black marks; the coverts of the tail, which are white, and extending its whole length, conceal the black feathers, are what have occasioned most of these mistakes. Brisson reckons eighteen quills in the tail, while Willughby, and some other ornithologists, reckon only sixteen; and there are really only fourteen. It would seem, that the plumage of this bird, how variable soever, is more uniform than the naturalists represent it*. There are twenty-four quills in the wings, the third one, reckoning from the outer side, is the longest, and the first six have black shafts, though the webs are white: the down which shade the feet and toes as far as the nails, is very thick and soft; and it has been said, that this is a kind of fur-gloves which nature has given to these birds, to defend them from the intense cold of their native climates. The nails are very long, even that of

* It is not surprising, that authors differ about the white or black colour of the lateral tail-feathers of this bird; for in spreading out the tail with the hand, it is easy to terminate the sides either by the black or the white feathers. Daubenton the younger has well remarked, that there is another method of settling the contradiction of authors, and of shewing clearly that the tail consists only of fourteen quills all black, except the outer one, which is edged with white near its origin, and the tip, which is white in them all; because the shafts of these fourteen black quills are twice as thick as the shafts of the fourteen white quills, and do not project so far, not overlapping entirely the shafts of the black quills; so that we may regard these white feathers as only coverts, though the four middle ones are as large as the black ones, which are all very nearly equal in length.

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the little hind toe; that of the mid-toe is scooped lengthwise, and its edges are sharp, which enables it to form holes in the snow with ease.

The Ptarmigan is at least as large as a tame pigeon, according to Willughby; its length is fourteen or fifteen inches, the extent of its wings twenty-two inches, and its weight fourteen ounces: ours is rather smaller. But Linnæus remarks, that they are of different sizes, and that the smallest inhabits the Alps*. He subjoins, indeed, that the same bird is found in the forests of the northern countries, and especially in Lapland; which gives room to suspect, that this species is different from our Alpine Ptarmigan, which has different habits, and prefers the lofty mountains: unless perhaps we say, that the cold which prevails on the summits of the Alps is nearly the same with what is experienced in the vallies and forests of Lapland. But the disagreement of writers with respect to the cry of the Ptarmigan seems to prove decidedly, that there is a confusion of species. Belon says, that it has the note of the partridge: Gesser, that the voice somewhat resembles that of a stag; Linnæus compares it to a prattling and jeering. Lastly, Willughby speaks of the feathers on its feet as a soft down (*plumulis mollibus*); and Frisch compares them to hogs

* Fauna Suecica.

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bristles. But how can we reconcile such opposite qualities, how refer such different characters to the same species? There is reason then for the division which I have drawn between the Ptarmigans of the Alps, the Pyrenees, and such other mountains, and the birds of the same genus that occur in the forests, and even in the plains of the northern regions.

We have already seen, that in winter the Ptarmigan is robed in white; in summer, it is covered with brown spots, which are scattered irregularly on a white ground. It may be said, however, never to enjoy the solstitial warmth, and to be determined by its singular structure to prefer the chilling frost; for as the snow melts on the sides of the mountains, the bird constantly ascends, till it gains the summits, where reigns eternal winter. It would seem to be oppressed by the dazzle of the solar rays; it withdraws from the lustre of day, and forms holes and burrows under the snow. It were curious to investigate the internal and intimate structure of the Ptarmigan, and discover the reason why cold seems so necessary to its existence, and why it so carefully shuns the presence of the sun; while almost every animated being longs for his return, and hails his approach as the father of Nature, the source of delight whose benign influence inspires and enlivens all. Must we ascribe it to the same cause

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which make the nocturnal birds retire from his
 effulgence? or is the Ptarmigan the *kakkerlac* of
 the winged tribe?

Such a disposition, however, will evidently
 render this bird difficult to tame, and Pliny ex-
 pressly mentions the fact*. Yet Redi speaks of
 two Ptarmigans, which he calls *White Partridges*
of the Pyrenees, that were bred in the volery of
 the garden at Boboli, belonging to the Grand
 Duke.

The Ptarmigans fly in flocks, but never soar
 aloft; for they are heavy birds. When they
 perceive any person, they remain still on the
 snow to avoid being seen; but they are often
 betrayed by their whiteness, which surpasses the
 snow itself. However, whether through stu-
 pidity or inexperience, they are soon recon-
 ciled to the sight of man; they may often be
 caught by presenting bread, or a hat may be
 thrown before them, and a noose slipped round
 the neck, while they are engaged in admiring
 this new object; or they may be dispatched by
 the blow of a stick behind †. It is even said,
 that they will not venture to pass a row of
 stones rudely piled like the foundation of a
 wall, but will constantly travel close by the
 side of this humble barrier, quite to the spot
 where the snares are placed.

* Coll. Acad. Part Etrang. i. 520.

† Gesner.

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They live upon the buds and tender shoots of the pine, the birch, the heath, whortle berry, and other Alpine plants*. It is to the nature of their food undoubtedly, that we must ascribe the slight bitterness of their flesh †, which otherwise is excellent for the table; it is dark-coloured, and is a very common sort of game in Mount Cenis, and in all the towns and villages near the mountains of Savoy ‡. I have eaten of it, and found it had much the flavour of hare.

The females lay and hatch their eggs on the ground, or rather on the rocks §;—this is all that we know with regard to their propagation. We should require wings to study the instincts and habits of birds, especially of those that will not bend to the yoke of domestication, and which delight in deserts.

The Ptarmigan has a very thick craw, and a muscular gizzard, in which small stones are found mixed with its aliments. The intestines are thirty-six or thirty-seven inches long; the *cæca* are thick, fluted, and very long, but not uniform, and are, according to Redi, full of minute worms ¶; the coats of the small intestine are covered with a curious network, formed by a multitude of small vessels, or rather of little wrinkles disposed regularly ¶¶. It has been observed that its heart is somewhat

* Willughby & Klein. † Gesner. ‡ Belon.

§ Gesner & Rzaczynski. ¶ Coll. Acad. Part. Etrang. tom.

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smaller, and its spleen much smaller, than in the Red Grouse *; and that the cystic and hepatic ducts join the intestines, at a considerable distance from each other †.

I cannot close this article without observing with Aldrovandus, that Gesner joins to the different names which have been given to the Ptarmigan, that of *urblan*, conceiving it to be an Italian word used in Lombardy; yet this term is totally unknown, both in the language of Italy, and in that which is spoken in Lombardy. The same perhaps may be said of the words *rboncas* and *berbey*, which, according to the same author, the Grisons, who speak Italian, bestow on the Ptarmigan. In the part of Savoy which borders on the Valais, it is called *arbenne*, which, being corrupted by the pronunciation of the Swiss and Grison peasants, might pass changed into some of the words just mentioned. [A]

* Roberg *apud Kleinum*.

† Redi, *Collect. Acad. Part. Etrang. tome i.*

[A] Specific character of the Ptarmigan, *Tetrao-Lagopus*: "It is cinereous; its toes shaggy, its wing-quills white; its tail-quills black and white at the tip, the intermediate ones white." The Ptarmigan occurs sometimes in the colder parts of England, and is pretty frequent in the Highlands of Scotland. Its egg is pale rufous, with dusky red spots.

The Greenlanders catch the Ptarmigan by slipping a noose over its neck. Sometimes they kill it with stones; but now they commonly shoot it. They eat the bird with seals fat, train-oil, and berries, and esteem the repast a great luxury. They make shirts of its plumage.

The Laplanders take these birds by forming a hedge of birchen boughs, and leave certain intervals, in which they hang snares.

HUDSON'S BAY PTARMIGAN.

*Tetrao Albus.**Ripa Major, Schœf.**The White Partridge, Edw.**The White Grouse, Penn. and Lath.*

THE authors of the British Zoology justly blame Brisson for classing the Ptarmigan with Edwards's White Partridge, since they are distinct species; for the latter is thrice as large as the Ptarmigan, and the colours of their summer garb are also very different, the White Partridge having broad spots of white and deep orange, and the Ptarmigan streaks of a dusky brown on a light brown. The same authors admit, that in winter both birds are alike, almost entirely white. Edwards says, that the lateral quills of the tail are black even in winter, and only tipped with white; and yet he afterwards subjoins, that one of these which had been killed in that season, and brought from Hudson's-bay by Light, was of a snowy white, which still more shews that in this species the colours of the plumage are variable.

The White Grouse is of a middle size, between the partridge and the pheasant, and its shape would resemble that of the former, if its tail

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were somewhat shorter. The one represented in Edwards, Pl. LXXII. is a cock, such as it is in spring, when it begins to drop its winter's robe, and feel the influence of the season of love; its eyebrows are red and more prominent, and in short, like those of the Red Grouse; it has also small white feathers round the eyes, and others at the bottom of the bill, which cover the nostrils; the two middle feathers are variegated like those of the neck, the two succeeding are white, and all the rest blackish, tipped with white, both in summer and winter.

The livery of summer extends only over the upper part of the body; the belly continues always white, the feet and toes are entirely covered with feathers, or rather with white hairs; the nails are less curved than usual in birds*.

The White Grouse resides the whole year in Hudson's-bay; it passes the night in holes that it makes in the snow, which, in these arctic countries, resembles fine sand. In the morning it emerges from its retreat, and flies directly upwards, shaking the snow from off its wings. It feeds in the morning and evening, and does not seem to dread the sun, like the Ptarmigan of the Alps; since it spends whole days exposed to his rays, even in the middle of the day, when they

* We have seen two birds brought from Siberia under the name of *Ptarmigans*, which were probably the same species with that of Hudson's Bay, and whose nails were so flat, that they resemble more the nails of Apes than the claws of birds.

are most forcible. Edwards received this same bird from Norway, which appears to me to form the shade between the Ptarmigan and the Red Grouse; having the feet of the one, and the large eyebrows of the other. [A]

[A] Specific character of the White Grouse, *Tetrao-Albus*:—"It is orange, variegated with black stripes and white dashes; its toes shaggy; its tail-quills black, and white at the tip; the intermediate ones entirely white." The White Grouse are amazingly numerous about Hudson's Bay; where they breed all along the coast, and lay about ten eggs, sprinkled with black. In the beginning of October, they assemble in some hundreds, and live among the willows, whose tops they crop: Hence they are styled *Willow Partridges*. In December they retire to the mountains to feed on cranberries: for, in that frightful climate, the cold is so intense, that the snow appears like fine powder, which in the depth of winter, is in a great measure swept by the winds from the uplands, and carried into the plains. These birds are generally tame as chickens; if they chance to be unusually shy, they may be soon hunted and worn out, till they sink into their natural security. They are esteemed excellent meat, and much sought for by the servants of the Hudson's Bay Company. They are commonly taken with nets of twine twenty feet square set inclined, into which they are driven. Ten thousand are often caught in the course of the winter.

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I.

The CANADA HAZEL GROUS.

La Gelinotte du Canada, Buff.

Tetrao Canadensis, Linn. and Gmel.

Lagopus Freti Hudsonis, Klein.

The Black and Spotted Heath-cock, Edw.

The Spotted Grouse, or Wood Partridge, Penn. and Lath:

It would seem that the Hazel Grouse of Canada, and the Hazel Grouse of Hudson's Bay, as described by Brisson and designed by Edwards, are the same species.

It is frequent through the whole year in the country bordering on Hudson's Bay, and prefers the plains and low grounds; whereas, in another climate, the same bird, says Ellis, is found in the highest tracts, and even on the summit of mountains. In Canada, it is called the Partridge.

The male is smaller than the common Hazel Grouse; its eyebrows red; its nostrils covered with small black feathers; the wings short; the feet clothed below the tarsus; the toes and nails grey; the bill black. In general its colour is very dusky, and is brightened only by a few white

spots round the eyes, on the flanks, and on some other parts.

The female is smaller than the male, and the colours of its plumage lighter and more variegated; in other respects it is precisely alike.

These birds feed on pine cones, juniper-berries, &c. They are numerous in the northern countries of America, and are stored up for winter's provisions; the frost preserves them from putrefaction, and they are thawed in cold water, when they are to be used. [A]

[A] Specific character of the *Tetrao Canadensis*:—"Its tail-quills are black, fulvous at the tip; two white dashes at the eyes." By the English settlers at Hudson's Bay it is called the *Wood Partridge*, because it usually lives among the pines. It is a very stupid bird, often knocked down with a stick, and commonly caught by the Indians with a noose. In summer, it lives on berries; in winter, it crops the shoots of the spruce fir, which gives its flesh a disagreeable taste. It is said to lay only five eggs.

II.

The RUFFED HEATH-COCK, Or, The LARGE HAZEL GROUS OF CANADA.

Tetrao Togatus, Linn. 2nd Gmel.
Bonasa Major Canadensis, Briss.
The Shoulder-knot Grouse, Lath.

Though Brisson conceives this bird also as distinct species from the ruffed Hazel Grouse of Pennsylvania, it is highly probable that they

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really the same: and to this species must we refer to the ruffed Heath-cock of Edwards. If we consider that Edwards's figure was taken from a living bird in love-season, and that Brisson's was copied from a dead subject; if we make allowance for the liberties which are suggested by the fancy of the designer, we may disregard the minute disparities.

It is rather larger than the ordinary Hazel Grouse, and like it, the wings are short, and the feathers that cover the feet reach not to the toes; but it has neither the red eyebrows, nor the ring of that colour which encircles the eyes. What distinguish it, are the two tufts of feathers which rise from the upper part of the breast, one on each side, and project beyond the rest, and bend downwards; the feathers which form these are of a fine black, the edges beaming with different reflections of gold green. The bird can expand at pleasure these false wings, which when closed fall on both sides on the upper part of the breast; the bill, toes, and nails, are of a reddish brown.

This bird is, according to Edwards, very common in Maryland and Pennsylvania, where it is called the *pheasant*. But its instincts and habits are much nearer those of the Grouse. It is of a middle size between that of the pheasant and the partridge; its feet are feathered, and its toes inserted on the edges like those of the Grouse; its bill is similar to that of a common cock; its

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nostrils are shaded with small feathers, which rise from the bottom of the bill, and point forward; the whole upper part of the body, including the head, the tail, and the wings, are mailed with different brown colours, more or less brightened with the mixture of orange and black; the throat is of a brilliant orange, though rather deep; the stomach, the belly and the thighs, are marked with black spots, in the shape of a crescent, and strewed with regularity on a white ground; it is furnished with long feathers round the head and neck, which it can erect at will, and form a crest or ruff, and this it generally does in the season of its amours; it also spreads the tail-quills like a fan, inflates its craw, trails its wings, and rustles with a whirring noise like a turkey-cock; it summons its females also by a very odd sort of clapping the wings, which is so loud as to be heard at half-a-mile's distance in calm weather*. It takes this kind of exercise in spring and autumn, which are the seasons of breeding, and repeats it every day at stated hours, viz. at nine o'clock in the morning, and four o'clock in the afternoon, and this always sitting on a dead trunk. At first, it strikes slowly, allowing an interval of two seconds between each beat; but it gradually quickens the strokes, which at last become so rapid as to appear

* Mr. Bartram says, that the people of Pennsylvania call this the *thumping* of the ruffed Grouse.

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continued sound, resembling the noise of a drum, or, according to some, the muttering of distant thunder. This noise lasts about a minute, and, after a repose of seven or eight minutes, it again renews and passes through the same gradations. Such is the call which invites the female to the feast of love; but what announces a future generation, is often the signal for the destruction of the present. The sportsman, led by the noise, approaches the bird unperceived, and when the male is dissolved in convulsions of pleasure, he takes the fatal aim. If the bird however observe the person, it stops its motions, and flies off three or four hundred paces.—These are really the instincts and habits of the European Grouse, though the singularities are rather heightened.

The common food of those in Pennsylvania is grain, fruits, wild grapes, and above all ivy berries, which is the more extraordinary, as these prove fatal to other animals.

They hatch only twice a year, probably in spring and autumn, which are the two seasons when the male beats his wings. They make their nests on the ground with leaves, or by the side of a fallen trunk, or at the foot of a tree; all which habits indicate a heavy bird. They lay from twelve to sixteen eggs, and sit about three weeks. The mother has the safety of her young much at heart; she risks every thing in their defence, and exposes herself to all the dangers

dangers that menace their destruction. The tender brood are themselves dexterous in searching for a concealment beneath the leaves. But all these precautions are insufficient to elude the dreaded assaults of the birds of prey. The little family continues united, till the glow of the following spring inspires new appetites, and disperses its members.

These birds are exceedingly wild, and can never be tamed. If they are hatched under common lens, they fly almost as soon as they burst from the shell, and hide themselves in the forests. The flesh is white, and an excellent meat; and may not this be the reason why the rapacious birds chase them with such perseverance? We have already mentioned the conjecture in treating of the European Grouse; if it were confirmed by a sufficient number of observations, we might infer that voracity does not always exclude predilection, but that the birds of prey have nearly the same taste as man: and this would afford another analogy between those two species. [A]

[A] Specific character of the Ruffed Grouse, *Tetrao-Umbellatus*: "It has a ruff about its neck." Its flesh is lean, dry, close, and exceedingly white; yet if well cooked, it is excellent food. The bird builds its nest on dry ground, and hatches nine young. The mother clucks to her chickens, and gathers them under her wings.

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The LONG-TAILED GROUS.

Tetrao Phasianellus, Lin. and Gmel.*The Sharp-tailed Grouse*, Penn.

The American bird, which may be called the Long-tailed Hazel Grouse, designed and described by Edwards under the name of the *Hudson's-Bay Heath-Cock*, or *Grouse*, but which appears to me to be more related to the Hazel Grouse. The individual represented in Edwards, Plate CXVII, is a female, with the size, colour, and long tail of the pheasant; the plumage of the male is of a deeper shining brown, with various reflections near the neck: and he stands very erect, with a bold aspect; differences which are invariable between the male and female in all birds of this kind. Edwards did not venture to give red eye-brows to this female, because he only saw a stuffed specimen, in which that character was not sufficiently distinct; the legs were rough, the toes indented on the edges, and the hind toe very short.

At Hudson's Bay, this bird is called a *pheasant*. The long tail, indeed, forms a sort of shade between the hazel grouse and the pheasants. The two middle quills of the tail project

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two inches farther than the two following on either side, and thus gradually shorten. These birds are also found in Virginia, in the woods and the unfrequented parts. [A]

[A] Specific character of the Long-tailed Grouse, *Tetrao Phasianellus*:—"Its tail is wedge-shaped; its head, its neck, and the upper side of its body, are brick coloured, striped with black." In Hudson's Bay, it lives among the larch bushes: feeds on berries in summer, and on the buds of larch and birch in winter. It lays from nine to thirteen eggs. The cock has a very shrill sort of a crow, not very loud. When disturbed, or on wing, he repeats the sound *cuck, cuck*, and cracks the feathers of his tail. The flesh of these birds is gray, fat, and juicy.

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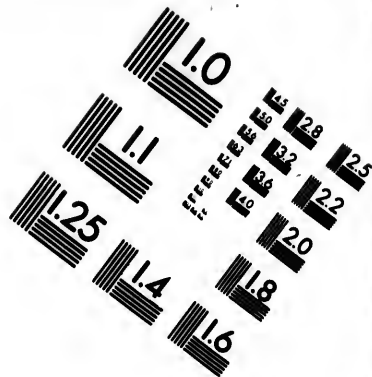
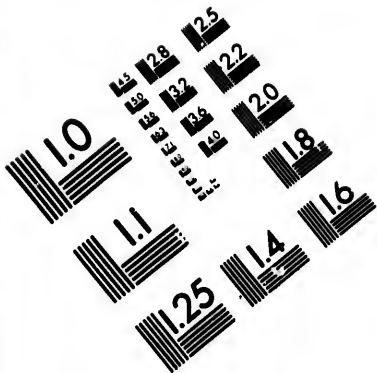
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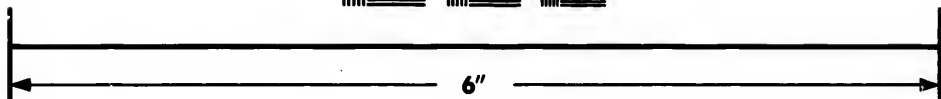
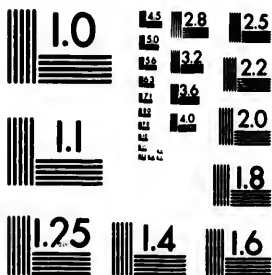
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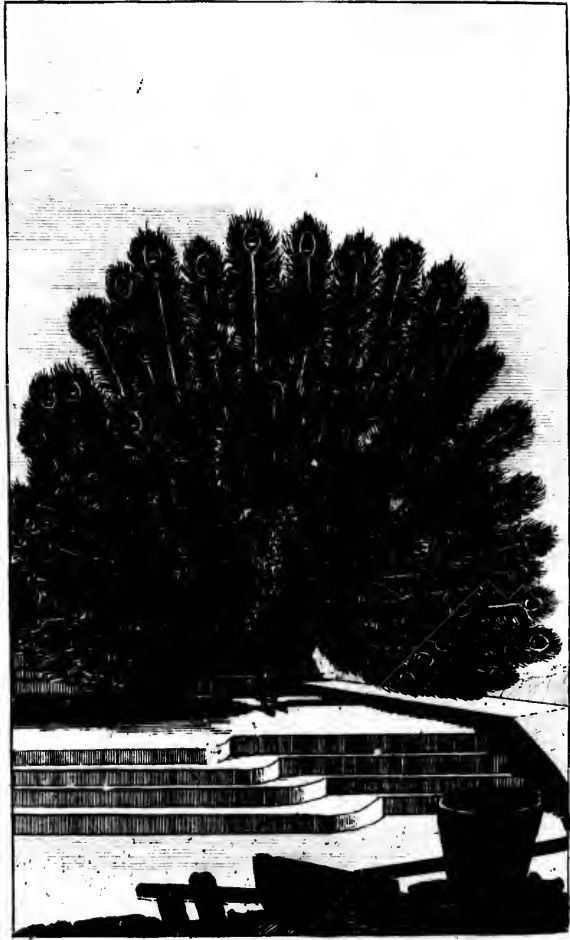


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The P E A C O C K*.

Le Paon, Buff.*Pavo Cristatus*, Linn. and Gmel.*The Crested Peacock*, Lath.

IF empire belonged to beauty and not to strength, the Peacock would undoubtedly be king of the birds; for upon none of them has Nature poured her treasures with such profusion. Dignity of appearance, nobleness of demeanour, elegance of form, sweetness and delicacy of proportions, whatever marks distinction and commands respect, have been bestowed. A light waving tuft, painted with the richest colours, adorns its head, and raises without oppressing it. Its matchless plumage seems to combine all that delights the eye in the soft delicate tints of the finest flowers; all that dazzles it in the sparkling lustre of the gems; and all that astonishes it in the grand display of the rainbow. But not only has Nature united, in the plumage

* In Greek, *Tauvς*, or *Tauv*, perhaps from *tauu*, to stretch, on account of the length of its tail: in the Æolian dialect it was pronounced *Παυv*; and hence the Latin *Pavo*, and its names in the modern languages: in Italian, *Pavone*; in Spanish, *Pavon*; in French, *Paon*; in German, *Pfau*; in Polish, *Paw*; and in Swedish, *Pao-fogel*.

of the Peacock, to form a master-piece of magnificence, all the colours of heaven and earth; she has selected, mingled, shaded, melted them with her inimitable pencil, and formed an unrivalled picture, where they derive from their mixture and their contrast new brilliancy, and effects of light so sublime, that our art can neither imitate nor describe them.

Such appears the plumage of the Peacock, when at ease he saunters alone in a fine vernal day. But if a female is presented suddenly to his view; if the fires of love, joined to the secret influence of the season, rouse him from his tranquillity, and inspire him with new ardour and new desires; his beauties open and expand, his eyes become animated and expressive, his tuft flutters on his head, and expresses the warmth that stirs within; the long feathers of the tail, rising, display their dazzling richness; the head and neck bending nobly backwards, trace their shadow gracefully on the shining ground, where the sun-beams play in a thousand ways, continually extinguished and renewed, and seem to lend new lustre, more delicious and more enchanting; new colours more variegated and more harmonious; each movement of the bird produces new shades, numberless clusters of waving, fugitive reflections, which ever vary and ever please.

It is then that the Peacock seems to spread out all his beauties, only to delight his female, who
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though denied the rich attire, is captivated with its display; the liveliness which the ardor of love mingles with his gestures, adds new grace to his movements, which are naturally noble and dignified, and which, at this time, are accompanied with a strong hollow murmur expressive of desire*.

But this brilliant plumage, which surpasses the glow of the richest flowers, like them also is subject to decay; and each year, the Peacock sheds his honours †. As if ashamed at the loss of his attire, he avoids being seen in this humiliating condition, and conceals himself in the darkest retreats, till a new spring restores his wonted ornaments, and again introduces him to receive the homage paid to beauty; for it is pretended, that he is really sensible to admiration, and that a soothing and attentive gaze is the most certain means to engage him to display his decorations; but the look of indifference chills his vivacity and makes him close his treasures.

Though the Peacock has been long naturalized in Europe, it is not a native of this quarter of the globe. The East Indies, the climate that produces the sapphire, the ruby, and the topaz, must be considered as the origi-

* "Running forward with a creaking noise." PALLADIUS.

† It loses its feathers with the first fall of the leaves, and recovers them again when the buds burst forth.

ARISTOTLE, *Hist. An.*

XIII

nal country of the most beautiful of birds. Thence it passed into the western parts of Asia, where, according to the express testimony of Theophrastus, quoted by Pliny, it had been introduced from abroad*. But it does not appear to have been carried thither from the eastern part of Asia, or China; for travellers agree, that though very common in the East Indies, it is not indigenous in China, which at least proves it to be a rare bird in that country †.

Ælian informs us, that Greece received this beautiful bird from the Barbarians ‡; who must have been the people of India, since Alexander, who traversed Asia, and was well acquainted with Greece, first met with the Peacock in that country §: and besides, in no region of the globe is the tribe so numerous as in that oriental clime. Mandeslo and Thevenot saw them in profusion in the province of Guzarat; Tavernier, in every part of India, but particularly in the territories of Baroche, Cambaya, and Broudra; Francis Pyrad, in the vicinity of Calicut; the Dutch, on the Malabar coast; Lintscot, in the island of Ceylon; the Author of the Second Voyage to Siam, in the forests on the frontiers of that kingdom, on the side of Cambogia, and near the bank

* "Theophrastus relates, that even in Asia the pigeons and peacocks are of foreign extraction." PLIN. lib. x. 29.

† Navarette, *Description de la Chine*.

‡ *Hist. Anim.* lib. v. 21.

§ *Id. ibid.*

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of the river Meinam; Gentil, at Iva; Gemelli Carreri, in the Calamian islands, lying between the Philippines and Borneo: if to these authorities we add, that in all these countries the Peacocks live in the wild state, and that they are no where else so large*, or so prolific †, we cannot hesitate to conclude that the East Indies is their native abode. That beautiful bird must owe its birth to the luxurious climate where Nature lavishly pours her riches; where gold, and pearls, and gems, and precious stones, are scattered with profusion. This opinion is countenanced by Holy Writ; Peacocks are enumerated among the valuable and rare commodities that were every three years imported by Solomon's fleet; which being fitted out in the Red Sea, and not being able to venture at a distance from the shore, must obviously have drawn its riches either from India, or the eastern coast of Africa. Nor is it probable that the latter was the place that furnished these luxuries; for no traveller has ever seen wild Peacocks in Africa, or the adjacent islands; except at St. Helena, where Admiral Verhoyen shot some that could not be caught. But it is not probable that Solomon's fleet could sail every three years to Madeira, without a mari-

* "The largest Peacocks are found in India."

ÆLIAN, lib. xxvi. 2.

† Peter Martyr, *de Rebus Oceani*, says, that in India the Peacocks lay from twenty to thirty eggs.



Asia the pigeons are
 N. lib. x. 29.

ibid.

ner's compass; where, besides, they could obtain neither gold, nor silver, nor ivory, nor scarce any thing which they might want. I should even imagine that in this island, which is above three hundred leagues from the continent, there were no Peacocks in Solomon's time, and that those found there by the Dutch, had been left by the Portuguese, and had multiplied exceedingly in the wild state; especially as it is said that no venomous creature or voracious animal exists in St. Helena.

Nor can we doubt that the Peacocks which Kolben saw at the Cape of Good Hope, and which, he says, are exactly like those of Europe, though the figure that he gives is widely different *, had the same origin with those at St. Helena, and had been carried thither in some of those European ships which are continually visiting that coast.

The same may be said of those seen by travellers in the kingdom of Congo †, with the turkies, which undoubtedly are not natives of Africa; and of those also that are found on the confines of Angola, in a wood inclosed by a wall, where they are bred for the king of the country ‡. This conjecture is cor-

* *Hist. Gen. des Voyages*, tome v. pl. 24.

† *Voyage de P. Van-Broëk*, in the *Recueil des Voyages qui ont servi à l'établissement de la Compagnie des Indes*, tome x. p. 321.

‡ *Relation de Pigafetta*, p. 92.

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roborated by the testimony of Bosman, who expressly mentions that there are no Peacocks on the Gold Coast, and that the bird taken by de Foquemrog and others for a Peacock, is quite different, and called *Kroon vogel* *.

Besides, the term *African Peacock*, bestowed by most travellers on the *Demoiselle of Numidia* †, is a direct proof that Africa is not the natal region of the Peacock. If they were anciently seen in Lybia, as Eustathius relates, they were certainly transported from India to that country, which is the part of Africa next to Palestine; nor does it appear that they were naturalized in that country, or multiplied fast, since severe laws were passed against killing or wounding them ‡.

We may therefore presume, that Solomon's fleet did not import these rarities from the African coast, but from the shores of Asia, where they abound, living in a state of nature, and multiplying without the assistance of man; and where they are larger and more prolific than in other countries, as is the case with all animals in their congenial climate.

From India they migrated into the western part of Asia. Accordingly we learn from Diodorus Siculus, that they abounded in Ba-

* *Voyage de Guinée*, Lettre xv.

† Labat.—*Voyage de M. de Genes au detroit de Magellan*.

‡ Aldrovandus.

bylon. In Media also they were bred in such numbers, that the bird was called *Avis Medica* *. Philostratus speaks of those of Phasis, which had a blue crest †, and travellers have seen some of that kind in Persia ‡.

From Asia they were transported into Greece, where at first they were so rare as to be exhibited in Athens for thirty years, at the monthly festivals, as an object of curiosity, which drew crowds of spectators from the neighbouring towns §. We cannot fix the date of this event; but we are certain that it was after the return of Alexander from India, and we know that he first stopped at the island of Samos. The conqueror was so delighted with the rich plumage of the Peacocks, that he enacted severe penalties against killing them. But it is very probable that soon after his time, and even before the close of his reign, they were become common; for we learn from the poet Aristophanes, who was contemporary with that hero and survived him, that a single pair brought into Greece had multiplied so rapidly, that they were as numerous as quails; and

* Aldrovandus.

† Idem.

‡ Thevenot, *Voyage du Levant*.

§ “ The Peacock was at Athens shewn for a stated price to both men and women, who were admitted to the spectacle at the feasts of the new moon. Considerable sums were thus collected; and many, through curiosity, came from Lacedæmon and Thessaly.” *ÆLIAN, Hist. Anim. vol. 2.*

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besides, Aristotle, who outlived his pupil only two years, speaks in several parts of his work of Peacocks as well-known birds.

Secondly, That the isle of Samos was the first station of Alexander on his return from India, is probable from its proximity to Asia; and is besides proved by the express testimony of Menodotus *. Some indeed have given a forced interpretation of this passage, and resting on the authority of some very ancient medals of Samos, in which Juno is represented with a Peacock at her feet †, have pretended that Samos was the primitive abode of that bird, from whence it has been dispersed to the east and the west. But if we examine the words of Menodotus, we shall find that they mean no more than that Samos was the first part in Europe where the Peacocks were bred; in the same manner as the Pintadoes, which are well known to be African birds, were seen in Æolia or Ætolia, before they were introduced into the rest of Greece; and especially as the climate of Samos is particularly suited to them ‡, and they lived there in the state

* "There are the Peacocks sacred to Juno, they being first reared in Samos, and thence carried into other countries, as the cocks from Persis, and the Meleagrides from Æolia (or Ætolia)."

ATHENÆUS.

† Some of these are still to be seen, and even medallions which represent the temple of Samos, with Juno and her Peacocks. *TOURNEFORT'S Voyage to the Levant.*

‡ Foreign flocks of Peacocks are said to subsist wild on the island of Samos in the grove of Juno.

VARRO, *de Re Rustica*, lib. iii. 6.



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of nature; and as Aulus Gellius considered those of that island as the most beautiful of all*.

These reasons are more than sufficient to account for the epithet of Samian bird, which some authors have bestowed on the Peacock; but the term can no longer be applied, since Tournefort never mentions the Peacock in his description of that island, and says that it is full of partridges, woodcocks, thrushes, wild-pigeons, turtles, becasigoes, and excellent poultry; and it is not probable that Tournefort would include so distinguished a bird in the generic term *poultry*.

After the Peacock was transplanted from Asia into Greece, it found its way into the south of Europe, and gradually was introduced into France, Germany, Switzerland †, and as far as Sweden, where indeed they are very rare, and require great attention ‡, and even suffer an alteration in their plumage.

Lastly, The Europeans, who by the extent of their commerce and navigation connect the whole inhabited world, have spread them along the African coasts, and adjacent islands; and

* *NoB. Attic.* l. vii. c. 16.

† The Swifs are the only people who have endeavoured to extirpate this beautiful species of bird, and with as much pains as other nations have bestowed in rearing them. The reason is somewhat whimsical; the crest of the Dukes of Austria, against whom they had revolted, was a Peacock's tail.

‡ Linnæus.

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afterwards introduced them into Mexico, Peru, and some of the Antilles *, as St. Domingo and Jamaica, where they now are numerous †, though there were none prior to the discovery of America. The Peacock is a heavy bird, as the ancients well remarked ‡; the shortness of its wings, and the length of its tail, check its aerial course; and as it with difficulty subsists in a northern climate §, it could never migrate into the new world.

The Peacock has scarcely less ardour for the female, or contends with less obstinacy, than the common cock ||. His passions must even be more fiery, if it be true, that when he has only one or two hens, he teazes and fatigues them, and even induces sterility and disturbs the work of generation, by his immoderate use of venery. In this case, the eggs are ejected from the oviduct before they have time to ripen ¶; and, for this reason, he ought to be allowed five or six females **; whereas, when the ordinary cock,

* Histoire des Incas.

† Charlevoix's History of St. Domingo, and Ray's Synopsis of Birds.

‡ "They can neither soar high, nor fly to great distances."

COLUMELLA.

§ "They live sometimes with us, especially in the aviaries of the great, but require attention."

LINNÆUS.

|| Columella de Re Rustica, lib. viii. 11. ¶ Id. Ibid.

** I here give the opinion of the ancients; for intelligent persons whom I have consulted, and who have reared Peacocks in Burgundy, assure me from experience, that the males never fight, and that they require each only one or two females at most. But perhaps this coolness of passion is owing to the nature of the climate.



who can satisfy the wants of fifteen or twenty hens, is reduced to one, he makes her the mother of a numerous brood.

The pea-hens are also of an amorous mould, and when deprived of the males, they toy with each other, and welter in the dust; but the eggs which they lay are then void of the principle of life. This happens commonly in the spring, when the return of soft and genial warmth awakens nature from her torpor, and gives a new stimulus to the appetite, which prompts every animated being to reproduce its species. Hence perhaps the reason why such eggs were termed zephyrian (*ova zephyria*), not because the gentle zephyrs were imagined capable of impregnating them, but because the vernal season is fanned by light airs, and even depicted by the zephyrs*.

I could easily believe that the sight of the male strutting round them, displaying his tail, and shewing every expression of desire, would still more excite them, and make them lay more of these addle eggs; but I will never be persuaded that the caresses, distant gestures, and light flutterings, would effect a real fecundation, without the more intimate union, and the more vigorous compressions of the male. And the pea-hens which some have fancied to be im-

* *Wind-eggs*: is their common name in English; because they want the outer shell, and are flaccid, as if inflated with air. Perhaps this was also the reason of the ancient epithet Zephyrian.

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pregnated by the influence of love glances, must have been covered before, though unobserved*.

These birds, according to Aristotle, attain their full vigour in three years †. Collumella ‡ is of the same opinion, and Pliny repeats the words of Aristotle, with some slight alterations §. Varro fixes the period at two years ||; and people who are well acquainted with these birds inform me, that in our climate the female begins to lay at the end of the year, though the eggs are then certainly addle. But almost all agree that the age of three years is the term when the Peacock has acquired his full growth, and is fit to perform the office of the male; and that the power of procreating is announced by a new and splendid production: this is the long and beautiful feathers of the tail, which they display, as they strut and expand their fan ¶; the surplus nourishment being no longer directed to the growth of the individual, is spent on the reproduction of the species.

The spring is the season when these birds seek to couple **: and if we would forward the union, we must, according to Columella's direc-

* Belon makes the same remark. † Hist. Anim. lib. vi. 9.

‡ De Re Rustica, lib. viii. 11.

§ "The first year it lays one or two eggs, the second four or five, and in the following years not more than twelve." Lib.

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|| Lib. iii. 6. ¶ Pliny, lib. x. 20.

** "About the ides of February, before the month of March."

COLUMELLA.

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tion, give them, every five days, in the morning while fasting, beans slightly roasted*.

The female lays her eggs soon after fecundation; she does not exclude one every day, but only once in three or four days, and according to Aristotle she has but one hatch in the year, which consists in the first of eight eggs, and in the following years of twelve. But this must be understood of those pea-hens that both lay their eggs and rear their young; for if the eggs be removed as fast as they are laid, and are placed under a common hen †, they will, according to Columella, have three hatches in the course of the year; the first of five eggs, the second of four, and the third of two or three. It would seem that in this country they are not so prolific, since they lay scarcely four or five eggs in the year. On the other hand, they appear to be far more prolific in India, where, according to Peter Martyr, they lay twenty or thirty, as I have already noticed. The temperature of a climate has a mighty influence on whatever relates to genera-

• COLUMELLA.

† Aristotle says, that an ordinary hen cannot hatch more than two pea-hens' eggs; but Columella allows five of these eggs in addition to four common eggs. He advises to remove the eggs the tenth day, and substitute an equal number of the same kind recently laid, in order that they may be hatched along with the pea-hen's eggs, which require ten days longer incubation. Lastly, he directs that these be turned every day, if the sitter be unable to do it on account of their bulk, which it is easy to discover by marking the eggs on one side.

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tion, and this is the key to those apparent contradictions which are found between the writings of the ancients and our own observations. In a warm country, the males are more ardent, fight with each other, require more females, and these lay a greater number of eggs; but in a cold country the latter are not so prolific, and the former are calm and indifferent.

If the pea-hen be suffered to follow the bent of instinct, she will lay her eggs in a secret retired spot; the eggs are white, and speckled like those of the turkey-hen, and nearly of the same size. It is asserted that she is very apt to lay in the night, or rather carelessly drop the eggs from the roost on which she is perched; and for this reason, it is advised to spread straw underneath, to prevent their being broken by the fall*.

During the whole time of incubation, the pea-hen anxiously shuns the male, and is particularly careful to conceal her track, when she returns from the nest: for in this species, as in the gallinaceous tribe and many others †, the male burning with lust, and faithless to the intentions of nature, is more earnest in the pursuit of pleasure, than solicitous about the multiplication of the race. If he discovers his mate sitting on her eggs, he breaks them; probably to remove an obstacle to the gratification of his pas-

* Columella, lib. viii. 11. † Aristotle Hist. Anim. lib. vi. 9.

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sions. Some have imagined that it was from the desire of covering them himself*, which would be a very different motive. Natural history will continually be clouded with uncertainties; to remove them, we ought to observe every thing ourselves; but who is able for the task?

The pea-hen sits from twenty-seven to thirty days, more or less, according to the temperature of the climate, and the warmth of the season †. During that time, a sufficient supply of food ought to be set within their reach, that they may not be obliged to stray in search of subsistence, and allow their eggs to cool; and care must be taken not to teaze or disturb them in their nest; for if they perceive that they are discovered, they will be filled with disquietude, abandon their eggs, and begin to make a second hatch, which is not likely to succeed, because of the lateness of the season.

It is said that the pea-hen never hatches all her eggs at once, but as soon as a few chickens emerge, she leaves the nest to lead them about. In this case, the eggs that are left should be set under another hen, or placed in a stove for incubation ‡.

Ælian tells us, that the pea-hen does not sit constantly on her eggs, but sometimes leaves

* Aldrovandus. † Aristotle, lib. vi. 9. and Pliny, lib. x. 50.

‡ Maison Rustique, tome i. p. 138.

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them two days together, which suspends the progress of incubation. But I should imagine that there is some mistake in the text of Ælian, which refers to the hatching, what Aristotle and Pliny mention with regard to the laying, which is really liable to interruptions of two or three days; whereas such interruptions in the sitting seem to be inconsistent with the law of nature observed by all the known species of birds, unless when the heat of the climate approaching that of incubation dispenses with it as unnecessary*.

After the young are hatched, they ought to be left under the mother for twenty-four hours, and then removed to the coop †; Frisch advises them not to be restored to their dam till some days after.

Their first food must be barley-meal, soaked in wine; wheat steeped in water; or even pap boiled, and allowed to cool. Afterwards they may have fresh curd, from which the whey well pressed, mixed with chopped leeks, and green grasshoppers, of which they are very fond, but the legs must be previously removed from these insects ‡. When they are six months old, they will eat wheat, barley, the dregs of cyder and perry, and even crop the tender grass; but that sort of nourishment is not sufficient, though Cælius represents them as *graminivorous*.

As in the case of the Ostrich. † Columella, lib. viii. 11.

Columella, lib. viii. 11.

It is observed that on the first days after hatching, the mother never leads her young to the ordinary nest, or even sits with them twice in the same place; and as they are delicate, and cannot mount on the trees, they are exposed to many accidents. At this time therefore we ought to watch them closely, and discover where the mother resorts, and put the brood in a coop, or in the field in a patch inclosed with hurdles, &c. *

Till they grow stout, the young Peacocks trail their wings †, and make no use of them. In their early essays to fly, the mother takes them every evening one after another on her back, and carries them to the branch on which they are to pass the night. In the morning, she descends before them from the tree, and encourages them by her example to trust themselves to their slender pinions ‡.

A pea-hen, or even a common hen, can breed twenty-five young Peacocks, according to Columella; but only fifteen, according to Palladius: and this last number is even too great for cold countries, where they must be warmed from time to time, and sheltered under the mother's wing.

It is said that the common hen, when she has a hatch of young Peacocks, is so pleased with their beauty, that she grows disgusted with

* Maison Rustique, tome i. p. 138.

† Belon.

‡ Maison Rustique, tome i. p. 139.

* Columella
† Varro, De
‡ Columella

own chickens, and attaches herself to the strangers *. I mention this circumstance not as a fact that is ascertained, but as one that deserves to be inquired into.

As the young Peacocks grow strong, they begin to fight, (especially in warm countries,) and for this reason the ancients, who seem to have bestowed more attention than we in training these birds †, kept them in small separate huts ‡. But the best places for breeding were, according to them, the islets, which are so numerous on the Italian coasts §; for instance, that of Planasia, belonging to the Pisans ||. Such a spot indeed allowed them to follow freely the bent of nature, without danger of escaping, since they are unable to fly to a distance, and cannot swim; and at the same time they had nothing to apprehend from rapacious animals, which were entirely extirpated from the little island. They lived there at ease, without constraint, and without disquietude; they thrived better, and (what was not overlooked by the Romans) their flesh acquired a sweeter relish; and to have them under their eye, and to examine whether their numbers increased or diminished, they accustomed them every day at a stated hour, on the display of a certain signal,

* Columella, lib. viii. 11.

† Id. *ibid.*

‡ Varro, *De Re Rustica*, lib. iii. 6.

§ Columella, *loco citato*.

|| Varro, *loco citato*.

to come round the house, and they threw a few handfuls of grain to draw them together*.

When the brood are a month old, or a little more, the crest begins to shoot, and then they are subject to sickness, as the young turkies in similar circumstances. At this time the parent cock adopts them as his offspring; for before the growth of the crest, he drives them away as superfluous †. They ought not however to be trusted with the old ones before the age of seven months, and they must be accustomed to perch on the roost, that they may not suffer from lying on the ground, on account of the cold damps ‡.

The crest consists of small feathers, of which the shaft is not furnished with webs, but beset with little slender detached threads; the top is formed by a bunch of ordinary feathers united together, and painted with the richest colours.

The number of these small feathers is variable. I have counted twenty-five in a male, and thirty in a female; but I have not examined enough to decide accurately.

The crest is not an inverted cone, as might be supposed; its base, which is uppermost, forms a very extensive ellipse, whose greater axis is in the direction of the head; all the feathers that compose it, have a particular and perceptible

* Columella, *loco citato*.

† Palladius, *De Re Rustica*, lib. i. 28.

‡ Columella.

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motion, by which they approach each other, or recede, at will, and also a general motion, by which the whole crest is sometimes erected, sometimes reclined.

The waving summits of this crest, as well as all the rest of the plumage, are decorated with much more splendid colours in the male than in the female. Besides this circumstance, the cock is discriminated from the hen when three months old, by a little yellow which appears on the tip of the wing; he is afterwards distinguished by his size, by the spur on each leg, by the length of his tail, and the power of expanding it like a fan. Willughby fancies that the Peacock shares that remarkable property with the turkey alone; but in the course of this history we have seen that it belongs also to some grous, to some pigeons, &c.

The tail-feathers, or rather those long coverts that are inserted in the back near the rump, are on a great scale what those of the crest are on a small one. The shaft is equally furnished from its origin to its extremity, with parted filaments of a varying colour, and it ends in a flat vane, decorated with what is called the *eye*, or the *mirror*. This is a brilliant spot, enamelled with the most enchanting colours; yellow, gilded with many shades, green running into blue and bright violet, according to the different positions, and the whole receives additional lustre from the colour of the centre, which is a fine velvet black.

The two feathers in the middle are each four feet and a half long, and extend beyond the rest, the others gradually diminishing as they approach the sides. The crest is permanent, but the tail is cast every year, either entirely or in part, about the end of July, and shoots again in the spring; during which interval the bird is dispirited and seeks retirement.

The predominant colour of the head, throat, neck, and breast is blue, with different reflections of violet, yellow, and lucid green; and by means of these waving shades, nature can spread a greater variety of colouring on the same space.

On each side of the head, there is a protuberance formed by small feathers, which cover the perforation of the external ear.

Peacocks seem to toy with each other by the bill; but on examining them closely, I find that they scratch the head, which is subject to a very nimble sort of lice. These may be seen running over the white skin that encircles the eyes, which must occasion an uneasy feeling. Accordingly, the birds remain very tame and seem pleased when another scratches them.

These birds assume the rule in the yard, and will not suffer the other poultry to feed till they have satisfied their hunger. They eat nearly the same way with the gallinaceous tribe, laying hold of the grain by the point of the bill, and swallowing it whole.

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When they drink, they plunge their bill into the water, and make five or six quick motions with the lower jaw; then raising their head and holding it horizontal, they swallow the water, with which their mouth is filled, and without moving the bill.

Their food is received into the *œsophagus*, where a little above the anterior orifice of the stomach, is placed a glandulous swelling filled with small tubes, which pour out much limpid liquor.

The stomach is clothed on the outside with a great number of muscular fibres.

In one of these birds, which was dissected by Gaspar Bartholin, there were two biliary ducts; but he found only one pancreatic duct, though there are generally two in the feathered tribes.

The *cœcum* was double, and pointing from behind forwards; its length was equal to that of all the other intestines together, and was more capacious*.

The rump is very thick, because in it are inserted all the muscles destined to elevate and expand the tail.

The excrements are commonly figured, and mixed with a little of that white matter which is common to the gallinaceous tribes, and many other birds.

I am informed that they sleep, sometimes hiding their head under their wing, sometimes covering their neck, and leaving the bill exposed.

* Acta Hafniensia, 1673.

Peacocks love cleanliness, and for this reason they are at pains to hide their excrements; not because they are loth that men should derive any benefit from the dung*, which it is said is good for sore eyes, for manure, &c. but doubtless they are not well acquainted with all these properties.

Though they cannot fly much, they are fond of climbing. They generally pass the night on the roots of houses, where they do a great deal of mischief, and on the loftiest trees. From these elevated stations, they often scream; and their cry is universally allowed to be disagreeable, perhaps because it disturbs our sleep, and from which it is pretended that their name is formed in all languages †.

It is said that the female has only one note, which she seldom utters except in the spring, while the male has three. For my own part, I can only distinguish two tones; the one flat like that of the hauthoy, the other sharp, exactly the octave of the former, which resembles more the shrill notes of the trumpet; and I confess that my ear is not hurt by these sounds, any more than my eye by the shape of their legs, and we apply to the Peacocks our false reason

* "Fimum suum resorbere tradantur, invidentes hominum et litatibus." *PLIN.* lib. xxix. 6. Hence the Peacock is said to be envious.

† *Volucres pleraque a suis vocibus appellatæ, ut hæc . . . Upupa, cuculus, ulula, pavo. VARRO de Linguâ Latinâ.*

ings and even our vices, when we suppose that their cry is only a groan extorted by their vanity, as often as they view the clumsiness of their sect.

Theophrastus maintains, that their cries if often reiterated, forebode rain; others, that they foretell it when they scramble higher than ordinary*. Others allege that these cries forebode the death of a neighbour; and lastly, others relate that these birds always wear under the wing a bit of the root of flax, as an amulet to preserve them from witchcraft †. Whatever is much spoken of, is made a subject of silly fables.

Besides the different cries which I have mentioned, the male and female emit a certain dull sound, or smothered cracking, which seems to be formed internally, and which they often repeat, whether they are disturbed or in a state of tranquillity and ease.

Pliny says, that a sympathy has been observed between the pigeons and the Peacocks ‡; and Clearchus tells us of one of the latter which grew so much attached to a young woman, that, having witnessed her death, it could not survive the shock §. But a more natural and better founded friendship is observed between the Turkey and Peacock. These two birds are of the number that raise and display their tail; a circumstance which implies many common pro-

* De Naturâ Rerum.

† Ælian. Hist. Anim. lib. xi. 8.

‡ Plin. Hist. Nat. lib. x. 20.

§ Athenæus, lib. xiii. 30.

perties. Accordingly, they agree better than with the other fowls. It is even said that a Peacock has been seen to copulate with a turkey-hen *; which would shew a great analogy between the two species.

The term of the life of the Peacock is twenty-five years, according to the ancients †; and this determination seems to be well-founded, since the bird is full grown before the end of three years, and the feathered race attain to a greater age than quadrupeds, because their bones are more pliant. But I am surpris'd that Willughby imagines, on the authority of Ælian, that the Peacock lived a complete century, especially as the account of that relator is mingled with many circumstances evidently fabulous ‡.

I have already said, that the Peacock feeds on all sorts of grain, like the gallinaceous tribe. The ancients generally gave it a monthly allowance of a bushel of wheat, weighing about twenty pounds. It is proper to notice that the flower of the elder is hurtful to them §, and that the leaf of the nettle is, according to Franzius, a mortal poison to the young Peacocks.

As in India the Peacocks live in the state of nature, it is usual in that country to hunt them. They can hardly be approached in the day-time, though they are scattered over the

* Belon. † Aristotle, Hist. Anim. vi. 9.—Pliny, x. 20.

‡ Ælian de Nat. Anim. xi. 33.

§ Linnæus.

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fields in numerous flocks; because, as soon as they descry a sportsman, they fly away more speedily than partridges, and conceal themselves in the thickets, where they cannot be pursued. The night therefore is the only proper time for the chase, which, in the vicinity of Cambaya is conducted in the following manner:

The sportsmen get close to the tree where the Peacocks are perched, and present a kind of banner, which supports two burning candles, and is painted with the figures of Peacocks. The Peacock dazzled by the glare, or engaged in admiring the painting, stretches out its neck repeatedly, and again draws it back, and when its head is observed to be entangled in a running knot, placed for the purpose, the hunters immediately draw the cord and secure the bird*.

We have seen that the Greeks much admired the Peacock, but this was only for the beauty of the plumage. The Romans, who carried every luxury to excess, actually feasted on Peacocks flesh. The orator Hortensius was the first who ordered it to be served up at his table †, and his example being followed, this bird came to be sold at a very high price at Rome. The Emperors refined on the luxury of their subjects; and Vitellius and Heliogabalus gloried in filling enormous chargers ‡ with the brains of

* Tavernier. † Varro, *De Re Rustica*, lib. iii. 6.

‡ Among others that called by Vitellius the *Ægis* of Minerva.

Peacocks, the tongues of the *phœnicopterus*, and the livers of the *scarus**, forming insipid dishes, whose whole merit consisted in their destructive expence.—In those times, a flock of an hundred Peacocks could bring a revenue of 60,000 sesterces, three Peacocks being only required of the keeper for each hatch †. This sum, according to the estimation of Gassendi, amounts to 10 or 12,000 livres. Among the Greeks, the cock and hen together cost a thousand *drachmæ*, which corresponds to eighty-seven livres ten sous on the highest valuation, twenty-four livres on the lowest. But the last was undoubtedly reckoned much under value; else the exclamation in Athenæus would have no meaning:—"Is it not madness to rear Peacocks, "when they are as dear as statues ‡?" The price must have greatly fallen towards the beginning of the sixteenth century; since in the "Nouvelle Coutume de Bourbonnois," published in 1521, the Peacock is valued at two sous six deniers money of that time, which Duprè de Saint Maur values at three livres fifteen sous of the present currency. But it would seem that soon after this period the price was advanced; for Bruyere tells us, that in the neighbourhood of Lisieux, where they could easily rear Peacocks with the cyder lees, they bred flocks, which were very profitable, since, being rare in other

* Suetonius. † Varro, *De Re Rusticâ*, lib. iii. 6.

‡ Anaxandrides apud Athenæum, lib. xiv. 25.

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parts of the kingdom, they were usually sent from thence to all the considerable cities, to be served up in splendid entertainments. However, scarce any but young ones are fit to be eaten; for their flesh is naturally dry, and grows hard as they become old. To this quality we must impute the singular property, which appears well ascertained, that their flesh can be kept several years without putrifying*. Yet old ones have been used, though more for show than use; for they were served up decorated with their richest plumes †. This is a well imagined refinement in luxury, and which the industrious elegance of the moderns has added to the extravagant magnificence of the ancients. It was over a Peacock dressed in this way, that our old knights made, on grand occasions, the vow called the *Vow of the Peacock* ‡.

Peacock's feathers were formerly used to make a sort of fans §, and they were formed into crowns like those of laurel, for the *Troubadour* poets. Gesner || saw a web whose woof was silk and gold thread, and the warp Peacocks feathers. Such no doubt was the robe woven with these feathers which Pope Paul III. sent to King Pepin ¶.

* St. Augustine, *de Civitate Dei*, lib. xxi. 4. † Aldrovandus.

‡ Mem. de l'Acad. des Inscript. tome xx. 636. § Frisch.

|| *Traite de Tournois*, par le pere Meneftrier.

¶ Genealogie de Montmorency.

According

According to Aldrovandus, Peacocks' eggs are reckoned by the moderns as improper food; whereas the ancients put them in the first class, and even before those of the goose and common hen *. This contradiction he explains by saying, that they are pleasant to the taste, but pernicious to the health. It remains to be inquired whether the temperature of the climate affects their quality. [A]

* Athenæus.

[A] Specific character of the Peacock, *Pavo Cristatus*:—"Has a compressed crest on its head; with single spurs."



The WHITE PEACOCK.

Climate has no less influence on the plumage of birds than on the fur of animals. We have elsewhere seen, that the hare, the ermine, and most other animals are subject to grow white in cold countries, particularly in the winter season. Here is a species or a variety of Peacocks, which seems to have received similar impressions from the same cause: and the effects are even greater, since the race is permanent; for the whiteness of hares and ermines is merely temporary, and happens only in the winter, like that of the ptarmigan. The colour of the White

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Peacock, on the other hand, is no longer affected by the season or climate, and the eggs hatched even in Italy produced a white brood. The one which Aldrovandus has caused to be engraved, was reared at Bologna; and this circumstance has made him suspect that this variety did not belong peculiarly to cold countries. Yet most naturalists agree in assigning Norway and other northern countries for its native region *. It would seem that it is there wild, for in the winter it travels into Germany, where it is commonly caught in that season †. They are indeed found in countries much farther south, as in France and Italy, but there they are in the domestic state ‡.

Linnæus affirms in general, as I have before said, that Peacocks are averse to reside in Sweden, and he excepts not even the white sort.

It required a long period of time, and a singular concurrence of circumstances, to reconcile a bird, bred in the delicious climates of Asia and India, to the rigours of the northern tracts. If it had not been carried thither, it could not have migrated to these inhospitable countries, either by the north of Asia, or by the north of Europe.

Though the date of this event be not exactly known, I presume that it is not very distant;

* Frisch, and Willughby.

† Frisch.

‡ Aldrovandus. He adds also the Madeira islands, citing *Calamosto de Navigatione*.

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for, on the one hand, I learn from Aldrovandus, Longolius, Scaliger, and Schwenckfeld, that it is not long since White Peacocks were esteemed as rarities; and on the other hand, I have grounds to believe that the Greeks were unacquainted with them, because Aristotle, having spoken in his *Treatise on the Generation of Animals* of the variegated colours of the Peacock, and afterwards of white partridges, white ravens, and white sparrows, takes no notice of White Peacocks.

The moderns add nothing to the history of this sort of Peacocks, except that the young are very delicate and difficult to rear*. It is however likely, that the influence of climate is not confined to the change of plumage alone, but must have operated in some degree on their temperament, instincts, and habits. I am surprised that no naturalist has observed the progress of the alterations, or at least noticed the intimate and latent effects produced. A single discovery of this kind would undoubtedly be more interesting, and tend more to the improvement and extension of natural knowledge, than the minute enumeration of all the feathers of these birds, and the laborious description of all their shades and tints, in the four quarters of the world.

Lastly, though their plumage be entirely white, and particularly the long feathers of the

* Schwenckfeld.

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tail, we can still perceive at their extremities distinct traces of those spangles which formed their finest ornament, so deep was the impression of their primæval colours *! It would be a curious subject to try to revive these colours, and to determine by experiment what length of time, and how many generations would be required, in a suitable climate, such as that of India, to restore them to their original lustre.

* Frisch.

The VARIEGATED PEACOCK.

Frisch supposes that this is produced by the union of the common Peacock with the white kind. It bears indeed on its plumage the impression of this origin; for white is spread on its belly, its wings, and its cheeks. In the rest of the body, it is like the common Peacock, except in the spangles of the tail, which are neither so broad, so round, nor so well defined. All that I can find in authors with respect to the particular history of this bird is, that the young ones are not so delicate in rearing, as those of the White Peacock.

III

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The COMMON PHEASANT*.

Le Faïfan, Buff.

Phasianus Colchicus, Linn. Gmel. &c.

Phasianus, Briff. Frisch, Gesner, &c.

THE name of this bird is alone sufficient to indicate its native country. The Pheasant, or the Bird of Phasis, was confined, it is said, to Colchis, before the expedition of the Argonauts †. That bold body of adventurers saw, in ascending the Phasis, these beautiful birds scattered along its banks; they carried them home to Greece, and in doing so they conferred a richer present than that of the golden fleece.

Even at present the Pheasants of Colchis or Mingrelia, and some other countries bordering on the Caspian, are the finest and largest that are known ‡. From thence they have spread westward through Greece, from the shores of

* In Greek, Φασιανός; in Latin also, *Phasianus*; in Turkish, *Surglan*; in Italian, *Fasiano*; in German, *Fasan*.

† “ Argivâ primum sum transportata carinâ,
“ Ante mihi notum nil, nisi Phasis, erat.”

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‡ Marco Polo affirms, that the countries subject to the Tartars breed the largest Pheasants, and those which have the longest tail.

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the Baltic * to the Cape of Good Hope †, and the island of Madagascar ‡; and eastward, through Media, to the remotest parts of China § and Japan ||, and even into Tartary. I say through Media, for it appears that that country, which is congenial to the nature of birds, and which is stocked with the most excellent poultry, the most beautiful peacocks, &c. has also proved a nursery of Pheasants, and has supplied many other regions ¶. They are exceedingly numerous in Africa, especially on the Slave Coast **, the Gold Coast ††, the Ivory Coast, the country of Iffini ‡‡; the kingdoms of Congo and Angola §§, where the Negroes call them *Galignoles*. They are pretty common in different parts of Europe; in Spain, Italy, especially in the Pope's dominions, the

* Regnard killed one in the forests of Bothnia. See his Voyage to Lapland.

† We perceive no difference between the Pheasants of the Cape of Good Hope and ours. KOLBEN.

‡ *Description de Madagascar par Rennefort*. There is in Madagascar a number of large Pheasants. FLACCOURT, *Histoire de Madagascar*.

§ *Voyages de Gerbillon*. In the Corea we see abundance of pheasants, hens, larks, &c. HAMEL, *Relation de la Corée*.

|| Kœmpfer says that at Japan there are Pheasants of great beauty.

¶ Athenæus relates, that these birds were sent for from Media, being more numerous and of a better kind. ALDROVANDUS.

** Bosman's Description of Guinea.

†† Villault de Bellefond, *Relation des côtes d'Afrique*.

‡‡ Loyer in the *Hist. Gen. des Voyages*.

§§ Pigafetta.

Milanese,

Milanese*, some islands in the Gulph of Naples, in Germany, France, England †; but in the two last countries they are not generally met with. The Authors of the British Zoology assure us that, in the whole extent of Great Britain, there is not a single Wild Pheasant. Sibbald agrees with these naturalists, since he tells us that in Scotland some gentlemen breed these birds in their houses ‡. Boter affirms still more directly, that there are no Pheasants in Ireland §. Linnæus takes no notice of them in the enumeration he has given of the Swedish birds. In the time of Schwenckfeld, they were very rare in Silesia; and it is only twenty years since they were introduced into Prussia ||, though they are very frequent in Bohemia ¶. If they have multiplied in Saxony, it is owing to the attention of the Duke Frederic **, who let loose two hundred in that country, and prohibited their being caught or killed. Gesner, who travelled through the mountains of Switzerland, affirms that he never saw any. It is true, indeed, that Stumpfius asserts the contrary; but it is probable that they may be found in some districts which Gesner had not examined, as is that part which borders on the Milanese territories, where Olina says they are very common

* Olina and Aldrovandus. † History of Harwich.

‡ *Prodromus Historiæ Naturalis Scotiæ.*

§ Willughby.

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Pheasants are far from being plentiful in France. In the northern provinces they are seldom seen, and would perhaps soon die away but for the attention bestowed on the preservation of the royal game. Even in Brie, where some are continually making their escape from their keepers, and where their nests, with eggs, have been found in the extensive forests of that province, so unfavourable is the climate that the number of the wild Pheasants is never observed to increase. We knew an opulent person in Burgundy, who was at the utmost pains and spared no expence in stocking his estate, which lay in Auxois, but without success. I should therefore suspect that Regnard must have been mistaken when he tells us, that he killed two Pheasants in Bothnia*; and Olaus Magnus, who says that they are found in Scandinavia, where they lie under the snow through the winter without any sustenance †. This habit seems to belong rather to the grouse than to the Pheasants; and the name *Gallæ sylvestres*, which Olaus applies, suits better that genus of birds. My conjecture has the more foundation, since neither Linnæus, nor any other accurate observer, mentions seeing real Pheasants in the northern countries. In short, we may suppose, that the name Pheasant has first been given by

* Regnard, *Voyage de Laponie*.

† Quoted by Aldrovandus.

¶ Id.

the natives to the grouse, which are very numerous in the boreal tracts, and afterwards adopted blindly by travellers, and even by compilers, who are equally inattentive in discriminating species.

Since the wings of the Pheasant are short, consequently its flight low and laborious, we may readily conclude, that it could not traverse the immense ocean that divides America from the temperate countries in the Ancient Continent. Accordingly, none have been found in the New World, but only some birds a-kin to them. I speak not of the true Pheasants which are at present common in the plantations of St. Domingo; for these, as well as the peacocks and pintados, were introduced by the Europeans*.

The Pheasant is of the size of the common cock †, and in some respects rivals the peacock in beauty. His figure is as dignified, his deportment as bold, and his plumage almost as resplendent. The colours of the Chinese Pheasant are even brighter; but he has not, like the peacock, the power of displaying his rich plumage, and of elevating the long feathers of his tail. Besides, the Pheasant has neither the crest of the peacock, nor the double tail; of

* *Histoire de l'Isle Espagnole de St. Domingue.*

† Aldrovandus, who has carefully observed and described this bird, says, that he examined one which weighed three pounds and twelve ounces. *libras tres duodecim unciarum*, which some have ignorantly translated, three pounds twelve ounces.

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* *Geminas*
† *Phasianus*
§ *Ibid.*

which the shorter one consists of quills capable of being erected, and the longer one formed of the coverts of these: in general, the Pheasant seems to have been modelled after less slender and less elegant proportions; the body thicker, the neck shorter, the head larger, &c.

The most remarkable traits in its appearance are, the two spots of scarlet in the middle of which the eyes are placed, and the two tufts of feathers of a gold-green, which, in the love season, rise on each side under the ears; for in animals there is almost always, as I have already remarked, a new production, more or less remarkable, which is a sign that the generative faculty is again roused to action. These tufts of feathers are probably what Pliny calls sometimes ears *, sometimes little horns †. A prominence is observed at their base, formed by an *erector* muscle ‡. Besides these, the Pheasant is furnished with feathers at each ear, to close at pleasure the orifice, which is very large §.

The feathers of the tail and rump have their ends heart-shaped, like some of the tail-feathers of the peacock ||.

I shall not here enter into a particular description of the colours of the plumage; I shall only

* *Geminas ex plumâ aures submitunt subriguntque.* Lib. x. 48.

† *Phasianæ corniculis.* Lib. xi. 37.

‡ Aldrovandus.

§ Ibid.

|| Briffon.

observe, that in the female they are much less brilliant than in the male, in whom the reflexions are still more fugitive than in the peacock, and depend not only on the various incidence of the light, but on the junction and position of the feathers: for if any one be taken singly, the green wavings vanish, and we see only a brown or black*. The shafts of the feathers of the neck and the back are of a fine bright yellow, and appear like so many plates of gold †. The coverts under the tail continue diminishing, and terminate in a kind of filaments. The tail consists of eighteen quills, though Schwenckfeld reckons only sixteen; the two middle ones are the longest of all, and they shorten regularly towards the sides. Each leg is furnished with a short pointed spur, which has escaped some designers, and even the engraver of our *Planches Enluminees*, No. 121; the toes are connected by a membrane broader than usual in pulverulent birds ‡, and seems to form the first shade between these and the aquatic tribes; and in fact Aldrovandus observes, that the Pheasants delight in wet places; and he adds, that they are sometimes caught in the marshes in the neighbourhood of Bologna. Olina, another Italian and Le Roi, Lieutenant of Rangers at Versailles have made the same remark. The last-mentioned person informs me, that it is always

* Aldrovandus.

† Ibid.

‡ Ibid.

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† Ibid.

the most watery spots, and along the sides of the pools in the large forests of Brie, that Pheasants lodge which have escaped from the hunters in the vicinity. Though habituated to the society of man, though loaded with his favours, these Pheasants retire as far as possible from all human dwellings; for these birds are very wild, and extremely difficult to tame. It is said, however, that they can be instructed to return at the sound of a whistle*; that is, they can be attracted by this means to their food; but as soon as their appetite is satisfied, they return to their natural mode of life, and forget the hand that fed them. They are stubborn slaves, that will not submit to constraint, who know nothing desirable that can enter into competition with liberty; who seek continually to recover it, and never lose sight of it when opportunity occurs †. The wild ones newly bereaved of freedom become furious; they dart with violence on the companions of their captivity, and strike with their bills, nor do they spare even the peacocks ‡.

* *Journal Economique mois de September 1753.* It is very probable that this was all the attainment of the tame Pheasants, which, according to *Ælian*, were bred in the *menagerie* of the King of India, lib. xviii.

† "Though reared in the house, and hatched under a hen, they never grow domestic, but still retain their rusticity."

LINA.—Which confirms what I have myself observed.

‡ Longolius, *apud Aldrovandum.*

These birds are fond of living in woods that grow on the plains, differing in this respect from the grouse, which inhabit forests that clothe the mountains. They perch on the tops of trees during the night*, sleeping with their head under the wing; their cry, that is the cry of the male, (for the female has none at all,) is intermediate between that of the peacock and the pintado, but more like that of the latter, and therefore far from being agreeable.

Their disposition is so unsocial, that they not only fly from the presence of man, but avoid the company of each other, except in the months of March and April, when the male courts the female. It is then easy to discover them in the woods, because they are betrayed by the loud noise made by the clapping of their wings, which may be heard at a great distance †. The Cock Pheasants are not so ardent as the common cocks. Frisch asserts that, in the wild state, each attaches itself to a single female; but man, who glories in perverting the order of nature to his interest or his whims, has changed the instinct of these birds, by habituating each cock to serve seven hens, and constraining them to rest satisfied with the performance of a single male.

Some have had patience to make all the observations necessary to determine this pro-

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† Olin.

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portion to be the most profitable for breeding*. Several œconomists, however, allow only two females to each male †; and I must confess that this distinction succeeded the best in some trials I have made. But the different combinations must depend on particular circumstances; on the temperature of the climate, the nature of the soil, the quality and quantity of the food, the extent and position of the place for rearing them, and the attention of the keeper, who ought to remove the hen as soon as she has imbibed the quickening influence, and present the females one after another at proper intervals. He should also give the cock during that season buck-wheat and other stimulating aliments, as is usual about the end of winter, when we want to anticipate the period of love.

The Hen Pheasant constructs her nest alone; she selects the darkest corner of her lodging, and forms it with straw, leaves, and other materials; though it appears very rude and unshapely, she prefers it to any other not built by herself; inso- much that if one be prepared for her of a regular construction, she tears it in pieces, and arranges the materials anew in her own way. She breeds but once a year, at least in our climates; she lays twenty eggs ‡ according to some, and forty or fifty according to others, especially if we save

* Journal Economique, Sept. 1753. Also see the article *Maisanderie* in the *Encyclopedie*.

† Frisch.—*Maison Rustique*.

‡ Palladius, *De Re Rustica*.

her the trouble of sitting*. Those, however, which I had occasion to see, never laid more than twelve eggs, and sometimes less, though these were hatched by common hens. They generally lay one every two or three days, and the eggs are much smaller than those of an ordinary hen, and the shell thinner even than those of pigeons. The colour is a greenish-grey, speckled with little brown spots, as Aristotle has well observed †, ranged in a circular zone round the egg. A Hen Pheasant can hatch eighteen.

If we would undertake to raise Pheasants on a great scale, we must for that purpose allot a park of proportional extent, which should be partly laid out in grass, and partly planted with bushes, where these birds may be shaded from the sun, sheltered from rain, and even protected from the assaults of the ravenous tribes. One part of this park ought to be divided into several small patches of ten or twelve yards square, constructed so that each may lodge a cock with his females, and they must be confined either by disabling their wings, or by spreading a net over the little inclosure. Care should be taken not to shut up several cocks together; for they will undoubtedly fight, and perhaps kill each other. We must even contrive that they shall not see

* Journal Economique, Sept. 1753.

† Hist. Anim. lib. vi. 2. Imitated by Pliny, lib. x. 52.

‡ Journal Economique, Sept. 1753.

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or hear each other, for though naturally cold and phlegmatic, their disquietude or jealousy will interrupt or relax their amours. Thus, in some animals, as well as in man, jealousy is not always proportioned to the appetite of love.

Palladius alleges, that the cocks need only be a year old *, and all naturalists agree, that hens are proper for breeding the third year. Sometimes when Pheasants are numerous, it is sufficient to lodge the females in the inclosures, and leave them to the embraces of the wild cocks.

These birds feed on all sorts of grain and herbs. It is even recommended to throw part of the park into a kitchen garden, in which to raise beans, carrots, potatoes, onions, lettuces, parsnips, and especially the two last, of which they are remarkably fond. It is also said that they love acorns, the berries of the white thorn, and seed of wormwood †; but the food best adapted to them is wheat mixed with ants eggs. Some advise not to mix ants themselves, lest they take a dislike to the eggs; but Edmond King recommends the ants themselves, and affirms that these insects afford them the most salutary nourishment, and can even restore them when they are sickly and drooping; and that instead of these, we may substitute even grasshoppers, ear-wigs, and millepedes. The English author, whom I have just quoted, assures us, that he lost many Phea-

* Journal Economique, Sept. 1753.

† Gerbillon, *Voyage de la Chine & de la Tartarie*.

fants before he learnt this fact, but that after he attended to that circumstance, not one died of those which he was breeding*. But whatever sort of food we give them, it must be offered sparingly, not to make them too fat; for corpulence blunts the ardor of the cock, weakens the prolific powers of the hen, and makes her lay eggs with soft shells and easily broken.

The time of incubation is from twenty to twenty-five days, according to most authors and my own observation †. Palladius fixes it at thirty; but this is a mistake which ought not to have been adopted in the *Maison Rustique*; for in the warm climate of Italy, the Pheasants could not require so long time to hatch, and therefore instead of *trigesimus*, we ought to read *vigesimus*.

We ought to keep the sitting-hen in a place remote from noise and somewhat under ground, so as not to be affected by the variations of the weather, or exposed to the stroke of thunder.

As soon as the young Pheasants leave the shell, they begin to run like all the gallinaceous tribe. For the first twenty-four hours, food is generally withheld from them; after that, they are put with the mother into a crib, and carried out every day to the fields, into the pasture grounds where ant-hills abounds. This ought

* Philosophical Transactions, No. 23.

† Gefner, Schwenckfeld.—Journal Economique, & le Roi.

to be covered with deals, which may be removed or replaced as occasion requires. It ought also to have a division near one of the ends, where the mother should be confined with bars so wide afunder however as to allow the chickens to go out and return as often as they chuse. The clucking of the imprisoned mother, and the necessity of being frequently warmed, will constantly bring them back and prevent them from fauntering too far. It is usual to join together three or four hatches of nearly the same age, so as to form a single family, which may be reared by the same mother.

They are fed at first, like all young chicks, with a mixture of hard eggs, crumbs of bread, and lettuce leaves mixed together, and with an addition of the eggs of meadow ants. But at this tender age two precautions must be carefully observed. They must not be allowed to drink at all, nor be carried abroad till the dew is entirely gone, for humidity of every kind is hurtful to them. We may notice by the way, that this is one of the reasons why hatches of wild Pheasants seldom succeed in France; for, as I have already remarked, these birds prefer the fresh verdant places, and in such situations the young can hardly survive the damps. The second point to be attended to is, that their food should be given frequently and in small quantities, beginning as soon as day break, and always mixing with it ants eggs.

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In the second month, more substantial nourishment may be given; eggs of the wood ants, turkey beans, wheat, barley, millet, ground beans; and the intervals between the meals may be gradually enlarged.

At this time they begin to be subject to vermin. To prevent that disorder, most modern writers advise us to clean the crib, or even to lay it aside altogether, except the small roof which serves to shelter them. Olin recommends a plan proposed by Aristotle, which seems to me better contrived and more suitable to the nature of these birds. They are in the number of those that welter in the dust, and when that gratification is withheld, they languish and die*. Olin directs small heaps of dry earth or very fine sand to be laid near them, in which they may tumble and rid themselves of the painful itching occasioned by the insects.

We must also be very attentive in giving them clean water, and in often renewing it, else they will be in danger of contracting the pip, of which there is scarcely any remedy, according to the moderns; though Palladius advises to remove it as in common chickens, and to rub the bill with garlick bruised with tar.

The third month is attended with new diseases. The tail feathers then drop and others appear, which is a sort of crisis to them, as well as to

* ARIST. Hist. Anim. lib. v. 31.

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the Peacocks. But ants eggs are still a resource ; they hasten the trying moment, and lessen the danger, provided we do not give them too much, for the excess is pernicious. In proportion as the young Pheasants grow up, their regimen becomes the more like that of the adults ; and at the end of the third month, they may be let loose in the place intended to be stocked. But such is the effect of domestication on animals that have lived some time in that state, that even those which, like the Pheasants, have an invincible attachment to liberty, cannot be restored to it but by imperceptible degrees ; in the same manner as a good stomach that has been weakened with watery elements, cannot at once recover its tone, so as to digest rich food. We must first carry the crib which contains the brood to the field where the colony is to be dispersed ; we must give them what food they like best, but never in the same spot ; and we must diminish the quantity every day, and thus by degrees constrain them to provide for themselves, and to become acquainted with the country. When they are able to procure subsistence, they should be resigned to liberty and nature. They will soon grow as wild as those bred in the woods ; except only that they will still retain a sort of affection for those spots where they were fostered in their infancy.

Man, encouraged by his success in changing the instinct of the Cock Pheasant, and in reconciling

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ciling it to the society of a number of females, has tried also to effect another violence, to make it breed with a foreign species; and the experiments have in some degree succeeded, though they required great care and attention*. A young Cock Pheasant which had never copulated, was shut in a close place where but a faint light glimmered through the roof: some young pullets were selected, whose plumage resembled the most that of the Pheasant, and were put in a crib adjoining that of the Cock Pheasant, and separated from it only by a grate, of which the ribs were so close as to admit no more than the head and neck of these birds. The Cock Pheasant was thus accustomed to see these females, and even to live with them, because the food was thrown into the crib only. When they had grown familiar and the season of love approached, both the cock and hens were fed on heating aliments, to provoke their desires; and after they discovered an inclination to couple, the grate which parts them was removed. It sometimes happened, that the Cock Pheasant, faithful to nature and indignant at the insult offered him, abused the hens, and even killed the first he met with: but if his rage did not subside, he was on the one hand mollified by touching his bill

* The Wild Pheasants never tread the hens which they meet; not but they sometimes make advances, only the hens will never permit them to proceed. I owe this, among many other observations, to M. Le Roi, Lieutenant des Chasses at Versailles.

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with a red-hot iron, and on the other, stimulated by the application of proper fomentations. At last his appetites however growing every day more fiery, and nature constantly counteracting herself, he at last copulated with the hens, which in consequence laid eggs dotted with black, like those of the Pheasant, but much larger; and they produced hybrids partaking the properties of both species, and, according to some, more delicate, and even better flavoured than the true sort, but incapable, it is said, of propagating their kind: yet Longolius asserts, that the females of this kind which couple with their sire, produce real Pheasants. Care has also been taken to give the Cock Pheasant only virgin hens; whether the more to incite the males, (for man judges of all creatures from himself,) or because the repetition of the experiment on the same subjects is said to occasion the breed to degenerate.

It is pretended that the Pheasant is a stupid bird, and imagines itself safe when its head is concealed; which has been alleged of many other birds that heedlessly fall into all sorts of snares. When hunted by a pointer, and met, it stands still, and looks steadily at the dog, so that the sportsman can take his aim at leisure. To decoy it, we need only present its own figure, or a red rag on a white sheet. It is caught also by setting gins in the tracks which it treads in the morning to drink. It is also chased by the

falcon,

falcon, and such as are taken this way, are said to be more delicate and delicious than ordinary*. Autumn is the season when they are fattest. The young ones may be fattened like other poultry, only in introducing the little ball into the throat, care should be taken to prevent the tongue from being pushed backwards, which would infallibly kill the bird.

A fat young Pheasant is a most exquisite morsel, and at the same time very wholesome food. Accordingly this luxury has been always reserved for the tables of the rich, and the whim of Heliogabalus of feeding his lions on Pheasants, has been regarded as the most wanton profusion.

According to Olin and Le Roi, this bird, like the common hens, lives about six or seven years; but the opinion that the age may be discovered from the number of the cross bars on its tail, is void of foundation. [A]

* Aldrovandus.

[A] Specific character of the Pheasant, *Phasianus Colchicus*. — "It is rufous, its head blue, its tail wedge-shaped, its cheeks marked with papillæ."

The WHITE PHEASANT.

Phasianus Colchicus Albus, Linn.

We are not sufficiently acquainted with the history of this variety, to determine the cau

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to which we ought to refer the whiteness of its plumage: analogy would lead us to suppose it to be the effect of cold, as in the case of the White Peacock. It is true, that the Pheasant has not been introduced so far into the northern regions as the Peacock; but the white is also not so pure, since, according to Brisson, it has spots of deep violet on its neck, and other rusty spots on the back; and according to Olin, the males have sometimes the full colours of ordinary Pheasants on the head and neck. This last author asserts, that the White Pheasants come from Flanders; but in Flanders they undoubtedly say, that they come still farther north. He subjoins that the females are of a purer white than the males; and I have myself observed that property to obtain in the Pheasants.

The VARIEGATED PHEASANT.

Phasianus Colchicus Varius, Linn.

As the White Peacock, when coupled with the common sort, produces the variegated kind, we may suppose that the White and the common Pheasant would breed the variety here mentioned; especially as it has the shape and even the size of the ordinary sort, and its plumage, the ground of which is white, is sprinkled with spots that have all the usual colours.

Frisch observes, that the variegated Pheasant is not proper for propagation.

The COCQUAR, OR BASTARD PHEASANT.

Phasianus Colchicus Hybridus, Linn.

The Hybridal Pheasant, Lath.

The Bird Pheasant, Mayes.

The name which Frisch gives to this variety shews that he considered it as bred between the Cock Pheasant and the common hen. It resembles indeed the Pheasant, by the red circle round its eyes, and its long tail; and it approaches the common cock, by the dull and homely feathers of its plumage. It is also smaller than the ordinary Pheasant, and like the other Hybrids it is incapable of producing its species.

Frisch tells us, that many of these are raised in Germany, being profitable; and that they are excellent food.

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FOREIGN BIRDS

ANALOGOUS TO THE PHEASANT.

I SHALL not range under this denomination, several birds on which most travellers or naturalists have bestowed the name of Pheasant, but which, after a close investigation, we have determined to belong to very different tribes.— Such as, 1. The Pheasant of the Antilles of Briffon, which is that of the island Kayriouacou of Father Tertre, and which has longer legs and a shorter tail than the Pheasant. 2. Briffon's crowned Pheasant of the Indies, which differs from the Pheasant by its general form, and by the shape of its bill, its instincts and habits, its long wings and short tail, and which, if we except its size, seems to resemble much the pigeons. 3. The American bird, which we have directed to be figured under the name of *The Crested Pheasant of Cayenne*, because it was sent to us under that name; but which appears to be distinguished from the Pheasant by its bulk, its carriage, its long slender neck, its small head, its long wings, &c. 4. The *Hocco Pheasant* of Guiana, which is by no means a Pheasant, as the comparison of the figures alone suffices to shew. 5. All the other *Hoccos* of Ame-

rica, which Brisson and Barrere, and others who have been misled by their systems, have referred to the genus of the Pheasant; though they differ in many respects, and even in some properties that have been received as generic characters.

I.

The PAINTED PHEASANT.

Faisan Doré, ou Le Tricolor Huppé de la Chine, Buff.

Phasianus Pictus, Linn. and Gmel.

Phasianus Sanguineus, Klein.

Phasianus Aureus Sinensis, Briss.

Gold Faisan, Gunth.

Some authors, who have applied to this bird the name of *Red Pheasant*, would have had equal reason to have called it the *Blue Pheasant*, and the term *Golden Pheasant* is equally inadequate to denote the plumage, which is enriched by the lustre of all these three colours.

It may be considered as a variety of the ordinary species, whose garb sparkles with the decorations of a happier clime. They are two branches of the same family, which, though long separated, recal their common descent, and can still intermingle, and breed with each other. But it must be confessed that their progeny partakes somewhat of the sterility of Hybrids; which

proved

proves the antiquity of the partition of the paternal house.

The Painted Pheasant is smaller than the ordinary Pheasant. The remarkable beauty of this bird has occasioned its being so much bred in our pheasant walks. The predominant colours of its plumage are red, gold, yellow, and blue; it has long beautiful feathers on the head, which can be erected at pleasure; its iris, bill, legs, and nails, are yellow; the tail is proportionally longer than that of the common Pheasant, more mottled, and in general of a brighter plumage; above the feathers of the tail others are spread long and narrow, and of a scarlet colour, with a yellow shaft; the eyes are not encircled with red skin, like the European Pheasant: in a word it appears to have been deeply marked by the impresson of the climate.

The female of the Painted Pheasant is somewhat smaller than the male, and its tail is not so long; the colours of its plumage are very ordinary, and even inferior to those of the common kind; but sometimes they acquire in time the beauty of the male. In England, one belonging to Lady Essex changed, in the space of six years, its mean dusky colour into the rich lustre of the male; so as not to be distinguished, except by the appearance of the eyes and the length of the tail. Intelligent persons who have had opportunities of observing these birds, in-

form me, that this change of colour takes place in most females, and begins at four years old, when males take a dislike to them and treat them harshly. That then those long narrow feathers, which in the male lie over the tail, begin to appear. And in a word, as they grow older, they become the more like the males, which in a certain degree happens in all animals.

Edwards tells us, that he saw at the Duke of Leeds's, a common Hen Pheasant, whose plumage had in the same manner become like that of the male. He adds, that such changes of colours seldom take place except among birds that live in the domestic state.

The eggs of the Painted Pheasant are very like those of the Pintado; they are proportionally smaller than those of the domestic Hen, and more reddish than those of the common Pheasant.

Sir Hans Sloane kept a male about fifteen years: it would therefore seem that this bird is hardy, since it lived so long out of its native abode. It is soon reconciled to our climate, and multiplies fast; it breeds even with the European Pheasant. Le Roi, Lieutenant of the Rangers at Versailles, put one of them to a Cock Pheasant of this country, and obtained two Cock Pheasants very like the common kind, but the plumage had a dirty cast, and only a few yellow feathers on the head like those of the Painted Pheasant:

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Pheasant: and these two young males being paired with European hen-pheasants, one succeeded the second year, and a hen-pheasant was hatched, which could never be made to breed. The two Cocks produced no more, and the fourth year made their elopement.

It is probable that the Painted Pheasant is that elegant pheasant whose plumes sell higher in China than the pheasant itself; and also the same with what *Marco Polo* admired in one of his travels to China, whose tail was two or three feet long. [A]

[A] Specific character of the Painted Pheasant, *Phasianus pictus*:—" Its crest is yellow, its breast saffron, its secondary wing-quills blue, its tail wedge-shaped."

II.

The BLACK-AND-WHITE CHINA PHEASANT.

Phasianus Nyctemerus, Linn. and Gmel.

Phasianus Albus Sinensis, Briss. and Klein.

Silber Fasan, Gunth.

The Pencilled Pheasant, Lath.

The figure in the *Planches Enluminées* was taken from a stuffed specimen; and I doubt not, but that of Edwards, which was drawn from the life, and retouched at leisure, the minute

parts being added from the dead subject, represents this Pheasant more exactly, and gives a better idea of its air and port, &c.

It is easy to see, from the bare inspection of the figure, that it is a variety of the Pheasant, having the general proportions of the Painted Chinese Pheasant, but larger, and exceeding even the European kind. It resembles the last in a remarkable property, having a red border round the eyes, which is even broader and of greater extent; for it falls on each side below the under mandible, and at the same time rises like a double comb above the upper mandible.

The female is rather smaller than the male, and differs much in colour. It has neither the upper-side of the body white, nor under-side of a fine black, with purple reflexions. In no part of its plumage is there any white, except a single speck below its eyes; the rest is of a brown red, more or less deep, except under the belly and on the lateral feathers of the tail, where there are black transverse bars on a gray ground. In every other respect there is less difference between the sexes in this than in any other Pheasant: the female has, like the male, a tuft on its head, its eyes are encircled with a red border, and its legs are of the same colour.

Since no naturalist, or traveller, has given the least hint concerning the original abode of the

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the Black-and-white Pheasant, we are obliged to form conjectures. I am inclined to suppose that, as the Pheasant of Georgia, having migrated towards the east, and having fixed its residence in the southern or temperate provinces of China, has become the Painted Pheasant; so the White Pheasant, which is an inhabitant of our cold climates, or that of Tartary, having travelled into the northern provinces of China, has become the pencilled kind: that it has there grown to a greater size than the original Pheasant, or that of Georgia; because it has found in these provinces food more plentiful and better suited to its nature: but that it betrays the marks of a new climate in its air, port, and external form; in all which it resembles the Painted Pheasant; but retains of the original Pheasant the red orbits, which have been even expanded from the same causes undoubtedly that promoted the growth of its body, and gave it a superiority over the ordinary Pheasant. [A]

[A] Specific character of the Pencilled Pheasant, *Phasianus Nisibemerus*:—"It is white, its crest and belly black, its tail wedge-shaped."

III. The

III.

The ARGUS, OR LUEN.

Phasianus Argus, Linn. and Gmel.*The Argus Pheasant*, Lath.

In the north of China, another sort of Pheasant has been found, the wings and tail of which are sprinkled with a multitude of round spots like eyes; whence it has received the name of *Argus*. The two feathers in the middle of the tail are very long, and project much beyond the rest; it is of the size of a turkey; its head is covered with a double crest, which lies backwards*.

* In the Philosophical Transactions, vol. LV. p. 88, for 1766, is a very full description of this bird, accompanied with a good engraving, framed by Mr. Edwards from a drawing sent from China.

IV. The

IV.

The NAPAUL, or HORNED PHEASANT.

Meleagris Satyra, Linn.*Penelope Satyra*, Gmel.*Phasianus Cornutus*, Briss.*The Horned Pheasant*, Lath.

Edwards, to whom we are indebted for our acquaintance with this uncommon bird, ranges it among the turkies, on account of the fleshy excrescences on the head, and yet he has given it the name of Horned Pheasant. I should suppose that it is more like the pheasant than the turkey: for these protuberances are by no means peculiar to the turkey; they belong also to the cock, the pintado, the royal bird, the cassowary, and many others in both continents; nor are they even withheld from the pheasant, since we may regard the broad circle of red skin that surrounds the eyes, as nearly of the same nature; and in the Pencilled Pheasant of China, this really forms the double comb on the bill, and the barbils under it. If we add, that the Napaul is an inhabitant of the congenial climate of pheasants, since it was sent to Dr. Mead from Bengal; that in its bill, its feet, its legs, its wings, and its general form, it was like the pheasant; we shall be convinced that

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that it is more natural to class it with the pheasants, than with an American bird such as the turkey.

The Napaul, or Horned Pheasant, is so called because of two protuberances which grow from its head like horns, are of a blue colour, a cylindrical shape, blunt at their ends, reclined backwards, and consist of a substance resembling callous flesh. It has not that round circle about its eyes which occurs in the pheasants, and is sometimes dotted with black; the space which surrounds the eyes, is shaded with black hairs, like feathers. Under this space, and from the bottom of the lower mandible, grows a kind of gorget consisting of loose skin, which falls down and floats freely on the throat and the upper part of the neck: this gorget is black in the middle, and is sprinkled with a few straggling hairs of the same colour. It is marked with wrinkles; so that it appears to admit of extension in the living animal, and there is reason to suppose that it can be inflated or contracted at pleasure. The lateral parts are blue, with some spots of orange, and without any hair on the outer surface; but the inside, which applies to the neck, is shaded with little black feathers, as well as that part of the neck which it covers. The crown of the head is red, the fore-part of the body reddish, and the hind-part of a dusky colour. Over the whole bird, including even the tail and the wings, we per-

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ceive white spots, furrounded with black, and dispersed with considerable regularity: these spots are round on the fore-part, and oblong, or shaped like tears, on the hind-part, with the point turned towards the head. The wings scarcely reach beyond the origin of the tail; from which we may conclude that it is a heavy bird. The length of the tail could not be determined by Edwards, for in the original drawing it is represented as being partly worn off. [A]

[A] Specific character of the Horned Pheasant, *Penelope Satyra*.
 —“ It has a pair of horns on its head; its body is red, with spang-
 “ ling points.”

V.

The K A T R A C A.

Phasianus Motmot, Linn. and Gmel.

Phasianus Guianensis, Briff.

The Motmot Pheasant, Lath.

Though there are no true pheasants in America, as we have already established, yet among the multitude of birds that inhabit that vast continent, some possess the properties of that tribe in a greater or less degree. The Katraca approaches the nearest, and may be considered

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as the representative of the pheasant in the New World. Its general form, its bill, which is slightly hooked, its eyes, which are encircled with red orbits, and its tail, which is remarkable for its length, are all characters which prove it to be of a congenerous kind. At the same time, as it is a native of a distant climate, of even a different world, and as it is uncertain whether it would breed with the European pheasants, I range it in this place after the Chinese sort, which certainly couple with ours. Its history is totally unknown to us. We retain the name *Katraca*, which, according to Father Feuillée, is the name it has in Mexico. [A]

[A] Specific character of the *Phasianus Motmor*.—"It is brown, below tawny, its tail wedge-shaped, its lateral tail-quills rufous."

FOREIGN BIRDS

THAT SEEM RELATED TO THE PEACOCK
AND PHEASANT.

* I range under this vague title, some foreign birds, which have not been described with sufficient accuracy for us to assign their precise place.

I.

The CHINQUIS.

Pavo Tibetanus, Linn. Gmel. and Briff.
The Tibet Peacock, Lath.

The name *Chinquis* is formed from the Chinese word *chin-tchien-kbi*. The bird is the tenth species of the genus of Pheasant in Brisson's system. It is found in Thibet, whence that author has called it the *Tibet Peacock*. It is as large as the pintado; the iris is yellow, the bill black-coloured, the feet gray, the ground of the plumage cinereous, variegated with black lines and white points. But its chief and distinguishing ornament is, the large round spots of brilliant blue, changing into violet and gold; read, one by one, on the feathers of the back and

and the coverts of the wings; two and two, on the quills of the wings; and four and four, on the long coverts of the tail, of which the two middle ones are the longest; the lateral perpetually diminish.

We are totally unacquainted with its history; we are not even informed whether it expands its fine spangled plumes into a fan.

We must not confound the Chinquis with the Kinki, or Golden Hen of China, which is mentioned in the narrations of Navarette, Trigault, and du Halde; and which, as far as we can judge from the imperfect accounts given of it, is nothing but the Painted Pheasant*. [A]

* Abbe Prevot. *Hist. Gen. des Voyages.*

[A] Specific character of the *Pavo Tibetanus*:—"It is cinereous, striated with blackish; its head somewhat crested with two spurs."

II.

The SPICIFERÆ.

Pavo Muticus, Linn. and Gmel.

Pavo Japonensis, Briff.

The Japan Peacock, Lath.

The Japan Peacock is the name given by Adrovanus to what is referred to in the eighth species of Pheasant by Brisson; and both

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these authors admit, that this bird resembles our peacock only by the feet and tail.

It has a spike-shaped tuft on its head; for which reason I term it *spicifere*. This tuft is about four inches high, and appears enamelled with green and blue; the bill is of an ash-colour, longer and more slender than that of the Peacock; the iris is yellow, and the orbits red, as in the Pheasant; the tail-feathers are fewer, their colour deeper, and their spangles broader, but glowing with the same tints as in the European Peacock. The distribution of the colours forms on the breast, the back, and that part of the wings next the back, a kind of scales which give different reflexions in different places; blue on the part of the wings next the back; blue and green on the back; blue, green, and gold-colour on the breast: the other quills of the wing are green in the middle through their whole length, then yellowish, and run into black at their extremity: the crown of the head, and the arch of the neck, are covered with blue spots mixed with white on a greenish ground.

Such is nearly the description which Aldrovandus has given of the male, from a painted figure sent by the Emperor of Japan to the Pope. He does not inform us whether it displays its tail like our Peacock: but it is certainly

not spread in Aldrovandus' figure; nor has it any spurs on the legs, though that author has not omitted them in the engraving of the Common Peacock, which is placed opposite to serve for comparison.

According to Aldrovandus, the female is smaller than the male; has the same colours on the head, neck, breast, and wings; but the under-side of its body is black, and the coverts of the rump, which are much shorter than the quills of the tail, are decorated with four or five spangles of considerable breadth in proportion to the size of the quills: green is the predominant colour in the tail, the feathers are edged with blue, and their shafts are white.—This bird seems to be much akin to the bird which Koempfer, in his History of Japan, mentions under the name of Pheasant*. [A]

* " There is at Japan a kind of Pheasants distinguished by the
 " diversity of their colours, by the brilliancy of their feathers,
 " and by the beauty of their tail, which is as long as half a man's
 " height, which, by this mixture and charming variety of the
 " richest colours, particularly of gold and azure, yields in no re-
 " spect to that of the Peacock." KOEMPFER.

[A] Specific character of the *Pavo Muticus*: " The crest
 " on its head is awl-shaped; no spurs."

III.

The EPERONNIER.

Pavo Bicalcaratus, Linn. and Gmel.

Pavo Sinenfis, Brisf.

The Peacock Pheasant, Edw.

The Iris Pheasant, Lath.

This bird is hardly known, except from the figure and description which Edwards published of the male and female, made from the living subject.

At first sight the male seems to bear some analogy to the Pheasant and Peacock: like them it has a long tail, decorated with spangles, as in the Peacock. And some naturalists, abiding by the first impression, have ranged it with the Pheasants*. But though from the consideration of these exterior appearances, Edwards has been induced to retain the name of Peacock-pheasant, he was convinced, on a closer inspection, that it did not belong to the Pheasant kind: because, 1. The long feathers of the tail are round, and not pointed at the end; 2. They are straight throughout, and not arched back; 3. They do not make an inverted gutter by the bending back of their webs as in the Phea-

* Klein and Brisson.

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fant; 4. It does not walk with its tail raised and recurved as in that bird.

Still less does it belong to the Peacock kind, from which it differs in the carriage of its tail, in the disposition and number of the quills that compose it. It is distinguished too by other properties; its head and neck are thick, its tail does not rise and spread like the Peacock's*, and instead of a tuft, it has only a sort of flat crest formed by the feathers on the top of the head, which bristle and stretch towards a point somewhat projecting; and lastly, it has a double spur on each leg, a singular character, from which I have denominated the bird †.

These external differences, which undoubtedly involve many others which are more concealed, would seem a sufficient reason to every sensible man, who is not prejudiced by systems for excluding it from the Peacocks and Pheasants; though like these, its toes are parted, its feet naked, its legs covered with feathers as far as the heel, the bill fashioned into a curved comb, the tail long, and the head without comb membrane. A person who sticks rigidly to a system, could not fail to range it with the Peacock or the Pheasant, since it possesses all the

* Edwards never says that this bird displays its tail: I therefore infer the negative, since if the expansion had taken place, that intelligent naturalist would have observed it and mentioned it.

† *Eperonnier*, from *Eperon*, a spur.

tributes of that genus; but must the historian, exempt from prejudice and unfettered by forms, recognise it as the Peacock of Nature?

In vain it will be urged, that since the principal characters of this bird are the same with those of the Pheasant, the little variations ought not to seclude it from that arrangement; for I may still ask, who has a right to fix these principal characters? to decide, for instance, that the negative attribute of having neither crest nor membrane is more essential than the shape or the size? and to pronounce that all birds which resemble each other in characters arbitrarily selected, must also agree in their true properties?

In laying aside the name of Chinese Peacock, I have acted conformably to the testimony of travellers, who assure us, that through the whole extent of that vast country there are no Peacocks but such as have been introduced from abroad*.

In this bird the iris is yellow, and also the space between the bottom of the bill and the eye; the upper mandible red; the lower mandible of deep brown, and the feet of a dirty brown; the plumage is exceedingly beautiful; the tail, as I have already said, is sprinkled with oval spangles, and is of a fine purple colour with reflections of blue, green, and gold. The effect of these angles, or mirrors, is the more striking, as they

* Navarette, *Description de la China*.

are defined and distinguished from the ground by a double circle, the one black and the other dull orange. Each quill of the tail has two of these mirrors clustered together, the shaft passing between them. However, as the tail contains much fewer quills than that of the Peacock, it is much less loaded with spangles; but to compensate this, it has a very great number on its back and wings, where the Peacock has none: those on the wings are round; and as the ground colour of the plumage is brown, it resembles a sable richly strewed with sapphires, opals, emeralds, and topazes. The greater quills of the wing are not decorated with spangles, all the rest have each only one; and their colours, whether in the wings or in the tail, do not penetrate to the other surface, which is of an uniform dull cast.

The male exceeds the size of an ordinary Pheasant; and the female is a third smaller and appears more lively and active. As in the male, its iris is yellow; but there is no red on its bill, and its tail is much smaller. And though in the female of this bird the colours are more like those of the male, than in the Peacocks or Pheasants, they are more faint and dull, and have not that lustre and those luminous undulations which produce so charming an effect in the spangles of the male.

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This bird was alive last year at London, and Sir — Codrington sent coloured drawings of it to the younger Daubenton, from which our figures were taken. [A]

[A] Specific character of the *Pavo Bicalcaratus*: "It is brown; its head somewhat crested; two spurs."

The H O C C O S.

ALL the birds known under the general term Hocco, are strangers to Europe; they belong to the warmer parts of America. And the various names bestowed by different Savages, each in his own jargon, have contributed, no less than the multiplied epithets imposed by nomenclators, to introduce confusion. I shall endeavour, as far as the poverty of observation will permit, to dispel the chaos, and reduce the nominal to real species.

I.

The HOCCO, *properly so called.*

Crax-Alector, Linn. and Gmel.

Crax Guianensis, Briss.

Mituporanga, Ray.

The Indian Cock, Pitfield.

The Peacock Pheasant of Guiana, Bancr.

The Crested Curassow, Lath. Brown, and Sloane:

Under this species I range not only the *Mitou* and the *Mitou-poranga* of Marcgrave, which



which that author considered as of the same kind, the Indian cock of the Academicians and of many others, the *Mutou* or *Moytou* of Laët, the *Temocholli* of the Mexicans, and their *Tepetototl* or mountain-bird, the *Quirizao* or *Cureffo* of Jamaica, the *Pocs* of Frisch, the *Hocco* of Cayenne in Barrere's system, the *Hocco* of Guiana, or the twelfth Pheasant in Brisson's; but I also refer to the same division, as varieties, the *Hocco* of Brazil, and even Albin's Red Hen of Peru*, or Brisson's eleventh species of Pheasant, the *Hocco* of Peru, the *Coxclissi* of Fernandez, and sixteenth Pheasant in Brisson's system. My reason for this arrangement is, that this multitude of names is applied to birds having many common characters, distinguished only by some slight variations in the disposition of the colours, in the fashion of the bill, and in some other circumstances, which, in the same species, are affected by the age, sex, and climate; and these diversities are the more to be expected in a species like the present, which is so easily tamed, and has actually been tamed in some provinces, and consequently must partake, in some degree, of the changes to which domestic animals are subjected †.

* *Albin*. "It is of the same size and figure with the Caraffow hen, and appears to be of the same species." Thus speaks Albin, who had the advantage of delineating the two birds from the life.

† Sir Hans Sloane says, that their plumage is variegated in different ways, like that of common hens.

The Academicians had heard that their Indian cock was brought from Africa, where it was called *Ano*; but as Marcgrave and several other observers inform us that it is a native of Brazil, and since we learn from a comparison of the most accurate descriptions and figures, that its wings are short and its flight laborious, we can hardly be persuaded that it could traverse the immense stretch of ocean that divides the shores of Africa and Brazil. It is much more natural to suppose that the subjects dissected by the Academicians, if they were really brought from Africa, had been previously carried thither either from Brazil or from some other settlement in the New World. The same reason will enable us to judge of the propriety of the appellation of the Persian Cock, bestowed by Johnston on this bird.

The Hocco is nearly as large as a turkey. One of its most distinguishing properties is a crest, which is black, or sometimes black mixed with white, about two or three inches high, and which extends from the origin of the bill to the back of the head. The bird can raise or depress it at pleasure, and according as it is differently affected. This crest consists of narrow tapering feathers somewhat reclined, but the point is reflected and bent forwards. Of these feathers, the Academicians observed many whose webs were enclosed half the length of their shaft, in a kind of membranous case.

The

The prevailing colour of the plumage is black, which is for the most part uniform and like velvet on the head and neck, and sometimes sprinkled with white speckles; the rest of the body has greenish reflections, and in some subjects it changes into a deep chestnut, as in that of No. 125. of the *Planches Enluminees*. The bird figured in that plate has no white under the belly or on the tail; in which respect it differs from that of No. 86. Lastly, Others are white below the belly and not at the tail, and *vice versa*; and we must observe, that these colours are liable to vary both in their tints and in disposition, according to the sex.

The bill is shaped like that of the gallinaceous tribe, but is rather stronger: in some, it is of a flesh colour and whitish near the point, as in the Brazilian Hocco of Brisson: in others, the end of the upper mandible is grooved on both sides, which makes it look as if it were armed with three points, the principal one in the middle, and the two lateral, formed by furrows, somewhat farther back, as in the Indian Cocks of the Academicians: in others, the base is covered with a yellow skin, in which are placed the nostrils; as in the Guiana of Brisson: in others, this yellow skin, extending on both sides of the head, forms a circle of the same colour round the eyes; as in the *Mitou-poranga* of Marcgrave: in others, this skin swells on the base of the upper mandible into a kind of tubercle or round bump, which

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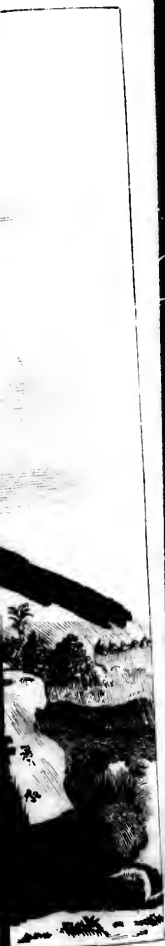
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which is pretty hard and about the size of a small nut. It is commonly believed that the females have not this protuberance; and Edwards adds, that it does not grow on the males till after the first year; which appears to be the more probable, since Fernandez observed in his *Tepe-tototl* a kind of tumor begun to form on the bill. Some individuals, as the *Mitou* of Marcgrave, have a white skin behind the ear like the common hens. The legs would resemble in shape those of the gallinaceous tribe, if they had spurs and were not proportionally thicker: they vary too in their colour, from a darkish brown to a carnation.

Some naturalists would refer the Hocco to the genus of the turkey; but it is easy, from the foregoing description, and from the figure, to collect numerous and decisive differences which discriminate these kinds. In the turkey the head is small and not feathered, which is also the case with the top of the neck; the bill bears a conical muscular protuberance, capable of being dilated and contracted; the legs are armed with spurs; the tail feathers can be spread like a fan, &c. whereas in the Hocco, the head is large, the neck sunk, and both are clothed with feathers; on the bill is a round, hard, and almost bony swelling; and on the crown of the head a moveable crest, which seems to be peculiar to this bird, and which is raised and depressed at pleasure;



pleasure; but no person has ever asserted that it can expand its tail feathers like a fan.

To these exterior differences, add the more intimate essential disparities, which appear from dissection to be as numerous.

The intestinal canal is much longer, and the two *cæca* much shorter, than in the turkey; its craw is also much less capacious, being only four inches round; but I have seen a crop taken out of a turkey, that seemed to have nothing unusual in its structure, that could contain half a Paris pint dry measure. Besides, in the Hocco, the fleshy substance of the gizzard is for the most part very thin, and its inner coat, on the contrary, very thick, and so hard as even to be apt to crack. Lastly, The *trachea arteria* dilates and makes an inflexure near where it forks; as happens in some aquatic birds, quite contrary to what is observed in the turkey.

But if the Hocco be not a turkey, the modern nomenclators had still less reason to suppose it a Pheasant; for besides those differences, which will readily be perceived externally and internally, there is a decisive one in the instincts of these birds. The Pheasant is always wild; though bred from its infancy, though treated kindly and fed with great attention, it never becomes reconciled to the domestic state; it is ever a restless prisoner, ever seeking the means of escape: it even abuses the companions of its slavery, and never associates with them. When

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it recovers its liberty, and is restored to the savage state, for which it seems to be formed, nothing can be more timorous or mistrustful; every new object is viewed with a suspicious aspect; the least noise scares it, and the slightest motion disturbs its quiet; even the shadow of a branch shaken by the wind is sufficient to make it take wing. On the contrary, the Hocco is a calm bird, secure and even stupid; which perceives no danger, or at least makes no exertion to shun it: it seems to forget itself, and to be careless of its own existence. Aublet shot nine of them in the same flock with the same piece, which he loaded as often as required. Such was their patient tranquillity. We may suppose that such a bird must be sociable; that it will readily accommodate itself to the other domestic fowls; and that it can be easily tamed. And though trained, it roams to a great distance during the day, but always returns again in the evening; as Aublet tells me himself. It becomes so tame as to rub with its bill on the door to gain admission; to pull the servants by the clothes when they neglect it; to follow its master every where; or, if not allowed, it waits anxiously for his return, and, on seeing him again, shews every sign of joy and affection.

It is difficult to conceive habits more opposite; and I should imagine that no naturalist, or even nomenclator, if he had been acquainted with them,

them, would have ventured to refer these two birds to the same genus.

The Hocco loves to inhabit the mountains, if we may infer this from the import of the name *Tepetototl*, which, in the Mexican language, signifies *mountain-bird*. When kept in cages it is fed on bread, paste, and other such things *. It is fond of perching on trees, especially to pass the night. It flies tardily, as I have observed above; but its carriage is bold †. Its flesh is white, though rather dry; but when kept a sufficient time, it is pleasant eating ‡.

Sir Hans Sloane says, that its tail is only two inches long, which Edwards conceives to be printed by mistake for ten. But I should imagine that this correction is too general and unlimited; for I observe that Aldrovandus asserts, from a drawing of a bird of this sort, that it has no tail. And on the other hand, Barrere relates, from his own observations which he made on the spot, that the female of his Amazon Hocco, which is the Curassow-Hocco of Brisson, has a short tail. Whence it appears that what Sir Hans Sloane has affirmed with regard to the Hocco in general, must be restricted to the female only, at least in certain tribes. [A]

* Fernandez. † Barrere. ‡ Fernandez, Marcgrave, &c.

[A] Specific character of the *Crax-Alestor*: "Its cere is yellow, its body black, its belly white."

II.

The PAUXI, or STONE.

Crax-Pauxi, Linn. and Gmel.*Gallina Indica Alba*, Will.*Crax Mexicana*, Briff.*The Cusbeu Curassow*, Lath. and Edw.

We have figured this bird in the *Planches Enluminees* under the name of *Stone of Cayenne*, which is really what it bears in the *Royal Menagerie*, where the drawing was made after the life. But as in its native country, which is Mexico, it is known by the name of *Pauxi*, according to Fernandez, I have thought proper to employ both these names.—It is the fourth species of the Pheasant of Brisson, which he terms the *Mexican Hocco*.

This bird resembles the preceding in many respects; but it differs in some particulars. Its head is not tufted like the other; the swelling on the bill is larger, of the shape of a pear, and of a blue colour. Fernandez says, that this tubercle is as hard as a stone; and this is the reason, I suppose, why it was called first the *Stone-bird*, and then the *Stone*; for the same cause that it was first named *Cusco* or *Cusbeu-bird*, and *Numidian-ben*, from this bump, which some have conceived to resemble the American nut, called *cusco* or *cusbeu*; and others have imagined that it is like the casque of the *Pin-do*.

But these are not the only differences which distinguish the Pauxi from the preceding Hocco: it is smaller, its bill is stronger, more hooked, and almost as much so as that of the parrot. Besides, it is much more seldom brought to Europe than the Hocco. Edwards, who saw the Hocco in almost every collection, could not meet with a single Cashew or Pauxi in the course of his inquiries.

The elegant black of its plumage has blue and purple reflections, which cannot be represented in the design.

This bird perches on trees; but it lays on the ground like the pheasants, leads its young, and even calls them together. The brood live first on insects, and afterwards, when they are grown up, they feed on fruits, seeds, and whatever is proper for poultry*.

The Pauxi is as gentle, or, if we chuse, as stupid, as the other Hocco; for it will sit still though fired at six times in succession; yet, according to Fernandez, it will not suffer itself to be caught or handled; and M. Aublet informs me, that it is found in uninhabited places, which is probably one of the causes why it is so rarely brought to Europe.

Briffon says, that the male differs from the female only by the colours, having brown where the other is black; but that they are in other respects alike. Aldrovandus, however, admits

* Aublet and Fernandez.

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have already noticed, the tail of the female is
much shorter than that of the male: and these
are not the only American birds which want the
tail; in a certain part of that continent, the
poultry transported from Europe lose their tail
and rump, as we have already observed in the
history of the cock. [A]

[A] Specific character of the *Crax Pauxi*: "Its cere is blue;
"a crested bunch on its nostrils; its body blackish; its belly and
"the tip of its tail, white."

III.

The HOAZIN.

- Phasianus Cristatus*, Gmel.
- Crax Fuscus Mexicanus*, Briss.
- The Crested Pheasant*, Lath.

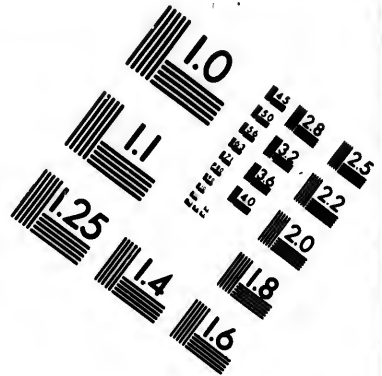
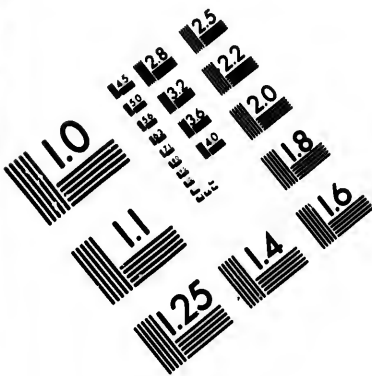
This bird is figured in the *Planches Enluminees*
under the name of *Crested Cayenne Pheasant*; at
least it does not differ sensibly from that, as will
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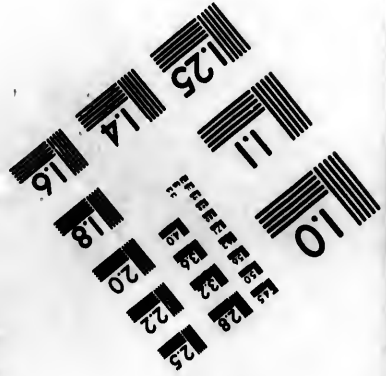
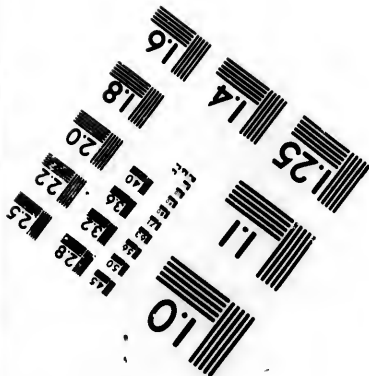
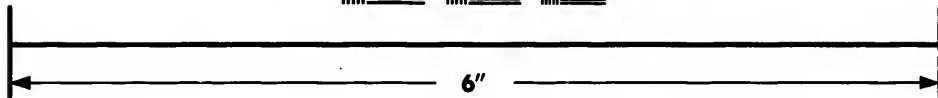
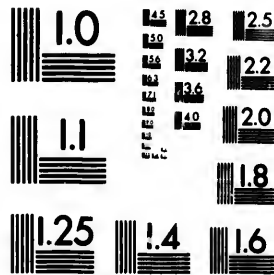
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**IMAGE EVALUATION
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According to that author, the Hoazin is not quite so large as a turkey-hen; its bill is hooked; its breast of a yellowish white; the wings and tail marked with spots or white rays an inch asunder; the back, the upper side of the neck, the sides of the head, are of a tawny brown; the legs are of a dirty colour. It has a crest composed of feathers that are whitish on one side and black on the other; this crest is taller and differently shaped from that of the Hocos; and it does not appear that they can raise and depress it at pleasure: its head also is smaller and its neck more slender.

Its voice is very strong, and more like a braying than a cry. It is said that it calls its own name, probably in a sad frightful tone. Nothing more was wanted among savage tribes to place it in the class of inauspicious birds; and as the human mind is naturally prone to imagine the object of dread endowed with vast power, these rude people draw from it remedies for the most inveterate and alarming disorders. They do not appear, however, to feed on it: they abstain perhaps through fear, which it inspires; or perhaps from an aversion, because it lives commonly on serpents. It inhabits generally extensive forests, where it perches on trees beside water, to watch and surprise these reptiles. It is found in the warmest parts of Mexico. Hernandez adds, that it appears in autumn

which

which gives room to suspect that it is a bird of passage*.

M. Aublet assures me that this bird, which he easily recognized in No. 337. of the *Planches Enluminees*, can be tamed; and that it is sometimes a sort of domestic among the Indians, and that the French call it a peacock. The young are fed with ants, worms, and other insects. [A]

* Hernandez.—Fernandez speaks of another bird to which he gives the name of *Hoazin*; though from his account it appears to be very different from what we have described; for besides that it is smaller, its cry is very agreeable, and resembles sometimes a laugh or a sneering laugh: its flesh is eaten, though neither tender nor well tasted.—The bird cannot be tamed.

I should rather discover the Hoazin in another bird mentioned by the same author, after the Pauxi. He thus describes it: "Another bird must be ranged with the Pauxi. . . . It is of the size of a stork, its colour cinereous, the crest eight inches long, and composed of many feathers. . . . these dilated, especially on the top." Here is distinctly the crest and the size of the Hoazin.

[A] Specific character of the *Phasianus Cristatus*: "Above, brown; below, rufous-white; its vent rufous, its head crested, a naked red space about the eyes; the tail wedge-shaped, with a yellow tip."

IV.

The Y A C O U.

Penelope Cristata, Gmel.

Meleagris Cristata, Linn.

Phasianus Fuscus Brasiliensis, Klein.

Iacupema, Marcg. Ray, and Will.

The Guan, or *Quan*, Edw. and Lath.

This bird has named itself; for its cry is, according to Marcgrave, *Yacou*; whence is derived the name *Iacupema*. I have preferred that of *Yacou* as the easiest, and the best adapted.

Marcgrave is the first who has spoken of this bird. Some naturalists, copying him, have ranged it with the pheasants; others, such as Brisson and Edwards, have classed it with the turkeys. But it is neither the one nor the other:—it is not a turkey, though it has a red skin under the neck; for it differs in many respects; in its size, which is scarcely equal to that of a common hen; its head is partly covered with feathers, and its crest is much more like that of the Hocco than that of the crested turkey; and its legs have no spurs:—besides, it has not the bunch of hard hair under the neck, nor the muscular caruncle on the bill, as in the turkey-cock, nor does it expand the feathers of its tail. On the other hand, it is not a pheasant; for it has the long and slender bill and the crest of

the Hoccos; its neck is slender; it has a fleshy membrane under the throat; its tail-feathers are all of an equal length; and its dispositions are mild and gentle: all which characters distinguish it from the pheasants, and its cry differs from both that of the pheasant and of the turkey. But what shall we then make it? It shall be a Yacou, having some analogies with the turkey (the fleshy membrane under the throat and the tail composed of equal quills); with the pheasants (the eye encircled with black skin, the wings short, and the tail long); with the Hocco (the long tail, the crest, and mild disposition); but which is distinguished from all these by numerous and marked differences, and therefore constitutes a separate species.

We can hardly doubt that the *Guan* or *Quan* of Edwards, so called, according to him, in the West Indies, probably by some other tribe of Savages, is at least a variety of the Yacou, from which it differs only in being not so tall, and its eyes of another colour; but such differences may take place in the same species, especially since it is domesticated.

Black mixed with brown is the prevailing colour of its plumage, but with different reflections, and some white streaks on the neck, breast, belly, &c.; the legs are of a bright red.

The flesh of the Yacou is excellent meat. All that is known with respect to its other properties has been related in the beginning of this article.

Ray considers it as of the same species with the coxoliti of Fernandez; but that bird is much larger, and has not under its throat that fleshy membrane which characterizes the Yacou; and for this reason I have classed it with the Hoccos properly so called. [A]

[A] Specific character of the *Penelope Cristata*: "Its head is crested with erect feathers, its temples violet."

V.

The M A R A I L.

Penelope-Marail, Gmel.

The Marail Turkey, Lath.

No author has taken notice of the female of the Yacou except Edwards, who conjectures that it has no crest. From this single authority, and the comparison of the most accurate figures and stuffed specimens, I am inclined to suppose, that the bird figured in No. 328. of the *Planches Enluminees* under the name of *The Greenish Pheasant of Cayenne*, and which is generally called in that island *The Marail*, is perhaps the female of the species of Yacou; for I can discover many decisive points of resemblance to the *Guan* of Edwards (Plate XIII.); in its size, the colour of its plumage

plumage, and its general shape, if we except only the crest, which is wanting in the female; in its port, in the length of its tail, in the red circle that surrounds the eyes*, the red naked space below the throat, the form of its feet and bill, &c. I must own that I have also perceived some differences; the quills of the tail are like organ pipes, as in the pheasant, and not equal, as in the Guan of Edwards; and the nostrils are not so near the origin of the bill: but it would not be difficult to instance a number of species in which the female differs still more from the male, and in which there are varieties that are more remote from each other.

M. Aublet, who saw this bird in its native country, tells me, that it is easily tamed, and that its flesh is delicate, and richer and superior in succulency to that of the pheasant. He adds, that it is a real turkey, only smaller than what is naturalized in Europe: and this is still another point of resemblance to the Yacou, its having been taken for a turkey.

This bird is not only found in Cayenne; but, if we may judge from the identity of the name, it inhabits the country which is watered by the majestic stream of the Amazons; for Barrere speaks of the Marail of the Amazons, as a bird whose plumage is black, its bill green, and no

* This naked skin is blue in the Yacou, and red in the Marail; but we have before observed the same difference of colour between the sex and the other in the fleshy membranes of the Pintado.

tail. We have seen, in the account of the Hocco and the Stone of Cayenne, that in these species some individuals without tails have been taken for females: is this the case too with the Marails? With regard to most of these foreign birds so little known, if we adhere to veracity, we must speak with diffidence and hesitation. [A]

[A] Specific character of the *Penelope Marail*:—“It is greenish black, the space about its eyes naked, and its feet red; the throat somewhat naked, and dotted with white.”

VI.

The CARACARA.

I give this name, which is expressive of its cry, to that beautiful bird of the Antilles described by Father du Tertre.

If all the American birds that have been taken for pheasants must be referred to the Hocco tribe, the Caracara ought to be ranged with these; for the French inhabitants of the Antilles, and Father du Tertre after them, have applied to it the name of *Pheasant*. “This Pheasant is,” says he, “a very beautiful bird, about the size of a capon, taller, and with legs like those of the peacock. Its neck is much longer than that of a cock, and the bill and head resemble those of a raven; all the feathers of the neck

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" and breast are of a fine shining blue, as plea-
" sing as peacock's plumes; all the back is of a
" brown gray, and the wings and tail, which
" are rather short, are black."

" When this bird is tamed, it becomes master
" of the house, and drives off the common hens
" and turkey-hens, and sometimes even kills
" them. Nor does it allow the dogs to pass
" without offering violence. . . . I saw one
" which was a mortal enemy to Negroes, and
" would not permit one to enter the hut, but
" picked their legs and feet so cruelly as to draw
" blood." Those who have eaten them affirm,
that their flesh is as good as that of the pheas-
ants in France.

How could Ray suppose that such a bird was
the ravenous bird mentioned by Marcgrave un-
der the same name? It is true indeed that it
fights with the poultry, and flies at dogs and
Negroes; but this it does only when tamed.
We shall more easily discover in it the natural
jealousy of a domestic animal, which cannot
bear the rivals in his master's favour, than the
ferocious dispositions of a bird of prey, which
starts on others to tear them in pieces and devour
them. Besides, it is not common that the flesh
of a rapacious bird is delicate eating, as is that
of the Caracara. Lastly, It appears, that in the
Caracara of Marcgrave, the tail and wings are
much longer in proportion than in that of Fa-
ber du Tertre.

VII. The

VII.

The C H A C A M E L.

Penelope Vociferans, Gmel.
The Crying Curassow, Lath.

Fernandez speaks of a bird which is of the same country and nearly the same size with the preceding, and which, in the Mexican language, is called *Chachalacamelt*; from which I have formed *Chacamel*, for the easier pronunciation. Its chief character is that of having a cry like the common hen, or rather like the clamorous noise of a number of fowls; for it is so constant and so loud, that a single bird of this kind is said to make as much din as a whole court-yard. Hence is derived the Mexican name, which signifies the *crying bird*. It is brown on the back, of a dusky-white on the belly, and the bill and feet are bluish.

The Chacamel, like most of the Hoccoes, commonly inhabits the mountains, where it rears its young. [A]

[A] Specific character of the *Penelope Vociferans*:—"Its bill is bluish, its back brown, its breast blue, its belly whitish-brown."

VIII.

The PARRAKA AND HOITLALLOTL.

Phasianus Parraqua, Lath. Ind.

The Parraka Pheasant, Lath. Syn.

Phasianus Mexicanus, Gmel.

The Courier Pheasant, Lath.

As far as we can judge from the imperfect hints of Fernandez and Barrere, we may range here, 1. The Parraka * of the latter, which he calls *Pheasant*, and of which he says only that the feathers of the head are of a tawny colour, and form a kind of crest. 2. The *Hoitlallotl*, or Long Bird of the former, which inhabits the warm regions of Mexico †. This bird has a long tail, short wings, and a laborious flight, like most of the foregoing; but it outstrips the fleetest horses. It is not so large as the Hoccas, being only eighteen inches from the tip of the bill to the end of the tail. Its general colour is white, verging on the fulvous. Near the tail it is stained with black, mixed with some white spots; but the tail itself is of a varying green, which has reflections nearly like the peacock's plumes.

* Specific character :—" It is brown, below fulvous, its top fulvous, its tail equal."

† Specific character :—" It is tawny-white, its tail long and green."

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These birds are so little known, that we cannot venture to refer them to their species. I range them here only because those few properties which we do know belong more to the birds just described than to others. Their true place must be assigned from actual observation. In the mean time, I have done what I can to draw the curiosity of those who have it in their power to observe the facts.

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The PARTRIDGE.

IT is often the most difficult to give an accurate and consistent account of those species which are the most generally known. When a person meets, for the first time, with a bird which he has never before seen, he overlooks the minute characters, and, seizing the more obvious resemblances, he refers it to that tribe with which he is previously best acquainted. Hence that strange incoherent jumble of names which have been formed on the relations of hasty and inaccurate observers. We have already been more than once embarrassed in this chaos of terms; and I am afraid that the article of the Partridge will not be the last which requires a critical examination.

I take the Common Partridge for the basis and first species of the genus, as being the best known, and therefore the fittest subject for comparison.—I shall admit one variety and three permanent breeds.

These permanent breeds are, 1. The *Common Gray Partridge*; and, as a variety of it, the *White Gray Partridge* of Brisson. 2. The *Dafuscus Partridge*, not that of Belon, which is the Hazel Grouse, but that of *Aldrovandus*, which is smaller than our Gray Partridge, and which appears

appears to be the same with the Little Partridge, a bird of passage well known to our sportsmen.

3. The *Mountain Partridge*, which is figured in No. 136. of the *Planches Enluminées*, and which seems to form the shade between the Gray and the Red Partridges.

In the second species I range the Red Partridge, into which I admit two permanent breeds in France, and one variety, and two foreign breeds.

The two permanent Red Partridges which are found in France are, 1. No. 150. *Planches Enluminées*. 2. The *Greek Partridge*, Pl. 231.

The two foreign species are, 1. The *Red Barbary Partridge* of Edwards, Pl. 70. 2. The *Rufous-breasted Partridge*, which is found on the banks of the Gambia.

As the plumage of the Red Partridge is liable to assume shades of white like that of the Gray Partridge, thence results a variety exactly similar to that in the latter.

From this genus I exclude several species which have been improperly referred to it.

1. The Francolin, which we have removed from the Partridges, because it differs from them not only by its general shape, but by some particular characters, as in the spurs, &c.

2. The bird called by Briffon the *Senegal Partridge*, and which he makes his eighth species. This bird appears to me to be more a-kin to the Francolins than to the Partridges.

and as it has two spurs on each leg, I shall give it the epithet of *Double Spur*.

3. The African Red Partridge.

4. The third foreign species, called by Brisson the *Great Partridge of Brazil*, which he supposes to be the *Macucagna* of Marcgrave, from whom he copies the description, and confounds it with the *Agamia* from Cayenne, which is a bird wholly different from both.

5. The *Yambou* of Marcgrave, which is the Brazilian Partridge of Brisson, and which has neither the shape, the habits, nor the characters of the Partridge; since, according to Brisson himself, it has a long bill, perches upon trees, and lays blue eggs.

6. The American Partridge of Catesby and Brisson, which also perches, and prefers the woods to the cleared grounds; a character which does not belong to the Partridge.

7. A multitude of American birds, which the herd of travellers have called Partridges from some slight resemblance inaccurately observed. Such are the birds known at Guadeloupe under the names of *Red Partridges*, *Gray Partridges*, and *Black Partridges*; though, according to the accounts of persons better informed, they are pigeons or turtles; since they have neither the bill nor the flesh of the Partridge, perch on trees, where they build their nests, lay only two eggs, and since the young do not run as soon as they quit the shell, but are fed by the parents in the nest

nest like turtles. Such too are most probably those Partridges which Carreri saw on the mountains of the Havannah; such the *Manbouris*, the *Pegassous*, and the *Pegacans* of Lery; and such perhaps are some American birds which I have ranked in the class of Partridges on the authority of writers, when their relations seemed not contradicted by facts; though I must own, that it is not likely birds so heavy could cross the intervening ocean.

The GRAY PARTRIDGE*.

Tetrao-Perdix, Linn. and Gmel.

Perdix Cinerea, Ray, Will. and Briff.

The Common Partridge, Penn. and Lath.

Though Aldrovandus, judging of other countries from his own, asserts that Gray Partridges abound in every part of the globe; it is certain that there are none in the island of Crete; and it is probable that they never inhabited Greece; for Athenæus remarks with surprise, that all the Italian Partridges had not red bill like those of Greece. Nor are they

* In Italian, *Perdice*; in Spanish, *Perdix*; in German, *Wild-bun*, or *Feld-bun*; in Swedish, *Rapp-boena*; in Polish, *Kuroptawa*.

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equally spread through Europe: they seem to avoid the extremes both of heat and cold, and are found neither in Africa nor in Lapland. They thrive most in the temperate parts of France and Germany. It is true, indeed, that Boterius says that they do not inhabit Ireland; but this must be understood of the Red Partridges, which are not found even in England, (according to the best authors of that country,) and which have not penetrated in that direction beyond the islands of Guernsey and Jersey. The Common Partridge is frequent in Sweden, where Linnæus tells us it winters under the snow in a kind of burrow, which has a double entrance. This manner of lodging during the severe season, is very like that of the Ptarmigan, which we have already described; and if this fact were not averred by a man of so high reputation as Linnæus, I should suspect some mistake; especially as in France the long winters, with great falls of snow, prove fatal to numbers of Partridges. Lastly, as it is a bird of laborious flight, I am much inclined to suspect that it has never migrated into America; and I should imagine, that those birds of the New World which are referred to this genus, would be separated from it if they were better known.

The Gray Partridge differs in many respects from the Red; but what makes me consider them as distinct kinds, is that, according to the

remark of the few sportsmen who can make observations, though they sometimes inhabit the same spot, they never associate together. A vacant male of the one species will sometimes, indeed, consort with a pair of the other, follow them, and even discover symptoms of jealousy; yet it never copulates with the female, though it is reduced to abstinence, and beholds continually the sweets of conjugal felicity, and feels the enlivening influence of spring.

The Gray Partridge is also of a gentler nature than the Red, and not difficult to tame; and when not teased, it soon becomes familiar*. However, they never could be formed into flocks that would be driven, as has been done with the Red Partridges: for the Red Partridges are those which travellers, as Olina remarks, describe as being bred in numerous flocks on some islands of the Mediterranean. The Gray Partridges have also a more social turn, since each family continues in a single body, or covey, till the pairing of love. If a hatch, from some accident, does not completely succeed, the families recruit their strength by uniting with others, and adopting the feeble remnants of such as have suffered most severely from the sportsmen: so that about the end of

* Ray asserts the contrary; but as he confesses that the Red Partridges are never seen in England, his authority will not in this instance weigh against actual observers.

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summer they often compose new coveys more numerous than at first, and which continue associated till next year.

These birds are fond of corn countries, especially where the fields are in high cultivation, and manured with marl; no doubt because they find there abundance of food, both grain and insects; and perhaps the saline quality of the marl, which contributes so much to the fertility of the soil, is also suited to their constitution or taste. Gray Partridges prefer the open country, and never resort to copses or vineyards, but when they are pursued by the fowler, or by the bird of prey: yet they do not lodge in the depths of the forests; and I have been frequently told that they never pass the night among bushes or thickets: however, a Partridge's nest was found in a bush at the root of a vine. They begin about the end of winter, after the intense frosts, to pair: that is, each male selects his female companion, and retires. But this new arrangement is not effected without violent disputes among the males, and sometimes even among the females. War and love are in most animals inseparable, especially among those which, like the Partridges, are stimulated by an ardent appetite. The females of this species, like the common ones, lay without having had intercourse with the male. When the Partridges are once paired, they never part, but live in the closest and the

most faithful union. Sometimes, after they are paired, the weather grows severe, and then they all gather together, and again form the covey.

Gray Partridges seldom breed, at least in France, before the end of March, above a month after they have begun to pair; and they do not lay before May, or even June, if the winter has lasted long. They make their nest, in general, with little care or preparation: some grass or straw, strewed roughly in the print of an ox or a horse's foot, is all they require. It is observed, however, that the older and more experienced females take greater pains with their nests than young ones, and are more careful both in guarding against inundation, and in chusing a spot somewhat elevated and protected naturally by brush-wood. They generally lay from fifteen to twenty eggs, and sometimes twenty-five; but the number is much smaller when the bird is either very young or very old: such too is the second hatch made by Partridges of the proper age, when the first has been destroyed. The eggs are nearly of the same colour with those of pigeons: Pliny says that they are white*. The incubation lasts about three weeks, more or less according to the degree of heat of the season.

The female takes upon herself the whole task of covering, and, during that time, she undertakes

* Lib. x. 3.

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goes a considerable moult; for all the feathers of the belly drop. She sits with great assiduity; and, it is said, that she never leaves her eggs without strewing them with leaves. The male, attentive to his mate, generally settles near the nest, ready to accompany her when she rises in quest of food; and his attachment is so faithful and steady, that he prefers this laborious office to the free pleasures which the calls of other Partridges solicit him to enjoy: to these he sometimes replies, but never quits his station to indulge his appetite. At the expiration of the regular time, if the season be favourable and the incubation succeed, the chicks pierce the shell with great ease, and as soon as they have extricated themselves, they begin to run, carrying sometimes a part of the shell with them. It happens sometimes, however, that they are unable to burst from their prison, and that they die in the struggle. In this case, the feathers of the young bird are found glued to the inner surface of the shell, which must happen whenever the egg is exposed to too great heat. To remedy this malady, dip the eggs five or six minutes in water, so that the moisture may soak through the shell and loosen the feathers. This kind of bathing may also perhaps refresh the young bird, and give it additional strength to force a passage. The same happens with regard to pigeons, and many other useful birds, which

might be saved by the method I have described, or some analogous experiment.

The male, though it has no share in the incubation, assists the mother in raising the young. They lead them in common, continually call them together, point out to them their proper food, and teach them to find it by scratching the ground with their nails. It is not uncommon to discover them squatted beside each other, covering the chickens with their wings, whose heads project on all sides, presenting very lively eyes. In such case, the parents are not easily flushed; and the sportsman, who is attentive to the preservation of his game, avoids disturbing so interesting an office. But if the pointer comes too near, or runs in upon them, the male is always the first that springs, venting his anguish in a peculiar cry, and appropriated to this emergence. He stops thirty or forty paces distant, and sometimes even he returns upon the dog and beats it with his wings,—to such a degree does parental affection inspire courage in the most timid animals! Sometimes that tender sentiment inspires in these birds a sort of prudence, and suggests expedients for saving the brood. When the male springs in such cases, he has been observed to fly slowly, and hanging his wing, as if to decoy the enemy into a pursuit, in the expectation of an easy prey; while the bird keeps always before him, but at such a short distance as con-
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tinually to afford hopes, till the sportsman is carried away from the covey. On the other hand, the female springs shortly after the male, and shoots to a much greater distance, and invariably in a different direction. Immediately after she has alighted, she returns back running along the furrow, and finds her chickens scattered and squatted among the grass and the leaves; hastily collects them, and before the dog has returned from the eager pursuit of the male, she has led them to a distant spot, without giving the slightest notice to the sportsman by the noise in retreating. It is an observation with respect to animals which holds very generally, that the ardor for copulation is the measure of the solicitude for their progeny. The Partridge is an instance: few birds are so amorous, and few discover such an assiduous or such bold vigilance for their young. This strength of affection sometimes degenerates into rancour, which the mother discovers to other coveys, pursuing them and tearing them with her bill.

The legs of the young Partridges are at first yellow, which colour grows lighter, running into white, and afterwards turns brown, and at last, when the bird is three or four years old, it deepens into black. This is a method of discovering their age: another is drawn from the appearance of the last feather of the wing,

which is pointed after the first moult, but in the following year is quite round.

The first food of young Partridges is ants eggs, and the small insects which they find on the ground and among the herbage. Those which are fed within doors refuse grain for a long time, and probably this is not their proper aliment till they are grown up. They always prefer lettuce, succory, chickweed, sow-thistle, groundsel, and even the shoots of spring-corn. In the month of November their stomach is found filled with that substance, and during the winter they learn to search for the tender herbage beneath the snow. But when the ground is stiff with frost, they resort to the mild springs, and crop the herbs on their margins, though not suited to their constitution.— In summer, they are never observed to drink.

Partridges are three months old when the red tint discovers itself; for the Gray Partridges also have red on the side of the temples between the eye and the ear, and its appearance is a critical period with these birds, as with all others in like cases, since it advances the adult state. Previous to this they are delicate, their wing feeble, and they dread the damps; but after they have recovered from the shock, they become hardy, and begin to ply their wings, to spring together and constantly keep company; and though the covey be dispersed, they learn to assemble again, in spite of the precautions of the sportsman.

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They assemble by a call; every body knows the cry of the Partridge, which is not very pleasant; it is rather a sharp grating noise like that of a scythe, than a warble. The mythologists, struck with this resemblance, metamorphosed the inventor of that instrument into a Partridge*. The note of the male differs not from the female, except in being louder and more drawling. The male is besides distinguished from the female by a blunt spur on each leg, and a black mark like a horse-hoe under the belly, which is not found in the other sex.

In this species, as in many others, there are more males hatched than females †; and it is a matter of some consequence to destroy the supernumerary males, which disturb the pairs already formed and check multiplication. The common method of catching them is to call them in the pairing season by means of a female, and the best for this purpose is one that has been taken old. The males flock to the female's voice, and fall into the fowler's snares. So headlong they rush into danger, as sometimes to alight on houses, or even on the shoulder of the bird-catcher. The most proper sort of snares, and what are the least liable to accidents, are a kind of large wheel nets of a tunnel shape, into which the Partridges are driven by a person dis-

* Ovid's *Metamorphoses*, Book viii.

† About a third more, according to Ray.

guised

guised like a cow, who, to aid the deception, holds in his hand one of the bells usually fastened to the necks of cattle *. After they are entangled in the lines, the supernumerary males are selected, and sometimes even all the males are taken, and the females are set at liberty.

The Gray Partridges are sedentary birds, which not only continue in the same country, but which stray as little as possible from the neighbourhood where they are bred, and they always return again. They fear much the bird of prey; when they perceive him, they crowd close one upon another, but their formidable enemy discovers them from a distance, approaches them glancing along the ground, in order to spring one of which he may catch on the wing. Surrounded by so many enemies, and exposed to so many dangers, we may naturally suppose that few will reach a great age. Some fix the period of their life at seven years, and assert that, in their second year, they have attained their full vigour, and give over laying in the sixth. Olinas says, that they live twelve or fifteen years.

It has been tried to breed Partridges in parks, for the purpose of stocking grounds not inhabited by them. The experiment has succeeded, and it has been found that they may be raised nearly the same way as Pheasants, only no dependence must be had on the eggs of domestic

* Olinas.

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Partridges. Seldom do they lay, when reduced to that state, and still seldomer do they pair and copulate; and they never have been observed to hatch in those inclosures where the Pheasants so readily breed. We must therefore search in the fields for the eggs of free Partridges, and set them under common hens. A single hen can hatch about two dozen and rear that number of young, which will follow this stranger as well as they would do their natural mother, but they are not so well acquainted with her voice. They become however familiarized to it in a certain degree, and the Partridge thus bred, retains through the rest of its life the habit of calling when she hears the clucking of hens.

The Gray Partridges are much less delicate to raise than the Red sort, and not so subject to diseases, at least in France, which it would seem is their congenial climate. It is unnecessary even to give them ants eggs, and they may be fed like the common poultry on bread crumbs, hard eggs, &c. When they have grown stout and begin to seek their food, they may be let loose where they are bred, and from which place they never, as I have already noticed, remove to any great distance.

The flesh of the Common Partridge has long been esteemed delicious and wholesome food. It has two properties which are seldom combined; it is juicy, and yet not fat. These birds have twenty-two quills in each wing, and eighteen

eighteen in the tail, of which the four mid-ones are of the same colour with the back*.

The nostrils, which are at the origin of the bill, are more than half covered with a screen of the same colour with the bill, but of a softer substance, as in the common hens. The naked space between the eye and the ear is of a brighter red in the male than the female.

The intestinal canal is about two feet and a half long, and the two *cæca* are each five or six inches. The craw is very small †, and the gizzard is full of gravel mixed with the food, as observed in all the granivorous tribes. [A]

[A] Specific character of the Common Partridge, *Tetrao Perdix*:—"It has a naked saffron spot under its eyes, its tail is ferruginous, its breast brown, its feet whitish." Its egg is somewhat pear-shaped, and greenish gray.

The GRAY-WHITE PARTRIDGE.

Tetrao Perdix, Var. Linn.

Perdix Cincero-Alba, Briss.

This bird was known to Aristotle ‡, and noticed by Scaliger §; for they both speak of the

* Willughby.

† *Ingluvies ampla*, says Willughby, but in the Partridge which dissected it was very small.

‡ Lib. v. 6.

§ Exercit. 59. in Cardanum.

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GRAY-WHITE PARTRIDGE.

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White Partridge, and we cannot suppose that they meant the Ptarmigan, sometimes improperly so called; since Aristotle could not be acquainted with that bird, which is not an inhabitant of Greece, Asia, or any country to which his information reached. And indeed what proves decidedly this position, he does not remark the characteristic property of this bird, that its feet are feathered to the toes. With regard to Scaliger, he could not possibly confound these two species; because in the same chapter where he speaks of the White Partridge of which he had eaten, he a little afterwards discourses at great length on the *Lagopus* of Pliny, whose feet are clothed with plumage, and which is the true Ptarmigan.

The Grayish White Partridge is by no means so white as the Ptarmigan; the ground only is of that colour, and is sullied with the same specks as in the Common Partridge, distributed in the same manner. But what fully proves that the difference in the colour of the plumage is only accidental, and forms a variety of the Gray Partridge, is, that, according to naturalists and even according to sportsmen, it mingles and associates with that species. One of my friends * saw a covey of ten or twelve Partridges which were entirely white, and was witness to their pairing with the common sort in the breeding season.

* Le Roi, *Lieutenant des Chasses* at Versailles.

These

These White Partridges had white eyes or rather white pupils, as happens too in white hares, white mice, &c. the bill and legs were of a lead colour.

The DAMASCUS PARTRIDGE.

La Petite Perdrix Grise, Buff.

Tetrao Damascenus, Gmel.

Perdix Damascena, Briss. &c.

This Partridge, described by Aldrovandus, is probably the small migratory species, which has been observed at different times in several provinces of France.

It differs from the Gray Partridge not only in its size, which is always inferior, but by its bill, which is longer, by the yellow colour of its legs, and above all, the habit of changing its residence. It has been seen in Brie, and in other places, passing in numerous flocks, and pursuing its journey without halting. A game-keeper in the neighbourhood of Montbard saw last March (1770), a flight of one hundred and fifty or two hundred, which seemed to turn aside and suspend their progress at the noise of the call, but were entirely gone the next day. This simple fact, which is undoubted, points out the analog

and the difference between this species and the common fort. Their being drawn by the call shewed their affinity; their rapid flight through a country equally suited to the Gray and Red Partridges, which both reside in it the whole year, denotes another instinct, and consequently another organization, and at least another family.

We must not confound this Damascus or Syrian Partridge with the *Syroperdix* of Ælian, found in the vicinity of Antioch; whose plumage was black, the bill fulvous, the flesh firmer and better flavoured, and the disposition more savage than that of other Partridges: for the colours we see do not correspond, and Ælian does not tell us that this *Syroperdix* is a bird of passage. He adds, as a singular circumstance, that it swallows stones; which however is very common in the granivorous tribes. Scaliger mentions a remarkable fact, to which he was witness, and which bears some relation to the present; it is that in Gascony, where the land is very sandy, their flesh was mixed with minute particles, which was very disagreeable. [A]

[A] Specific character of the Damascus Partridge, *Tetrao damascenus*:—"It has a naked saffron spot under its eyes, its tail is ferruginous, its breast brown, its feet yellow."

The MOUNTAIN PARTRIDGE.

Le Perdrix de Montagne, Buff.*Tetrao Montanus*, Gmel.*Perdix Montana*, Briff.

I make this Partridge a distinct species, since it resembles neither the Gray nor the Red sort. It would be difficult to decide to which of these kinds we ought to refer it; for if, on the one hand, it be certain they sometimes breed with Gray Partridges; on the other, their ordinary residence is on mountains; and the red colour of their bill and legs, also shews a close relation to the Gray Partridge, and I am strongly inclined to suspect that they sometimes even consort with these. I am therefore persuaded that it constitutes the intermediate species between these extremes; it is nearly the size of the Gray Partridge, and has twenty quills in the tail.

[A] Specific character of the Mountain Partridge, *Tetrao Montanus*: — "Its feet and bill are red, its throat tawny-yellowish."

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The RED PARTRIDGES.

The GREEK PARTRIDGE.

*La Bartavelle, ou Perdrix Grecque, Buff.**Tetrao Rufus, Linn. and Gmel.**Perdix Græca, Briff.**Pernice, Zinn.*

Whatever the ancients have said on the subject of Partridges, we must refer to the Red kinds, and especially to the *Bartavelle*. Aristotle was undoubtedly best acquainted with the Greek Partridge, nor is it probable that he knew any but the Red Partridges; since these are the only Partridges that are found in Greece, or in the islands of the Mediterranean *, and in all probability in the part of Asia conquered by Alexander, situated in nearly the same latitude with Greece and the Mediterranean †, and which was probably the source of Aristotle's principal information. With respect to the succeeding naturalists, such as Pliny, Athenæus, &c. we plainly see that though they were acquainted with other Partridges in Italy besides the Red, they were contented with barely copying what Aristotle had said. It is

* Belon.

† It appears that only the Red Partridge was known to the Jews, since they represent it as an inhabitant of the mountains :

“ The king of Israel is come out to seek a flea, as one would hunt a Partridge on the mountains.” 1 Samuel, chap. 26. ver. 20.

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indeed true that the Grecian philosopher admitted a difference in the cries of the Partridges *; but we cannot thence infer any real distinction of species: for this diversity often results from the age or sex, has place even in the same individual, and may be the effect of some local cause or of the influence of climate; which the ancients themselves admitted, since Athenæus asserts that the Partridges which passed from Attica into Bœotia were known to change their cry †. Besides, Theophrastus, who also remarks some varieties in the notes of the Partridges, according to the countries which they inhabit, certainly supposes them not to be all of different species; for he describes the different voices in his treatise “*On the various Notes of Birds of the same kind.*”

On examining the accounts which the ancients have given respecting this bird, I discover many accurate facts and observations disfigured by a heap of exaggerations and fables; on which some moderns ‡ have shewn their pleasantry, though it required no great talents to ridicule. I shall endeavour to trace the origin of these tales from the nature and instincts of the Partridge.

Aristotle relates that this bird is fond of rolling in the dust, has a craw, a gizzard, and very small *cæca* §; that it lives fifteen years and

* Some *Κακαβίζουσι*, others *Τριζουσι*. † Gesner.

‡ Willughby. § *Hist. Anim.* lib. ii. cap. ult. and lib. vi. 4.

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more*; that, like all other birds of a laborious
 flight; it builds no nest, but lays its eggs on the
 open ground, on a little herbage or leaves strewed
 carelessly †, though in a spot of good aspect, and
 sheltered from the attacks of rapacious birds;
 that in this species, which is of a very amorous
 disposition, the males fight obstinately with each
 other in love season; and that at that time their
 testicles are distinctly seen; though in winter ‡
 they are hardly visible; that the females can lay
 eggs without any intercourse with the male §;
 that both sexes copulate by opening the mouth
 and darting out the tongue ||; that their hatch
 commonly consists of twelve or fifteen eggs;
 that sometimes they cannot retain their eggs,
 but drop them wherever they happen to be ¶.
 But after mentioning these facts, which are in-
 contestible, and which are confirmed by the ob-
 servations of the moderns, Aristotle adds many
 circumstances where the truth is disguised, and
 which must be analysed, in order to extract what
 is valuable from the mixture.

He says, 1. That the female Partridges lay
 most of their eggs in a concealed spot, to save

* Lib. ix. 7. Gesner has inadvertently put twenty-five years
 in his version, which error has been copied by Aldrovandus.
 Athenæus makes Aristotle say that the female lives longer than
 the male, as usual in birds.

† Lib. vi. 1. ‡ Lib. iii. 1. § Id. ibid.

|| Lib. v. 5. Avicenna has thence been led to say, that the
 partridges work up their passion by the closest kisses and caresses,
 like the pigeons; but this is a mistake.

¶ Lib. ix. 8.

them from the male, who seeks to destroy them, as impeding his pleasures*. This is reckoned ridiculous by Willughby; but I am inclined to think that he has been too hasty in passing judgment, for if we distinguish between the fact observed and the intention implied, the assertion of Aristotle is literally true, and is nothing more than that the Partridge, like all the other females of the feathered race, is industrious to conceal her nest; lest the males, especially the supernumerary ones, seeking to copulate in the time of incubation, disturb the function by the gratification of their appetites. For this reason it has always been recommended to destroy the superfluous males, as one of the most efficacious means of advancing the multiplication of the breed, not only of Partridges, but of other birds in the savage state.

Aristotle adds, 2dly, That the female Partridge divides her eggs into two hatches, one of which she entrusts to the male, until the young are educated †. This is absolutely incompatible with the propensity to break the eggs, which he supposes to be implanted in the male. But if we would reconcile Aristotle with himself and with truth, we may say, that as the female does not lay all her eggs in the same spot; since she cannot retain them, but allows them sometimes to drop wherever she happens to sit; and as the male seems in this species, or at least in some

* Id. *ibid.*† *Hist. Anim.* lib. vi. 8.

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families of this species, as in the gray sort, to share in the education of the young, it is not improbable but he also participates in the drudgery of incubation, and may cover a part of the eggs which were not under the hen.

Aristotle says, 3dly, That the males tread one another, and even their young as soon as they are able to walk*; and this assertion has been considered as fabulous and absurd. I have however more than once had occasion to mention undoubted instances of this perversion of instinct; and, among the Partridges, nature is so purient, that the male cannot hear the cry of the female without shedding *semen*; and so intoxicated is he with pleasure in the season of love, that though commonly extremely shy, he ventures then to alight on the bird-catcher. How much more therefore would their ardour be exalted in the warm climate of Greece, and when they had long been denied the company of their mates, as during the time of incubation?

Aristotle asserts, 4thly, That female Partridges conceive and produce eggs, when they happen to be fanned by wind from the males, or when these fly over them, or even when they hear their notes †. These words of the Grecian philosopher have given occasion to much ridicule; as if a current of air impregnated with the fecundating particles of the male, or the mere vibra-

* Lib. ix. 8.

† Lib. v. 5.

tion impressed by his voice, were really sufficient to impregnate the female. All that is insinuated is, that in such circumstances the natural fire of their constitution blazes with new force; and for the same reason, weltering in the dust forwards the laying*.

From these facts it is easy to conceive, that the Hen Partridge, though strongly set on covering, will sometimes prefer the indulgence of appetite to the tedious duty of incubation. It may even happen that, when she perceives her mate wavering in his fidelity, and about to yield to the allurements of other females, she will offer the embrace, to secure the domestic harmony, and provide for the prosperity of the expected progeny †.

Ælian has said, that the males fight always with greater obstinacy in presence of the females; because, he adds, when thus circumstanced, they will rather die, than shew cowardice, or appear after being vanquished ‡. We must here too distinguish between the fact and the intention. It is certain that the sight of the females adds fuel to their quarrels; not however because it

* Aristotle adds a fact which evinces their falacious temperament; "they also lay *zephyrian* or addle eggs, if the genital parts be stroked by the finger."

† Often the female rises from her nest when she perceives her mate attending to a sauntering female, and throwing herself into his embrace, satiates his appetite. Arist. lib. ix. 18.—So that lust overcomes even the attachment to their brood. Lib. x. 33.

‡ Hist. Anim. lib. iv. 1.

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piques their honour, but because it inflames their
 appetite for enjoyment.

It is thus by distinguishing between actions
 and intentions, and rejecting crude suppositions
 which disfigure important facts, that we can
 often extract the truth from relations of animals,
 which have so much been deformed by the fictions
 of man, and the folly of ascribing to all other
 beings his own character, his own feelings, and
 his own apprehensions.

As the *Bartavelles* possess many properties in
 common with the Gray Partridges, we need only
 remark the chief differences. Belon, who had
 visited their native climate, tells us, that they are
 double the size of our Partridges: that they are
 very plentiful, and even more common than any
 other bird in Greece, in the Archipelago islands,
 and particularly on the coasts of the island of
 Crete (now Candia): that they call in the love
 season, uttering a sound like that of the word
cbacabis; whence the Latins have undoubtedly
 formed the term *cacabare* to denote that cry; and
 the same analogy might perhaps have had some
 share in the construction of the *cubeth*, *cubata*,
cubeji, &c. the names of the Red Partridge in
 the eastern languages.

Belon relates also, that the *Bartavelles* generally
 lodge in rocks, but that they come down into
 the plains to build their nest, in order that their
 young may procure food with ease: that they
 lay from eight to sixteen eggs, of the size of small

hen eggs, white and sprinkled with reddish points, and the yolk of which cannot be made hard. Lastly, what he imagines shews the Greek Partridge to be of a different kind from our Red Partridge, is this, that in Italy, where both are known, they have each a distinct name, the Grecian sort being called *Cothurno*, and the other *Perdice*; as if the vulgar who bestow names could not be mistaken, or even apply two different denominations to the same species. He conjectures also, and not without probability, that it is this large Partridge, which, according to Aristotle, crosses with the ordinary hen and breeds prolific hybrids; a circumstance which, as the Greek philosopher remarks, rarely happens, and never but between the most salacious kinds*. It bears still another analogy to the common hen, that it sits on other eggs when robbed of its own: —This observation is very ancient, for it occurs in scripture †.

Aristotle observes, that the male Partridges sing or cry chiefly in the love season, when they fight with each other, or even before they begin to quarrel ‡. The ardour which they have for the female is then converted into mutual rage.

* *De Generatione Animalium*, lib. ii. 4.

† “As the Partridge gathereth the young which she has not brought forth; so he that getteth riches, and not by right, shall leave them in the middle of his days, and in the end be a fool.”

‡ Lib. iv. 9.

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Hence those contests, and those screams, that in-
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cipitates them not only into snares, but into the
very hands of the fowler*.

Fowlers have profited by their ardent head-
long disposition to draw them into the snare: a
female is presented to their burning appetites, or
a male has been exposed to provoke their im-
prudent rage †. The males have even been
trained to fight by way of entertainment, and
these birds, commonly so peaceable and so timid,
have contended with obstinate fury, and the
combat has been inflamed by the sight of the
females ‡. This custom is still very common in
the island of Cyprus §; and we have already ob-
served that the Emperor Alexander Severus
took great delight in this sort of battles. [A]

* Lib. ix. 8. † Lib. iv. 1.

‡ *Ælian de Nat. Anim.* lib. iv. 1.

§ *Hist. de Chypre*, par Francois Stephano Lusignano.

[A] Specific character of the Greek Partridge, *Tetrao Rufus*: —
“ Its legs and bill are blood-coloured; its throat is white, en-
circled with a black belt, dotted with white.”

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The

The EUROPEAN RED PARTRIDGE.

Tetrao Rufus, Var. Linn. and Gmel.

Perdix Rufa, Var. Lath. and Ind.

Perdix Rubra, Briss.

The Red-legged Partridge, Ray, and Will.

The Guernsey Partridge, Lath. Syn.

This is of an intermediate size between the *Bartavelle* and the Gray Partridge. It is not so common as the latter, nor does every climate suit it. It is found in most of the temperate and mountainous countries of Europe, Asia, and Africa: it is rare in the Netherlands *, and in many parts of Bohemia and Germany, where the attempts to breed it have proved unsuccessful, though the pheasant thrives there †. It is never seen in England ‡, nor in certain islets near Lemnos §; yet a single pair, being carried into the little island of Anapha (now Nansio), multiplied to such a degree, that the colonists were almost resolved to abandon their settlements ||. This abode is so congenial to their nature, that, even at this day, the inhabitants are obliged, about Easter holidays, to destroy their eggs by thousands; lest the Partridges, which might be hatched, should totally ruin the crops. And

* Aldrovandus. † Idem. ‡ Ray and Edwards.

§ Anton. Liberalis *apud* Aldrov. || Athenæus.

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THE GUERNSEY PARTRIDGE .

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these eggs prepared with different sauces serve several days to subsist the islanders*.

The Red Partridges settle in mountains which abound with heath and bushes, and sometimes in the same mountains which are inhabited by the game improperly termed *White Partridges*; yet they prefer the lower and more hospitable tracts †. In winter, they confine the range of their excursions, and lodge under the shelter of rocks with a southern aspect. During the rest of the year they continue in the bushes, and the sportsmen can hardly drive them from their retreats. I am well informed that they can, better than the common Partridge, support the rigours of winter, and are much more easily caught by gins or snares. They resort every spring in nearly the same numbers to their favourite haunts. They feed on grain, herbs, slugs, caterpillars, ants' eggs, and other insects; but their flesh is often tainted with the smell of their aliments. Helian relates that the Partridge of Cyrtha, a maritime town in Phocis, had a disagreeable taste, because of their living on garlick.

They fly heavily and laboriously, like the gray partridge; and without seeing them, we may easily distinguish them by the noise merely which they make with their wings when they are flushed. When they are surpris'd on the mountains, they seek shelter among the precipices, and

* Tournefort. † Stumpfius *apud Gesn.*

when

when they are dislodged, they regain the summit. In the plains, they shoot swiftly forward. When they are hotly pursued, they fly into the woods, and perch upon the trees, and sometimes even burrow in the ground, which the Gray Partridge never does.

The Red Partridges are distinguished from the Gray also by their natural habits and dispositions; they are not so social: they form themselves indeed into coveys, but the union is not so complete or harmonious. Though hatched and bred together, the Red Partridges keep apart from each other: they do not spring at the same instant, they do not fly in the same direction, and they do not call each other with the same eagerness, except in the love season, and then even each pair forms a separate union. Lastly, When their passion is gratified, and the female begins coolly to cover her eggs, the male abandons to her the charge of raising the family. In this respect, our Red Partridges seem to differ from those of Egypt; since the priests chose as the emblem of domestic harmony, a pair of Partridges, a male and a female, occupied each apart with its hatch*.

A consequence of the savage disposition of the Red Partridge, is that they are more difficult to breed in parks like the pheasant, though the method is nearly the same. It requires more pains and attention to habituate

* Aldrovandus.

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them to their captivity: nor are they ever completely reconciled, since the young Partridges languish in their prison, and though every expedient be tried to sweeten their condition, would pine away or fall into some disorder, if not set at liberty as soon as their feathers begin to shade their heads.

These facts, which have been communicated to me by M. Le Roi, seem to contradict what is related of the Partridges of Asia *, and some islands in the Archipelago †, and even those of Provence ‡, where numerous flocks have been seen that obeyed the voice of their conductor with wonderful docility. Porphyry mentions a tame Partridge brought from Carthage, which ran to call his master, fawned on him, and expressed its

* " In the country round Trebizond, I saw a man leading above four thousand Partridges. He marched on the ground, while the Partridges followed him in the air, till he reached a certain camp three days journey from Trebizond. When he slept, all the Partridges alighted to repose around him, and he could take as many as he pleased of their number."

ODORICUS de Foro-Julü, *apud Gesn.*

† " There are people on the coast of Vessä and Elata (in the isle of Scios), who raise Partridges with care. They lead them to feed in the fields, like flocks of sheep: each family entrusts its Partridges to the common keeper, who brings them back in the evening; and he calls them together by means of a whistle, even in the day-time."

TOURNEFORT'S Voyage to the Levant.

‡ I have seen a man in Provence who led flocks of Partridges into the fields, and assembled them whenever he chose; he took them with his hand, put them into his bosom, and then dismissed them. Id. *ibid.*

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fondness by certain articulations which seemed to flow from sentiment, and were entirely different from its ordinary notes. Mundella and Gesner raised some themselves that grew very familiar. It appears from several passages in ancient authors, that they had even acquired the art of teaching them to sing, or at least to improve their natural notes so much as to give a pleasing sort of warble*.

But all this may be reconciled, by saying that this bird has not so great aversion to man as abhorrence of slavery: that he has discovered the way to tame and subdue the most savage animal, that is, one the most enamoured of liberty; and that the method is to treat it according to its instinct, and to indulge it with as much freedom as possible. In this light, the society of the tame Partridge with the person who directs its will, is the most engaging, and the most noble; founded not on its wants, its interests, or on a stupid serenity of temper, but bound by sympathy, choice, and a mutual affection. The Partridge contracts a liking for man, and submits to his inclinations, only when he allows it to leave him at pleasure, and imposes no restraint beyond what society requires. In a word, when he attempts to reduce it to domestic slavery, its generous nature revolts at the appearance of force; the loss of liberty preys upon its vitals, and ex-

* Athenæus.—Plutarch.—Ælian.

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tinguishes the most powerful instincts, those of love and of self-preservation. Sometimes, in the paroxysms of its rage, it dashes its head against the cage and expires. It discovers an invincible repugnance to propagation: and if sometimes, stimulated by the ardour of temper, and the warmth of the season, it copulates in confinement, its embraces are too feeble to perpetuate a race of slaves. [A]

[A] The Red Partridge is not found in England; but in France it is the most common of the genus.

The WHITE RED PARTRIDGE.

In the species of the Red Partridge, as in the Gray, the plumage is sometimes white; which change of colour is the accidental effect of some particular cause. Nor is this whiteness intimate; the colour of the head is not altered, and the bill and legs remain red: and as they commonly breed with the Red Partridges, we have reason to conclude that they belong to the same species.

—Ælian.

tinguishes

The

The FRANCOLIN.

Tetrao Francolinus, Linn. and Gmel.*Perdix Francolinus*, Lath. Ind.*Tetrao Orientalis*, Hasselq.*The Francoline Partridge*, Lath. Syn.

This name, too, has been bestowed on very different birds. We have already seen it applied to the *Attagas*; and from a passage of Gesner, the bird known at Venice by the name of *Francolin*, appears to be a kind of Hazel Grouse*.

The Neapolitan Francolin is larger than a common hen; and indeed the length of its legs, bill, and neck, will not allow us to regard it as either an Hazel Grouse or a Francolin †.

All that we know of the Francolin of Ferrara is, that it has red feet, and lives on fish ‡. The bird of Spitzbergen, which has been called *Francolin*, receives also the appellation of the *Beach Runner*, because it never strays far from the shore, where it picks up gray worms and shrimps for its subsistence: it is no larger than a lark §. The Francolin which Olina figures and describes, is the one of which I am to treat. That of Edwards differs from it in some respects

* It is the same with the hazel-hen of the Germans, which I discovered beyond all doubt from a figure of the Venetian Francolin sent to me by the learned physician Aloysius Mundella.

GESNER.

† Ibid.

‡ Ibid.

§ *Voyages de Prévôt*, tome xv.

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and appears to be exactly the same bird with the Francolin of Tournefort, which also resembles that of Ferrara, since it is found on the sea-coast, and in marshy situations.

Ours seems to differ from these three last, and even from that of Brisson, not only in the colour of its plumage, and even of its bill, but by the size and form of its tail, which is longer in Brisson's figure, more spread in ours, and hanging in those of Edwards and Olina. But notwithstanding this, I believe that the Francolin of Olina, that of Tournefort, that of Edwards, that of Brisson, and my own, are all of the same species; since they have many common properties, and their small differences are not sufficient to constitute different races, but may be referred to the age, the sex, the climate, and other local or accidental circumstances.

The Francolin is undoubtedly, in many respects, like the Partridges, and for this reason, Olina, Linnæus, and Brisson, have ranged it with them. For my own part, I am convinced, from a close examination and comparison of these two birds, that they ought to be separated: for the Francolin differs from the Partridge not only in the colours of its plumage, its general shape, the figure of its tail, and its feet; but is distinguished also by a spur on each leg*; whereas the male Partridge has only a callous tubercule.

* That of Olina had none; but it was probably a female.

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The Francolin is also much less diffused than the Partridge; it can hardly subsist but in the warm climates. Spain, Italy, and Sicily, are almost the only countries of Europe where it is found; it inhabits also Rhodes*, the Isle of Cyprus †, Samos ‡, Barbary, especially in the vicinity of Tunis §, Egypt, the coasts of Asia ||, and Bengal ¶. In all these places, both Francolins and Partridges occur; but they have each their appropriated name, and form distinct species.

As these birds are very rare in Europe, and their flesh is excellent food, the killing them has been forbidden in many countries under severe penalties; and hence, it is said, they derive the name *Francolin*; because they enjoy a sort of freedom under the protection of these prohibitions.

Little more can be said of this bird than what the figure suggests: its plumage is very beautiful; it has a conspicuous collar of an orange colour. It is rather larger than the Common Partridge; the female is smaller than the male; the colours of its plumage fainter and less variegated.

These birds feed on grain; and they may be bred in aviaries, though care must be taken to give each a small separate crib, where it may

* Olina.

† Tournefort.

‡ Edwards.

§ Olina.

|| Tournefort.

¶ Edwards.

squat and conceal itself, and to strew sand and a little gravel on the floor.

Their cry is a kind of loud whistle, audible at a great distance *.

Francolins live much in the same manner as Partridges †; their flesh is exquisite, and sometimes preferred to that of Partridges or Pheasants.

Linnæus takes the Damascus Partridge of Willughby for the Francolin ‡. But we may observe, 1st, That this Damascus Partridge is rather Belon's, who first took notice of it, and whom Willughby only copied. 2dly, This bird differs from the Francolin, both in the size, which is inferior to that of the Common Partridge, according to Belon; and in its plumage, as will easily be perceived by comparing the figures; and besides, its legs are feathered, which prevented Belon from classing it with the plovers. Linnæus should also have admitted the Francolin of Tournefort as the same with that of Olina, which Willughby mentions. Lastly, the Swedish naturalist is mistaken in fixing exclusively on the East as the climate of the Francolin; for, as I have already observed, it is found in Sicily, Italy, Spain, and Barbary, and in many other countries to which the epithet of oriental cannot be applied.

† Edwards.

‡ Edwards.

* Olina.

† Ibid.

‡ Tenth edition of the *Systema Naturæ*.

Aristotle ranges the *Attagen*, which Belon conceives to be the Francolin, among the pulverulent and granivorous birds. Belon makes him also say, that it lays a great number of eggs, though no mention of this sort is made in the place quoted; but it is the necessary consequence of Aristotle's theory with regard to pulverulent granivorous birds. Belon relates, on the authority of the ancients, that the Francolin was common in the plain of Marathon, being fond of marshy situations; which agrees very well with Tournefort's observations respecting the Francolins at Samos. [A]

[A] Specific character of the *Tetrao Francolinus*:—"Its belly and throat are black, its tail wedge-shaped."

DOUBLE SPUR.

Le Bis-Ergot, Buff.

Tetrao Bicalcaratus, Linn.

Perdix Bicalcaratus, Lath. Ind.

Perdix Senegalensis, Briss.

The Senegal Partridge, Lath. Syn.

The first species which seems to approach the Francolin, is the bird to which, in the *Planches Enluminees*, we have given the name of *Senegal Partridge*. It has, on each foot two spurs, or rather tubercles, of hard, callous

flesh; and as it is a distinct species, we may call it *Double Spur*, on account of that singular character. I place it next the Francolins, as being more related to them than to the Partridge; by its size, by the length of its bill and wings, and by its spurs. [A]

[A] Specific character :— “ Its legs are double spurred ; its eye-brows black.”

The B A R E - N E C K E D
AND
AFRICAN RED PARTRIDGE.

Tetrao Nudicollis, Gmel.

Perdix Nudicollis, Lath.

This bird, which we have seen alive at Paris at the house of the late Marquis de Montmirail, had the lower part of the neck and throat divested of feathers, and merely covered with a red skin; the rest of the plumage was much less variegated and less pleasant than that of the Francolin. It resembles that species by its red legs and the spreading shape of its tail; and is related to the preceding species, by the double spur on each leg.

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The want of facts prevents me from inquiring into the analogy between these two species in respect to their dispositions and habits. M. Aublet assures me that it is a bird which never perches.

The AFRICAN RED PARTRIDGE has more red than our species, because of a broad spot of that colour under its throat; but the rest of its plumage is much inferior. It is distinguished from the two preceding by two very obvious characters; its spurs are long and pointed, and its tail more expanded than is common in Partridges. We have not observations sufficient to enable us to judge whether they differ also in their modes of living. [A]

[A] Specific character:—"Its legs are double spurred and rufous; its throat naked and rufous."

FOREIGN BIRDS,

THAT ARE RELATED TO THE PARTRIDGE.

I.

THE RED PARTRIDGE OF BARBARY, Pl. LXX. of Edwards*, seems to be a different kind from the European Red Partridge, and is smaller than the Gray. Its bill, its orbits, and its feet, are red, as in the Greek Partridge; but the scapular feathers are of a fine blue, edged with brown-red; and round the neck is a sort of collar formed by white spots, scattered on a brown ground, which, joined to its diminutive size, distinguishes this species from the two breeds of Red Partridges common in Europe.

* *Tetrao Rufus*, Var. 3. Gmel.; *Perdix Rubra Barbarica*. Briff.

II.

The ROCK PARTRIDGE,
OR
GAMBRA PARTRIDGE.

Tetrao Petrofus, Gmel.

Perdix Petrofa, Lath. Ind.

The Rufous-breasted Partridge, Lath. Syn.

This bird takes its name from its favourite haunts; it delights, as do the Red Partridges, in rocks and precipices; its predominant colour is a dull brown, and it is marked on the breast with a spot like the colour of Spanish tobacco. It also resembles the Red Partridge in the colour of its legs, its bill, and its orbits; it is smaller than our sort, and cocks its tail when it runs, but is, like them, very fleet; its shape, on the whole, is the same, and its flesh excellent*. [A]

* *Journal de Stibbs*. PREVÔT.

[A] Specific character of the *Tetrao Petrofus*:—" Its bill and legs are red, its body dusky, with a ferruginous spot on its breast."

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The PEARLED CHINESE PARTRIDGE.

Tetrao Perlatus, Gmel.*Perdix Sinensis*, Briff.

This Partridge, known only by Briffon's description, seems to be peculiar to the eastern extremity of the Antient Continent. It is somewhat larger than the Red Partridge of Europe, but has its shape, the figure of its tail, the shortness of its wings, and the same general appearance. Of the Common Red Partridge it has the white throat; and of the African sort, the long, pointed spurs; but it has not, like that bird, the red bill and legs: these are here of a rust-colour, and the bill is blackish, as well as the nails. The ground of the plumage is dusky, enlivened on the breast and sides by a number of small round light-coloured spots: from this property I have applied the name of *Pearled Partridge*. It has, besides, four remarkable bars, which rise from the bottom of the bill and stretch over the sides of the head; these bars are alternately of a bright and deep colour. [A]

[A] Specific character of the *Tetrao Perlatus* :—“ Its legs and eye-brows are rufous, its bill blackish, its throat white, its body dusky and variegated.”

IV. The

IV.

The NEW ENGLAND PARTRIDGE.

Tetrao Marilandus, Linn. and Gmel.

Perdix Marilandica, Lath. Ind.

Perdix Novæ Angliæ, Briss.

The American Partridge, Du Pratz.

The Maryland Partridge, Penn. and Lath.

I refer this American bird, and the following, to the Partridges; not that I imagine them to be real Partridges, but only the representatives: for of the birds in the New World they approach the nearest to the Partridge, though it is impossible that this species could wing its course over the immense oceans which separate the continents.

This bird is smaller than the common Gray Partridge; its iris is yellow, its bill black, its throat white, and two bars of the same colour stretch from the base of the bill to the back of the head, passing over the eyes. It has also some white spots on the top of the neck; the under-side of the body is yellowish, striped with black, and the upper side of a brown bordering on rufous, nearly as in the Red Partridge and checkered with black; its tail is short, as in the other Partridges. It is found not only in New England, but in Jamaica, though the two climates differ widely.

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Albin fed one a considerable time with wheat and hemp-feed. [A]

[A] Specific character of the *Tetrao Marilandus* :—" Its eye-brows are white, its neck dotted with black and white." The American Partridges are about one-half larger than the English Quails, and are plump and well-tasted. They are frequent in North America, as high as Canada. They lay from twenty to twenty-five eggs, and breed about the beginning of May; their numerous covies make a loud noise when sprung. The cock perches on a fence, and emits his double note while the hen is sitting. These birds have been introduced into Jamaica, where they are naturalized, and said to breed twice a-year.

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La Caille, Buff.

Tetrao-Coturnix, Linn. and Gmel.

Perdix Coturnix, Lath. Ind.

Coturnix, All the Naturalists.

THEOPHRASTUS discerned such intimate relation between the Partridge and the Quail, that he bestowed on the latter the name of *Dwarf Partridge*. The same appearance of analogy must have led the Portuguese to call the Partridge *Codornix*; and the Italians apply the term *Coturnice* to the *Bartavelle*, or Greek Partridge. These birds, indeed, resemble each other considerably: they are both pulverulent; they have short wings and tail, and run very swiftly; their bill is like that of the gallinaceous tribe; their plumage is gray, speckled with brown, and sometimes entirely white †. Besides, they feed, copulate, build their nest, hatch their eggs, and raise their young nearly in the same way; both are of a salacious disposition, and the males quarrel much with each other.

* In Greek, *ὄρνις*; in Latin, *Coturnix*; in Italian, *Quaglia*; in Spanish, *Cuadraviz*; in German, *Wachtel*. Frisch asserts that in the time of Charlemagne it was called *Quacara*; but others have termed it *Curculius*, on account of its swift running.

† Aristotle, *de Coloribus*, chap. vi.

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THE QUAIL.

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But how numerous soever be the points of resemblance, they are balanced by an almost equal number of disparities, which make the Quails a species entirely distinct from the Partridges. For, 1. The Quails are universally smaller than the Partridges, comparing corresponding breeds. 2. They have not the bare space between the eyes, as in the Partridges, nor the figure of the horse-shoe impressed on the breast of the males, nor have true Quails the bill and legs ever red. 3. The eggs are smaller, and of an entirely different colour. 4. Their notes also are quite different, though they love in nearly the same season; but the Partridges intimate their rage before they fight, while the Quails scream only in the midst of their quarrels *. 5. The flesh of the latter is of a different taste, and much more loaded with fat. 6. The period of their life is much shorter. 7. They are less cunning than the Partridge, and much more easily ensnared, especially when young and unexperienced. Their dispositions are not so gentle; it is extremely rare to see them tamed, and though confined from their infancy, they can hardly be trained to obey the voice. They are not of such a social temper; for they seldom form themselves into coveys, except when their wants unite the feeble family to their mother, or some common and powerful cause urges at once the whole species

* Aristotle, *Hist. Anim.* lib. viii. 12.

to assemble together, and traverse the extent of the ocean, holding their course to the same distant land. But this forced association subsists no longer than necessity requires; and after they have alighted, and find in their adopted country that they can live at will, their union dissolves. The appetite of love is the only tie that binds them together, and even this connection is unstable and momentary; for though the male seeks the female with the greatest ardour, he discovers no choice or predilection; the matches are formed hastily, and as quickly broken. As soon as passion has spent its force, the male treats his mate with indifference and cruelty, and abandons her to the labour and care of raising the family. The young are hardly grown up when they separate, or if they are kept together, they fight obstinately with each other; their quarrels are terminated only by their mutual destruction*.

The propensity of the Quails to migrate at certain seasons, is one of their most powerful instincts.

The cause of this desire must be very general, for it acts not only on the whole species, but also on individuals kept in confinement and debarred from communication with their kind. Some young Quails, bred in cages from their

* The ancients were well acquainted with this fact, for they said that obstinate quarrelsome children were like Quails in a cage.

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earliest infancy, which had never enjoyed liberty, and therefore could not feel its loss, were yet observed, for the space of four years, to shew a degree of restlessness, and to flutter with unusual agitations, regularly at the season of migration, which returns twice annually, in April and in September. This uneasiness lasted thirty days each time, and began constantly an hour before sun-rise. The prisoners moved backward and forward from one end of the cage to the other, and darted against the net which covered it, and often with such violence, that they dropped down stunned by the blow. They passed the night in these fruitless struggles, and the following day they appeared dejected, exhausted, and torpid. We know also that, in the state of liberty, Quails sleep the greater part of the day: and if to this we add, that they are seldom observed to arrive in the day-time, we may infer, that they perform their journies by night*, and that the disposition to migrate is innate: whether that avoiding the extremes of heat and cold, they remove to the north in summer, and advance to the south in winter; or what is more probable, that they direct their course to those countries where the harvest is making, and thus change their abode to procure the proper subsistence for themselves and for their young.

* Belon and Pliny express the same opinion.

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This last reason, I say, is the most probable; for, on the one hand, it is proved by experience, that Quails can well support cold; since Horrebow informs us that they have been found in Iceland; and they have been kept for years together in a room without fire, and having even a northern aspect, and yet seemed not in the least affected by the severest winters. On the other hand, it appears, that one circumstance which determines them to abide in a country, is the plenty of herbage; for it is well known by sportsmen, that when the spring is dry, and consequently grass scarce, there are few Quails the rest of the year. Besides, the spur of actual want is a more powerful cause, is more consistent with the limited instinct of these animals, and implies less foresight, which philosophers have rather been too liberal in bestowing on brutes. When they cannot procure subsistence in one country, it is very natural to suppose that they will seek it in another. This scarcity of food intimates to them their situation, and rouses all their faculties into action. They leave the exhausted tract, rise into the regions of air, and push forward to discover countries which may present them with abundance. Habit joining itself to the instinct common to all animals, but most remarkable in the winged tribes, of scenting their food from distant

most probable; proved by experiment cold; since have been found kept for years fire, and having yet seemed not in rest winters. On that one circumstance to abide in a cage; for it is well when the spring is scarce, there are few Besides, the powerful cause, is more instinct of these animals, which philosophy liberal in bestowing cannot procure subsistence is very natural to it in another. This to them their situation faculties into action, tract, rise into the forward to discover them with abundance to the instinct common most remarkable in their food from distant

distance, gives birth to a disposition which is as it were innate; it is not therefore surprising that the same Quails should return annually to the same haunts. But we can hardly suppose with Aristotle, that it is from an attentive observation of the seasons, and that they change their climate twice a-year, like the ancient kings of Persia. It will be still more difficult to admit, with Catesby and Belon, and some others, that when they shift their residence, they wing their course without interruption to the Antipodes, there to find exactly the same latitude, and to enjoy the same temperature; which would imply scientific knowledge, or rather error, to which brute instinct is much less subject than cultivated reason.

But whatever speculations we may form with respect to the migration of the Quails, certain it is, that when they enjoy their natural liberty they depart and return at stated times. They first depart from Greece according to Aristotle, in the month of *Boedromion* *, which comprehended the end of August and the beginning of September. In Silesia, they arrive in the month of May, and depart about the end of August †. Our sportsmen reckon on their return to France about the tenth or twelfth of May. Aloysius Mundella says, that they begin to appear in the neighbourhood of Venice about the middle of

* Hist. Anim. lib. viii. 12.

† Schwenckfeld.

April. Olinæ fixes the time of their arrival in the *Campagna di Roma* in the beginning of April. But almost all agree that they depart after the first autumnal frost, which spoils the grass and destroys the insects; and since the colds of May do not drive them back to the south, we are furnished with another proof that warmth is not what they seek, but that their real object is food, and of which the spring frosts cannot deprive them. We must not however consider these terms as invariably fixed. They will vary within certain limits in different countries according to the nature of the climate; and even in the same region, they will be affected by the lateness or earliness of the season, which will advance or retard the harvest, and will promote or check the multiplication of the insects which support the Quails.

Both the ancients and the moderns have been busy in forming theories with regard to the migration of the Quail and other birds of passage; some have heightened it by the addition of the marvellous; while others, struck with the difficulty of conceiving that so small a bird, and which flies tardily and laboriously, could perform distant journies, have hesitated to admit the fact, and have had recourse to hypotheses still more extraordinary to account for their regular disappearance at certain stated seasons. None of the ancients ever entertained indeed the slightest doubt on the subject: and yet the

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well knew that the Quail is inactive, flies little and with reluctance*; and that though extremely ardent in its passions, it employs not its wings to transport itself to the invitation of the female, but often travels more than a quarter of a league through the closest herbage to meet her, and never rises into the air except when closely pursued by dogs or hunters: with all these circumstances, the ancients were acquainted; but they never dreamt that, on the approach of the cold season, these birds crept into holes to remain in a dormant state during the winter, like the dormice, the hedge-hogs, the marmots, the bats, &c. This absurdity was reserved for some moderns, who certainly did not know that the internal heat of animals subject to become torpid, being generally inferior to that of other quadrupeds, and still more to that of birds, requires a constant accession of warmth from the air, as I have shewn in another work: when this source fails, the vital action is suspended; and, if they were exposed to a greater cold, they would in a short time perish. But this certainly is not applicable to the Quails, which are generally esteemed of a hotter constitution than the other birds; so that in France it has given rise to a proverb †; and in China, it is customary to carry this bird alive in one's hands to keep them

* Aristotle, *Hist. Anim.* lib. viii. 8.

† It is a common saying, *Chaud comme un Caille*, warm as a Quail.

warm*. Besides, I have discovered from observations continued for several years, that they never grow torpid, though shut during the whole winter in rooms without a fire, and exposed to the north, as I have formerly mentioned: and many persons of the most undoubted veracity, who had similar opportunities, have assured me of the same fact. But, if the Quails neither conceal themselves nor remain torpid through the winter, and always disappear in that season, we may certainly conclude that they migrate into other countries.—And this fact is demonstrated by a great number of other authorities.

Belon, happening in autumn to be on board a vessel, in his passage from Rhodes to Alexandria, saw Quails flying from the north towards the south. Many of them were caught by the mariners, and grains of wheat were found very entire in their craw. The preceding spring, the same observer saw in sailing from the island of Zante to the Morea, a great number of them in motion from south to north; and he affirms that, in Europe as well as Asia, Quails are generally migrating birds.

The Commander Godeheu constantly saw them passing Malta in the month of May, aided by certain winds, and again in September in their return †. Many sportsmen have assured me,

* Osborn's Travels.

† Memoires de Mathematique and de Physique, presentes a l'Academie Royal des Sciences par divers Savans, &c. tome iii. 91.

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that they have often, in the fine nights during
spring, heard them arrive, and could easily
distinguish their cry, though at a great height
in the air. Add to this, that they are no where
so plenty as on the French coasts, opposite to
Africa or Asia, and in the interjacent islands.
Almost all those of the Archipelago and even the
shelves, are, according to Tournefort, covered
with them, in certain times of the year; and
more than one of those islands has been named
Ortygia *. In the age of Varro, it was remark-
ed that at the seasons of the arrival and de-
parture of the Quails, immense flocks were seen
in the islets of Pontia, Pandataria, and others
scattered along the southern coast of Italy †, and
which they probably chose for a station to re-
cruit. About the beginning of autumn, such
great numbers were caught in the island of Ca-
prea, in the entrance of the Gulph of Naples,
that the bishop of the island drew his princi-
pal revenue from the profits of the game, and
was for that reason called *The Bishop of Quails*.
Many too are caught in the neighbourhood of
Pesaro, which is situated on the Adriatic Gulf,
about the end of autumn, the season of their
arrival ‡. Lastly, such amazing numbers drop

* From *Ogrye*, which signifies a Quail. The two Delos were,
according to Phanodemus in Athenæus, termed *Ortygiæ*: so also
another little island opposite to Syracuse, and even the city of Ephe-
sus, according to Stephanus of Byzantium and Eustathius.

† De Re Rustica, lib. iii. 5.

‡ Aloysius Mundella, *apud Gesnerum*.

on the western coasts of the kingdom of Naples, in the vicinity of *Nettuno*, that in the extent of four or five miles, sometimes a hundred thousand are taken in a day, and are sold for fifteen *jules* the hundred (less than seven shillings), to a sort of brokers who carry them to Rome, where they are much less common *. Clouds of them also alight in the spring on the coasts of Provence, especially on the lands belonging to the bishop of Frejus, which border on the sea; they are exhausted, it is said, with the fatigue of their journey, that for the first days they may be caught with the hand.

But it will still be replied, how can a bird so small, so weak, whose flight is so slow and laborious, how can it, though urged by hunger, traverse the great extent of sea? I may admit that many islands are scattered at intervals in their passage, on which they may halt to recruit their vigour: such as Minorca, Corfica, Sardinia, Sicily, Malta, Rhodes, and other isles in the Archipelago. But still I conceive that it would be impossible for them to perform the journey without assistance. Aristotle was well convinced that this was necessary, and was even acquainted with the kind of aid which the Quails most commonly receive, and if he was mistaken, it is only in describing the manner. "When the north wind blows

* Gesner and Aldrovandus. This capture is so lucrative, that the land near the place is extravagantly high priced.

“ the Quails, (says he,) perform their journey
 “ with ease ; but when the south wind prevails, as
 “ it oppresses them with the load of its vapours,
 “ they make a painful progress, and declare
 “ their labour and exertion, by the cries which
 “ they utter in their flight *.” In fact, it is the
 wind, I conceive, which assists the Quails in
 their passage ; not indeed the north wind alone,
 but a favourable wind ; nor does the south
 impede their progress, but so far as it is
 contrary to the direction of their motion : and
 this must take place in all countries where the
 Quails perform their journies across the seas †.

M. Godeheu has well remarked, that in
 the spring, the Quails never alight on Malta,
 except when they are carried by a north-west
 wind, which hinders them from gaining Pro-
 vence ; and that in their return, they are waisted
 to that island by the south wind, which opposes
 their descent on the Barbary shore ‡. We know
 also, that the Author of nature employed that
 mean, as the most conformable to the general
 laws which he had established, to shower the
 immense multitudes of Quails upon the Israelites
 in the desert § ; and this wind, which came from
 the south-west, swept over Egypt, Ethiopia, and
 the coasts of the Red Sea, and in a word, the

* Lib. viii. 12. † Pliny expresses the same idea, lib. x. 23.

‡ Memoires présentés à l'Acad. &c. tome iii. 92.

§ Psalm lxxvii.

countries where these birds were most abundant*.

Sailors whom I have consulted on this subject inform me, that when the Quails are surprised in their passage by a contrary wind, they alight on the nearest vessels, as Pliny has remarked †, and often fall into the sea, and are then observed to float and struggle on the waves, with one wing raised in the air to catch the gale. Hence some naturalists have taken occasion to say, that when they embark on their voyage, they furnish themselves with a little stick, with which they relieve themselves at intervals from the fatigue of flying, resting upon it as upon a raft, and riding on the rolling billows ‡. It has even been supposed that each carries in his bill three small stones, to ballast them, according to Pliny §, against the violence of the wind; or, according to Oppian ¶, to discover ¶, by dropping them one after another, when they have crossed the sea. This is nothing more than bits of gravel which the Quails, like other granivorous birds, swallow with their food. In general, such a degree of design, sagacity, and discernment, is ascribed to them, as would

* The Gulf of Arabia abounds very much with Quails.

JOSEPHUS, lib. iii. 1.

† “ They arrive not without danger to navigators who have approached near the land; for they alight on the sails, and this always at night, and sink the vessels.” PLINY *Hist. Nat.* lib. x. 23.

‡ See Aldrovandus, tome ii. 116. § Lib. x. 23.

¶ *In Ixut.* ¶ Pliny, lib. x. 23, and Solinus, cap. xvii.

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give room to doubt if those who are so liberal in bestowing these qualities, really possess a large share themselves. They have remarked that other migratory birds, as the Land Rail, accompany the Quails, and that the Falcon was sure to catch some one on its arrival; hence they have concluded that the Quails choose out from another species a guide or chief, which they call *The King of the Quails* (*ortygrometra*); for as the foremost of the body falls a victim to the hawk, the Quails shrewdly contrive to cast the danger upon the fated individual of a foreign race.

But the Quails do not all migrate; there are a few which, being unable to follow the rest, remain behind; either having received a wound in their wings, or, being the product of the second hatch, they are too young and feeble to perform the journey. These stragglers seek to find a proper situation in the country where they are obliged to abide*. In France the number of these is very inconsiderable; but the Author of the British Zoology assures us, that in England a part only of the Quails are observed to quit the island entirely, while those which remain shift their quarters, removing from the interior counties to the sea coast, and particularly the hundreds of Essex, where they continue through the winter: if the frost or snow drive

* Aldrovandus, lib. viii. 12.

them

them from the stubble fields or marshes, they retreat to the beach, and subsist upon the marine plants, which they can pick up between high and low water mark. The same Author subjoins, that the time of their appearance in Essex corresponds exactly to that of their leaving the inland country. It is likewise said, that a great number of them remain in Spain and in the south of Italy, when the winter is not so severe as entirely to destroy the seeds and insects that serve for their food.

With respect to such as venture to cross the seas, those only perform a fortunate voyage that are assisted by a fair wind; and if in the preceding season it has seldom blown from a favourable quarter, much fewer arrive in the countries where they spend their summer. And, in general, we may judge with tolerable accuracy of the place whence they have come, by the direction of the breeze which wafts them along.

As soon as the Quails arrive, they set about laying. They do not pair, as I have already remarked; and if the number of males, as I am informed, exceeds much that of the females, monogamy would have been inconvenient. Fidelity, confidence, personal attachment, qualities so desirable in the individual, would have been hurtful in the species. The multitude of males reduced to a state of celibacy, would disturb the marriages that are formed, and render them un-

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prolific. But in the present case, the unbounded liberty of union blunts and extinguishes the jealousy and the rivalry of their loves. The male has been observed to repeat a dozen times a-day his embraces with several females indiscriminately*; and while nature tolerates this kind of libertinism, she provides for the multiplication of the species. Each female drops fifteen or twenty eggs into a nest, which she hollows in the ground with her claws, lines with grass and leaves, and conceals as much as possible from the piercing eye of the hawks. These eggs are greyish, speckled with brown. She sits about three weeks. The ardor of the males effectually fecundates them, and they are seldom found addle.

The Authors of the British Zoology say, that in England the Quails seldom lay more than six or seven eggs. If this fact be uniform, we may conclude that they are less prolific in that island than in France, Italy, &c.; and it remains to be inquired whether this diminution of the genial powers ought to be attributed to the cold, or some other quality of the climate.

The young Quails are able to run almost as soon as they leave the shell, like the young Partridges; but they are in many respects more hardy, since in the state of liberty they quit their mother much earlier, and even venture to de-

* Aldrovandus and Schwenckfeld,

pend on themselves for subsistence eight days after they are hatched. This circumstance has made some persons suppose that the Quail lays twice a year*; but I much doubt it, except they have been disturbed in their first hatch. It is not even affirmed that they begin another after they have arrived in Africa in the month of September, though this would be much more probable, since on account of their regular migrations they are unacquainted with autumn and winter, and the year to them consists of two springs and two summers: and they change their climate, it might seem, to enjoy and perpetuate the ever verdant season of love and propagation.

Certain it is, that they drop their feathers twice a year, in the end of winter and on the approach of autumn. Each moulting lasts a month; and as soon as their plumage is restored, they wing their passage, if at liberty, into other climes; and if they are kept in confinement, they discover a restlessness and struggle to burst from their prison at the stated periods of migration.

When the young are four months old, they are able to accompany their parents in their distant flight.

The female differs from the male in being somewhat larger, according to Aldrovandus.

* Aldrovandus asserts, that the Quails begin to lay the same year they are hatched, in the month of August, and have to eggs.

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(others reckon it equal and others smaller), in having a white breast sprinkled with black spots almost round; while in the male it is reddish, without any intermixture of other colours: its bill is also black, as well as its throat, and a few hairs that grow round the base of the upper mandible*: its testicles have also been remarked to be very large in proportion to the size of the body; but this observation has undoubtedly been made in the season of their amours, when the testicles of all birds acquire a considerable increase of dimensions.

The male and female have each two cries; a louder and a fainter. The male makes a sound like *ouan, ouan, ouan, ouan*; he never gives the honourous call, except when parted from the females; nor when confined, though he has a female companion. The female has a well-known cry, which invites the male; and though it is very weak and audible only a short way, the males flock to it from the distance of half a league: it has also a slender quivering note, *cri*. The male is more ardent than the female, as he runs to her amorous murmurs with much precipitation and inconsiderateness, as to light to her upon the hand of the bird-cher †.

Aldrovandus.—Some naturalists have taken the male for the female: I have on this occasion followed the opinion of sportsmen, especially those of observation.
Aristotle, lib. viii. 12.

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The Quail, like the Partridge and many other animals, never multiplies its kind, except when it enjoys the liberty of nature. In vain have the forlorn prisoners been furnished with the materials for constructing their nests; the tenderest concerns are stifled in their breast, and their eggs are allowed to drop unheeded.

Many foolish stories have been told with respect to the generation of Quails. It has been said that, like the Partridges, they are impregnated by the wind; this means no more than that they sometimes lay without the male influence*. It has been alleged that they are bred from the tunnies, which the troubled ocean sometimes casts on the shores of Lybia; that they appear at first like worms, then assume the form of flies, and gradually growing larger, they become grasshoppers, and at last Quails †: that is, the vulgar seeing the Quails searching among the carcases of the tunnies rejected by the waves for some insects that are hatched in them, and having some vague idea of the metamorphosis which insects undergo, fancied that a grasshopper could be transformed into a Quail, as a worm changed into a fly. Lastly, it has been said that the male copulates with the female toad, a story which has not even the slightest appearance of probability.

* Ibidem.

† Gesner.

‡ *Phanodemus apud Gesnerum.*

The Quails feed on wheat, millet, hemp-feed, green herbage, insects, and all sorts of seed, even that of the hellebore; which gave the antients an antipathy to its flesh, augmented still further by the reflection that these were the only animals besides man that are subject to the epilepsy *. But experience has destroyed this prejudice.

In Holland, where these birds are frequent, especially along the coasts, it is usual to call the berries of Bryony Quail-berries; which shews that they prefer that sort of food †.

It would appear that they can subsist without drink; for sportsmen have assured me, that they are never observed to seek water; and others, that they have fed them a whole year on dry grain without any drink, though they frequently drank when it was in their power. To withdraw every kind of drink, is even the only way to cure them when they *cast out their water*; that is, when they are attacked by a certain disorder, in which they have always a drop at the point of their bill.

Some have imagined, that they always trouble the water before they drink, and they have not failed to ascribe it to envy; for naturalists are never satisfied till they assign to brutes the motives of action. They inhabit the fields, the pasture grounds, and the vineyards; but seldom

* Pliny, lib. x. 23.

† Hadrian. Jun. *Nomenclat.*

resort to the woods, and never perch upon trees. They grow much fatter than Partridges. What is supposed to contribute to this, is their remaining still during the greatest part of the heat of the day; then they conceal themselves in the tallest grass, and sometimes continue in the same spot for the space of four hours, lying on their side, with their legs extended; and so much are they overcome with the drowsy indolence, that a dog must absolutely run upon them before they are flushed.

It is said that they live only four or five years, and Olinia attributes the shortness of the term to their disposition to corpulency. Artemidorus imputes it to their unhappy quarrelsome temper; and such is really their character, for they have been made to fight in public to entertain the rabble. Solon even directed that such combats should be exhibited to the youth, with the view to inflame their courage. And this species of gymnastic exercise, which would appear to us so puerile, must have been held in high estimation by the Romans, and considered as an affair of the state, since we are told that Augustus punished a prefect of Egypt with death, for buying and bringing to table one of these birds that had acquired celebrity by its victories. Even at present this sort of amusement is common in some cities of Italy. They give two Quails high

feeding; and then place them opposite to each

other

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other, at the ends of a long table, and throw between them a few grains of millet seed (for they need a ground of quarrel). At first they shew a threatening aspect, and then rush on like lightning, strike with their bills, erecting the head and rising upon their spurs, and fight till one yields the field of battle*. Formerly, these combats were performed between a Quail and a man: the Quail was put into a large box, and set in the middle of a circle traced on the floor; the man struck it on the head with one finger, or plucked some feathers from it: if the Quail, in defending itself, did not pass the limits of the circle, its master gained the wager; but if in its fury it transgressed the bounds, its worthy antagonist was declared victor; and such Quails as often won the prize sold very dear †. It may be remarked that these birds, as well as the Partridges and others, never fight but with their own species; which implies jealousy, rather than courage, or even violence of temper.

Since the Quail is accustomed to migrate, and travels to immense distances by the aid of the wind, it is easy to conceive that it must be spread through a wide extent. It is found at the Cape of Good Hope, and through the whole inhabited part of Africa ‡; in Spain, Italy §, France, Switzerland ||, the Netherlands ¶, Germany **,

* Aldrovandus. † Julius Pollux *de Ludis*, lib. ix.

‡ Kolben, and Josephus, lib. iii. 1. Comestor, &c.

§ Aldrovandus. || Stumpfius.

¶ Aldrovandus. ** Frisch.

England *, Scotland †, Sweden ‡, and as far as Iceland §; and eastwards, in Poland ||, Ruffia ¶, Tartary **, as far as China ††. It is even possible that it could migrate into America; since it every year penetrates near the polar circles, where the two continents approach; and, in fact, it occurs in the Malouine islands, as we shall afterwards take notice. In general, it is more common along the coasts than in the interior country.

The Quail is therefore an universal inhabitant, and is every where esteemed excellent game. Aldrovandus tells us, that the fat is sometimes melted by itself, and kept for sauce.

The female, or a call imitative of her cry, is made use of to draw the males into the snares. It is even said, that a mirror having a noose placed before it is sufficient; the bird, mistaking its image for another of the species, rushes towards it. The Chinese catch them as they fly with slender nets, which they use very dextrously ††. In general all the forms of gins that are used for other birds, succeed with the Quails,

* British Zoology. † Sibbald. ‡ Linnæus *Fauna Suecica*.

§ Horrebow. || Rzaczynski. ¶ Cramer and Rzaczynski.

** Gerbillon, "Travels performed into Tartary, in the suite
" or by the order of the Emperor of China." *Hist. Gen. des Voyages*, tome vii. p. 465. and 505.

†† Edward's Gleanings, vol. i. The Chinese, says he, have also our common Quail, as evidently appears from their paintings, in which it is depicted from nature.

‡‡ Gemelli Carreri.

and especially the males, which are less suspicious, more ardent, and which may be led at pleasure by imitating the cry of the female.

This ardor of the Quails has occasioned the quality to be ascribed to their eggs, fat, &c. of restoring a relaxed frame and rousing the genial powers*. It has been said that the presence alone of one of these birds in a bed-chamber, gave those who slept there love dreams †.—We need only quote these stories, as they refute themselves. [A]

* “The eggs of the Quail rubbed on the testicles procure pleasure, and if swallowed they stimulate lust.” KIRANIDES.

† Frisch.

[A] Specific character of the Quail, *Tetrao Coturnix*:—“Its body is spotted with gray, its eye-brows white, the margin of its tail-quills, with a crescent, ferruginous.” The Quail occurs in every part of Great Britain, but is not frequent.

The CHROKIEL, OR THE GREAT POLISH QUAIL.

Tetrao Coturnix, Var. 1. Gmel.
Coturnix Major, Briss.

Our knowledge of this Quail is drawn from the Jesuit Rzaczynski, a Polish author, who merits the more attention on this subject, as he

describes a bird which is a native of his own country. In its shape, and even its habits, it exactly resembles the Common Quail, and differs only by its size; and for this reason I consider it as merely a variety.

Jobson says, that the Quails of Gambia are as large as Wood-cocks*; and if the climate were not widely different, I should consider them as the same with the Polish fort.

The WHITE QUAIL.

Tetrao Coturnix, Var. 2. Gmel.

Aristotle is the only naturalist who mentions this Quail †, which must be viewed as a variety; just as the grayish-white and white-red partridges are varieties of these two species of the partridge, and the white lark a variety of the common lark, &c.

Martin Cramer speaks of Quails ‡ with greenish legs; is this a variety of the species, or merely adventitious in the individual?

* Purchas's Collection of Voyages, vol. ii.

† *De Colonibus*, cap. 6. ‡ *De Polonia*, lib. i. 474.

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The QUAIL OF THE MALOUINE ISLANDS.

Tetrao Falklandicus, Gmel.

We may consider this bird as a variety of the common sort which is diffused through Africa and Europe, or at least a proximate species; the only difference being, that its plumage is of a deeper brown, and its bill somewhat stronger.

But what opposes this idea, is the immense expanse of ocean which separates the two continents towards the south: our Quails must have performed an astonishing voyage, if we suppose they held their course from the north of Europe to the Straits of Magellan. I will not therefore decide whether this Quail is the same species with ours, or only a branch from the same stem, or if not, rather a breed peculiar to the Malouine Islands. [A]

[A] Specific character of the *Tetrao Falklandicus*:—"It is variegated with dusky curved streaks and spots, below, white; its bill lead coloured, its feet dusky, its temples spotted with white."

The RUFF, OR CHINESE QUAIL.

Tetrao Chinenfis, Linn. and Gmel.*Coturnix Philippensis*, Briss.

This bird is figured in the *Planches Enluminees* by the name of the *Quail of the Philippines*, because it was sent from these islands to the Royal Cabinet. But it is also found in China, and I have called it the *Ruff*, on account of a sort of white ruff under its neck, which is the more remarkable, as its plumage is of a brown verging upon black. Edwards gives a figure of the male, Pl. CCXLVII.: it differs from the female in our *Planches Enluminees*, in being somewhat larger, though still not bigger than a lark; its aspect is also more marked, the colour of its plumage more lively and variegated, and its feet stronger.—The subject, which is described by Edwards, was brought alive from Nankin to England.

These little Quails have this character in common with the ordinary sorts, that they fight obstinately with each other, particularly the males; and the Chinese lay considerable bets, as customary in England on game cocks. We cannot therefore hesitate to admit that they are of the same genus with our Quails, though probably of different species.

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The TURNIX, OR MADAGASCAR QUAIL.

Tetrao Striatus, Gmel.

We have given this Quail the name *Turnix*, contracted for *Coturnix*, to distinguish it from the ordinary kind, from which it differs in many respects. For, 1st, it is smaller; 2dly, its plumage is different both in the colours and their distribution; and, 3dly, it has three fore-toes on each foot, like the bustards, and none behind. [A]

[A] Specific character of the *Tetrao Striatus* :—" Its legs tawny; its eye-brows white; its bill, its throat, the lower part of its breast, and its belly, black, with white drops."

The NOISY QUAIL.

*Réveil-Matin**, ou *La Caille de Java*, Buff.*Tetrao Sufcinator*, Gmel.*Coturnix Javensis*, Briff.

This bird is not much larger than our Quail, resembles it exactly in the colours of its plumage, and pipes at intervals; but it is distinguished by many notable differences.

* i. e. Morning Waker.—See Bontius's " Natural and Medical History of the East-Indies."

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I. Its

1. Its note is very deep, and very strong, and pretty much like the sort of lowing of the bittern, ingulphing its bill in the marshes*.

2. Its disposition is so gentle that it can be tamed to the same degree as our domestic fowls.

3. It is remarkably affected by cold; it ceases to pipe, and its active powers are suspended, in the absence of the sun. As soon as he has descended into the west, it retires into some hole, and spends the night enveloped in its wings; but when the star of day again beams upon the earth, it rises from its lethargy, and celebrates his return with joyous notes, that awaken the whole house †. Also, when kept in a cage, if it has not the sun constantly, or if the cage is not covered with a coat of sand upon linen cloth to retain the heat, it will pine away and soon die.

4. Its instinct is different; for, according to Bontius's account, it is very social, and goes in companies. Bontius adds, that he found it in the forests on the island of Java; but our Quails live solitary, and are never found in the woods.

5. Its bill is somewhat longer.

* The Hollanders call this lowing *Pittoor*, according to Bontius.

† Bontius says, that he kept one in a cage for the express purpose of rousing him in the morning: in fact their first calls announce always the rising of the sun.

This species has however one point of analogy to our Quail, and to many others; to wit, the males fight each other with excessive rancour, and desist not till one is killed.—But this circumstance is not a sufficient foundation for arranging it with these, and I have therefore bestowed on it a distinct name. [A]

[A] Specific character of the *Tetrao Sufitator*:—"It is variegated with yellowish, rufous, black, and gray; its bill longer."

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OTHER BIRDS

WHICH ARE RELATED TO THE PARTRIDGES
AND THE QUAILS.

I.

The COLINS.

THE Colins are Mexican birds, which have rather been mentioned than described by Fernandez*; and those who have copied that author on this subject have committed some mistakes, which it will be proper to correct.

First, Nieremberg †, who professes to take his accounts entirely from others, and who in this place borrows from Fernandez, takes no notice of the *Cacacolin* of chap. cxxxiv. though that bird is of the same species with the Colins.

Secondly, Fernandez speaks of two *Acolins* or Water-Quails, in chap. x. and cxxxi.; Nieremberg mentions the former, and very improperly, after the Colins; since it is a water-bird, as well as the one of chap. cxxxi. which he totally omits.

* *Historia Avium Novæ Hispaniæ*, cap. xxiv, xxv. xxxix. lxxv. and cxxxiv.

† *Juan Euseb. Nirembergi Historia Naturæ maxime Peregrinæ* lib. x. cap. lxxii. p. 232.

BIRDS

THE PARTRIDGES JAILS.

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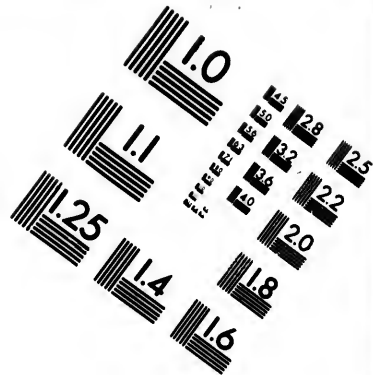
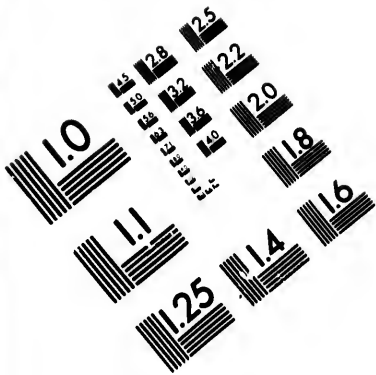
OTHER BIRDS related to the PARTRIDGES, &c. 427

Thirdly, He takes notice of the *Occolin* of chap. lxxxv. of Fernandez, which is a Mexican Partridge, and consequently nearly related to the Colins, which are also Partridges, as we shall see.

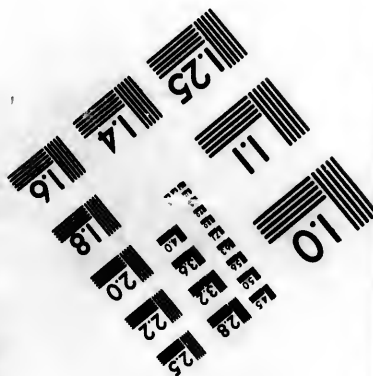
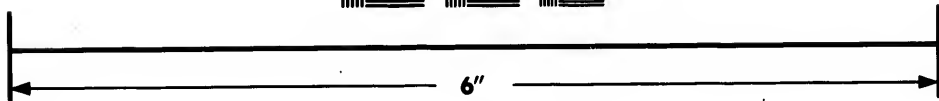
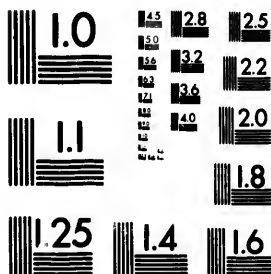
Fourthly, Ray still copying Nieremberg, on the subject of the *Coyolcozque* varies the expression and in my opinion alters the meaning of the passage; for Nieremberg says, that this *Coyolcozque* is like the Quails so called by us *Spaniards*, (which are certainly the Colins,) and concludes with telling that this is a species of the Spanish Partridge. But Ray makes him say that it is like the European Quails, and suppresses the words *est enim species perdicis Hispanicæ**; yet these last words are essential, and contain the real notion of Fernandez with regard to the species to which these birds must be referred; since, in chap. xxxix. which is occupied entirely on the Colins, he says that the Spaniards call them *Quails*, because they resemble the European Quails, though they certainly belong to the genus of Partridges. It is true, that he repeats in the same chapter, that all the Colins are referred to the Quails; but, in spite of this confusion, it is easy to see that when the author bestows on the Colins the name of *Quails*, he speaks after the vulgar, who are guided in applying epithets by the general appearances, and that his more ac-

* i. e. For it is a species of Spanish Partridge.





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curate opinion was, that they are species of the Partridge. I should therefore have had reason, from the authority of Fernandez, the only observer who has had an opportunity of viewing these birds, to place the Colins next the Partridges; but I have rather chosen to yield as much as possible to the common opinion, which is not altogether groundless, of ranging them after the Quails, as being related to both these kinds of birds.

According to Fernandez, the Colins are very common in New Spain; their music resembles much that of our Quails; their flesh is excellent, and proper even for sick people when kept some days. They feed on grain, and are commonly kept in a cage; which would make one believe that they are different from our Quails, and even our Partridges.—We shall in the following articles take notice of their several kinds,

II.

The ZONECOLIN*.

Tetrao Cristatus, Linn. and Gmel.

Coturnix Mexicana Cristata, Briss.

The-Crested Quail, Lath.

This word, shortened for the Mexican *Quantzonecolin*, denotes a bird of a moderate size, whose

* Fernandez, chap. xxxix.

plumage

plumage is of a dusky colour ; it is distinguished by its cry, which, though rather plaintive, is agreeable, and by the crest which decorates its head.

Fernandez mentions, in the same chapter, another Colin of the same plumage, but not so large and without the crest ; this is perhaps the female of the preceding, from which it is distinguished only by accidental characters, that are liable to vary in the different sexes. [A]

[A] Specific character of the *Tetrao Cristatus* :—“ Its pendulous crest and its throat are fulvous.”

III.

The GREAT COLIN*.

Tetrao Novæ Hispaniæ, Gmel.

Coturnix Major Mexicana, Briss.

The Mexican Quail, Lath.

This is the largest of all the Colins : Fernandez does not give us its name ; he only says that its predominant colour is fulvous, that its head is variegated with white and black, and that there is also white on the back and on the tips of the wings, which must make a fine contrast with the black colour of its legs and bill.

* Fernandez, chap. xxxix.

IV. The

IV.

The C A C O L I N*.

This bird is called the *Cacolin* by Fernandez, and is, according to him, a species of Quail, that is of the Colin, of the same size, shape, and even cry; feeding on the same substances, and having its plumage painted with almost the same colours with those of the Mexican Quails. Neither Nieremberg, Ray, nor Brisson, takes any notice of it.

V.

The C O Y O L C O S.

Tetrao Coyolcos, Gmel.

Coturnix Mexicana, Brisson.

The Lesser Mexican Quail, Lath.

I have found the Mexican word *Coyolcozqui* into this name. This bird, in its cry, its size, its habits, its manner of living and of flying, resembles the other Colins, but differs from them in its plumage. Fulvous mixed with white, is

* "Species of what is called the Quail." Fernandez, chap. cxxxiv.

the prevailing colour of the upper side of the body, and fulvous alone that of the under side and of the legs: the top of the head is black and white, and two bars of the same colour descend from the eyes upon the neck: it inhabits the cultivated fields.—Such is what Fernandez relates, and Brisson must have read the account with little attention, or rather copied Ray, when he tells us that the Coyoicos is like our Quail in its cry, flight, &c.; while Fernandez expressly says, that it is analogous to the Quails, so called by the vulgar, that is to the Colins, and is really a species of the Partridges*. [A]

* "It is a species of the Spanish Partridge." *Hist. Anim. Novæ Hispaniæ.*

[A] Specific character of the *Tetrao Coyoicos*: "Its feet are fulvous, its top and its neck are striped with black and white; its body is fulvous above, variegated with white."

VI.

The COLENICULI.

Tetrao Mexicanus, Linn. and Gmel.

Coturnix Ludoviciana, Brisson.

Attagen Americanus, Frisch.

The Louisiana Quail, Lath.

Frisch gives (Pl. CXIII.) the figure of a bird, which he calls *The Small Hen of the forests of America*, and which, according to him, resembles the

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by Fernandez, species of Quail, that size, shape, and substances, and with almost the same as the American Quails. Neither Brisson, takes any

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an word *Coyoicos* quail in its cry, its size, and of flying, but differs from them mixed with white, it

Quail." Fernandez, chap

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the Wood Grouse in its bill, legs, and general form; its legs however are not feathered, nor are its toes edged with indentings, nor its eyes decorated with red orbits, as we may see from the figure. Brisson, who conceives this bird to be the same with the *Colenicuiltic* of Fernandez, has ranged it among the Quails, by the name of *Louisiana Quail*, and gives a figure of it. But comparing the figures or the descriptions of Brisson, Frisch, and Fernandez, I find greater differences than could occur in the same bird; for not to mention the colours of the plumage, so difficult to paint in description, and still less the attitude, which is but too arbitrary, I observe that the bill and the legs are large and yellowish, according to Frisch; red and moderate sized, according to Brisson; and that the legs are blue, according to Fernandez.

But if I attend to the different lights in which naturalists have viewed it, the embarrassment will be increased; for Frisch fancied that it was a Hen of the Wood, Brisson a Quail, and Fernandez a Partridge. That this was the opinion of the last manifestly appears, for though he says, in the beginning of chap. xxv. that it is a Quail, he evidently conforms to the common language, since he concludes the chapter with saying, that the *Colenicuiltic*, in its bulk, in its cry, in its habits, and in every other particular, is analogous to the bird of chap. xxiv; but that bird is the *Coyolcozque*, a kind of Colin; and Fernandez

as we have already seen, ranks the Colins among the Partridges.

I would not insist on this matter, were it not to avoid as much as possible the great inconvenience attending on nomenclature. Each author, fond of building a system, is not satisfied till he assign to every object, however anomalous, its place; and thus, according to the different views that arise, the same animal may be classed with *genera* widely distinct.—Such is the present case.

To return—The Colenicui is of the bulk of our Quail, according to Brisson; but its wings seem to be longer; its body is brown above, and dirty-gray and black beneath; it has a white throat, and a sort of white eye-brows. [A]

[A] Specific character of the *Tetrao Mexicanus*:—"Its legs and bill are blood-coloured, the line on its eye-brows white."

VII.

The OCOCOLIN, OR MOUNTAIN PARTRIDGE OF MEXICO.

This species, which Seba took for the crested Roller of Mexico, is still farther removed from the Quail, and even the Partridge, than the preceding. It is much larger, and its flesh is not inferior

inferior to that of the Quail, though much inferior to that of the Partridge. The Oocolin resembles somewhat the Red Partridge, in the colour of its plumage, of its bill, and of its feet; its body has a mixture of brown, light gray, and fulvous; the lower-part of its wings is of an ashy-colour, the upper-part is mottled with dull white, and fulvous spots, as likewise the head and neck. It thrives best in countries that are temperate and rather chilly, and cannot subsist or propagate in the hot climates.—Fernandez speaks also of another Oocolin, but which is a bird entirely of a different kind*.

* “Oocolin, a kind of Wood-pecker with a long sharp bill.” It lives in the forests of Telzocan, where it breeds: it does not chirp.

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The PIGEON DOMESTICA.

Columba, Linn. and Gmel.

IT was easy to domesticate the heavy and in-
 active birds, such as the common hen, the
 turkey, and the peacock; but to tame those which
 are nimble and shoot on rapid wings, required
 attention and art. A low hut, rudely constructed
 on a confined spot, is sufficient for lodging and
 raising our poultry; to induce the Pigeons to
 settle, we must erect a lofty building, well cov-
 ered without and fitted up with numerous cells.
 They really are not domestics, like dogs or
 horses; or prisoners like the fowls; they are
 rather voluntary captives, transient guests, who
 continue to reside in the dwelling assigned them,
 only because they like it, and are pleased with a
 situation which affords them abundance of food,
 and all the conveniencies and comforts of life.
 On the slightest disappointment or disgust, they
 abandon their mansion, and disperse; and some
 of them even will always prefer the mouldering
 holes of ancient walls to the neatest apartments
 in Pigeon-houses; others take their abode in
 the clefts and hollows of trees; others seem to
 by the habitations of men, and cannot be pre-
 vailed to enter their precincts; others again never

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roam from human dwellings, but must be fed near their volery, to which they are inflexibly attached. These various and even opposite habits shew, that under the Pigeon are included many different species. This opinion is confirmed by the modern nomenclators, who, besides a great number of varieties, reckon five species of Pigeons, without including the Ring-dove and Turtle. We shall remove these two last species from those of the Pigeon, and consider each separately.

The five species of Pigeons noticed by our nomenclators are, 1. The Domestic Pigeon; 2. The Roman Pigeon, which includes sixteen varieties; 3. The Brown Pigeon; 4. The Rock Pigeon, with one variety; 5. The Wild Pigeon; but these five species are in my opinion the same. My reason is this. The Domestic Pigeon and the Roman Pigeon, with all their varieties, though differing in size and colours, are certainly the same species; since they breed together, and their progeny are capable of procreating. We cannot consider the great and little Domestic Pigeons as two different species; we can only say that they are different branches of the same kind, the one of which has been reduced to a more perfect domestication than the other. In the same manner, the Brown Pigeon, the Rock Pigeon, and the Wild Pigeon, are three nominal species which may be comprised in one, which is the Brown Pigeon, and of which the Rock Pigeon and the Wild Pigeon are only minute varieties.

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since the nomenclators themselves admit that these three are nearly of the same size, that they migrate, perch, and have all the same instincts, differing only in their shades of colour.

Thus the five nominal species are comprised under two; viz. the Brown Pigeon and the Common Pigeon; and in these no real difference exists, except that the first is wild, and the second domestic. I consider the Brown Pigeon as the parent of all the rest, and from which they differ more or less according as they have been handled by men. Though I cannot prove it, I am confident that the Stock Pigeon and the Common Pigeon would breed together if they were paired: for the difference is not so great between our little Domestic Pigeon and the Stock Pigeon, as between it and the large rough-footed or Roman Pigeon, with which however it breeds. Besides, in this species we can trace all the gradations between the wild and the domestic state, as they occur in succession; in the order of genealogy, or rather of degeneracy. The Stock Pigeon is imitated, in a way that cannot be misunderstood, by those deserters which leave our pigeon-houses; they perch on trees, which is the first and strongest shade in their return to the state of nature: these Pigeons, though bred domestics, and apparently reconciled, like the rest, to a fixed abode and to common habits, abandon their dwelling, renounce society, and seek a settlement in the woods; and thus, impelled by in-

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stinct alone, they resume their native manners. Others, seemingly less courageous and less intrepid, but equally fond of liberty, fly from our pigeon-houses, and seek a solitary lodgment in the holes of old walls, or, forming a small body, they haunt some unfrequented towers; and in spite of the hardships to which their situation exposes them, and the multiplied dangers that assail them from all sides, they still prefer these uncomfortable dwellings to the convenience and plenty of their former mansion: this is the second gradation to the state of nature. The Wall Pigeons do not completely adopt their native habits, and do not perch like the former, yet they enjoy a much larger share of freedom than those which remain in the domestic condition. The third gradation is the inhabitants of our pigeon-houses, which never leave their dwelling but to settle in one more comfortable, and which roam abroad only to seek amusement, or to procure subsistence. And as even among these there are some deserters, it would seem that the traces of their primæval instincts are not entirely effaced. The fourth and fifth gradations have totally changed their nature. Their tribes, varieties, and intermixture are innumerable, being completely domestic from the earliest ages; and man, while he has improved their external forms, has changed their internal qualities, and extinguished in them every sentiment of freedom. These birds are for the most part larger and more beautiful than

the Common Pigeons; are more prolific, fatter and finer flavoured, and on all these accounts more pains have been bestowed upon them. They are inactive helpless creatures, that require the constant attention of man; and the most cruel hunger cannot in them call forth those little arts in which animals are usually so prompt. They are therefore completely domesticated, and entirely dependent on man, who has degraded them from their original condition.

If we suppose, that after our dove-cots were stocked, we selected those of the young which were most remarkable for their beauty, and raised them apart with greater care and attention, and still continued to choose the most gaudy of their descendants; we should at last obtain those painted varieties which at present exist. To give a complete history of these would therefore be to detail the effects of art, rather than to describe the productions of nature. For this reason, we shall content ourselves with the bare enumeration of them.

The BISET or WILD PIGEON*, is the primitive stock whence all the others are descended. It is commonly of the same size and shape with the

* *Columba-Livia*, Gefner, Gmel. and Briff.

Le Biset, Buff.

Columba Saxatilis, Aldrov.

Columba Fera Saxatilis, Schwenckfeld.

The Biset Pigeon, Lath.

Domestic Pigeon, but of a browner colour. It varies however both in its bulk and plumage; for the one which is figured by Frisch under the name of *Columba Agrestis*, is the same bird with a white shade, and its head and tail reddish; and what the same author has termed *Vinago*, five *Columba Montana*, is still the Wild Pigeon, only its plumage borders on a dark blue. What Albin describes by the term *ring-dove*, which is not applicable to it, must be considered as still the same bird; and likewise what Belon calls the *Deserter Pigeon*, which is more proper. We may suppose that this variety has arisen from those individuals which desert our pigeon-houses, and relapse into the state of nature; for the dark blue Wild Pigeons nestle not only in the clefts of trees, but in the holes of ruins and precipices which they find in the forests. Hence some naturalists have called them *Rock Pigeons*, and others, because they are fond of elevated tracts, have named them *Mountain Pigeons*. We may also observe, that this is the only species of the Wild Pigeon with which the ancients seem to have been acquainted, and which they called *Ouzes*, or *Vinago*, and that they never mention our brown sort, which is however the only Pigeon really wild, and never reduced to that state of domestication. My opinion on this subject derives additional force from this fact, that in all countries where there are Domestic

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Pigeons, the *Oenas* is found, from Sweden* to the torrid zone †; but the Brown Pigeon never occurs except in cold regions, and continues only during the summer in our temperate climates. They arrive in flocks in Burgundy, Champagne, and other northern provinces in France, about the end of February and the beginning of March; they settle in the woods and nestle in the hollow trees, laying two or three eggs in the spring, and probably making a second hatch in summer; they raise only two young at a time, and leave the country in November, and direct their course towards the south, traversing Spain, to pass the winter probably in Africa.

The Biset or Wild Pigeon and the *Oenas* or Deserter Pigeon, which returns into the wild state, perch, and by this circumstance, they are

* "Cerulean Dove with a shining neck, and a double blackish spot on the wings." LINN. *Fauna Suecica*, No. 174.

† "Wild and tame Pigeons are found every where in Persia, but the wild ones are much the most numerous; and as Pigeon's dung is the best for melons, a great many Pigeons are carefully bred throughout the kingdom, and no country in the world, has, I suppose, more beautiful pigeon-houses. . . . Above 3000 pigeon-houses are computed in the neighbourhood of Isfahan; it is a pleasure to see people take Pigeons in the field, by means of Pigeons tamed and trained for the purpose, which they make to fly in flocks the whole day beside the Wild Pigeons; these are thus mingled in the flock, and led to the pigeon-house." *Voyage de CHARDIN*, tom. ii. p. 29, and 30. TAVERNIER, tom. ii. p. 22, and 23. "The Pigeons of the island Rodrigue are rather smaller than ours, all of them slate coloured, and constantly very fat and excellent: they perch and nestle on the trees, and are very easily caught." *Voyage de LEGUAT*, tom. i. p. 106.

distin-

distinguished from the Wall Pigeons, which also forsake their houses, but seem afraid to penetrate into the forests. After these three Pigeons, the two last of which approach more or less to the state of nature, we shall range the Common Pigeon *, which, as we have observed, is only half domestic, and still retains the original instinct of flying in flocks. If it has lost that native courage which is founded on the feeling of independence, it has acquired more of the agreeable and useful qualities. It often hatches thrice a-year, and, if still more domesticated, even ten or twelve times; whereas the Brown Pigeons breeds only once, or at most twice, annually. They lay, at intervals of two days, almost always two eggs and seldom three, and never raise more than two young, which are commonly a male and female. Many, and these are of the younger sort, lay only once a-year, and the spring hatch is always the most numerous. The best pigeon-houses are those built facing the east, on some rising ground several hundred paces distant from the farm-yard; where the inhabitants can enjoy quiet, have the advantage of an extensive prospect, and receive the cheering influence of the morning sun. I have frequently seen Pigeons, flying from the vallies before sun-

* In Greek, *περισσος*; in Latin, *Columba*; in Italian, *Colomba*, or *Colomba*; in Spanish, *Colont*, or *Paloma*; in German, *Taube*, or *Fauben*; in Saxony, *Duwe*; in Swedish, *Duwa*; and in Polish, *Golab*.

rise, alight to bask on a pigeon-house that was seated on a hill, and drive away or even dispossess the lodgers; and this happens ofteneft in spring and autumn. I shall add another remark, that lofty and solitary pigeon-houses are the most productive. From one of mine, I had usually 400 pairs of young Pigeons; while I got only 100 or 130 from others that were situated 200 feet lower. The only danger is, lest the rapacious birds that hover about the elevated tracts disturb the Pigeons and check their breeding, for they cannot much diminish their numbers, as they prey on those only which stray from the flock.

After the Common Pigeon, which is half domestic, we shall place those varieties to the production of which man has so much contributed; but the number is so immense, that it would exceed the limits of our work to describe each particularly, and we shall therefore be contented with a general survey.

The curious in this line apply the name of *Bifet* to all Pigeons that live in the fields, or are bred in large pigeon-houses, and call those *domestic* which are lodged in small pigeon-houses, or voleries, and do not venture to roam abroad. They are of different sizes: for instance, the tumbler and wheeler Pigeons, which are the least of all the volery Pigeons, and smaller than the Common Pigeon. They are more agile and nimble, and when they breed with the common sort, they lose their distinctive qualities. It would

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would seem that their peculiar constrained motions are owing to the slavery to which they are reduced.

The pure breeds; that is, the principal varieties of the Domestic Pigeons, from which all the secondary ones can be derived; are: 1. The Pouter Pigeons *, which are so called on account of their power of inflating their craw in respiration; 2. The Proud Pigeons †, which are noted for their prolific quality, such as the Roman Pigeons, the rough-footed Pigeons, and the Jacobine Pigeons; 3. The Shaker ‡ Pigeons, which display their broad tail, like the turkey and peacock; 4. The Turbet Pigeon §; 5. The Shell Pigeon of Holland ||; 6. The Swallow Pigeon ¶; 7. The Carmelite Pigeon **; 8. The Dashed Pigeon ††; 9. The Swiss Pigeons ††; 10. The Tumbler Pigeon §§; 11. The Wheeler Pigeon |||.

The breed of the Pouter Pigeon consists of the following varieties:

1. The Wine-sop Pouter Pigeon, in which the males are extremely beautiful, being decora-

* *Les grosses gorges*, i. e. the thick throats.

† *Les Pigeons mondains*.

‡ *Les Pigeons paons*, i. e. the Peacock Pigeons.

§ *Le Pigeon cravate*, ou à gorge frisée; i. e. the cravated or frizled-necked.

|| *Le Pigeon coquille Hollandois*.

** *Le Pigeon carme*.

†† *Les Pigeons Suisses*.

||| *Le Pigeon tournant*.

¶ *Le Pigeon-hirondelle*.

†† *Le Pigeon heurté*.

§§ *Le Pigeon culbutant*.

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; 4. The Turbet
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7. The Carmelite
Pigeon †††; 9. The
Tumbler Pigeon §§;

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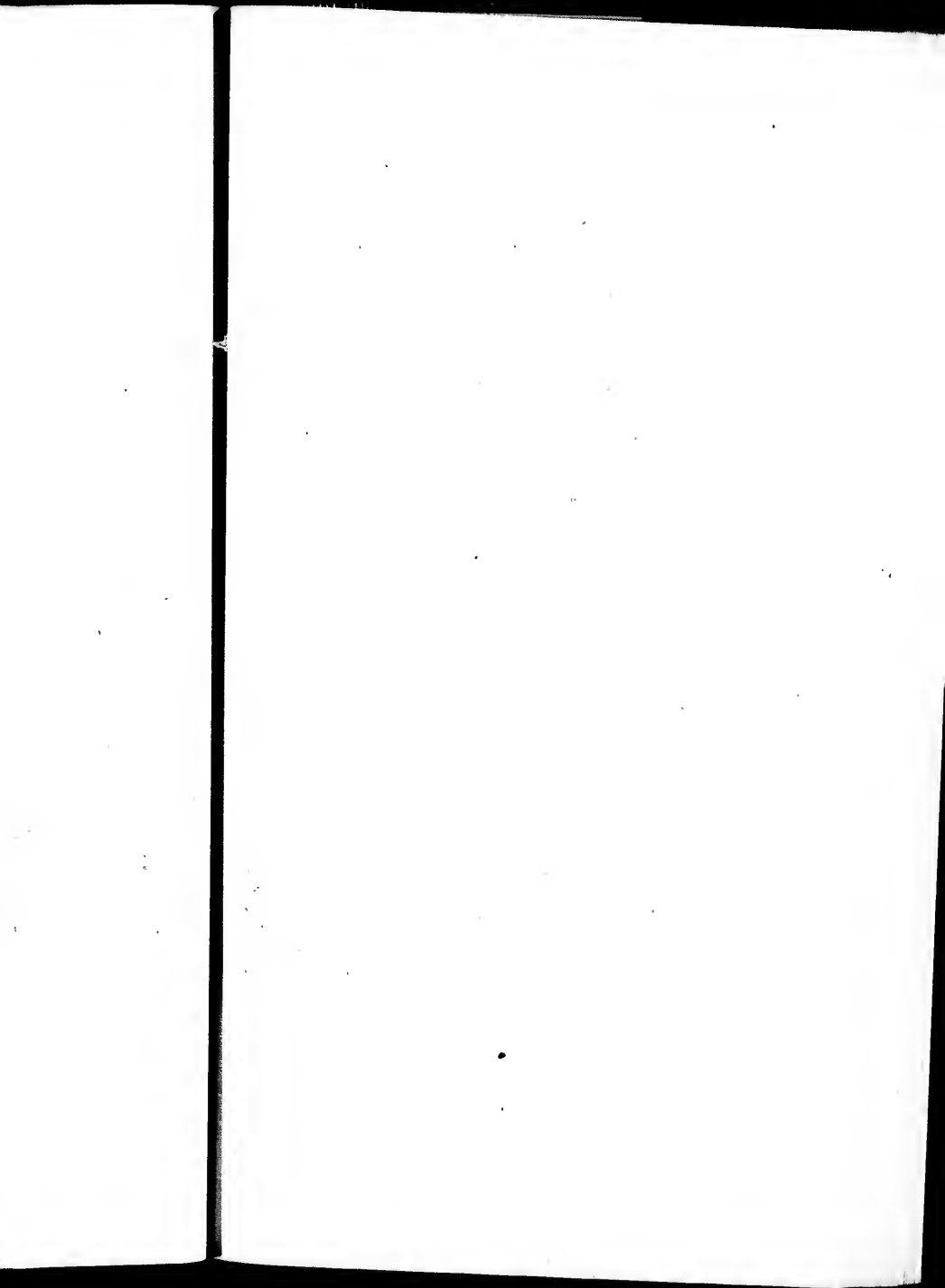
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THE POUTER PIGEON .

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THE POUTER PIGEON.

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ted with plumage of a varied intermixture of hues; but the females are destitute of such ornament.

2. The Painted Chamois Pouter Pigeon; the female has not that rich assemblage of colours. To this variety we ought to refer the Pigeon pl. cxlvi. of Frisch; and which the Germans call *Kropftaube* *, or *Kröüper*, and to which that author has applied the epithet *Strumous Pigeon*, or *Pigeon with the inflated œsophagus*.

3. The Pouter Pigeon, white as a Swan.

4. The White Pouter Pigeon, rough-footed, with long wings which cross over the tail, and of which the ball of the neck appears very loose.

5. The variegated gray, and soft gray Pouter Pigeon, whose colour is delicate, and spread uniformly over the whole body.

6. The Pouter Pigeon of iron gray, and barred, and striped gray.

7. The Gray Pouter Pigeon spangled with silver.

8. The Hyacinth Pouter Pigeon, of a blue colour interwoven with white.

9. The Fire-coloured Pouter Pigeon; each of its feathers is marked with a blue and red bar, and terminates in a black bar.

10. The Hazel-coloured Pouter Pigeon.

11. The Chestnut-coloured Pouter Pigeon, whose tail-quills are all white.

* i. e. *The crop or craw Pigeon.*



PIGEON.

12. The Dark Pouter Pigeon of a fine velvet black, with ten wing-quills white, as in the Chestnut Pouter Pigeon. Both have the bib or kerchief under the neck white; and the females are like the males. Of all the Pouter Pigeons of a pure breed, that is, which have an uniform plumage, the ten quills are all white as far as the middle of the wing, and this may be regarded as a general character.

13. The Slaty Pouter Pigeon, which has the under-surface of the wings white, and a white cravat; the female is like the male.—These are the principal breeds of the Pouter Pigeons, but there are others of inferior beauty, such as the red, the olive, the sable, &c.

All Pigeons have more or less the power of inflating their craw by inspiring air; and the same effect may be produced by blowing into the gullet. But this breed of Pouter Pigeons possesses the property in so superior a degree as can result only from some peculiar conformation of its organs. The craw, almost as large as the rest of the body, and kept constantly inflated, obliges them to draw back their head, and prevents them from looking forward: and thus while they swell with conceit, the falcon seizes them unawares. Hence they are raised more for curiosity than utility.

Another breed is the Proud Pigeons; they are the most common, and at the same time the most esteemed, on account of their prolific quality.

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The Proud Pigeon is nearly one half larger than the Biset, and the female pretty much resembles the male. They breed almost every month in the year, provided that only a small number are put into the same volery, and to each there be allowed three or four baskets or rather holes, formed into pretty deep casements with shelves, to prevent them from seeing one another while sitting; for each Pigeon not only defends its own hole, and fights the others that come near it, but contends for the possession of the next row. For example, eight pairs are sufficient to stock a space eight feet square, and people who have bred them affirm that six pair would be equally productive. The more their number be increased in a given space, the more there will be of brawling and fighting and of broken eggs. In this breed there are often impotent males, and barren females, which never lay.

They are fit to breed in the eighth or ninth month, but do not attain maturity till three years old. Their prolific powers are vigorous for six or seven years; after which the number of eggs they lay diminishes gradually; though there are instances of their breeding at the age of twelve. They lay their two eggs sometimes in the space of twenty-four hours, and during winter in that of two days; so that the interval varies according to the season. The female keeps her first egg warm, without covering it assiduously, nor does she begin to sit closely till after the

the second is laid. The period of incubation is commonly eighteen days; sometimes only seventeen, especially in summer, and nineteen or twenty in winter. The attachment of the female to her eggs is so ardent and steady, that she will forego every comfort, and submit to the most cruel hardships, rather than forsake them. A Hen Pigeon, whose toes froze and dropt off, persisted to sit till her young were hatched: her toes were frost-bitten, because her hole chanced to be close to the window of the dove-cot.

While the female is employed in hatching, the male places himself in the next hole; and the moment she is compelled by hunger to leave her eggs and go to the trough, he observes her feeble murmur of intimation, takes her place, covers the eggs and sits two or three hours. This incubation of the male is commonly repeated twice in the course of the twenty-four hours.

The varieties of the Proud Pigeon may be reduced to three with respect to size, which have all the common character of a red filet round the eyes.

1. Those heavy birds that are nearly as large as small pullets; their bulk alone recommends them, for they are not good breeders.

2. The *Bagadais* are large Proud Pigeons with a tubercle over the bill in the form of a small morel*, and a broad red ribbon round the

* *Morel* is a little red mushroom.

eyes, that is, a second eyelid, fleshy and reddish, which even falls upon the eyes when they are old, and prevents them from seeing.—These Pigeons are not productive.

The *Bagadais* have a curved and hooked bill, and exhibit many varieties; white, black, red, tawny, &c.

3. The Spanish Pigeon; which is as large as a hen, and exceedingly beautiful. It differs from the *Bagadais* in not having the *morel* above its bill, and its second fleshy eyelid being less protuberant, and its bill straight instead of curved. It crosses with the *Bagadais*, and produces a very thick and large breed.

4. The Turkish Pigeon; which, like the *Bagadais*, has a thick excrescence above the bill, with a red bar extending from the bill round the eyes. This bird is very thick; crested, low legged, with a broad body and wings: some are of a tawny colour, or a brown bordering on black, such as represented in Pl. CXLIX. of Frisch; others are of an iron-gray, lint-gray, chamois, and wine-top. These Pigeons are very inactive, and never roam from their volery.

5. The Roman Pigeons; which are not quite so large as the Turkish, but have the same extent of wings, but no crest; they are black, tawny, or spotted.

These are the largest of the Domestic Pigeons; there are some of a middle size, and others

smaller. Among the rough-legged Pigeons, which are feathered as low as the nails, we may distinguish the one without a crest, figured by Frisch, Pl. CXLV. under the name *trummel taube* *, in the German; *Columba typanifans*, in the Latin; and *Pigeon-tambour*, in the French: also the crested rough-legged Pigeon, which the same Author has designed in Pl. CXLIV. by the name of *Monttaube* † in German, and in Latin by the epithets *Columba menstrua, seu cristata pedibus plumosis* ‡. The rough-legged Drum-Pigeon is also termed the *Glou-glou Pigeon*, because it continually repeats that sound, and its voice at a distance resembles the beat of a drum. The crested rough-legged Pigeon is also called the *Month Pigeon*, because it hatches every month, and does not wait till its young are able to provide for themselves. Its breed is very profitable, though we must not reckon upon twelve hatches annually; the usual number is eight or nine, which is still very great.

In the intermediate and small breed of Domestic Pigeons, we may distinguish the Jacobine Pigeon §, of which there are many varieties; viz. the Wine-sop; the Painted Red, and the Painted Chamois; but in none of the three is the female thus decorated. In the Jacobine

* i. e. *The Drum Pigeon*. The Latin and French signify the same.

† i. e. *The Month Pigeon*.

‡ i. e. *The Month Pigeon, or the crested with feathery feet*.

§ *Pigeon Nonain, i. e. The Nun Pigeon*.

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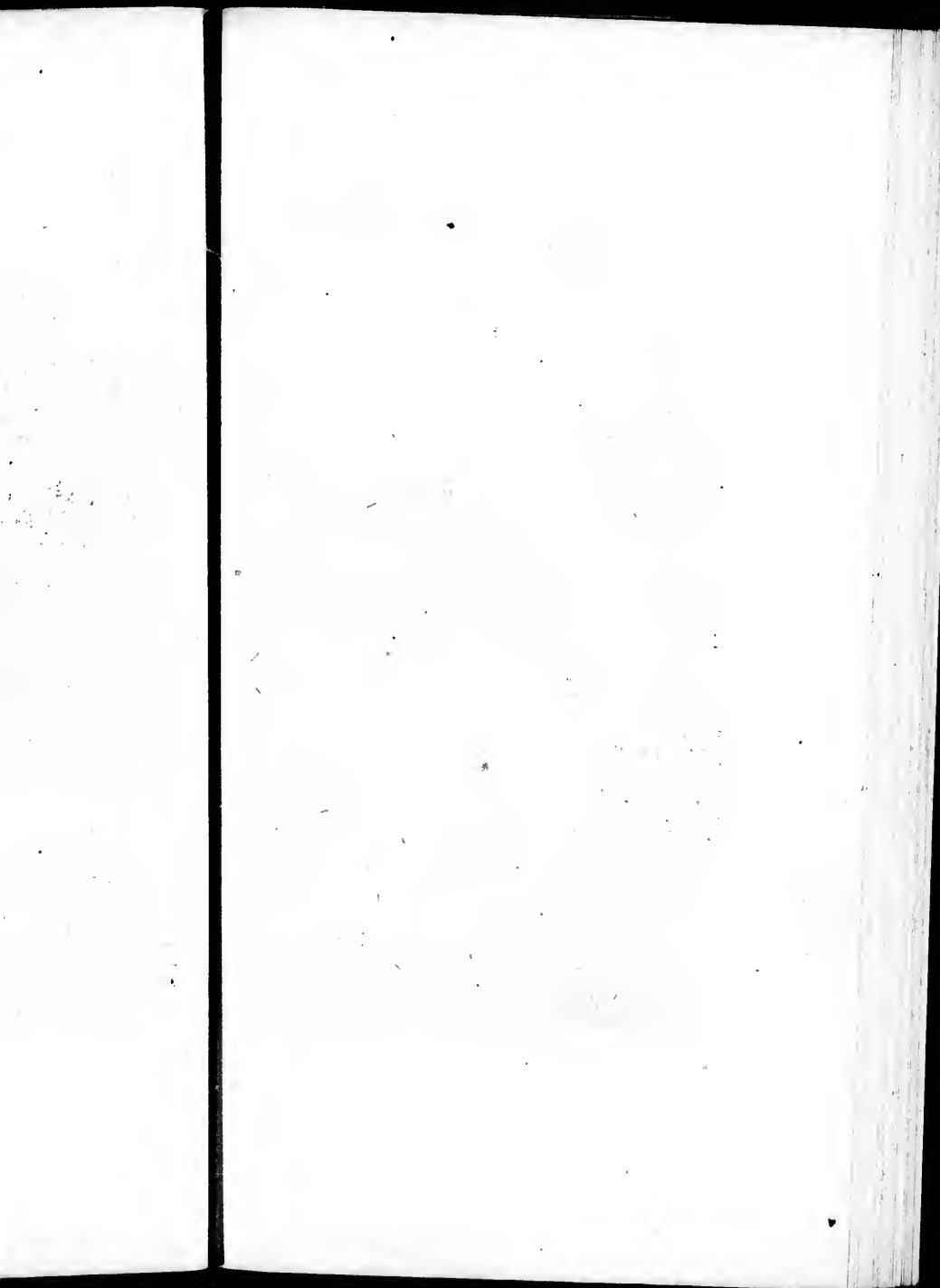
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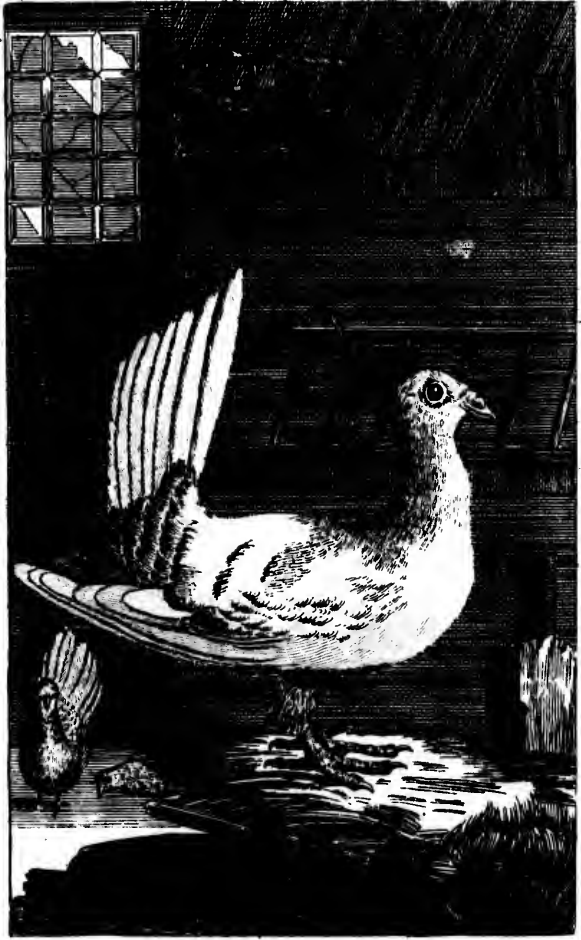


THE JACOBINE PIGEON.

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THE SHAKER PIGEON.

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breed, there is also the *Moorish Pigeon* *; which is entirely black, except the head and the tips of its wings, which are white: to this we may refer the Pigeon of Pl. CL. of Frisch, which he names in German *Schleyer*, or *Parruquen-taube* †, and in Latin *Columba-galerita*, that is, Hooded Pigeon. But in general all of the Jacobines are hooded, or rather have a half-cowl on the head, which descends along the neck, and extends along the breast like a cravat of ruffled feathers: this variety is nearly allied to the Pouter Pigeon, for its size is the same, it also somewhat inflates its crop, nor is it so prolific as the other Jacobines, of which the most perfect are entirely white. In all of them, the bill is very short; the latter breed often, but their young is very small.

The Shaker or Peacock Pigeon is somewhat larger than the Jacobine. The finest of this breed have thirty-two feathers in the tail, while the common sort have only twelve. After they have raised their tail, they bend it forwards, and at the same time draw back the head so as to make it meet the tail. They shake also during the whole of this movement; either from the violent contraction of the muscles, or from some other cause, for there is more than one breed of Shaker Pigeons ‡. They make this display of the tail commonly

* *Pigeon Maurin.*

† i. e. *The veiled or perruqued Pigeon.*

‡ There is a Shaker Pigeon different from the Peacock Pigeon,



GEON.

commonly in the love season; though sometimes also upon other occasions. The female raises and displays her tail also like the male, and is quite as beautiful; some kinds are entirely white, others white with the head and tail black. To this second variety we must refer the Pigeon figured in Pl. CLI. of Frisch, which he calls in German, *Pfau-taube*, or *Hunerschwantz* *, and in Latin, *Columba caudata*. That Author remarks at the same time, that the Shaker Pigeon displays its tail, and works eagerly and constantly with its head and tail, nearly in the same way as the *wryneck*. These Pigeons do not fly so well as the others; their broad tail catches the wind, and they often fall to the ground; for this reason they are bred chiefly from curiosity. However, these Pigeons, though by themselves they could perform no distant journies, have been carried into remote countries: in the Philippine islands, says Gemelli Carreri; are Pigeons that elevate and spread their tail like the peacock.

The Polish Pigeons are larger than the Shaker Pigeons. Their distinguishing character is a very thick and short bill, their eyes bordered

its tail not being near so broad. The Peacock Pigeon has been denominated by Willughby and Ray, *Columba tremula laticauda* (broad-tailed Shaker Pigeon); and the Snaker Pigeon *Columba tremula angusticauda seu acuticauda* (narrow-tailed or sharp-tailed Shaker Pigeon): the latter, though it does not raise or display its tail, trembles, they say, almost continually.

* i. e. Peacock or Hen-tailed Pigeon.

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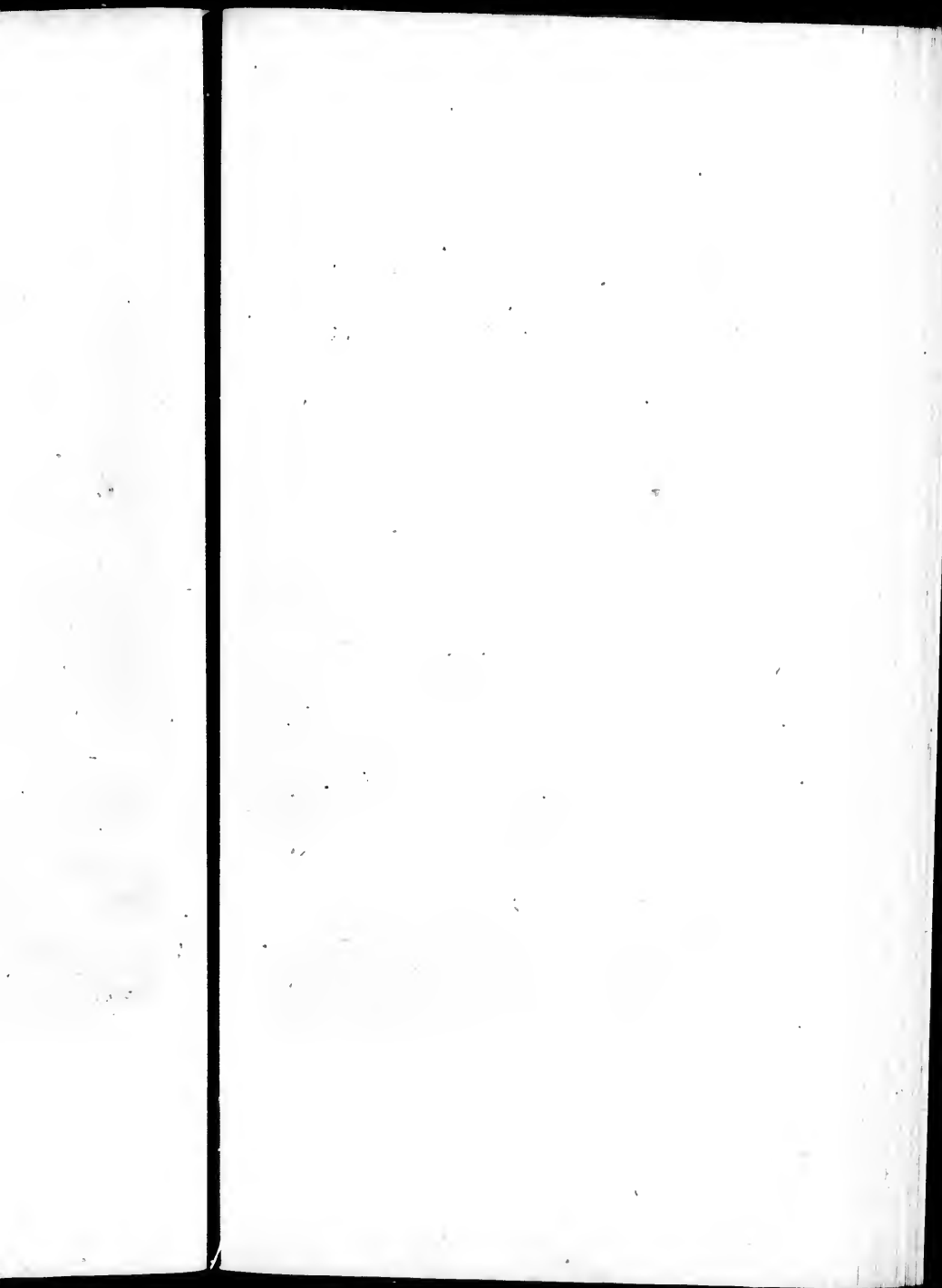
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THE POUTER PIGEON.

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THE TURBET PIGEON.

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with a red circle, their legs very low. They are of different colours, many black, others rufous, chamois, dotted with gray, or entirely white.

The Turbet Pigeon is one of the smallest, being scarcely larger than a turtle, with which it breeds. The Turbet Pigeon is distinguished from the Jacobine, the former not having the half cowl on the head and neck, but only a tuft of feathers that appear to ruffle on the breast and under the throat. These Pigeons are very handsome, well-made, and have a neat air; some are of the colour of wine-sop, others chamois, painted, rufous, gray, entirely white or black, and others white with black mantles. The last variety is what Frisch represents in his CXLVII. Plate, under the German name *Mowchen*, and the Latin designation *Columba collo hirsuto**. This Pigeon has an aversion to pairing with other Pigeons, and is not very prolific: it is besides very small, and easily falls a prey to the rapacious tribes. Upon all these accounts it is scarcely ever raised.

The Pigeons called Dutch-shell Pigeons, because on the back of the head are reversed feathers forming a sort of shell, are also small. Their head is black, the end of the tail and the tip of the wings are also black; but all the rest of the body is white. Some are red-headed, blue-headed, or the head and tail yellow;

* Pigeon with shaggy neck.



the tail is usually of the same colour with the head, but the wings are always white. The first variety which has a black head, resembles so much the Sea-swallow, that some persons have applied to it that name; and with the more appearance of analogy, as this Pigeon has not its body round like most of the rest, but long and very slender.

Besides the Shell Pigeon which we have just mentioned, there are other Pigeons which have the head and tail blue; others where these parts are black; others where they are red; others where they are yellow: but in all the four the extremity of the tail is of the same colour with the head. They are nearly as large as the Peacock Pigeons, and their plumage is very neat and singular.

There are some named Swallow Pigeons, that are not larger than turtles, and like them are slender shaped and of very nimble flight: the whole of the under-side of their body is white, and the upper-side, as well as the neck, the head and the tail, black, or red, or blue, or yellow, with a small casque of the same colours on the head, but the under-side of the head is always white, and so is that of the neck. To this variety we must refer the *Galeated Pigeon* of Johnston and Willughby, of which the principal character is, that the feathers of the head and those of the tail and the quills of the wings are always of the same colour, and the body of a different colour; for example, the body white,

and

and the head, the tail, and the wings black, or of some other colour, whatever it be.

The Carmelite Pigeon, which forms a different breed, is perhaps the lowest and the smallest of all our Pigeons; it appears squatted like the goat-sucker; it is also very rough-legged, the feathers on its thighs being exceeding long, and its legs remarkably short. The males and females resemble each other, as in most of the other breeds. It includes four varieties, which like those of the preceding sorts, are also of an iron-gray, chamois, wine-fop, and soft gray: but in them all, the under-side of the body and of the wings is white, all the upper-side of the body being of the colours we have mentioned. Their bill is smaller than that of a turtle, and they have a little tuft behind the head, which draws to a point as in the crested lark.

The Drum Pigeon or *glou-glou*, of which we have spoken, is also very low and rough-legged, but larger than the Carmelite Pigeon, and nearly of the size of the Polish Pigeon.

The Dashed Pigeon, which is marked by a daub, as it were, of a black, a yellow, or a red pencil, above the bill only, and as far as the middle of the head, with the tail of the same colour, and all the rest of the body white, is highly valued by the curious. It is not rough-legged; it is of the size of the ordinary Proud Pigeons.

The Swiss Pigeons are smaller than the Common Pigeons, and not larger than the Bisets; they even fly as nimbly. There are several kinds of them; viz. those garnished with red, with blue, and with yellow, on a silky white ground with a collar, which forms a horse-shoe on the breast, and is of an embroidered red. They have often two bars on the wings, of the same colour with that of the horse-shoe.

There are other Swiss Pigeons not garnished with intermingled tints, shaded over the whole body with an uniform slate colour, and without any collar or horse-shoe. Others are called *jaspersed yellow collars*, *mailed yellow collars*, and others *very mailed yellow collars*, &c. because they have collars of that colour.

There is still another variety of the Swiss Pigeons, called the *Azure Pigeon*, because its plumage inclines more to blue than the preceding.

The Tumbler Pigeon is one of the smallest kind; that which Frisch has figured, Pl. CXLVIII. under the names *Tummel-taube*, *tumler*, *Columba gestuosa* seu *gesticularia*, is of a rufous brown; but some are gray, and variegated with rufous and gray. It whirls round in its flight, like a body thrown in the air; for this reason it has received its appellation. All these motions seem to imply vertigoes, which, as I have observed, may be ascribed to the effect of domestication. It flies very
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swiftly, and soars higher than any; but its movements are precipitate and very irregular. Frisch says, that its fluttering resembles in some measure the capers of a rope-dancer; it has been called the Harlequin Pigeon (*Columba gestuosa*). Its shape is pretty much like that of the Bifet; it is commonly employed to attract Pigeons from other dove-cots, because it flies higher and farther, and continues longer on the wing than the rest, and more easily escapes the hawk.

The same may be said of the Wheeler Pigeon, which Brisson has called after Willughby, the *Smiter Pigeon**; it turns round in its flight, and flaps so vigorously with its wings, as to make as much noise as a mill-clapper; and often in the violence of its exertions, which seem to be almost convulsive, it breaks some of its wing-quills. These Wheeler or Smiter Pigeons are commonly gray, with black spots on the wings.

I shall barely mention some other varieties that are uncertain or secondary, noticed by the nomenclators, and which belong undoubtedly to the breeds that we have described, but to which, from the imperfect accounts given, we cannot refer them with accuracy or certainty.

1. The Norway Pigeon mentioned by Schwenckfeld, which is white as snow, and which is probably a crested rough-legged Pigeon, bigger than the rest.

* *Columba Percussor*, Will. and Briss.

2. The Pigeon of Crete, according to Aldrovandus, or of Barbary, according to Willughby *; which has a very short bill, its eyes encircled with a broad ring of naked skin, and its plumage blueish, and marked with two blackish spots on each wing.

3. The frizzled Pigeon † of Schwenckfeld ‡ and Aldrovandus §, which is entirely white, and frizzled all over its body.

4. The Carrier Pigeon of Willughby ||, which is much like the Turkish Pigeon both by its plumage which is brown, and by its eyes which are encircled with a naked skin, and its nostrils covered with a thick membrane. These Pigeons, it is said, were usually employed to carry letters speedily to a distance, when dispatch was needed, which gave occasion to the name.

5. The Horseman Pigeon of Willughby ¶ and Albin, produced, they say, by crossing the Pouter Pigeon and the Carrier Pigeon, and partaking of the qualities of both; for it has the power of inflating its craw, like the Pouter Pigeon, and, like the Carrier Pigeon, its nostrils are covered with thick membranes. But it is probable that any other Pigeon might be trained to carry light matters, or rather to fetch them from a distance: We need only separate them from

* *Columba Barbarica, seu Numidica, Will.*

† The Laced Pigeon, Lath. ‡ *Columba Crista, Schwenck.*

§ *Columba crispis pennis, Aldrov.*

|| *Columba Tabellaria, Will.* ¶ *Columba Equis, Will.*

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their female, and carry them to the place from whence the news is to be brought, and they will certainly return to their mate as soon as they are set at liberty*.

These five families of Pigeons are only, we see, secondary varieties of the first, which we have described from the observations of some curious people, who have passed their lives in breeding Pigeons, and particularly the Sieur Fournier, who has for several years had the charge of the voleries and poultry-yards of his Highness the Count of Clermont. That prince, who discovered an early taste for the arts, directed all sorts of domestic fowls to be collected from every quarter, and continually intermixed. In this way, from the Hen Pigeon alone, an amazing variety was produced entirely new, and yet bearing the impressions of their original species, though all surpassing it in beauty.

* “ In the pigeon-houses of Cairo, some males are separated from their females, and sent into the cities from which they wish to receive news: The message is written on a small bit of paper, which is folded and then covered with wax; this is stuck under the wing of the male Pigeon, and in the morning after a hearty meal, he is dismissed, and proceeds straight to the dove-cot where his female resides. He travels farther in one day, than a man on foot could in six.” Pietro della Valle, tom. i. p. 416, & 417.

At Aleppo, Pigeons are employed to carry letters from Alexandria to Aleppo, which they perform in less than six hours, though the distance is at least twenty-two leagues.

Voyage de THEVENOT, tom. ii. p. 73.

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Tame Pigeons were known in ancient Greece; for Aristotle says, that they hatch ten or eleven times a year, and those of Egypt twelve times *. However, we may suppose that large dove-cots where Pigeons breed only twice or thrice annually, were not very common in the time of that philosopher. He divides the genus into four species †; to wit, the Ring-Pigeon, the Turtle, the Biset, and the Common Pigeon ‡; and it is the last which he mentions as breeding ten times a-year. But this rapid multiplication is found only in some of those that are highly domesticated. Aristotle takes no notice of the varieties of the tame Pigeons. Perhaps they were then few in number; but in the time of Pliny they seem to have been greatly multiplied; for that naturalist mentions a large breed of Pigeons that existed in Campania, and tells us, that there were some curious persons who gave an extravagant price for a pair, whose pedigree could be traced, and that these were kept in little turrets erected on the house-tops §. All that the ancients have said with respect to the instincts and habits of Pigeons, must be applied to the domestic sort, rather than to the inhabitants

* *Historia Animalium*, lib. vi. 4. † *Hist. Anim.* lib. viii. 3.

‡ In the original, *φάσσα* or *φασσα*, *πιδαια* or *πιδαιας*, *τρύγας*, *αυας* or *φασ*.

§ Lib. x. 37.—The purchase was made by Lucius Axius, before Pompey's civil war, for the sum of four hundred *denarii*, about fifteen pounds sterling; a price much higher than is given by bird-fanciers at present.

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of pigeon-houses, which ought to be considered as an intermediatrace between the tame Pigeons and the wild, partaking of the qualities of both. They are all fond of society, attached to their companions, and faithful to their mates; a neatness, and still more the art of acquiring the graces, bespeak the desire to please; those tender caresses, those gentle movements, those timid kisses which grow close and rapturous in the moment of bliss; that delicious moment soon renewed by the return of the same appetites and by the gradual swell of the soothing melting passion; a flame always constant, and ardor continually durable; an undiminished vigour for enjoyment; no caprice, no disgust, no quarrel to disturb the domestic harmony, their whole time devoted to love and progeny; the laborious duties mutually shared; the male assisting his mate in hatching and guarding the young:—If man would copy, what models for imitation! [A]

[A] Specific character of the Common Pigeon, *Columba Domestica*:—"It is cinerous, its rump white, there is a stripe on its wings, the tip of its tail is blackish." Linnæus reckons up twenty varieties. 1. The Biset, *Columba Livia*: 2. The Rock-Pigeon, *Columba Saxatilis*: 3. The Roman Pigeon, *Columba Hispanica*: 4. The rough-footed Pigeon, *Columba Dasyptus*: 5. The Crested Pigeon, *Columba Cristata*: 6. The Norway Pigeon, *Columba Norvegica*: 7. The Barbary Pigeon, *Columba Barbarica*: 8. The Jacobine, *Columba Cucullata*: 9. The Frizzled Pigeon, *Columba Crispa*: 10. The Turbit Pigeon, *Columba Turbita*: 11. The Peacock Pigeon, *Columba Laticauda*: 12. The Tumbler Pigeon, *Columba Gyarix*: 13. The Helmet Pigeon, *Columba Galeata*: 14. The Turkish Pigeon, *Columba Turcica*: 15. The Carrier Pigeon, *Columba Tabellaria*: 16. The Cropper Pigeon, *Columba*

Columba Gutterosa: 17. The Horseman Pigeon, *Columba Equus*: 18. The Smiter Pigeon, *Columba Percussor*: 19. The Turner Pigeon, *Columba Jubata*: 20. The Spot Pigeon, *Columba Maculata*.

Though Linnæus reckons the Biset a variety of the *Columba Domestica*, it is evidently the same with our Wood Pigeon, which he denominates *Columba Oenas*, and thus characterizes: "Cinereous, neck glossy green; stripe on the wings, and the tip of the tail, blackish." In English, it bears the name of Stock Dove, being supposed to be the only original of all the domestic kinds. Multitudes of Stock Doves breed in the rabbit burrows on the downs of Suffolk, and the young are every year sold by the shepherds. The Rock Pigeons, as our Author observes, are the same birds: they are frequent in the South of Russia, and breed in turrets, and on the steep banks and rivers: in winter, vast numbers resort to the cliffs of the Orkneys.

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FOREIGN BIRDS, WHICH ARE RELATED TO THE PIGEONS.

FEW species are so generally spread as those of the Pigeons; for having a very powerful wing and a well-supported flight, they can easily perform very distant journies. Accordingly, most of our wild and tame sorts occur in every climate; house Pigeons are bred from Egypt to Norway, and though they thrive the best in warm countries, they succeed also in the cold when care is taken. What proves that in general they are little affected by heat or cold, is that the Wild Pigeon is almost equally diffused through the whole extent of both continents*.

* The birds which the inhabitants of our American islands call *Wood Pigeons*, (*Ramiers*,) are the real European Bisets. They are migratory, and never halt long in one place. They follow the crops which ripen not at the same time in all the different parts of the islands. They perch on the tallest trees, in which they breed twice or thrice a-year. . . . It is incredible what number the sportsmen kill. When they eat good grain, they are very fat and as well tasted as the Pigeons of Europe; but those which feed on bitter seeds, such as those of the *Acomas*, are as bitter as foot. *Du TERTRE*, Hist. Antilles, tom. ii. 256. "There are Pigeons on the coast of Guinea, which are the most common, such as our Field Pigeons, and which are very good eating." *BOSMAN'S Voyage to Guinea*.—There are many Pigeons in the Maldivé Islands. . . . At Calcutta are very large pigeons and wild Peacocks. *Voyage de Pyrard*, p. 131 and 426.

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The Brown Pigeon of New Spain, mentioned by Fernandez under the Mexican name *Ceboilott**, which is entirely brown excepting the breast and the tip of the wings which are white, appears to be only a variety of the Bifet. Its eyes are encircled by a bright red skin; its iris black; its legs red. The one mentioned by the same author under the name *Hoilott*†, which is brown marked with black spots, is probably but a variety of the preceding, occasioned by difference of age or sex. Another of the same country, termed *Kacaboilott*‡, which is blue in the upper parts, and red on the breast and belly, is perhaps only a variety of our Wild Pigeon. All these seem to belong to our European Pigeon.

The Pigeon described by Brisson by the name of *Violet Pigeon of Martinico*§, and which he figures under this same name, appears to us only a very slight variety of the Common Pigeon. The one which that author calls simply the *Martinico Pigeon*||, and which is designed in our

* *Hist. Nov. Hisp.* cap. cxxvii. It is the *Columba Mexicana* of Brisson and Gmelin; and the *Mexican Pigeon* of Latham.

† *Ibidem*, cap. lvi. and lx. It is the *Columba Nævia* of Gmelin, the *Oenas Mexicana* of Brisson, and the *Black-spotted Pigeon* of Latham.

‡ *Ibidem*, cap. cliv. The *Columba Carulea* of Gmelin, and the *Columba Carulea Mexicana* of Brisson, and the *Blue Pigeon* of Latham.

§ “The Violet-cheeked Pigeon; its belly tawny; its quill-feathers rufous within.” BRISSON.

|| “Pigeon, dusky-rufous above, dilute fulvous wine-coloured below; the neck gold-violet; black spots on either wing; the lateral tail quills furnished with a black stripe, white at the tips.” BRISSON.

Planches Enluminees under this appellation of *Rufous Cayenne Pigeon*, are neither of them different from the Common Pigeon. It is probable even that the latter is the female of the former, and that both derive their descent from the Deserter Pigeons. They are improperly called *Partridges* in Martinico, where no real partridges exist; but there are Pigeons that resemble partridges in colour only, and differ not considerably from our European Pigeons.

As the one was brought from Cayenne and the other from Martinico, we may infer that they are spread through all the warm countries in the New Continent.

The Pigeon described and figured by Edwards (Pl. CLXXVI). under the name of the *Brown Indian Dove*, is of the same size with the Biset, and as it differs only in colour, we may consider it as a variety produced by the influence of climate. Its eyes are encircled by a fine blue skin devoid of feathers, and frequently it raises its tail of a sudden, but does not however display it like the Peacock-pigeon.

In like manner, Catesby's *Passenger Pigeon**, which Frisch terms the *American Pigeon*, differs from

* This is the *Columba Migratoria* of Linnæus, and the Wild Pigeon of Lawson. Its specific character:—"Its orbits bare and blood-coloured, its breast rufous." Weight nine ounces. The Passenger Pigeons breed in the northern parts of the American continent: they nestle on trees, and lays two eggs. During incubation, they live on the seeds of the red-maple, and afterwards on those

from those which desert our pigeon-houses, and relapse into the state of nature, only by the colours, and by the greater length of the tail-feathers, which seem to indicate an analogy with the turtle: but these differences are too minute to form a distinct and separate species.

The same may be said of the Pigeon noticed by Ray, called by the English the *Parrot-Pigeon*, afterwards described by Brisson, and which we have caused to be delineated in the *Planches Enluminees*, No. 138. by the name, *Green Pigeon of the Philippines*: it differs from our Wild Pigeon only by the intensity of its colours, which we may attribute to the effect of a hot climate.—In the Royal Cabinet, there is a bird termed the *Green Amboyna Pigeon*, which is different from that on which Brisson bestows the same name. It is figured No. 163. *Planches Enluminees*, and so nearly resembles the preceding, that it may be considered as a variety of

of the elm. As soon as their provisions fail, they gather in vast bodies, and advance towards the southern provinces. In hard winters the air is darkened by their flight; one flock succeeds to another, and this passage lasts several days. When they roost in trees, the branches are sometimes broken down by their weight, and the ground beneath is covered to a considerable depth with their dung. The Indians used to kill vast numbers, and collected their fat to serve as butter. In the State of New York, the Passenger Pigeons are observed in their progress to the southern or western settlements about the beginning of August, and in their return about the beginning of March: they fly in mornings and evenings. Prodigious quantities of these birds are caught in clap-nets, or decoyed and shot. T.

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THE WHITE BELLED PIGEON.

the same, resulting from a difference of age or of sex.

The Green Amboyna Pigeon described by Brisson * is of the size of a turtle, and though different in the distribution of its colours from that to which we have appropriated that name, must still be considered as but another variety of the European Pigeon. It is also extremely probable that the Green Pigeon from the island of St. Thomas mentioned by Marcgrave, which is of the same size and shape with the European sort, but differs from it, as from all others, by the saffron colour of its legs, is also a variety only of the Wild Pigeon. In general, Pigeons have all red legs; the difference consists entirely in the intensity or the vivacity of this colour, and perhaps the yellow cast observed by Marcgrave was occasioned by some distemper or accident. It is much like the Green Pigeons of Amboyna, and of the Philippines, as delineated in the *Planches Enluminees*. Thevenot speaks of these Green Pigeons in the following terms: "In India, at Agra, there are found Green Pigeons, which differ from ours only in the colour. Fowlers catch them easily with bird-lime."

The Jamaica Pigeon, mentioned by Sir Hans Sloane †, which is of a purple brown on the

* "Olive-green Pigeon; the back chestnut; the wing-quills black above, cinereous below, their exterior margins yellow; the feet naked." BRISSON.

† "The lesser white-bellied Pigeon." SLOANE.—The middle white-bellied Pigeon. BROWN.



D PIGEON.

body, and white under the belly, and nearly of the same size with our Wild Pigeon, must be regarded as merely a variety of that species, especially as it is not a constant inhabitant of Jamaica, but only visits the island as a bird of passage.

There is still another in Jamaica, which must also be regarded as a variety of the Wild Pigeon; it is what Sloane, and after him Catesby, termed the White Crowned Pigeon: its size is the same; it nestles and breeds also in the holes of rocks, so that we can scarce doubt of its being the same species.

From this enumeration it appears, that the Wild Pigeon of Europe is found in Mexico, Martinico, Cayenne, Carolina, and Jamaica; that is, in all the warm and temperate climates of the West Indies; and that it also occurs in the East, from Amboyna to the Philippines.

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THE RINGDOVE.

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The RING PIGEON*.

Le Ramier, Buff.


Columba Palumbus, Linn. and Gmel.

Palumbus, Gesner and Brisson.

Palumbus Torquatus, Aldrov. Ray and Will.

Columba Torquata, Frisch.

The Ring Dove, *Queest*, or *Cushat*, Will. and Penn.



As this bird is much larger than the Biset, and as both are nearly related to the Domestic Pigeon we may suppose that the small breeds of our house-pigeons have proceeded from the Bisets, and the large breeds from the Ring Pigeons: and this conjecture is the more probable, as the ancients were in the practice of rearing and fattening the Ring Pigeons †. The only circumstance that seems to oppose this idea is, that the small domestic Pigeons cross with the large sorts, while the Ring Pigeon seems not to intermix with the Biset, and, though they inhabit the same tracts, do not mix together. The turtle, as it is still more easily raised and kept

* In Greek, *Φασσα* or *Φαζα*: in Latin *Palumbes* or *Palumbus*: in Italian, *Colombo Torquato*, *Colombaccio*: in Spanish, *Paloma Torcatz*: in German, *Ringel Taube*: in Swiss, *Schlag-tub*: in Dutch, *Ring-duwe*: in Flemish, *Kriest-duwe*: and in the Brabant, *Manseau*: in Swedish, *Ring-dafwa*: and in the isle of Oeland, *Sjutut*: in Danish, *Ringel-due*: and at Bornholm, *Skude*: in Polish, *Grywatz*.

† *Periottus*, *apud Gesnerum*.

in houses, might equally be regarded as the source of some of our domestic breeds, were it not, like the Ring Pigeon, of a peculiar species, that intermingles not with the Wild Pigeons. But though in their native forests, where each can possess its proper female, these birds are never observed to associate together, yet when they are deprived of their liberty, and have no longer the opportunity of selection, the force of passion may obliterate the principle of choice, and may impel them to unite with the females of their kindred species, and give birth to a progeny of hybrids. Nor will the offspring, like the males, be blasted with sterility, but may, like the breed between the he-goat and the sheep, be capable of reproduction. To judge from analogy, the Pigeon tribe consists in the state of nature of three principal species, as we have observed, and of two that may be regarded as intermediate. On these the Greeks bestowed five different names: the first and largest is the *Phassa* or *Phatta*, which is our Ring Pigeon: the second is *Peleias*, which is our Wild Pigeon: the third is the *Trugon* or the Turtle: the fourth, which is the first of the intermediate kinds, is the *Oinas*, which being rather larger than the Wild Pigeon, must be considered as relapsed from the state of domestication: the fifth is the *Phaps*, which is a Ring Pigeon smaller than the *Phassa*, and for that reason called the *Lesser Pigeon*, but which appears to us to be only a variety of the species of
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the Ring Pigeon; for it has been observed that the Ring Pigeons are of different sizes, according to the nature of the climate.—Thus all the nominal species, ancient or modern, may be reduced to three, viz. the Wild Pigeon, the Ring Pigeon, and the Turtle, which have all perhaps contributed to the endless varieties of our domestic Pigeons.

The Ring Pigeons arrive in our provinces in the spring, rather earlier than the Bifets, and retire in autumn somewhat later. The month of August is the time in France when the young are the most numerous; and it appears that they issue from the second hatch, which is made towards the end of the summer; for the first hatch being very early in the spring, the nest is not covered with leaves, and is therefore too much exposed and often destroyed. Some Ring Pigeons remain in most of our provinces during winter; they perch like the Bifets, but do not like them construct their nests in holes of trees; they place them on the tops, and build them neatly with sticks: the nest is flat and so wide as to admit at once both the male and female. I have ascertained that very early in the spring, they lay two and often three eggs; for several nests have been brought to me containing two and sometimes three young ones already strong in the beginning of April*. Some persons have asserted

* Salerne says, that the poulterers of Orleans buy, in the season of the nests, a considerable number of Turtles, which they blow with

asserted that in our climate they breed only once a-year, unless they are robbed of their eggs or young, which, it is well known, obliges all birds to a second hatch. But Frisch affirms that they lay twice a-year, which seems to us very certain; since the union of the male and female being constant and faithful, would seem to imply that their love, and the attachment for their young, continues the whole year. But the female lays a fortnight after the embrace of the male*, and sits only another fortnight; and the same length of time would be sufficient for the young gaining strength to enable them to fly, and provide for themselves:—thus it is probable, that she may breed twice in the course of the year. first in the beginning of spring, and again at the summer solstice, as the ancients remarked. In warm and temperate climates this

with the mouth and fatten with miller, so that in less than a fortnight they are fit to be carried to Paris. That in the same manner they fatten the Ring Pigeons, and also carry thither Bisets and other Pigeons, which they call *Postes*, and which are, according to them, Pigeons that have forsaken dove-cots, and roam at will, nestling sometimes in one place, and sometimes in another, in churches, in towers, in the walls of old castles, or in rocks.—This fact proves that the Ring Pigeon, like all the Pigeons and Turtles, can be reared like other domestic birds, and consequently that they may have given birth to the most beautiful and the largest dove-cot Pigeons. M. Le Roy, Licutenant of the chaces, and inspector of the park at Versailles, assures me, that the young Ring Pigeons taken from the nest, tamed and fattened very well, and that even the old Ring Pigeons caught by a net, were easily reconciled to live in the voleries, where in a very short time by blowing they grow fat.

* Aristotle, *Hist. Anim.* lib. vi. 4.

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undoubtedly takes place, and very probably the case is nearly the same in cold countries. The Ring Pigeon has a louder sort of cooing than the Common Pigeon, but is never heard except in the love season, and in fine weather; for when it rains, these birds are silent, and seldom does their song cheer the gloom of winter. They live upon wild fruits, acorns, beech-mast, strawberries, of which they are very fond, and also beans and grain of all kinds. They make great havoc among the corn when it is shed or lodged, and if these sorts of food fail them, they have recourse to herbage. They drink like other Pigeons, that is at one draught, without raising their head, till they have swallowed as much water as they have occasion for. As their flesh, especially when they are young, is excellent meat, their nests are much sought for, and great numbers are robbed. This devastation, joined to their slow multiplication, much reduces every where the species. Many are caught indeed with nets in their route through the provinces bordering on the Pyrenees; but this lasts only a few days and at one season.

It appears that though the Ring Pigeons prefer the warm and temperate climates*, they

* The rocks of the two islands of Magdalena serve as a retreat to an infinite number of Ring Pigeons, natives of the country, and differing not from those of Europe, except that they are of a more delicate and exquisite flavour. *Voyage au Senegal*, par M. ADANSON.

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also inhabit sometimes the bleak regions of the north; since Linnæus inserts them among the birds that are natives of Sweden*. They would seem also to have migrated from the one continent to the other †; for we have received from the southern parts of America, as well as from the hot countries in the Old World, several birds, which must be considered as varieties or species closely allied to the Ring Pigeon, and which we shall notice in the following article. [A]

* *Fauna Suecica*, No. 175.

† At Guadaloupe the seeds of the logwood-tree, which were ripe, had attracted a prodigious number of Ring Pigeons; for these birds are passionately fond of such seeds. They fatten surprisngly, and their flesh acquires a very agreeable odour of cloves and nutmegs. When these birds are fat they are excessively lazy. . . . Several discharges of a musket will not force them to rise; they only hop from branch to branch, while they behold their companions drop around them. *Nouveau Voyage aux îles de l'Amérique*, tom. v. p. 486. In the Bay of All Saints, there are two sorts of Ring Pigeons, some of the bulk of our Ring Pigeons, others smaller, and of a light gray: both are very good to eat, and the flocks of them are so large, that from the month of May to September, one man may kill nine or ten dozen in a morning, when the sky is cloudy and they resort to feed on the berries which grow in the forests. DAMPIER'S *Voyage*.

[A] Specific character of the Ring Pigeon, *Columba Palumbus*:—
 “Its tail-quills are black behind, its primary wing-quills whitish
 “on their margin, the neck white on both sides.”

FOREIGN BIRDS,
WHICH ARE RELATED TO THE RING PIGEON.

I.

THE Ring Pigeon of the Moluccas, mentioned under this name by Brisson*, and which we have caused to be designed (*Pl. Enl. No. 164.*) with a nutmeg in its bill, because it feeds on that fruit. How different soever the climate of those islands be from that of Europe, the bird is so like our Ring Pigeon in size and figure, that we cannot but consider it as a variety occasioned by the influence of climate.

The same may be said of the bird described by Edwards under the name of the *Triangular Spotted Pigeon* †, and which he tells us is found in the southern parts of Guinea. As it is half rough-legged, and nearly of the size of the Eu-

* *Columba Aenea*, Linn. and Gmel. *Palumbus Moluccensis*, Brisson. The Nutmeg Pigeon, Lath.

Specific character:—"its legs feathery; its bill and legs greenish; its body copper-coloured."

† *Columba Guinea*, Linn. Gmel. and Klein. The Turtle of the Cape of Good Hope, Sonnerat.

Specific character:—"its orbits naked and red; its wings marked with triangular white spots; its tail-quills black at the tip."

ropean Ring Pigeon, we shall refer it to that species as a simple variety. It differs indeed in its colours, being marked with triangular spots on the wings, having the whole of the under-side of the body gray, the eyes encircled with a red naked skin, the iris of a fine yellow, the bill blackish: but all these differences of the colour of the plumage, bill, and eyes, may be considered as variations introduced by the climate.

A third variety of the Ring Pigeon, which occurs in the other continent, is the *Ring-tailed Pigeon* mentioned by Sir Hans Sloane and Brown*, which being nearly of the same size with the European sort, may be referred to it better than to any other species. It is remarkable for the black bar which crosses its blue tail, for the iris, which is of a more lively red than in the Ring Pigeon, and for two tubercles near the base of its bill.

* "Pigeon with a ring-tail, or marked with a dusky belt." Sloane. Greater Pigeon, of a sky-black, the tail striped. Brown. *Columba Caribæa*. Gmel. The Ring tailed Pigeon. Latb.

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The FOUNINGO.

Columba Madagascariensis, Linn. and Gmel.

Palumbus Madagascariensis, Briff.

The Madagasc Pigeon, Lath.

The bird called at Madagascar *Founingo-menarabou*, and of which we retain part of the name, because it appears to be a peculiar species, and which, though related to the Ring Pigeon, differs too much from it in size to be regarded as a simple variety *. Briffon first noticed this bird, and we have caused it to be figured (*Pl. Enl. No. 11.*) under the appellation of the *Blue Ring Pigeon of Madagascar*. It is much smaller than the European Ring Pigeon, and nearly of the same size with another Pigeon of the same climate, which appears to have been first mentioned by Bontius †, and afterwards by Briffon ‡,

* What induces us to consider the Founingo of a different species from our Ring Pigeon, is that the latter occurs in the same climate. " We saw (says Bontekoe), in the island of Mascarenes, a number of Blue Ring Pigeons, which allowed themselves to be caught in the hand. We killed this day near two hundred. . . . We also found there a number of Ring Pigeons." *Voyage aux Indes Orientales.*

† " Pigeon of a very green colour."

‡ *Columba Madagascariensis*, Linn. and Gmel. *Palumbus Viridis Madagascariensis*, Briff.

Specific character: " Its legs feathery; its tail violet; its body bluish-black."

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from an individual brought from Madagascar, where it was called *Founingo Maitfou*; which seems to prove that, notwithstanding the difference of colour, its being green instead of blue, these two birds are of the same species, and the only distinction subsisting between them arises from the age or sex. This bird is represented *Pl. Enl. No. 111.* by the name of *Green Ring Pigeon of Madagascar.*

 III.

The SCALLOP NECKED PIGEON.

Le Ramiret, Buff.
Columba Speciosa, Gmel.

We have represented this bird *Pl. Enl. No. 213.* by the name of the *Cayenne Ring Pigeon.* The species is new, and has been described by no preceding naturalist. It is smaller than our Ring Pigeon, and different from the African *Founingo.* It is one of the handsomest birds of this kind; it resembles somewhat the turtle in the shape of its neck, and the disposition of its colours, but differs in point of size, and in many other characters which denote a greater affinity to the Ring Pigeon, than to any other species.

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The Pigeon of the Nincombar, or rather the Nicobar, islands, described and designed by Albin*, which, according to him, is of the size of the European Ring Pigeon: its head and throat are of a blueish-black, the belly of a blackish-brown, and the upper parts of the body and of the wings are variegated with blue, with red, with purple, with yellow, and with green. According to Edwards, who has, since Albin, given an excellent description and an accurate figure of it, the size does not exceed that of an ordinary Pigeon The feathers covering the tail are long and pointed like those of a dung-hill cock; they have very beautiful reflections of colour variegated with blue, with red, with gold, and with copper. The back and the upper-side of the wing are green, with reflections of gold and copper I have, subjoins Edwards, found in Albin, figures which he calls the *Cock* and the *Hen* of this species; but I have examined the specimens in Sir Hans Sloane's collection, and can discover no difference from which we might infer that these birds were male

* *Columba Nicobarica*, *Linn. Gmel. and Klein.* *Columba Nicobaricensis*, *Briff.* The Nicobar Pigeon, *Alb. Edw. and Latb.*
 Specific character:—"Its tail is white, its body black, its wing-quills blue, its back glossy green, with an elongated feather "round its neck."

PIGEON.

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and female. Albin calls it the *Ninckombar Pigeon*; the true name of the island whence this bird was brought is *Nicobar*. . . there are several small islands which bear that name, and lie on the north of Sumatra.

V.

The bird called by the Dutch *Kron-vogel*, figured by Edwards Pl. CCCXXXVIII. under the name of the *Great Crowned Pigeon* *, and also by Brisson, by the term *Crowned Pheasant of India*.

Though this bird is as large as a turkey, it belongs undoubtedly to the genus of the Pigeon: its bill, its head, its neck, the general shape of its body, its legs, its feet, its nails, its cooing, its instincts, its habits, &c. all are analogous. From being deceived by its size, and never thinking of comparing it with a Pigeon, Brisson, and afterwards our designer, termed it a *Pheasant*. The last work of Edwards was not then published; that excellent ornithologist has since given

* *Columba Coronata*, Linn. and Gmel. *Columba Mugiens*, Scop.

Specific character:—"It is bluish; above cinereous; its orbits black, its shoulders ferruginous."

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his opinion on the subject. "It is of the family
" of the Pigeons, though it is as large as a
" middle sized turkey . . . Mr. Loten brought
" several of these birds alive from India . . . It
" is a native of the island of Banda . . . Mr.
" Loten assured me that it was really a Pigeon,
" and has all the gestures and cooing of that bird
" in caressing its female: I confess that without
" this information, I should never have imagined
" that a bird of such magnitude was related
" to the Pigeons *."

The Prince of Soubise has very lately received
at Paris, five of these birds alive. They are all
so much like each other in size and colour, that
it is impossible to distinguish their sex. Besides,
they do not lay, and Mauduit, an intelligent nat-
uralist, informs me, that he saw several in Hol-
land, which also did not lay. I remember to
have read in some voyages, that it is usual in
India to raise these birds as we do our poul-
try.

* Edwards, Gleanings.

The COMMON TURTLE *.

La Tourterelle, Buff.

Columba Turtur, Linn. and Gmel.

Turtur, Gesner, Aldrov. Briss. Frisch, &c.

Palumbus-Turtur, Klein.

The Turtle-dove, Willughby.

THE Turtle, more perhaps than any other bird, loves coolness in summer, and gentle warmth in winter. It arrives in our climates very late in the spring, and departs in the end of August; whereas the Bisets and the Ring Pigeons appear a month earlier and remain a month later, and some even the whole winter. All the Turtles, without a single exception, assemble in flocks, and perform their journeys in a body; they never reside with us more than four or five months, and, during that short space, they pair, build their nest, and lay and rear their young, which are able to join them in their retreat. They choose the darkest and coolest woods to form their settlement, and they construct their nest, which is almost quite flat, on

* In Greek, Τρυων, from τριζω or τρυζω, to murmur: the Latin name *Turtur*, is evidently formed in imitation of the Turtle's notes *tur, tur*; in Italian, *Tortora*, *Tortorella*; in Spanish, *Tortota* or *Tortora*; in German, *Turtel*, *Turjel Taube*; in Swedish, *Turtur Dufwa*; in Polish, *Trakawke*.

N^o 54

TURTLE *.

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THE TURTLE .

101

the tallest trees at a distance from our habitations. In Sweden*, in Germany, in France, in Italy, in Greece †, and perhaps in countries still cooler or hotter than these, they remain only during summer, and depart before autumn: only Aristotle informs us, that in Greece a few stay behind in the most sheltered situations: this seems to prove that they seek very hot climates where to pass the winter. They are found in every part almost of the Ancient Continent ‡; they occur also in the New,

* “ The Turtles do not winter with us the Turtles keep
“ in flocks when they arrive and depart the Quails also re-
“ tire, except a few that settle in sheltered spots, which is likewise
“ the case with the Turtles.” ARIST. *Hist. Anim.* lib. viii.

† “ We saw in the kingdom of Siam, two sorts of Turtles: the
“ first is like ours, and the flesh excellent; the second has a
“ finer plumage, but its flesh is yellowish and ill-tasted. The
“ fields are full of these Turtles.” *Second Voyage de Siam*, p. 248.
and Geronier, *Hist. Nat. and Polit. de Siam*, p. 35.—“ Ring
“ Pigeons and Turtles come to the Canary islands from the coast,
“ of Barbary.” *Hist. Gen. des Voy.* tom. ii. 241.—At Fida in A-
frica, there is such a multitude of Turtles, that a man who shot
pretty well, undertook to kill a hundred in six hours time. BOSMAN’S
Voyage to Guinea.—There are Turtles in the Philippines, in the
isles of Palo Condor, and in Sumatra. DAMPIER’S *Voyage*.—Here
(at New Holland) is a number of plump fat Turtles, which are
very good eating. *Idem*.

‡ “ † The plains of Chili are stocked with an infinite number of
“ birds, particularly Ring Pigeons, and Turtles.” FREZIER’S
Voyage . . . “ The Ring Pigeons there are bitter, and the Turtles
“ not excellent.” *Idem*.—“ In New Spain are many European birds,
“ as Pigeons, large Turtles like those of Europe, and others as little
“ as Thrushes.” GEMELLI CARRERI, tom. v.—“ In no part of
“ the world have I seen such numbers of Turtles and Ring Pigeons,

New*, as far as the South Sea islands †. They are, like the Pigeons, subject to varieties, and though naturally more savage, they can be raised in the same manner, and multiplied in the domestic state. It is easy to intermingle their different varieties, and they can even be made to breed with the Pigeon, and thus produce new

“ as at Areca in Peru.” LE GENTIL, tom. i. “ In the country “ about the Bay of Campeachy, there are different sorts of Turtles; “ some have a white craw, the rest of the plumage gray verging “ on blue; these are the largest and are good eating; others are “ of a brown colour over the whole body, not so fat as the first, “ and smaller. These two species fly in pairs, and live upon the “ berries which they gather from the trees. The third sort are of a “ very dull gray, and called *Land Turtles*; they are much larger “ than a Lark, round and plump; they go in pairs.” DAMPIER’S *Voyage*.—“ It is commonly believed that there are Red Par- “ tridges and Orolans at St. Domingo; but this is a mistake, “ for these are different species of Turtles: ours are very common “ there.” CHARLEVOIX, *Hist. des St. Dominique*, tom. i. pp. 28, & 29.—“ At Martinico and the Antilles, Turtles are seldom found “ but in sequestered spots whither they are driven. Those of Amer- “ ica have appeared to me to be much larger than those of France. “ At the time they breed, many of the young are caught in nets; “ they are fed in voleries, and fatten perfectly well, but are not so “ fine tasted as the wild ones: it is impossible to tame them. Those “ which live at liberty feed on *monbin* plums and wild olives, of “ which the nuts remain pretty long in the craw, which has led some “ persons to believe they eat small stones. They are commonly “ very fat and well tasted.” *Nouv. Voy. aux îles de l’Amérique*, tom. ii. p. 237.

* In the enchanting islands of the South Sea, we saw Turtles that were so familiar as to perch upon us. *Hist. des Navig. aux Terres Australes*, tom. ii. p. 52. . . There are plenty of Turtles at the Gallapago islands in the South Sea: they are so tame, that one may kill five or six dozen in an afternoon merely with a stick, *Nouv. Voy. aux îles de l’Amérique*, tom. ii. p. 67.

† LINNÆUS, *Fauna Suecica*, No. 175.

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tribes, or new individual varieties. "I have
" seen, a person writes me of the most un-
" doubted credit *, I have seen in Bugey, at a
" house of Chartreux, a bird got by cross-
" ing a Pigeon with a Turtle; it was of the
" colour of a French Turtle, and resembled the
" Turtle more than the Pigeon; it was restless,
" and molested the other birds of the volery.
" The father Pigeon was of a very small kind,
" perfectly white, with black wings." It has
not been observed whether these hybrids are
prolific; but the general fact proves at least the
great analogy that subsists between these two
birds. It is therefore not unlikely, as we have
before remarked, that all the varieties of the do-
mestic Pigeon may result from the gradations of
intercourse, and the multiplied combinations of
the Biscat, the Ring Pigeon, and the Turtle.

What seems to confirm our opinion with re-
gard to these unions, which may be conceived to
be illegitimate, as being out of the usual course
of nature, is, that excessive ardor which these
birds feel in the season of love. The Turtle melts
with a still more tender passion than the Pigeon,
and more singular preludes announce the swell
of pleasure. The male Pigeon only struts round
his mate, puffing and displaying his figure. The
Turtle, whether kept in confinement or fluttering
at will in the grove, begins his addresses by

* M. Hebert, whom I have already cited more than once.

saluting his female eighteen or twenty times in succession in the most humble posture, bending so low each time as to touch the ground, or the branch, with his bill, and he sighs the tenderest murmurs. The female appears at first insensible to his passion, but the secret flame soon kindles, and at last yielding to the soft desires, she gives vent to some plaintive accents. And when once she has dissolved in his embrace, she burns with a constant fire; she never leaves the male, she returns his kisses and his caresses, and stimulates him to renew the rapturous joys, till the business of hatching divides her attention, and invites to more serious occupations.

I shall cite only one fact which manifests the ardour of these birds*: if the males be put in one cage and the females in another, they will copulate together as if they were of different sexes; the males indeed burn sooner and with more intensity than the females. Confinement therefore only deranges nature, but cannot extinguish it!

In the species of the Turtle we are acquainted with two constant varieties. The first is, the

* The Turtle, M. Roy writes me, differs from the Ring Pigeon and the Common Pigeon, by its dissoluteness and inconstancy, notwithstanding its reputation for the contrary qualities. Not only females that are shut up in voleries receive promiscuously all the males; but I have seen wild ones, which were neither constrained nor corrupted by domestication, give favours to two successively on the same branch.

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THE COLLARD TURTLE.

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THE WHITE TURTLE.

VII

Common Turtle: the second the *Collared Turtle* *, so called, because it bears on its neck a sort of black collar. Both of them are found in our climate, and when they mix together, they produce a hybrid. The one which Schwenckfeld describes, and which he calls *Turtur mixtus*, was the offspring of a common male Turtle, and of the female Collared Turtle, and resembled more the father than the mother. I have no doubt but these are prolific. The Collared Turtle is only somewhat larger than the common kind; its instincts and habits are the same. In general we may say, that all the three tribes of the Pigeon are more analogous in their dispositions than in their figure. They eat and drink in the same manner, without lifting their head till they have swallowed as much as they want; they fly in flocks; their voice is a loud murmur, or a plaintive moan, rather than an articulated song; they lay only two eggs, sometimes three; all of them hatch, several times in the year in warm countries, or when kept in voleries. [A]

* *Columba Risoria*, Linn. and Gmel. La Tourterelle à Collier, Buff. *Turtur Torquatus*, Briff. The Indian Turtle, *Albin*, & Will. The Collared Turtle, Lath.

Specific character:—"Above yellowish, with a black crescent on the neck."

[A] Specific character of the Turtle, *Columba-Turtur*:—"Its tail-quills are tipped with white, its back gray, its breast carnation; a black lateral spot on its neck, with white strokes." The Turtle is found in the west of England, where it breeds retired in the oak-woods.



FOREIGN BIRDS,
WHICH ARE RELATED TO THE TURTLE.

I.

Columba Marginata, Linn. and Gmel.

Turtur Americanus, Briss.

The Marginated Pigeon, Lath.

THE Turtle, as well as the Common Pigeon and the Ring Pigeon, has suffered varieties in different climates, and occurs likewise in both continents. That which Brisson has mentioned by the name of the *Canada Turtle*, and which is figured No. 176. *Pl. Enl.* is rather larger, and its tail longer, than that of the European Turtle; but the differences are not so great as to constitute a distinct species. I think that we might refer to it the bird which Edwards calls (*Pl. XV.*) the *Long-tailed Dove*, and which Brisson names the *American Turtle*. These birds much resemble each other, and as they are distinguished from our Turtle only by the length of their tail, we regard them as varieties produced by influence of climate.

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The SENEGAL TURTLE and the COLLARED TURTLE OF SENEGAL, both mentioned by Briffon, the second being only a variety of the first, as the Collared Turtle of Europe is only a variety of the common sort; they appear not distinct species from our Turtles, for they are of the same size, and scarce differ but in the colours, which must be ascribed to the influence of climate.

We presume that the Spotted throated Turtle of Senegal, being of the same size and climate with the preceding, is also but a variety.

III.

The TOUROCCO.

Columba Macroura, Gmel.

The Great-tailed Pigeon, Lath.

But there is another bird of Senegal, which has hitherto been noticed by no naturalist, and which we have caused to be engraved *Pl. Enl.* No. 329. under the name of the *Broad-tail Turtle of Senegal*, this denomination being given it

it by Adanson when he presented it. However, as it seems to differ from the European Turtle, carrying its tail like the *Hocco*, and having the bill and other characters of the Turtle, the term *Tourocco* may denote its mixed qualities. [A]

[A] Specific character of the *Columba Macroura*:—"It is cinnamon-coloured, below partly whitish, the tip of its tail white."

 IV.

The TURTLETTE.

Columba Capensis, Gmel.

The Cape Pigeon, Lath.

Another bird a-kin to the Turtle; which is that described by Brisson, and figured *Pl. Enl.* No. 140. by the appellation of *Black Cravated Turtle of the Cape of Good Hope*: but we have appropriated a name to it, because it appears a peculiar species, different from that of the Turtle. It is much smaller than our Turtle, and its tail much longer, though not so broad as that of the *Tourocco*: the two feathers in the middle of the tail only are very long. The male alone is represented in the *Pl. Enl.*; it is distinguished from the female by a kind of cravat of a shining black under the neck and on the

the throat, while the corresponding part in the female, is gray mixed with brown. This bird is found at Senegal, as well as at the Cape of Good Hope, and probably in all the southern parts of Africa. [A]

[A] Specific character of the *Columba Capensis* :— “ Its primary wing-quills are rufous on the inside.”

V.

The TURVERT.

We give this name to a green bird which bears some resemblance to the Turtle, but appears to be a species entirely distinct from all the rest. Under the Turvert we include three birds; No. 142, 214, and 117. of the *Pl. Enl.* The first has been described by Brisson, under the appellation of *Green Amboyua Turtle*, and in the *Pl. Enl.* by the *Purple-throated Turtle of Amboyua**, because that colour of the throat is the most striking character of the bird †. The second

* *Columba Viridis*, *Lin.* and *Gmel.* The Green Turtle, *Lath.* Specific character :—“ It is copper-coloured, the under-side of its body purple violet.”

† To this species the following passages probably refer. “ In the island of Java, there is an infinite number of Turtles of different colours; green with white and black spots; yellow and white, white and black, and a species of an ash-colour. Their bulk is as different as their colours are various: some are as large
“ as

second is the *Turtle of Batavia**, which has not been noticed by any naturalist. We may presume that being a native of the same climate with the Turvert, and differing little in size, shape, or colours, it is only a variety arising from the age or sex. The third is termed the *Java Turtle* †, because it is said to inhabit that island; it seems also to be only a variety of the Turvert, but still more characterised than the former, by the difference of colour in the lower parts of the body.

 VI.

These are not the only species or varieties of the Turtle tribe; for, in the Old Continent, we find the *Portugal Turtle* ‡, which is brown, with black and white spots on each side, and near the

“ as a Pigeon, and others are smaller than a Thrush.” *Le GENTIL Voyage au Tour du Monde.*

“ In the Philippine islands is a sort of Turtle which has the feathers on the back gray, and those on the stomach white; in the middle of which we perceive a red spot like a fresh wound flowing with blood.” *GEMELLI CARRERI, tom. v. p. 266.*

* *Columba Melanocephala, Gmel.* The Black-capped Pigeon, *Lath.*

† *Columba Javanica, Gmel.* The Javan Turtle, *Lath.*

‡ *Columba Turtur, Var. 3, Gmel.* *Turtur Lusitanicus, Briff.*
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middle of the tail: *The striated Turtle of China**, which is a beautiful bird, the head and neck being streaked with yellow, red and white: *The striated Turtle of India* †, which is not striped longitudinally along the back as the preceding, but transversely on the body and the wings: *The Amboyna Turtle* ‡, which is also striped transversely with black lines on the neck and breast, with a very long tail. But as we have not seen these four birds, and as the authors who describe them term them *Doves* or *Pigeons*, we cannot decide whether they belong to the Pigeons or to the Turtles.

* *Columba Sinica*, *Linn.* and *Gmel.* *Turtur Sinenfis Striatus*, *Briff.* Dove from China, *Alb.*

Specific character:—"It is dusky, striped with black; its belly somewhat blood-coloured; its wings yellow, the wing-quills and the bill black."

† *Columba Striata*, *Linn.* and *Gmel.* *Turtur Indicus Striatus*, *Briff.* The Barred Turtle, *Lath.*

Specific character:—"Its orbits and straps bright white; its body cinereous, striped with black, below rufous."

‡ *Columba Amboinensis*, *Linn.* and *Gmel.* *Turtur Amboinensis*, *Briff.* Thus described by Brisson, "Rufous; tail very long; neck and breast covered with feathers striated transversely with blackish; wing-quills dusky; tail-quills of a dusky-rufous."

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VII.

The T O U R T E.

<i>Columba Carolinensis,</i>	} Linn. and Gmel.
<i>Columba Canadensis,</i>	
<i>Turtur Carolinensis,</i>	} Briff.
<i>Turtur Canadensis,</i>	
<i>The Carolina Pigeon,</i>	} Penn. and Lath.
<i>The Canada Pigeon,</i>	

In the New Continent we meet first with the Canada Turtle, which, as I have said, is the same species with the European Turtle.

Another bird, which we have called after the travellers, *Tourte*, is what Catesby has termed the *Carolina Turtle* *. It appears to be the same, the only difference being a gold-coloured spot, mixed with green and crimson, which in Catesby's bird is placed below the eyes and on the side of the neck, but which is not to be seen in ours. This would incline me to suppose that the first is the male, and the second the female. It is likely that the *Picacuroba* of Brazil, mentioned by Marcgrave, belongs to this species.

I presume also that the Jamaica Turtle †, noticed by Albin and afterwards by Briffon, being

* This Pigeon resides the whole year in Carolina, and feeds on the berries of poke (*Physolacca Decandria*, Linn.) and the seeds of the mug-apple. (*Podophyllum Peltatum*, Linn.) Its flesh is delicate.

† *Columba Cyanocephala*, Linn. and Gmel. *Turtur Jamaicensis*, Briff. The Turtle Dove from Jamaica, *Alb.* The Blue-head Turtle, *Latb.*

Specific character:—"Its head is blue, with a white stripe under its eyes."

a native of the same climate with the preceding, and differing but little from it, must be regarded as a variety of it.

We shall also remark, that this bird bears a great resemblance to the one given by Edwards, which is probably only the female of ours. What alone seems opposed to this opinion, is the difference between the climates. Edwards was informed that his bird came from the East Indies, and ours was brought from America. Might not there be some mistake with regard to the climate of Edwards's? These birds are so much like each other, and to the *Tourte*, that we cannot be persuaded that they are the inhabitants of climates so widely different; and we are certain that ours was sent from Jamaica to the Royal Cabinet.

VIII.

The COCOTZIN.

Columba Passerina, Linn. and Gmel.

Turtur Parvus Americanus, Briff.

Columbus Minutus, Klein.

The Ground Dove, Catesby, Penn. and Lath.

We have retained this name given by Fernandez, because the bird on which it was bestowed seems to differ from all the others. As it is smaller than the Ordinary Turtle, many naturalists have called it the *Little Turtle* *. Others

* Ray, Sloane, Brown, &c.

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have called it the *Ortolan* *, because it is much larger than that bird, and is excellent eating. It was represented *Pl. Enl.* No. 243; by the name of *Little Turtle of St. Domingo*, fig. 1. and *Little Turtle of Martinico*, fig. 2. But after a close examination and comparison, we are convinced that they are the same bird; fig. 2. being the male, and fig. 1. the female. It would all seem that the *Picupinima* of Pifo and Marcograve, and the *Little Turtle of Acapulco*, mentioned by Gemelli Carreri †, belong all to the same kind. And thus this bird is spread through all the southern parts of the New World. [A]

* *Martinico Ortolan, Dutertre.*—"The birds which our islanders call *Ortolans*, are only *Turtles* much smaller than those of Europe . . . Their plumage is of an ash-gray, the under-side of the throat inclines somewhat to rufous: they always go in pairs, and many of them are found in the woods. These birds are fond of seeing people, and come into the roads without being scared. When taken young, they grow very tame: they are full of lumps of fat of a luscious taste." *Novo. Voy. aux îles de l'Amérique*, tom. ii. p. 237.

† "In the neighbourhood of Acapulco, *Turtles* are seen smaller than ours, with the tips of the wings coloured; they fly even into houses." GEMELLI CARRERI, tom. vi. p. 9.

[A] Specific character of the *Columba Passerina*:—"The quality of its wings and tail are darkish, its body is purplish, its bill and legs are red." This Pigeon is not larger than a Lark. It sometimes advances to the coast of Carolina, where it feeds on the berries of shrubs, especially those of the pellitory.

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