GUIDE TO THE GARDENS

OF

THE ZOOLOGICAL SOCIETY OF LONDON.

Twenty-third Edition,

CORRECTED ACCORDING TO THE PRESENT ARRANGEMENT OF THE GARDENS,

BY

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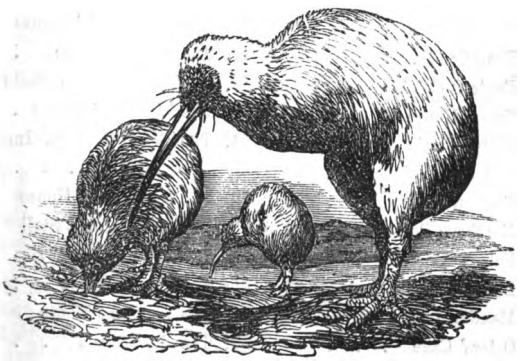

THE KIWI (p. 58).

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AND AT THE SOCIETY'S GARDENS IN THE REGENT'S PARK.

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CONTENTS.

	PAGE
1. The Western Aviary	3
2. The Cranes and Storks	7
3. The Monkey-House	10
3*a*. The Rodents' House	14
3*b*. The Swine-House	15
4. The Southern Ponds	16
5. The Seal-Pond	17
6. The Civets' House	19
7. The Pheasants' Aviaries	19
8. The Pea-Fowls' Aviary	21
9. The Goose-Ponds	21
10. The Emeus' Sheds	22
11. The Zebra and Antelope Houses	23
12. The Great Carnivores	26
13. The Bear-Pit	28
14. The Bear-Pond	29
15. The Eagle Owls' Aviary	29
16. The Camel House	29
17. The Water-Fowls' Lawn	29
18. The Pelicans' Inclosure	30
19. The Eastern Aviary	30
20. The Northern Pond	32
21. The Falcon Aviary	32
22. The Llamas' House	33
23. The Mandarin Ducks' Pond	34
24. The Otters' Cage	34
25. The Kites' Aviary	34
26. The Winter Aviary	34
27. The Small Mammals' House	35
28. The Martens' Cage	37
29. The Garganeys' Ponds	37
30. The Racoons' Cages	37
31. The Vultures' Aviary	38
32. The New Deer House	39
33. The Cattle Sheds	41
34. The Sheep Sheds	42
35. The Waders' Inclosure	43
36. The Three-island Pond	43
37. The Fish-House	44
38. The Refreshment Rooms	44
39. The Salamanders' Pond	44
40. The Eagles' Aviaries	44
41. The Music-Lawn	46
42. The Dove-cote	46
43. The Virginian Owls' Cage	46
44. The Reptile House	46
45. The Picture Gallery	48
46. The Marsupials' House	48
47. The Sloths' House	48
48, 49. The Kangaroo Sheds	49
50. The Wombats' House	49
51. The Brush-Turkeys' Inclosure	50
52. The Markhores' House	51
53. The Refreshment Stall	51
54. The Crows' Cages	51
55. The Parrot House	51
56. The Elephant House	52
57. The Deer Sheds	53
58. The Beaver Pond	53
59. The Superintendent's Office	53
60. The Hippopotamus Houses	53
61. The Giraffe House	55
62. The Eland House	56
63. The Ostrich House	58
64. The Gazelles' Sheds	59

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THE route taken in this Guide is supposed to commence at the NORTH ENTRANCE in the outer circle of the Regent's Park, and turns to the right hand, immediately after entering the Gate. The different buildings and inclosures are all *named* and *numbered* in the same way as the sections of this Guide, so that there will be no difficulty in recognising them.

The NORTH ENTRANCE is distant 1460 yards from the St. John's Wood Road Station of the Metropolitan Railway, and 1480 yards from the Chalk Farm Station of the North London Railway.

The first building which presents itself to the Visitor, who should turn to the right after entering at the North Entrance, is

1. THE WESTERN AVIARY.

The frontage of this Aviary, which was completed in 1851, is about 170 feet in length. It contains some of the most interesting Birds in the Collection, principally natives of Australia, the Indian Archipelago, and South America.

Among the Australian species, the most remarkable are the BOWER-BIRD, the LAUGHING KINGFISHER, the GRASS-PARRAKEETS, the WONGA-WONGA PIGEON, the BRONZE-WINGED PIGEONS, and the CRESTED DOVE. From New Guinea and the adjacent islands are the KAGUS and the CROWNED PIGEONS. From Africa, we have the WEAVER BIRDS and the TOURACOES. From America, we find the MIGRATORY THRUSH or AMERICAN ROBIN, the MOCKING-BIRD, the BLUE JAY, the CARDINAL or VIRGINIAN NIGHTINGALE, the PASSENGER-PIGEON, the GUIRA CUCKOO, the TINAMOUS, and the SUN-BITTERNS.

There are also usually many interesting European species, such as the GOLDEN ORIOLE, the REDWING, FIELDFARE, and RING-OUZEL, the HAWFINCH, the NIGHTINGALE, the BUFF-BACKED HERON, and the TURTLE-DOVE, in some of the compartments.

The Satin Bower-Bird. (*Ptilonorhynchus holosericeus.*)—The adult male of this Bower-Bird is conspicuous for the satin texture of its glossy black plumage. The younger bird is at first entirely of a dull green colour, which gradually becomes mottled with black, and eventually changes entirely into that hue.

The habits of the Satin Bower-Bird, and of the other species allied to it, are extremely singular and interesting. Long before the construction of their nest, and quite independently of it, they, with consummate skill, weave with twigs firmly planted in a platform of various materials, an arbour-like gallery of uncertain length, in which they amuse themselves with the most active glee. They pursue each other through it; they make attitudes to each other, the males setting their feathers in the most grotesque manner, and making as many bows as an ancient cavalier in a minuet.

THE SATIN BOWER-BIRD.

The architecture of the bower is excessively tasteful, and the ornamentation of the platform on which it stands is an object of constant solicitude to the birds. Scarcely a day passes without some fresh arrangement of the shells, feathers, bones, and other decorative materials, which they bring from long distances in the bush for this purpose, and of which they immediately appropriate every fragment placed within their reach when in confinement. The first account of the architecture of the Bower-Bird was published by Mr. Gould in 1841, and will be found, with characteristic illustrations, in his great work on the Ornithology of Australia.

The Laughing Kingfisher (*Dacelo gigantea*) may be taken as the type of a considerable group of Kingfishers, which differ essentially in their habits from the lovely bird which flashes like a jewel along the brooks and rivulets of Europe. These powerful Kingfishers of Australia seldom approach the water, but live in the dry scrub, and feed like birds of prey upon insects, reptiles, and small mammals, instead of fish. The Laughing

Kingfisher is excessively adroit in catching mice, and will wait, as patiently as a cat, at a hole whence he expects one to emerge. His note strangely resembles a rude powerful laugh, and the united efforts of the fine specimens confined in this Aviary are heard far and near every morning. The regularity with which this laughter rings through the Australian forest at certain hours of the day has not been unnoticed by the colonists, and among other trivial names for the bird, they have given it that of the "Settlers' Clock."

The Zebra Grass-Parrakeet. (*Melopsittacus undulatus.*)—**The Red-backed Parrakeet.** (*Psephotus hæmatonotus.*)—**The Turquoisine Parrakeet.** (*P. multicolor.*)—**The Crested Grass-Parrakeet.** (*Calopsitta novæ-hollandiæ.*)

The Parrots form one of the most characteristic features in the Fauna of Australia; and are exceedingly numerous. Upwards of sixty species have been already discovered, mostly belonging to generic groups which are altogether peculiar. Of these, the GRASS-PARRAKEETS are one of the prettiest. They for the most part inhabit the plains of the South, living almost entirely on the ground, and feeding on the seed of grasses. At certain periods of the year they migrate in vast flocks, their line being apparently determined by the scarcity or abundance of food afforded by the localities they visit. Their flight is excessively graceful; and as the tail is generally expanded in rising, the brilliant colours of the side-feathers of that organ in the Turquoisine make a most striking and attractive display.

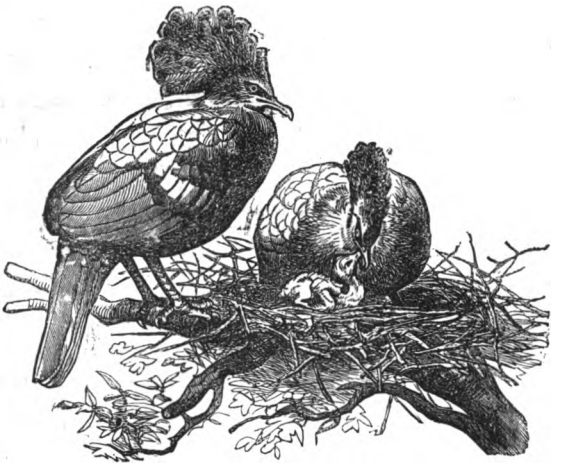
The ZEBRA GRASS-PARRAKEET, more generally known by the native name of "*Betcherrygah*," is easily distinguished by its breast of lovely green, and back delicately banded with black and yellow. It is one of the most universally diffused species of the Australian Parrots, and makes periodical visits to all the settled districts, probably when the droughts of the interior render its usual haunts untenable from the scarcity of water. This exquisite little bird differs essentially from all other Parrots, in its faculty of song: it warbles a low, continuous, and not unlively melody, something like the strain of the English Whitethroat. The natural breeding-place of the Zebra Parrakeet is the hollow arm of some decaying tree; but it accommodates itself to circumstances with great facility, and if turned loose in a room will soon excavate a nesting-hole in a brick wall. It breeds in confinement very readily, if properly treated; and is certainly one of the most interesting, as well as one of the most beautiful, cage-birds hitherto known. The first living specimen was brought from Australia by Mr. Gould, on his return to England in 1840; but since that period a thousand pairs have sometimes been landed in a single venture.

The RED-BACKED, TURQUOISINE, and CRESTED GRASS-PARRAKEETS also breed in this Aviary, and there is scarcely a doubt that all the species which inhabit the cooler parts of Australia would reproduce as certainly as those which are here mentioned, wherever space and congenial treatment can be afforded to them.

The Wonga-Wonga Pigeon. (*Leucosarcia picata.*)—**The Bronze-wing Pigeon.** (*Phaps chalcoptera.*)—**The Crested Dove.** (*Ocyphaps lophotes.*)

Australia is rich in pigeons, not less than twenty-one species being figured in Mr. Gould's work. Of these, the most desirable to acclimatise in Europe is the WONGA-WONGA, and the most graceful is the CRESTED DOVE. The latter breeds very freely in confinement, when suitably accommodated. The Wonga-Wonga, on the contrary, is unfortunately, as far as our experience goes, a shy breeder, but might perhaps do better in a

more retired situation. It would be well worthy to have some pains bestowed upon it, as it is not only of considerable size, but, according to Mr. Gould's observation, a first-rate bird for the table, possessing a whiteness and delicacy of texture in its pectoral muscles, which are unapproached by any other species of this widely-spread and useful family.



THE VICTORIA CROWNED PIGEON.

The Crowned Pigeon. (*Goura coronata.*)—**The Victoria Crowned Pigeon.** (*Goura victoriæ.*)

These noble birds, although natives of New Guinea and its adjacent islands, not only bear the vicissitudes of our climate with the protection this Aviary affords, but have frequently reproduced in it. The Victoria Crowned Pigeon, from the island of Jobie, is easily distinguished from the other species by the beautiful white-tipped vane which surmounts the crest, its red brown breast, and grey wing spot. The Gouras make a platform nest like all the arboreal pigeons, and go up to roost at night, although during the day they spend the greater part of their time upon the ground. As is the case with the following species, the Passenger-Pigeon, and the whole group of Fruit-eating Pigeons of the genus *Carpophaga*, as far as has been hitherto observed, they lay but one egg, forming an exception to the general rule which obtains in birds of this group, and which has caused a recent writer to call them *Bipositores*.

The Passenger-Pigeon. (*Ectopistes migratorius.*)—The history of the Passenger-Pigeon is one of the most interesting articles in Wilson's admirable "American Ornithology," one of the freshest and most delightful books to which the pursuit of Natural History has given birth. The late Mr. Audubon has also, in going over the same ground as Wilson, necessarily touched upon this remarkable bird, and his account contains the following graphic notice :—

"In the autumn of 1813, I left my house at Henderson, on the banks of the Ohio

on my way to Louisville. In passing over the Barrens, a few miles beyond Hardensburgh, I observed the pigeons flying from north-east to south-west in greater numbers than I thought I had ever seen them before. I travelled on, and still met more, the farther I proceeded. The air was literally filled with pigeons. The light of the noonday was obscured as by an eclipse. Before sunset I reached Louisville, distant from Hardensburgh fifty-five miles. The pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. . . . . Let us take a column of one mile in breadth, which is far below the average size, and suppose it passing over us, at the rate of one mile per minute. This will give a parallelogram of 180 miles by 1, covering 180 square miles; and allowing two pigeons to the square yard, we have 1,115,136,000 pigeons in one flock; and as every pigeon consumes fully half a pint per day, the quantity required to feed such a flock must be 8,712,000 bushels per day."

The Crested Colin. (*Eupsycortyx cristatus.*)—**The Virginian Colin.** (*Ortyx virginiana.*)—**The Californian Colin.** (*Callipepla californica.*)

There are no true Partridges in America, but their place is amply filled by the numerous family of which the birds here mentioned are examples. About thirty-five species are already known, and it is probable that several yet remain to be described. The greater part of them have been figured by Mr. Gould in his monograph of the "*Odontophorinæ.*"

They are all extremely prolific, and exceedingly disposed to reproduce in confinement, so that there will apparently be but little difficulty in acclimatising all those species which are indigenous to temperate regions.

The Kagu. (*Rhinochetus jubatus.*)—Examples of this curious bird have been recently received from Dr. George Bennett, of Sydney, a Fellow of the Society, whose donations to its menagerie have been numerous and of great value. The Kagu is an inhabitant of the little-known island of New Caledonia, which has recently become a French Colony. Its alliances are with the Cranes (*Gruidæ*), though it diverges from the ordinary members of that group in several important particulars, and is an isolated form, related to the Sun-bittern (*Eurypyga*), of which there are also living examples exhibited in this Aviary.

The American Mocking-Bird. (*Mimus polyglottus.*)—The male Mocking-Bird, as is well known to Europeans from the accounts of Wilson, Audubon, and other writers on American Ornithology, is a delightful songster, and perhaps unrivalled in his powers of imitating the notes of other birds. The Mocking-Bird belongs to a strictly American group, nearly allied to our Thrushes, but more bush-loving, and with a structure better adapted for the dense woodlands of the New World, throughout which the numerous species are generally distributed.

The central division of the Aviary contains a miscellaneous collection of the smaller birds from all parts of the world, especially from Continental Europe, a part of the series which the Society is particularly desirous to increase, as including many of the rarer visitants to the British Islands.

2. THE CRANES AND STORKS.

The Cranes, although not very numerous in species, are distributed over the whole world, with the exception of South America. In favourable localities they assemble in vast multitudes. Their migrations are conducted with wonderful organisation, and apparently under well-chosen leadership.

The series of Cranes in the Society's possession is very complete, embracing nearly all the finest species. Some of them are removed to more sheltered situations during the winter. The Storks are

arranged along with the Cranes for convenience' sake, but belong to an essentially different natural family of birds.

The Mantchurian Crane. (*Grus montignesia*, Bp.)—The descriptions of this magnificent bird in the old authors presume it to have been a native of Japan. There is at present no ground for believing that to be the fact; but we now know positively that its true locality is the country north of Pekin.

Sir John Bowring sent a pair of these birds to Her Majesty the Queen, which, after living for some years in the Royal Collection, were graciously presented to the Zoological Society in 1857.

The birds which were imported by M. de Montigny, on his return from China in 1854, not only flourished at Paris in the most perfect health, but for three successive seasons made a nest and hatched out their young. The pair in possession of the Society in 1860 nested twice, but did not succeed in hatching their eggs. The following year, however, they were more successful, and a young bird was hatched on the 24th of June, 1861, to which they devoted unceasing care and attention for many months. The Mantchurian Crane is a favourite bird among the Chinese, and it has been stated that a considerable number of them are always in captivity at Pekin. Its figure constantly occurs on the paper-hangings with which their houses are decorated, and which, although sometimes containing

THE MANTCHURIAN CRANE.

animals which are apparently pure inventions, often present very faithful transcripts of Nature. It is much to be regretted that only one individual of this fine Crane is now left in the Society's collection. No more valuable present could be made by the Society's correspondents in China than additional specimens of this species.

The Sarus Crane (*Grus antigone*) is another noble Asiatic species well known to all residents in India, where it is abundant throughout the central and northern portion of the peninsula.

The Australian Crane. (*Grus australis.*)—The Australian Crane bears

close resemblance to the great Sarus Crane of India, from which, however, there is no doubt that it is entirely distinct. It may be readily distinguished by the bright red hood which envelops the back of the head, and the black hairs which almost conceal the bright covering of the throat. According to Mr. Gould it is only found in Northern Australia and in New South Wales. It evinces great aptitude for domestication, and is called there "the Native Companion," from the docility with which it accommodates itself to the society of man.

The European Crane. (*Grus cinerea.*)—**The Canadian Crane.** (*G. canadensis.*)—**The American White Crane.** (*G. americana.*)

Although inferior in size to the species already noticed, the European Crane is equal to any in the majesty of its gait, and even in the beauty of its plumage, if we except the Mantchurian. It is the most widely-distributed of the whole family, as it occurs throughout Europe and Northern Asia, and is abundant in Africa north of the Sahara. The European Crane visits India in numerous flocks during the cold weather. In the Deccan and Central India it is generally seen in parties of from eight to twenty, but sometimes in much larger numbers, especially in the north-west provinces. It feeds chiefly on grain, and commits great havoc in the wheat-fields and rice-fields. The European Crane is replaced in North America by the Canadian Crane (*Grus canadensis*), of which the Society have also living examples. The second North American species (*Grus americana*)—the White Crane of America—which is represented by a fine specimen, is likewise a very ornamental species, and one of the most noticeable of recent additions to our Crane-yard.

The Wattled Crane. (*Grus carunculata.*)—**The Stanley Crane.** (*Tetrapteryx paradisea.*)

These are both fine South African species. The Stanley Crane was so named by Mr. Vigors in honour of the late Earl of Derby, then Lord Stanley, and for many years President of the Society. In the rich and varied collection of living animals which he accumulated at Knowsley, broods of this beautiful bird were hatched out on several occasions.

The Crowned Crane. (*Balearica pavonina.*)—**The Cape Crowned Crane.** (*B. regulorum.*)

The Crowned Cranes are an African type, of which *B. pavonina* is the most common, being found abundantly in West Africa. This bird is replaced in the South by an allied species called *B. regulorum*, which is easily distinguishable by the highly-coloured pendulous wattle which adorns its throat. *B. pavonina* occasionally visits S. Europe, and is said to occur in Asia Minor.

The series of Storks in the Society's Gardens is also large, and usually embraces examples of nearly all the known species. At present we have

The White Stork. (*Ciconia alba.*)—**The Black Stork.** (*C. nigra.*)—**The Maguari Stork.** (*C. maguari.*)—**The White-necked Stork.** (*C. leucocephala.*)

The Storks are still more extensively distributed than the Cranes, being represented in every part of the world, except in North America, where, singularly enough, no member of the group occurs. They are more or less carnivorous in their habits, and are armed with a powerful beak, which attains its largest development in the Adjutants and the Balæniceps. The White Stork is one of the most familiarly known species of European

birds, although in England it has, from the changes effected by improved agriculture, become comparatively rare. It is widely distributed throughout the Old World, being found in North Africa, and in Asia, as far as Bengal.

The Saddle-billed Stork. (*Xenorhynchus senegalensis.*)—**The Black-necked Stork.** (*X. australis.*)

The Storks of the genus *Xenorhynchus* have a long straight sharp-pointed bill and long legs, and serve to connect the true Storks with the Adjutants. In winter these birds require much protection, and are generally removed to the Eastern Aviary (p. 30).

The SADDLE-BILLED STORK is remarkable when adult for the bright red band which crosses its bill and its parti-coloured legs. It is an inhabitant of Central Africa, occurring on the White Nile and in Abyssinia, and also in Senegal. The bird in the Gardens, which was purchased in 1861, is now in full plumage.

The BLACK-NECKED STORK is found throughout India and the Malay countries, extending into Australia. In Central India and Lower Bengal, where it is a permanent resident, it is stated to frequent the banks of rivers and tanks, and to feed on fishes, frogs, crabs, and other water animals.

3. THE MONKEY-HOUSE.

The old Monkey-house in the centre of the Gardens having been found very ill-adapted for the group of animals to which it had been long devoted, both from its confined space and bad ventilation, it was determined in 1863 to build another house of much larger size, and upon entirely different principles. The present Monkey-house, which was completed in July, 1864, has been fitted up in the style of a conservatory, so as to be as light and sunny as possible, and to reproduce as nearly as may be the circumstances under which its occupants live in their native haunts.

The Monkeys are divided by zoologists into two great groups, which are as distinct in their anatomical characters as they are in their geographical distribution.

1. The Monkeys of the Eastern Hemisphere (*Catarrhinæ*), inhabiting Africa, Arabia, India, Japan, China, Ceylon, and the islands of the Indian Archipelago.
2. The Monkeys of the Western Hemisphere (*Platyrrhinæ*), inhabiting the warmer portions of Central and Southern America.

The first group, or *Catarrhinæ*, are characterised by nostrils which converge at their lower extremity, and are there only separated by a very narrow cartilage. Their dentition is the same as in man, consisting of eight incisor teeth, four canines, and twenty molars. Of the Catarrhine Monkeys, the following species are usually found in the collection.

The Chimpanzee. (*Troglodytes niger.*)

The Chimpanzee in a state of nature inhabits the forests of Western Africa, extending from Sierra Leone to the Congo river. The specimens of the Chimpanzee brought to Europe are almost invariably young animals, and rarely live long in captivity. The adult Chimpanzee, according to the excellent authority of Dr. Savage, never exceeds, although the male may almost attain, five feet in height. The interest that has until recently centred itself in this animal as being the most *anthropoid* of all the known

Apes, has been of late years somewhat diminished by the discovery of its gigantic brother, the Gorilla (*Troglodytes gorilla*), in the forests of the Gaboon. Specimens of this latter animal have not yet reached the Society in a living state.

The Orang-Utan. (*Simia satyrus.*)

The Orang is only found in Borneo and Sumatra. It lives in the low flat plains of these islands—where the forests are densest and most sombre. Those who are interested in the habits of the Orang in a state of nature should consult Mr. Wallace's article on this subject in the Annals of Natural History for 1856, and Professor Huxley's treatise on "Man's Place in Nature."

The Hoolock Gibbon. (*Hylobates hoolock.*)—The long-armed Apes or Gibbons constitute a very distinct section of Quadrumanous Animals confined to the Malay countries of Southern Asia and the adjacent islands. They do not usually bear captivity well; but the present example of the Hoolock Gibbon of Assam, received by the Society in August, 1868, will, it is hoped, prove an exception to the rule. For this valuable addition to the series the Society have to thank one of their Fellows, Mr. Arthur Grote, who brought it with him on his return from India. The specimen is a female, and was captured near Gowalpara in 1867. Its voice is very loud and powerful.

The Hanuman, or Sacred Monkey. (*Semnopithecus entellus.*)

The *Hanuman* is found throughout the whole of the southern part of India, and in some parts in great abundance. It is so called after a certain important personage of the same name in Hindu mythology, and is reverenced accordingly. These Monkeys are allowed unmolested access to the houses of the villagers in some parts of India. They are petted and fed, and at certain temples, as Professor Wilson informs us, especially in the western districts, attend in large numbers every day for food, which is supplied to them by the priests and the people.

The Chacma Baboon. (*Cynocephalus porcarius.*)—**The Guinea Baboon.** (*C. papio.*)—**The Yellow Baboon.** (*C. babouin.*)

The genus *Cynocephalus* —comprehending the Monkeys usually called Baboons—consists of several species which occur in Africa. They form two sections, of which the first have tails of moderate length, the second of extreme shortness. The second division, which includes the Drill and Mandrill, is also marked by a characteristic modification of the conformation of the head.

The Green Monkey. (*C. callitrichus.*)—**The Vervet.** (*C. lalandii.*)—**The Grivet.** (*C. griseoviridis.*)—**Sykes' Monkey.** (*C. albigularis.*)—**The Moustached Monkey.** (*C. cephus.*)—**The Mona Monkey.** (*C. mona.*)

The genus *Cercopithecus* is an extensive one, and includes at least twenty species, which are natives of Africa. They have all long and slender tails.

The Mangabey. (*Cercocebus æthiops.*)—**The Sooty Mangabey.** (*C. fuliginosus.*)

The genus *Cercocebus*, which is intermediate in its character between *Cercopithecus* and *Macacus*, appears to be entirely West African.

The Common Macaque. (*Macacus cynomolgus.*)—**The Bonnet Macaque.** (*M. radiatus.*)—**The Rhesus Macaque.** (*M. erythræus.*)—**The Capped Macaque.** (*M. pileatus.*)—**The Pig-tailed Macaque.** (*M. nemestrinus.*)

The species of the Asiatic genus *Macacus* are numerous, and vary greatly

in the comparative lengths of their tails, which in some species are reduced to almost a rudiment. They are found in India, Ceylon, and South-Eastern Asia generally, with its adjoining islands. The Common Macaque has an extensive range, being found in Sumatra, Borneo, Java, and Timor.

The Magot. (*Macacus inuus.*)

The MAGOT, or BARBARY APE, is remarkable as being the only species of monkey which occurs in Europe. Its single station is the rock of Gibraltar, where, however, it is rapidly becoming extinct; only three or four individuals being stated to be now remaining there in a wild state.

The second great division of Monkeys, the *Platyrrhinæ*, which are peculiar to the Western Hemisphere, are characterised by nostrils which open in a direction parallel to each other, and are therefore separated by a cartilage which is as wide at the base as at the upper extremity. They are divisible into two very distinct groups, which are usually considered as different families. These are the *Cebidæ*, in which there are six grinding teeth on each side of the jaw, instead of five, as in the Apes of the Old World, and the *Hapalidæ*, or Marmozets—a series of little animals which have the same number of teeth as the *Simiidæ*, but have not the same dentition—having four more false molars and four fewer true molars. They are also different in other points of structure, and are rather insectivorous in their habits.

Although the Monkeys of America are fully as numerous in species as those of the Eastern Hemisphere, far fewer of them have been brought to Europe in a living state, and they are therefore, for the present, less copiously illustrated in this house than is desirable.

The Brown Spider-Monkey. (*Ateles hybridus.*)—**The White-fronted Spider-Monkey.** (*A. marginatus.*)—**The Black Spider-Monkey.** (*A. belzebuth.*)

The SPIDER-MONKEYS are the most active and most lively of their tribe, and use their prehensile tail as an organ of locomotion, often suspending the whole weight of the body upon it. They are generally destitute of thumbs on their anterior limbs, although in some species these exist in a rudimentary state.

Our living specimens of this group are generally procured from the hot forests of Central America and Brazil.

The Common Capuchin. (*Cebus apella.*)—**The White-throated Sapajou.** (*C. hypoleucus.*)

The difficulty of distinguishing the species of Capuchin monkeys is considerably increased by the variations of colour which occur in many of them, and which appear to indicate transitions from one to another.

The Pinche-Monkey. (*Hapale œdipus.*)—**The Negro Marmoset.** (*H. ursulus.*)

These elegant little monkeys are found in great abundance in the hot parts of America, where they run about the trees like squirrels, which indeed they somewhat resemble in appearance. They feed on insects and fruits, and also, it is said, on small birds and their eggs. They are easily tamed, and often become great pets.

The LEMURS constitute a third distinct group of Quadrumanous animals, and present some extremely interesting modifications of form. They live almost entirely in trees, and are most active at night. The fur of the Lemurs is soft, dense, and woolly. Their nostrils, unlike those of either group of Monkeys, have a curved opening, and the tail is never prehensile.

The extremities of the Lemurs differ remarkably from those of the Monkeys in having a long, sharp, curved claw on the first finger of the hinder pair, and generally in the broad, flat character of the nails of the other fingers. The form of the face is somewhat fox-like in the prolongation of the muzzle, and affords a physiognomical character which will be readily recognised.

The Black-fronted Lemur. (*L. nigrifrons.*)—**The Black Lemur.** (*L. macaco.*)—**The Ring-tailed Lemur.** (*L. catta.*)

These Lemurs are all found in Madagascar, and in consequence of the hitherto limited intercourse of Europeans with that interesting and comparatively unexplored island, are obtained only at uncertain intervals. The Society has, however, at various times possessed nearly the whole of the known species.

THE POTTO.

The Potto. (*Perodicticus potto*). **The Slow Loris.** (*Nycticebus tardigradus*).

The Potto is an African form of a peculiar group of nocturnal Lemurs, remarkable for their sluggish habits, and therefore called "Slow Lemurs." Other allied animals inhabit India and some of the larger Asiatic islands, such as the Slow Loris, or Slow-paced Lemur of Bengal, of which there are generally examples in the collection.

The Large Fruit-Bat. (*Pteropus medius.*) **The Australian Fruit-Bat.** (*P. poliocephalus.*) **The Collared Fruit-Bat.** (*Cynonycteris collaris*).

The Fruit Bats, or "Flying Foxes," as they are often called, constitute a well-marked section of the Bats belonging to the warmer parts of the Old World. They are frugivorous, and are accused of doing great damage in gardens and plantations, which they visit at night in immense flocks. The female of the Collared Fruit-Bat, now in the Gardens, produced a young one some months ago, being the first instance of an animal of this group having bred in captivity.

3A. THE RODENTS' HOUSE.

The RODENTS (or order *Rodentia* of naturalists) form a very numerous series of small animals with a peculiar dentition adapting them for gnawing wood and vegetables. The SQUIRRELS, RATS and MICE, RABBITS and HARES, are familiar examples of this great division, which includes also the VOLES, POUCHED RATS, BEAVERS, PORCUPINES, and many others.

The Society's series of these Mammals is unfortunately distributed in several parts of the Gardens, but most of the larger species have lately been assembled in the present building.

The Capybara. (*Hydrochœrus capybara.*)—The large South-American Rodent, the Water-Pig or Capybara, is common in the neighbourhood of all the brooks and streams of Brazil and Paraguay, feeding upon marsh and water-plants and fruits. This animal is stated by Dr. Burmeister, Mr. Darwin, and others to be the favourite food of the Jaguar, which abounds in similar localities.

The Crested Porcupine. (*Hystrix cristata.*)—**The South African Porcupine.** (*H. africæ australis.*)—**The Indian Porcupine.** (*H. leucura.*)—**The Javan Porcupine.** (*H. javanica.*)

The spiny Rodents called Porcupines are divisible into two very distinct sections—the terrestrial Porcupines of the Old World and the arboreal Porcupines of North and South America. Of the former group we have several species exhibited here.

The Crested Porcupine is found in Southern Europe and Northern Africa. In South Africa it is replaced by a nearly allied species—the South African Porcupine, and in India by the Indian Porcupine. The flesh of the Porcupine is considered very delicate food, and is often eaten at dinners in Rome, the animal being not uncommon on the Campagna. The story of the Porcupine projecting its quills as a means of defence, has probably arisen from the fact, that if strongly excited when the quills are loose and ready for moulting, the violent jerks with which it manifests its anger have the effect of dislodging the most loose among them, and they are then mechanically thrown to some little distance from the animal.

The Vizcacha. (*Lagostomus trichodactylus.*)

This is one of the characteristic Rodents of the Pampas of South America, and is of interest as being nearly related to the *Chinchilla*, which produces such beautiful fur. "The Vizcacha," Mr. Darwin tells us, "is well known

to form a prominent feature in the zoology of the Pampas. It is found as far south as the Rio Negro, in lat. 41°, but not beyond. Near Buenos Ayres these animals are exceedingly common. Their most favourite resort appears to be those parts of the plain which during one half of the year are covered with giant thistles, to the exclusion of other plants. The Gauchos affirm that it lives on roots; which, from the great strength of its gnawing teeth, and the kind of places frequented by it, seems probable. In the evening the Vizcachas come out in numbers, and quietly sit at the mouths of their burrows on their haunches. At such times they are very tame, and a man on horseback passing by seems only to present an object for their grave contemplation. They run very awkwardly, and when running out of danger, from their elevated tails and short front legs, much resemble great rats. Their flesh, when cooked, is very white and good, but it is seldom used."—Darwin's "Nat. Journal."

3B. THE SWINE-HOUSE.

This building has lately been erected for the purpose of bringing together into one spot the species of the *Suidæ* or Swine family. It contains seven compartments, tenanted by the following members of the group.

The European Wild Swine. (*Sus scrofa.*)—**The Japanese Wild Swine.** (*S. leucomystax.*)

The Wild Swine is still common in the forests of Germany and the South of France. The Wild Swine of Europe, or at least a species not yet distinguished from it, is found also on the north coast of Africa. The young of this animal are easily distinguished from the young of the domestic varieties by their being striped. The Japanese Wild Swine seems also to occur in Formosa—at least, living specimens received by the Society from these two localities seem to be undistinguishable.

The Red River-Hog. (*Potamochœrus penicillatus.*)

The River-Hogs, two species of which are found in Africa, are distinguished from the true Hogs of the genus *Sus*, by the large protuberances on each side of the face, and the elongated pencilled tufts which terminate the ears. The Red River-Hog, which is the representative of the groups in Western Africa, is a very rare species, and previously to the arrival of the Society's examples was only known in Europe by the existence of a single male specimen in the museum of Basle.

The Æthiopian Wart-hog. (*Phacochœrus æthiopicus.*)—**The Ælian's Wart-hog.** (*P. æliani.*)

Two species of this very singular form of the Swine-family are found in Africa—one in the central and eastern and another in the southern parts of the continent. The pair now in the collection which belong to the former species, were imported from Natal, and presented to the Society by H.R.H. the Duke of Edinburgh, F.Z.S., in 1866. The Ælian's Wart-hog is from the coast-region of Abyssinia.

The Babirusa. (*Babirusa alfurus.*)—The Zoological Society have obtained, by exchange, from the Zoological Gardens of Rotterdam a fine young male of this remarkable species of Pig, which is an inhabitant of Celebes in the Indian Archipelago, and of some of the adjoining islands. The

name of *Babirusa* is said to be a compound of *Baba* and *Rusa*, being the Malayan appellations for the Pig and the Deer respectively. The more delicate nature of the Babirusa renders it necessary to remove him in winter to a more sheltered situation, so that he is then lodged in the Eland-House. (See p. 56.)

The Collared Peccary. (*Dicoteles tajassu.*)—**The White-lipped Peccary.** (*D. albirostris.*)

No true Hogs are found in the New World. In Mexico and Central and Southern America these two species of Peccary occur, which make the nearest approach to the Wild Hogs of Europe and Asia. They are, however, much inferior as an article of food, and are said to be only made palatable by the removal immediately after death of a singular gland which is found above the posterior vertebræ.

4. THE SOUTHERN PONDS.

The Zoological Society has always paid great attention to collecting Water-Fowl, which, from their general hardiness, are especially adapted for acclimatisation in this country. The visitor who wishes to see all the species continuously, may do so by taking the following route, which can be traced without difficulty on the plan. The inclosures in which the Water-Fowl are kept are numbered 4, 9, 17, 18, 20, 23, 29, 35, 36. The species usually possessed by the Society are about 50 in number, of which the most remarkable are

1. The Pied Goose (*Anseranas melanoleuca*), Australia.
2. The Spur-winged Goose (*Plectropterus gambensis*), W. Africa.
3. The Cereopsis (*Cereopsis novæ-hollandiæ*), Australia.
4. The Bar-headed Goose (*A. indicus*), Hindostan.
5. The Little Goose (*A. minutus*), N. Europe.
6. The Red-breasted Goose (*Bernicla ruficollis*), N.E. Europe and N. Asia.
7. The Sandwich Islands Goose (*Chloëphaga sandvichensis*), Sandwich Islands.
8. The Magellanic Goose (*C. magellanica*), Falkland Islands.
9. The Ruddy-headed Goose (*C. rubidiceps*), Falkland Islands.
10. The Ashy-headed Goose (*C. poliocephala*), South America.
11. The Black-necked Swan (*Cygnus nigricollis*), S. America.
12. The Black Swan (*C. atratus*), Australia.
13. The Whistling Duck (*Dendrocygna arcuata*), India.
14. The White-faced Whistling Duck (*D. viduata*), Brazil.
15. The Tree-Duck (*D. arborea*), West Indies.
16. The Red-billed Tree-Duck (*D. autumnalis*), S. America.
17. The Shieldrake (*Tadorna vulpanser*), Europe and Asia.
18. The Ruddy Shieldrake (*T. rutila*), N. Africa and S. Asia.
19. The Australian Shieldrake (*T. tadornoides*), S. Australia.
20. The Paradise Shieldrake (*T. variegata*), New Zealand.
21. The Summer Duck (*Aix sponsa*), N. America.
22. The Mandarin Duck (*A. galericulata*), China.
23. The Bahama Duck (*Pœcilonetta bahamensis*), S. America.
24. The Red-billed Duck (*P. erythrorhyncha*), S. Africa.

The first Pond next to the Swine-house is principally devoted to the Gulls, amongst which may be noticed examples of the Herring-Gull (*Larus*

argentatus), the Greater and Lesser Black-backed Gulls (*L. marinus*, and *L. fuscus*), and the Glaucous Gull (*L. glaucus*), all from the coasts of our own island. These birds do well in captivity. Some of the species make their nests at the sides of the inclosure every year, and not unfrequently succeed in hatching their young in spite of the persecution they are subjected to from their less domestically inclined brethren.

The succeeding inclosures are mostly tenanted by pairs of the more valuable species of the Duck tribe (*Anatidæ*). These are enabled to breed here in security, protected by the rat-proof fence, which surrounds the whole. Examples of the following species will be found either in these ponds or in some of the small inclosures close by, their stations being occasionally changed.

The Black Swan. (*Cygnus atratus.*)—**The Hooper.** (*C. ferus.*)

The Black Swan is a native of Australia, but has now become quite acclimatised in Europe, and breeds in these Gardens every year. The Hooper is the common wild swan of this part of Europe—our domesticated swans (*Cygnus olor*) belonging to an oriental species, which rarely occurs in a state of nature in England.

The Shieldrake. (*Tadorna vulpanser.*)—This brightly-plumaged Duck is a great favourite of those persons who possess collections of ornamental Water-Fowl, the pure and clearly contrasted colours of its feathers rendering it conspicuous from afar. It is a native of Europe, and still found on some parts of our coast, breeding in rabbit-burrows or other holes in the soft soil.

The Australian Shieldrake. (*Tadorna tadornoides.*)—Of this beautiful Shieldrake specimens were first received in 1862 from the Hon. J. C. Hawker, Speaker of the House of Assembly at Adelaide. These unfortunately turned out to be all females. Males, however, have been recently received from the Acclimatisation Society of Melbourne, and there is reason to hope that this fine species may soon be induced to propagate in this country.

The Ruddy Shieldrake, (*Tadorna rutila,*)—easily known by its bright colour, is one of the rarest visitants to Britain, and only becomes abundant in Eastern Europe. It occurs in Egypt, and is said to be extremely numerous in Asia Minor. Indian specimens differ slightly, but not sufficiently to merit specific distinction. A pair of these birds bred in the Gardens for the first time in 1859, and successfully reared four strong young birds. Since that time the species has bred with us nearly every year.

5. THE SEAL-POND.

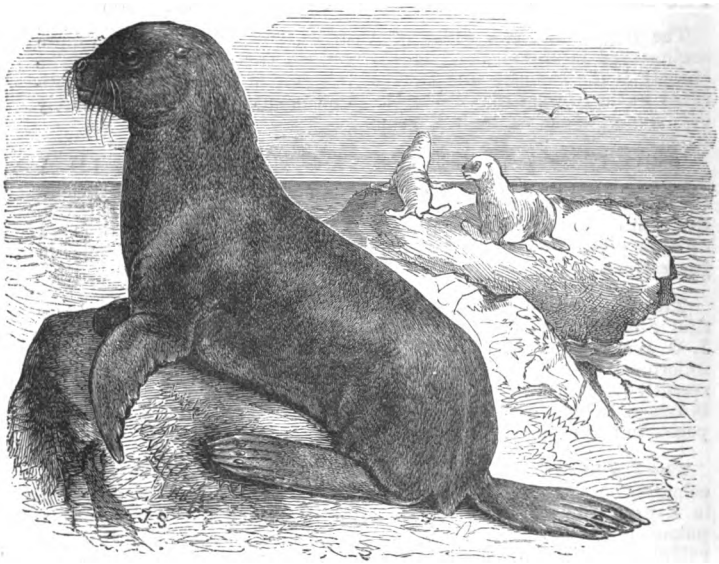
The Common Seal. (*Phoca vitulina.*)—**The Ringed Seal.** (*P. fœtida.*)—Four Seals are found in the British seas, but *Ph. vitulina* is much the most common. Nothing can be more beautiful as a special adaptation of structure to habits than the anatomical characters of the Seal, and as it is absolutely impossible to obtain a near acquaintance with these animals in a state of nature, the docility which they exhibit in confinement becomes extremely interesting. Under favourable circumstances a Seal will live for a considerable period in the Menagerie;

the old favourite known by the sobriquet of "Tom" inhabited these Gardens from 1852 to 1856, and then only died in consequence of having swallowed an accumulation of fish-hooks which had escaped observation in the whitings on which he was fed.

The quantity of fish consumed by the Seal must be enormous, if we may judge from the amount they will eat if permitted in confinement; an allowance at the rate of 14 cwt. per annum being no more than is absolutely necessary to keep them in condition.

The Sea-lion. (*Otaria jubata.*)

The Eared Seals, or Sea-lions and Sea-bears, as they are often called, form a very distinct group of marine carnivorous animals, readily known



THE SEA-LION.

from the true Seals by the presence of a small external ear. In 1866 the Society first obtained a living specimen of one of these remarkable animals, which proved to be of no ordinary interest both to scientific observers and to the public. Upon its death the Council determined to send François Lecomte—the keeper who had it under his charge—out to the Falkland Islands, in order to obtain other individuals of the same species. Lecomte returned from this expedition in August, 1867, but owing to various unforeseen circumstances only succeeded in landing alive in this country one out of the four Sea-lions with which he had started from Port Stanley. This individual, which has much improved in appearance since its arrival, is a female, captured by Lecomte at North Point Island, on the eastern coast of East Falkland Island, on June 8th, 1867.

6. THE CIVETS' HOUSE.

The collection of Carnivora is very extensive, and is by far the finest in Europe. The animals are unfortunately separated in various buildings; but they can be visited successively if desired. These buildings are numbered 6, 12, 13, 14, 27, 28, 30, 47.

The African Civet. (*Viverra civetta.*)—The African Civet is chiefly remarkable for the highly odoriferous secretion from which the perfumers used to prepare the old-fashioned "musk." Musk has now given way to Patchouli, and to far purer and more delicate floral perfumes: so that Civets are no longer in the demand which former periods of fashion created for them.

7. THE PHEASANTS' AVIARIES.

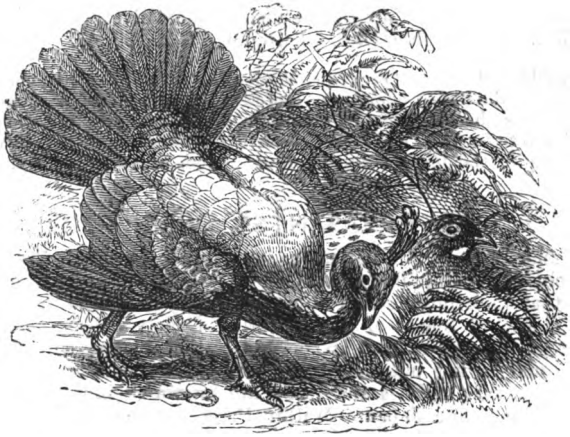
The Game-Birds of the Himalaya, and other parts of Eastern Asia, include so many fine species which are capable of living in Europe, that their introduction into this country has, from the first, been a cherished object of the Zoological Society. The common Pheasant is a comparatively modern accession to the coverts of England, and is not naturally more adapted to our climate than many other species of Pheasants which are known to inhabit India, Mongolia, China, and Japan. Within these last few years nearly the whole of these splendid birds have been introduced into this country in a living state, principally by the agents and correspondents of the Society. Some of them have succeeded well in captivity, and breed regularly in the Society's Gardens. Others have done well for the first year or so after their acquisition, but have subsequently fallen off, and will require fresh introduction.

A certain number of the young of the various species of Pheasants bred in the Gardens are disposed of every year in the month of November. Priced lists of these birds may be obtained on application at the Society's Office.

The Cheer. (*Phasianus wallichii.*)—Two females and a male of this singularly marked bird were obtained from Simla in the year 1857, and in the hills adjoining that station the Cheer is by no means uncommon. More recently other specimens have been imported, and the bird now breeds regularly in the Society's Gardens. The Cheer differs slightly from the true Pheasants, and has been separated from them as the type of a sub-genus.

The Monâl. (*Lophophorus impeyanus.*) **The Sclater's Monal.** (*L. Sclateri.*)—The Monâl or Impeyan Pheasant is one of the most striking birds of its tribe, and cannot fail to fix the attention of all who behold it. The rich beauty of its plumage, its size, and the grotesqueness of its actions at particular periods, are equally remarkable; and when we add that it seems to be extremely apt to endure the conditions of confinement, that it breeds without difficulty under that disadvantage in this country, that it is perfectly capable of bearing the severest rigour of our winter, it certainly appears that the introduction of this mountain bird into the forests of Scotland is not only desirable, but ought ere long, to be accomplished. Sclater's Monâl, of which a single male is in the Society's collection is one of the most brilliant recent discoveries in Indian Ornitho-

logy. It is a native of Upper Assam, where it was first detected in 1869 by Dr. Jerdon, a well-known Indian naturalist. The present example was presented to the Society by Major Montagu of the Bengal Staff Corps.



THE MONÂL.

The Purple Kaleege. (*Euplocamus horsfieldi.*)—**The White-crested Kaleege.** (*E. albo-cristatus.*)—**The Black-backed Kaleege.** (*E. melanotus.*)—**The Lineated Kaleege.** (*E. lineatus.*)

The division of *Phasianidæ* to which these fine birds belong, has long been familiar to European eyes in the Silver Pheasant, which was probably one of the first introductions resulting from our commerce with China. Males of the Horsfield or Purple Kaleege were obtained by the Society through Captain Nesbit, of "The Nile," in the year 1853; but a pair of birds which were sent from Darjeeling by Captain James, while acting Resident there, in 1857, were the first which reproduced in Europe. The Lineated Kaleege of Arracan and the Burmese provinces is the most recently introduced of the four species, all of which breed regularly in the Society's Gardens.

The Peacock Pheasant. (*Polyplectron chinquis.*)

The Polyplectrons obtained the name of Peacock Pheasants from the metallic eyes which adorn the principal feathers of the body, and all the feathers of the tail. This gorgeous scheme of decoration may be observed as occurring also in the Ocellated Turkey of Honduras, and in a more subdued, but by no means less lovely tone of colour, in the ARGUS, of which the Society formerly possessed for some years a very splendid male, obtained at Singapore, and presented to the collection by Mr. H. Cuming, on his return from the Philippines in 1840.

The Japanese Pheasant. (*Phasianus versicolor.*)—**Scemmerring's Pheasant.** (*P. Scemmerringii.*)

These beautiful birds, which are close allies of our common Pheasant (*P. colchicus*), inhabit Japan, where they are the only representatives of the

genus. Males of the Japanese Pheasant were introduced into Europe some years ago, and hybridised freely with females of the ordinary bird, until the ultimate produce could scarcely be distinguished from the pure-bred *P. versicolor*. The splendid Sœmmerring's Pheasant is a subsequent importation, the first arrival of any number of birds of this species having taken place in July, 1864.

The Bartailed or Reeve's Pheasant. (*P. reevesi.*)—This species of true Pheasant is remarkable for the excessive elongation of the two central tail-feathers, which in some specimens reach a length of five feet six inches. It is, besides, conspicuous for its beautifully variegated plumage. Its native country is Central China, to the north of the river Yangzekiang.

The Horned Tragopan. (*Ceriornis satyra.*)—**The Temminck's Tragopan.** (*C. temminckii.*) **The Blyth's Tragopan** (*C. blythii.*)

The first Horned Tragopans received by the Society were presented to the collection by the Babu Rajendra Mullick, of Calcutta, who has made many other valuable donations to the Menagerie. This Tragopan is found in Nepal, Bhotan, and Sikim, being replaced on the slopes of the north-western Himalayas by the Black-headed Tragopan (*C. melanocephala*). Temminck's Tragopan is a representative of this splendid group of Pheasants from Central and Western China, and Blyth's Tragopan, the most recent addition to the group, is from Upper Assam.

8. THE PEA-FOWLS' AVIARY.

The Common Pea-fowl. (*Pavo cristatus.*)—**The Black-shouldered Pea-fowl.** (*P. nigripennis.*)—**The Javan Peafowl.** (*P. muticus.*)

THE COMMON PEA-FOWL is a native of India and Ceylon. "In some of the unfrequented portions of the eastern province," says Sir James Emerson Tennent, in his interesting work on the latter country, "to which Europeans rarely resort, and where the Pea-fowl are unmolested by the natives, their number is so extraordinary that, regarded as game, it ceases to be sport to destroy them, and their cries at early morning are so tumultuous and incessant as to banish sleep and amount to an actual inconvenience!' THE BLACK-SHOULDERED PEA-FOWL is commonly called the Japan Peacock, but is not found in Japan. For a long time its origin was unknown; but it has recently been ascertained to occur wild in Cochin China. THE JAVAN PEA-FOWL is a splendid bird. It replaces the Common Pea-fowl in the Malay peninsula and Java, and is readily distinguished by its different colouring and peculiar crest.

9. THE GOOSE-PONDS.

The Society's series of Geese is numerous, and contains examples of nearly all the European species. The most interesting foreign birds of this group are three recently introduced species of the genus *Chloëphaga*, or "Grass-eating Goose," which are very terrestrial in their habits. These are—

The Ashy-headed Goose. (*Chloëphaga poliocephala.*)—**The Ruddy-headed Goose.** (*C. rubidiceps.*)—**The Upland Goose.** (*C. magellanica.*)

These three species are of great beauty, and are all from the Falkland

Islands, and the neighbouring coast of S. America. They are perfectly hardy, and as the Ashy-headed Goose has increased rapidly since its introduction at Knowsley, in 1849, there is little room to doubt that the others will also, in a few years, become equally abundant in European collections. These birds are closely allied to the genus *Bernicla*, which includes the well-known Brent Goose and Bernicle. They are rather terrestrial than aquatic in their habits, feeding almost entirely upon grass, which they graze with the closeness of a flock of sheep.

THE UPLAND GOOSE presents a very remarkable exception to the species most closely associated with it, in the great contrast in colour between the male and female. In both the Ashy-headed and the Ruddy-headed Geese, as in the Bernicle and the Brent, the sexes so nearly resemble each other that it is almost impossible to distinguish them; but in the Upland Goose the female has a sober hue of chestnut and greyish-brown, barred with black, and the male is conspicuously white, except on the back, and even there the ground colour is clear and brilliant, instead of being grey. The legs also differ in colour in the most marked manner, those of the male being black, and of the female yellow. The Upland Goose is a native of the Falkland Islands.

10. THE EMEUS' SHEDS.

These sheds are tenanted by the Emeus of Australia and the Nandus or Rheas of South America, both belonging to the same group of birds as the Ostriches now located on the other side of the Gardens. (See p. 58.) It is in contemplation to erect a new building near the Cranes' paddocks, where the whole of the Struthious family may be brought together.

The American Rhea. (*Rhea americana.*)

This "OSTRICH" of the New World is abundant in the Pampas of La

AMERICAN RHEA.

Plata and the adjoining States of South America, where it forms one of

the most characteristic features of the scenery. It differs essentially from the true Ostrich of the deserts of the Old World in its smaller stature, and in having three toes instead of two. Its habits in a state of nature have been well described by Mr. Darwin and other naturalists. There are now known three distinct species of this form of Struthious birds.

The Emeu (*Dromœus novæ-hollandiæ*) represents the *Struthiones* in Australia, where it is generally dispersed over the whole interior of the continent, though now becoming very scarce in the settled districts.

Both the Emeu and the Rhea breed every year in the Society's Gardens. They are strictly monogamous, but the most singular fact connected with their reproduction is that the whole duties of incubation, as well as the care of the young bird when hatched, devolve upon the male bird. This is believed to be the case with all the other Struthious birds, as will be seen on reference to a paper upon the subject in the Society's "Proceedings" (1863, p. 233).

11. THE ZEBRA AND ANTELOPE HOUSES.

This substantial edifice was planned with the idea of collecting the larger species of Antelopes, formerly located in inconvenient sheds, into one building. This has been accomplished, except as regards the Elands, which remain for the present in their old quarters on the other side of the road. (See p. 56.)

The Bless-bok. (*Damalis albifrons*).—Of this beautiful antelope, which, like its close ally the Bontebok, is well known to the hunters and explorers of the Cape Colony, the Society's collection now contains several examples. The female first acquired was the gift of H. E. Sir George Grey, in 1861; additional specimens having since been obtained by purchase. This species bred in the Society's Gardens for the first time in 1866, and will, it is hoped, continue to do so; for although it is certainly not of so tractable a nature as the Eland or the Nylgai, its elegant form and bright markings render it an animal of great interest.

The Addax. (*Addax naso-maculatus.*)—This is a North African Antelope, rather strong and heavy in its make, and not so elegantly shaped as some of its congeners. It is met with sparingly in the interior of the Algerian Sahara, as well as in Nubia and the Soudan. There appears to be no doubt that this animal was the true *Strepsiceros* of classical writers, and was an object of veneration of the ancient Egyptians.

The Black-Buck, or Indian Antelope (*Antelope cervicapra*), is well known to the sportsmen of British India, being a favourite object of pursuit in the interior of the peninsula, and very abundant in the more open parts of the country. The sexes are very different in colour.

The Nylgai. (*Portax picta.*)—The Nylgai, the largest of the Asiatic Antelopes, is likewise an inhabitant of British India. It breeds in these Gardens every year, the female usually producing two calves at a birth, but is rather shy and timid in disposition. The Indian name, by which it is also generally known in Europe, signifies "*blue cow*," and indicates that even in its native country the strong resemblance which it presents to the true cattle has not escaped notice.

The Common, or White-tailed, Gnu. (*Catoblepas gnu.*)—**The Brindled Gnu.** (*Catoblepas gorgon.*)—Instantly after crossing the Orange River, the KOKOON or BRINDLED GNU usurps the place of the White-

THE GNU.

tailed species (*Catoblepas gnu*); and, although herds of the former may actually be seen grazing on the northern bank, not a single individual has ever been known to pass the barrier. . . . By the Dutch Boors the present species is termed the Bastaard or Blauw Wilde Beest: throughout the country of the Bechuana, as far as the Tropic, it is recognised as the Kokoon, and the Hottentot tribes designate it the Kaop or Baas, both of which terms, signifying *master*, refer in all probability to its bold and terrific bearing. When excited by the appearance of any suspicious object, or aroused by any unusual noise, the Kokoon is wont to appear much more grim and ferocious than it actually proves—not unfrequently approaching with an air of defiance, as if resolved to do battle with the hunter, but decamping on the first exhibition of hostility on his part. On being pursued, the herd bring their aquiline noses low between their knees, and flourishing their streaming black tails, tear away in long regular files at a furious gallop, wheeling curiously about, at the distance of two or three hundred yards, advancing boldly towards the danger, tossing their shaggy heads in a threatening manner—presently making a sudden stop, presenting an impenetrable front of horns, and staring wildly at the object of their mistrust. . . . . When engaged in grazing they have an extremely dull and clumsy appearance, and at a little distance might often be mistaken for wild buffaloes; but their manner is sportive—at one moment standing to gaze at nothing, and at the next scampering over the plain without any apparent object in view, making grotesque curvets and plunges, with their preposterous Bonassus-looking heads held down between the forelegs. Blustering along at a little distance, the solitary bulls loom even more like the whiskered monarch of the forest than do their white-tailed congeners; the resemblance being not a little enhanced by their possessing, like the furious white Uri, produced in days of yore in the forests of Caledonia, *jubam densam ac demissam instar leonis;* or, as Holinshed has it, 'crisp and curled manes like unto fiery leons.'"—Harris's Portraits, ch. 4.

The Leucoryx. (*Oryx leucoryx.*)—The Leucoryx is found in North-eastern and Western Africa, its range extending from the Gambia to Abyssinia. In Southern Africa it is replaced by the Gemsbok (*Oryx gazella*); and the Society some years ago possessed a third species of this genus, of which the exact habitat is uncertain, although believed to be Arabia. This last species was described and figured in the Proceedings of the Society under the name of *Oryx beatrix.* (See P. Z. S. 1857, Mammalia, pl. LV.)

Passing through the folding doors connecting the two sections of the building the visitor enters the Zebra House, which contains a complete series of representatives of the *Solidungula*, or Horse-tribe.

The Kiang. (*Equus hemionus.*)—**The Onager.** (*E. onager.*)—**The Hemippe.** (*E. hemippus.*)—**The Abyssinian Wild Ass.** (*E. tæniopus.*)

For the fine female KIANG, or Wild Ass of Tibet, the only example of this animal in Europe, the Society is indebted to the energy and perseverance of Major W. S. Hay, F.Z.S., who brought it with him on his return from India in 1859. The Kiang, which is in all probability the true *Equus hemionus* of Pallas, is found in herds in the high plateau of Tibet at an altitude of from 15,000 to 16,500 feet above the sea. Major Hay has given a full account of its localities and habits in the Society's printed "Proceedings," 1859, p. 353, where a figure will also be found taken from this specimen.

The ONAGER, or Wild Ass of the Asiatic Deserts, is represented by several specimens from different localities, which are known by different native names. The *Gurkhoor*, or variety which inhabits Cutch, was obtained for the Society by Sir Thomas Erskine Perry. The differences between it and the Kiang will be obvious at first sight on comparison, though before the two were brought into juxtaposition, their distinctness was a matter of much discussion among naturalists. This Ass inhabits the sandy deserts of Cutch and Scinde on the left bank of the Indus in herds, and is noted for swiftness and difficulty of approach.

The HEMIPPE, or Wild Ass of Assyria, was considered as specifically distinct from that of Cutch, by the late M. Isidore Geoffroy St. Hilaire, and named *Equus hemippus;* but, judging from the Society's specimens, the two forms seem to be very nearly alike.

The ABYSSINIAN WILD ASS, which approaches most nearly the domesticated Donkey, and was doubtless the source whence the domestic animal was derived, is found in the high plains of Abyssinia, on the western shores of the Red Sea. It is readily distinguishable from the other species of Ass by the stripes on the hind legs.

The Burchell's Zebra. (*E. burchellii.*)—**The Quagga.** (*Equus quagga.*)

Southern Africa is the cradle of countless herds of great quadrupeds, which breed in the undisturbed wilderness, and for the most part make annual migrations in search of food, or from other causes, which from time to time bring them within the reach of man. Recent travellers have, however, penetrated so far into the hitherto unvexed haunts of the antelope, the elephant, and the rhinoceros, that these inroads, combined with the increased use of fire-arms among the natives, must henceforth begin to

diminish the numbers of the large game; and, although the continent is too vast to admit of their extermination, we cannot long expect to hear of the advent of such herds as were described by Sir Cornwallis Harris and other writers, on the first opening of the wilderness to the European sportsman.

There are three species of Zebra:—The Black and White, or true Zebra, which inhabits the mountains; Burchell's Zebra, or the Black and Yellow Zebra, which inhabits the plains; and the Quagga. Burchell's Zebra is found in great numbers north of the Orange River, according to Sir Cornwallis Harris:—

"Seldom congregating in herds of fewer than eighty or a hundred, it abounds to a great extent in all the districts included between that noble stream and the southern tropic. Occupying the same regions and delighting in the same pastures as the Brindled Gnu, rarely is it to be seen unless in the companionship of that fantastic animal, whose presence would seem to be almost indispensable to its happiness. It is singular enough that the members of two families so perfectly foreign to each other, should display so great a predilection for each other's society, uniformly intermixing as they do, and herding in bonds of the closest friendship. Fierce, strong, fleet, and surpassingly beautiful, there is, perhaps, no quadruped in the Creation, not even excepting the Mountain Zebra, more splendidly attired, or presenting a picture of more singularly attractive beauty than this free-born of the desert."

The QUAGGA is less attractively coloured, and inhabits a different tract of country. I continue to quote from Sir Cornwallis Harris:—

"The geographical range of the Quagga does not appear to extend to the northward of the river Vaal. The animal was formerly extremely common within the colony: but vanishing before the strides of civilisation is now to be found in very limited numbers, and on the borders only. Beyond, on those sultry plains, which are completely taken possession of by wild beasts, and may with strict propriety be termed the domains of savage nature, it occurs in interminable herds; and although never intermixing with its own more elegant congeners, it is almost invariably to be found ranging with the white-tailed Gnu, and with the Ostrich, for the society of which bird especially it evinces the most singular predilection. Moving slowly across the profile of the ocean-like horizon, uttering a shrill barking neigh, of which its name forms a correct imitation, long files of Quaggas continually remind the early traveller of a rival caravan on its march. . . . . Bands of many hundreds are thus frequently seen during their migration from the dreary and desolate plains of some portion of the interior, which has formed their secluded abode, seeking for those more luxuriant pastures, where during the summer months various herbs thrust forth their leaves and flowers to form a green carpet, spangled with hues the most brilliant and diversified."

12. THE GREAT CARNIVORES.

The Lion. (*Felis leo.*)—The Lion is subject to great individual variation both in size, colour, and expression; so that it is difficult to determine whether the Lion of Asia really differs more from the Lion of South Africa than the Lion of South Africa from that of Ashantee, Barbary, or Nubia, or than individuals of any of these races differ from each other. It was alleged some time since that the Asiatic Lion was maneless. But the Goojerat Lion presented by the Rajah of Jahnuggur, through Sir Erskine Perry and Col. Jacob, which lived in the Menagerie from 1854 to 1857, was as thoroughly maned as any African individual of the species. In colour Lions vary from a deep red chestnut-brown to grey so silvery as to have given rise to the belief that a race of white Lions exists in South Africa. The colour of the mane varies equally. In the Nubian Lion it is generally pale fulvous, and in the Cape Lions black; but all intermediate shades are found both in Nubia and the Cape country. The economy of Lions is now no longer unknown. The incursions into their wildest haunts by

Captain Sir C. Harris, Gordon Cumming, and other sportsmen in South Africa; the graphic recital of Dr. Livingstone; and the work of M. Jules Gérard on the Lion-hunting of Algeria, have left little to be told by others on this subject.

The Tiger. (*Felis tigris.*)—The Tiger is purely Asiatic in its range, but is not by any means confined to the hot plains of India. It is found in the Himalaya at certain seasons, at a high altitude. It also occurs on the southern shores of the Caspian, and to the eastward in Chinese Tartary, as far north as the Russian possessions on the Amoor.

The Tiger, although much more cruel and audacious in attack than the Lion, is capable of being tamed in an extraordinary degree. The pair of adult animals which were formerly presented to the Society by His Highness the Guicowar of Baroda, used to be led about by their attendants in the streets of that city: and Sir James Outram once possessed a male which lived at large in his quarters, and occasionally accompanied him in boat excursions.

The Leopard. (*Felis leopardus.*)—The Leopard is subject to greater variation than the Lion, but it is possible that further research and better means of comparison may establish the existence of a large species in North-West Africa, in addition to the *F. leopardus*, which is undoubtedly common to both Africa and Asia. The Black Leopard is now well-known to be nothing more than a *melanoid* form of the Common Leopard, whelps of each variety having been found together in the same litter.

The Puma. (*Felis concolor.*)—The Couguar, or Puma, is the anima occasionally designated as the Lion by travellers in South America. Its range is extensive, as it occurs in Paraguay, and is found as far North as the State of New York. There are two varieties, one nearly red and the other silvery grey; the latter is from the South. The Society once possessed an individual of this species which was almost an albino, the tail alone retaining any of the normal colour.

The Jaguar. (*Felis onça.*)—As the Puma is called "the Lion" of South America, the Jaguar is constantly spoken of as "the Tiger;" and, although I have never seen proof of it, I believe that under favourable circumstances this powerful Carnivore attains a size and power but little inferior to that of the huge monster of Bengal.

In that vivid chapter of the "Aspects of Nature" in which Baron Humboldt describes the nocturnal life of animals in the Primeval Forests, there occur the following notices of the Jaguar, taken from journals "written down on the spot:"—

"A striking evidence of the impenetrability of particular parts of the Forest is afforded by a trait, related by an Indian, of the habits of the large American Tiger, or Panther-like Jaguar. While in the Llanos of Varinas and the Meta and in the Pampas of Buenos Ayres, the introduction of European cattle, horses, and mules has enabled the beasts of prey to find an abundant subsistence,—so that since the first discovery of America their numbers have increased exceedingly in those extended grassy steppes; their congeners in the dense forests around the sources of the Orinoco lead a very different and far less easy life. In a bivouac near the junction of the Cassiquiare with the Orinoco, we had the misfortune of losing a large dog to which we were much attached, as the most faithful and affectionate companion of our wanderings. Being still uncertain whether he had actually been killed by the Jaguars, a faint hope of recovering him induced us, in returning from the mission of Esmeralda, through the swarms of musquitoes by which it is infested, to spend another night at the spot where we had so long sought him in vain. We heard the

cries of the Jaguar, probably the very individual which we suspected of the deed, extremely near to us; and as the clouded sky made astronomical observations impossible, we passed part of the night in making our interpreter repeat to us the accounts given by our native boat's crew of the tigers of the country. The black Jaguar was, they said, not unfrequently found there; it is the largest and most blood-thirsty variety, with the black spots scarcely distinguishable on its deep brown skin. It lives at the foot of the mountains of Maraguaca and Unturan. One of the Indians of the Durimund tribe then related to us that Jaguars are often led, by their love of wandering and by their rapacity, to lose themselves in such impenetrable parts of the forest that they can no longer hunt along the ground, and live instead in the trees, where they are the terror of the families of monkeys and the Kinkajou (*Cercoleptes caudivolvulus*)."

The Striped Hyena. (*Hyena striata.*)—**The Spotted Hyena.** (*H. crocuta.*)

The STRIPED HYENA is common to Africa and Asia; the SPOTTED HYENA and the BROWN HYENA—a third species of the genus—are restricted to Africa. The Hyenas pass the daytime in caves or in holes excavated in the ground by the aid of their powerful fore-feet. At night they sally forth in search of their food, which consists partly of the flesh of animals and partly of carrion. They are even said to visit cemeteries in the East for the purpose of digging up the recently interred bodies. Their jaws are enormously strong, and when they bite they hold on obstinately, and can with difficulty be made to let go their hold. The voice of the Striped Hyena when excited resembles a most unearthly laugh, whence it is commonly known as the Laughing Hyena.

The Brown Bear. (*Ursus arctos.*)—**The Syrian Bear.** (*U. syriacus.*)—**The Himalayan Bear.** (*U. tibetanus.*)—**The Japanese Bear.**—(*U. japonicus.*)—**The Malayan Bear.** (*Ursus malayanus.*)—**The Sloth Bear.** (*Prochilus labiatus.*)

The Society's Series of Bears is very complete, and contains examples of most of the known species. The BROWN BEAR is an animal of wide range, extending all over Europe, and Northern and Central Asia. The SYRIAN BEAR replaces the common Brown Bear in Western Asia, having been first described as a different species by Hemprich and Ehrenberg. It is, doubtless, the animal referred to in the Second Book of Kings (chap. ii. v. 24), being the only Bear known to occur in the mountain ranges of Syria. The JAPANESE BEAR is one of several new and interesting acquisitions from Japan.

13. THE BEAR-PIT.

The species now living in the Pit are the European Brown Bear, which has been noticed above, and the

American Black Bear. (*Ursus americanus.*)—This animal ranges throughout North America. It is subject to some variation, the most marked being that which is called the CINNAMON BEAR, from its bright red colour. A pair of these, presented by the Hudson's Bay Company in 1829, lived for twenty and twenty-five years respectively in the narrow precincts of this Pit, during which period they devoured an incalculable number of buns, provided by the liberality of visitors, for which they were always prepared to make an ascent to the summit of their pole.

14. THE BEAR-POND.

This structure is devoted to

The Polar Bear. (*Ursus maritimus.*)—The POLAR BEAR, or ICE BEAR, attains probably to the largest size of all this group, for Captain Lyon records the capture of one which measured eight feet seven and a half inches in extreme length, and weighed 1600 pounds. To capture an animal of these dimensions, and incarcerate him without injury in a cask, is a feat which few men would accomplish but the intrepid pursuers of the Whale, by whom Polar Bears are generally brought home as a supplemental venture on their return from the Northern Seas to Peterhead.

15. THE EAGLE OWLS' AVIARY.

This Aviary is at present occupied by the European EAGLE OWLS (*Bubo maximus*). The principal portion of the Collection of Owls will be found at the back of the Llamas' House (22), and another Aviary (43), the first in the North Garden after passing through the Tunnel, is devoted to the VIRGINIAN EAGLE OWLS.

The European Eagle Owl. (*Bubo maximus.*)—**The Virginian Eagle Owl.** (*B. virginianus.*)

The Eagle Owls are all of powerful size, the European (*B. maximus*) being the largest. This bird is very rare in Britain, and, like the Snowy Owl, can now only be regarded as an occasional visitant. In Norway the species continues in considerable abundance, and most of the specimens which are sent to this country are obtained there. The Eagle Owl not unfrequently deposits its eggs in confinement, and instances are known in which young have been hatched out and reared in this country.

16. THE CAMEL HOUSE.

Under the Clock Tower are two stables in which are to be found both the known species of the genus *Camelus:* **The Common Camel** (*Camelus dromedarius*), and **The Bactrian Camel** (*Camelus bactrianus*).

The COMMON CAMEL, a young male, was purchased by the Society in the year 1868.

The BACTRIAN CAMEL is a female born on the heights of Sebastopol, on the 5th of February, 1855, in the camp of the Royal Engineers, by whom she was presented to the Society. The geographical range of this Camel is far to the northward of that of the other: it appears to extend from Southern Siberia and Tartary to the Crimea, which is its western limit. It is easily distinguished by its double hump, and the long shaggy coat which is adapted to the lower temperature in which it lives.

Mr. Edward Blyth, late Curator of the Asiatic Society's Museum, Calcutta, informs us that the one-humped Camel of the colder regions of Western India, from Affghanistân to Khiva, is a very different looking beast from the Arabian Camel. It is said to be procurable at Peshâwur, and would be a valuable addition to the Society's Menagerie.

17. THE WATER-FOWLS' LAWN.

In this inclosure will be found several interesting species, some of which have been previously noticed at pp. 16, 17, and in addition to them—

The Pied Goose. (*Anseranas melanoleuca.*)—**The Red-breasted Goose.** (*Bernicla ruficollis.*)—**The Maned Goose.** (*B. jubata.*)

Pairs of the beautiful little Goose, known as the Maned Goose, or Hawkesbury Goose, of Australia, have recently been obtained through the liberality of the Society's correspondents in that country. This bird was formerly very common on the rivers near Sydney. In South Australia, Mr. Gould tells us, it is still one of the commonest water-birds, frequenting the brooks of the interior, and breeding in the hollow boles of the larger trees.

18. THE PELICANS' INCLOSURE.

The Common Pelican. (*Pelecanus onocrotalus.*) — **The Mitred Pelican.** (*P. mitratus.*)—**The Crested Pelican.** (*P. crispus.*)—**The Australian Pelican.** (*P. conspicillatus.*)—**The West-African Pelican.** (*P. rufescens.*)

The Pelicans do well in captivity, and the Society's living series of the species found in the Old World is very nearly complete. But we have at present no representatives of the Pelicans of America.

The Crested Pelican is seldom seen in collections. According to Lord Lilford it is common throughout the year on the coast of Epirus, but the living specimens which have been received by the Society have been usually brought from Upper Egypt. The orange colour of the pouch becomes extremely vivid in the breeding season; and the bird is altogether larger and more imposing than the common species, *P. onocrotalus*.

The Pelicans have a very extensive distribution, being found in all quarters of the world. One of the finest of the whole genus is the Australian Pelican, of which the Society have two adult specimens.

19. THE EASTERN AVIARY.

This Aviary, which has lately been rebuilt, and is now one of the best constructed buildings in the Gardens, is usually devoted to Hornbills, Curassows, and other tropical forms, although during the winter other birds, which require protection, are brought into it from more exposed situations.

The Concave-casqued Hornbill. (*Buceros bicornis.*)—**The Black Hornbill.** (*B. atratus.*)—**The White-billed Hornbill.** (*B. albirostris.*)—**The Ground Hornbill.** (*Bucorvus abyssinicus.*)—**The Red-billed Hornbill.** (*Toccus erythrorhynchus*).

It is only within these last few years that the Society have succeeded in adding a series of the very singular group of birds known as Hornbills to their collection. The Hornbills are mostly inhabitants of the tropics of the Old World, tenanting the deepest forests and jungles, and feeding principally upon fruits. They are especially remarkable for the extraordinary size and form of their beaks, which are well exhibited in the specimens of the two first species named above. The Ground Hornbill, which belongs to a different division of the same family, is on the other hand terrestrial in its habits, and only found in Africa. Its food consists principally of insects and reptiles, and its mode of attacking a snake, as is sometimes shown by the individuals in the Society's Menagerie, is very curious.

The European Flamingo. (*Phœnicopterus antiquorum.*)—**The Ruddy Flamingo.** (*P. ruber.*)

The Flamingos number about six species, of which three are American. The European bird is found on the shores of the Mediterranean, is extremely abundant in Tunis and Egypt, and extends its range at least as far as India. The Flamingos cross the Red Sea from Egypt to Arabia, prior to the breeding season, in immense flights, sometimes exceeding a mile in length. The peculiar structure of their beak is adapted, in a special manner, to their habit of feeding on minute mollusca, which they gather in shallow water. The upper mandible is always lowest during the operation, and the objects of search are passed over it as a duck sifts with its lamellæ. The action of the neck by which the head is thus turned downwards and inwards gives a most peculiar character to a flock of Flamingos as they wade along the shore. Nor is their flight less striking, the black pinions and roseate coverts making a beautiful contrast with their snow-white bodies, as every one who has crossed the lagoon, called El Baheira—which separates Tunis from the sea—where these birds are numerous, will testify.

The Sacred Ibis. (*Ibis religiosa.*)—**The Scarlet Ibis.** (*Ibis rubra.*)—**The White Ibis.** (*I. alba*).—**The Glossy Ibis.** (*Falcinellus igneus.*)

The Sacred Ibis is one of the most celebrated birds of antiquity, and had great honours paid to it by the ancient Egyptians. It is, however, by no means confined to the valley of the Nile, where indeed it is said to be now very scarce, but, like many other species indigenous to N. E. Africa, extends across the whole continent in the same latitude, and is found on the West Coast also. The specimens which are possessed by the Society were obtained from Western Africa.

Nothing can be more intense in colour than the Scarlet Ibis, when its plumage is developed under the hot sun of tropical America. In Europe, however, it rarely reproduces that gorgeous livery; and at each successive moult the adult birds usually become more pale. The majority of the specimens which are brought to us, are young birds in the brown plumage of immaturity. The next stage, effected at their first moult, is to pinkish-white: from that they advance to rose colour, and there the development of colour is almost always arrested. The Scarlet Ibis, like many of the wading birds, perches readily enough, and in form very closely resembles the European *Falcinellus igneus*, or Glossy Ibis, which, although formerly abundant, is now only an occasional visitant to the British Islands.

The Common Curassow. (*C. alector.*)—**The Yarrell's Curassow.** (*C. carunculata.*)—**The Globose Curassow.** (*C. globicera.*)—**The Razor-billed Curassow.** (*Pauxi mitu.*)—**The Lesser Razor-billed Curassow.** (*P. tomentosa.*)

The Guans and Curassows form an exclusively American family of birds, which appear to be the American representatives of the Pheasants, and inhabit the forests of the New World, from Mexico to the Southern confines of Brazil. They are divided into the following sections by systematic authors:—*Ortalida, Penelope, Oreophasis, Crax, Pauxi.*

The Curassows number some dozen species, most of which have been proved to be capable of enduring the climate of England with moderate protection. Some of them have occasionally reproduced in this country, but this is not often the case, and they are shy breeders, and certainly not good subjects for "acclimatisation."

20. THE NORTHERN POND.

This inclosure is one of the principal breeding-places of the Water-Fowl, and contains about a dozen species, of which the following are the most interesting:—

The Red-billed Duck. (*Pœcilonetta erythrorhyncha.*)—**The Yellow-billed Duck.** (*Anas flavirostris.*)

Both these species are natives of South Africa, and were originally introduced by the late Earl of Derby. They breed pretty freely in confinement; and are very desirable additions, as they are perfectly hardy, and require no more attention than the ordinary water-fowl of Europe.

The Bahama Duck. (*Pœcilonetta bahamensis.*)—This extremely beautiful Duck, the Ilathera Duck of Catesby, nearly allied to the Red-billed Duck of South Africa, breeds very freely in confinement, and has now been distributed by the Society to several of the amateurs who have collections, both in this country and on the Continent.

The Dusky Duck, (*Anas obscura,*)—"is abundant," says Wilson, "from Florida to New England. Its chief residence is on the sea-coast, though it makes extensive excursions up the tide-waters of our rivers." It breeds without difficulty in a suitable locality; and might easily be established in any district where it could be preserved for the few first seasons.

The Summer Duck. (*Aix sponsa.*)—This beautiful Duck is now well known in Europe, many hundred pairs of it having been imported from the United States, and constantly breeds on the ornamental waters of this country. Like its congener, the Mandarin Duck (23), it is arboreal in its habits, and not only builds its nest, but lives for a considerable part of its time in trees, when in a state of nature. Wilson gives an interesting account of his visit to a breeding-place of the Summer Duck on the Tuckahoc river, New Jersey, Am. Orn., vol. iii. 121.

21. THE FALCON AVIARY.

The Diurnal Birds of Prey, that is to say, the Falcons, Hawks, Eagles, and Vultures, in the Society's possession, are distributed in the following buildings, 21, 25, 26, 31, 40.

The Peregrine Falcon. (*Falco peregrinus.*)—**The American Peregrine.** (*F. anatum.*)—**The Greenland Falcon.** (*F. greenlandicus.*)—**The Iceland Falcon.** (*F. islandicus.*)

Besides the Peregrines, the Society's collection generally embraces specimens of both the Iceland and the Greenland Falcon, concerning the identity of which there has been so much discussion among European naturalists. An Iceland Falcon presented by Sir W. Milner in 1851, was then an adult bird, and moulted several years without any perceptible change in plumage. The Greenland Falcon exhibits the same persistence in the white plumage of that species; and if any evidence were required of the distinctness of these Jerfalcons, as pointed out by Mr. Hancock and Dr. Schlegel, it would have been amply substantiated by the facts which have thus been noted. Both Icelander and Greenlander are correctly figured in the first volume of the Zoological Sketches.*

The Saker Falcon. (*Falco sacer.*)—**The Lanner Falcon.** (*F. lanarius.*)—**The Jugger Falcon.** (*F. jugger.*)

All these Falcons are of great interest, as having been formerly much used in Falconry.

* Zoological Sketches by Joseph Wolf; edited, with notes, by P. L. Sclater.—Graves & Co., Pall Mall.

The SAKER, which is found wild in Eastern Europe and Western Asia, is still highly prized by the Arabian falconers, being esteemed of the same value as a thoroughbred horse.

The LANNER is considered hardly inferior in merits for hawking purposes. These birds, as well as the Peregrines, are often kept on blocks, in the open air, as they do better in this way than when confined in roofed buildings.

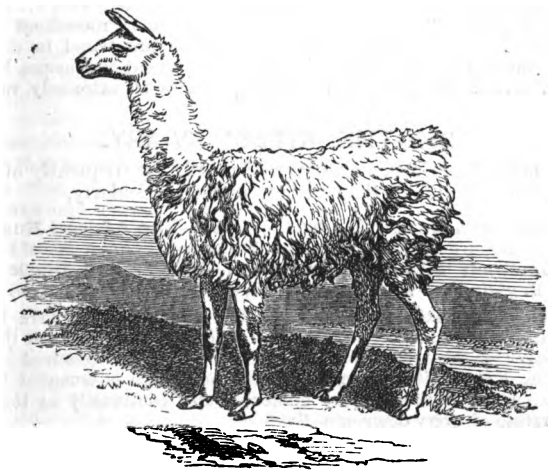
The Caracara. (*Polyborus brasiliensis.*)—**The Brown Milvago.** (*Milvago chimango.*)—**Forster's Milvago.** (*M. leucurus.*)

These three species represent a group of Raptorial Birds altogether peculiar to America, in which are included several species. The comparatively slender beak and talons of these birds unfit them for the fierce strife in which the Falcons engage, and their prey is consequently found among the less powerful forms of the Animal kingdom, in many instances being confined to reptiles and insects only. They also are addicted to feeding on offal and carrion, in which habits, and in the protrusion in some of the species of the naked craw when gorged, they show signs of resemblance to the Vultures.

The Australian Gos-hawk (*Astur novæ hollandiæ*) is remarkable amongst the birds of prey for its pure white plumage. It is, however, considered by the best authorities to be nothing more than a permanent white variety of an allied grey form (*Astur raii*).

22. THE LLAMAS' HOUSE.

The Llama. (*Lama peruana.*)—**The Alpaca.** (*L. pacos.*)—**The Guanaco.** (*L. huanaca.*)



THE LLAMA.

The Llamas and their allies, which represent the Camels in the New World, are found on the Andes of Peru and Bolivia, and in the

plains of Patagonia. Public attention has lately been directed to them from the successful introduction of their wool as an article of manufacture on a large scale. The three animals above mentioned are considered by some Naturalists as distinct species. Other writers reduce the number of species to two.

At the back of this house is part of the series of Owls, among which may be particularly noticed the BURROWING OWL (*Pholeoptynx cunicularia*) of the Pampas of South America, the WOOD-OWL (*Syrnium aluco*), and the BARN-OWL (*Strix flammea*) of this country, and other foreign and native species.

23. THE MANDARIN DUCKS' POND.

The Mandarin Duck, (*Aix galericulata,*)—a species which is so highly prized in China that Sir John Bowring had the greatest difficulty in obtaining a few pairs for the purpose of transmission to this country in 1850. Two pairs had previously reached a skilful amateur at Rotterdam, and from these individuals the whole of the birds of this species now in Europe have descended. The Mandarin Duck appears to be indigenous to the country north of Pekin, whence the Mandarins at Canton, and in the South generally, obtain a supply for their aviaries. It has also been found in a wild state by the recent Russian Exploring Expeditions on the Southern Amur.

24. THE OTTERS' CAGE.

The Otter. (*Lutra vulgaris.*)—Nothing can be more agile and graceful than the snake-like action of the Otters, as they glide through the water in play or in pursuit of food. In 1846 a pair of young Otters were bred in the Gardens, an account of which will be found in the Proceedings of the Society for 1847, p. 47. Several species of Otter are found in different parts of the Old World. Others inhabit the continent of America, besides the SEA OTTER (*Enhydris lutra*), which produces an extremely valuable fur.

25. THE KITES' AVIARY.

The species kept in this aviary provisionally are frequently of great interest; at the present time we may notice particularly,

The Common Buzzard. (*Buteo cinereus.*)—**The African Buzzard.** (*B. tachardus.*)—**The Jackal Buzzard.** (*Buteo jackal.*)—**The Common Kite.** (*Milvus regalis.*)—**The Indian Black Kite.** (*M. govinda.*)—**The African Black Kite.** (*M. ægyptius.*)

Though almost exterminated in the British Islands, the KITE is still abundant in Spain and Northern Africa. In the latter country it acts the part of scavenger for the Arabs, in conjunction with its darker-coloured brother the BLACK KITE (*Milvus ater*). In India their place is tenanted by the GOVINDA, which is there "very numerous and continually on the look out for refuse of every description."

26. THE WINTER AVIARY.

The series of Raptorial Birds is continued here, principally by species which require more protection than the open cages afford.

The Egyptian Vulture. (*Neophron percnopterus.*)—The examples of

this Vulture usually seen in captivity are young birds in the brown plumage which is characteristic of immaturity, but the adult "Pharaoh's chicken," as it is sometimes called, with its clean white plumage and yellow beak, is a very striking object. This Vulture, and the Griffon, are the commonest of the group in Southern Europe, and occasionally stray northwards, even as far as the shores of this country.

The Black Vulture (*Cathartes atratus*).—This vulture is well known under the name of the "Carrion Crow" in the Southern States of America. The American Ornithologist, Wilson, tells us—

"The habits of this species are singular. In the towns and villages of the Southern States, particularly Charleston and Georgetown, South Carolina, and in Savannah, Georgia, the carrion crows may be seen either sauntering about the streets, sunning themselves on the roofs of the houses, and the fences; or if the weather be cold, cowering around the tops of the chimneys, to enjoy the benefit of the heat, which to them is a peculiar gratification. They are protected by a law or usage, and may be said to be completely domesticated, being as common as the domestic poultry, and equally familiar. The inhabitants generally are disgusted with their filthy, voracious habits; but notwithstanding, being viewed as contributive to the removal of the dead animal matter which, if permitted to putrify during the hot season, would render the atmosphere impure, they have a respect paid to them as scavengers, whose labours are subservient to the public good.

"The black vultures are indolent, and may be observed in companies, loitering for hours together in one place. They do not associate with the Turkey Buzzards, and are much darker in their plumage than the latter bird, which, though found in the vicinity of towns, rarely ventures within them, and then always appears cautious of the near approach of any one."

The Turkey Buzzard, spoken of by Wilson, is the nearly allied species of Vulture (*Cathartes aura*), of which there are usually examples in the Society's collection.

27. THE SMALL MAMMALS' HOUSE.

In this house a collection of Quadrupeds are assembled, which are, for the most part, indigenous to climates which render them incapable of sustaining that of England without protection. Warm and perfectly dry bedding, however, enables some of them to pass the winter in the exterior cages; and when their constitutions are hardy enough to bear this treatment, their health, as may be seen, is in the finest possible state. The greater number of the animals confined here are Carnivores and Rodents.

The Ocelot. (*Felis pardalis.*)—The Ocelots are an interesting group of small Leopard-like cats, for the most part indigenous to South America. They number, in all probability, many species, but their variations are so difficult to distinguish, that at present our knowledge of them is very imperfect.

The Clouded Tiger. (*Felis macrocelis.*)—This remarkably beautiful animal appears to be in all respects identical with that described under this name by Sir Stamford Raffles, and discovered by him in Sumatra. The present specimen was obtained from Assam in 1862. The Clouded Tiger is often called the Tree Tiger—being an inhabitant of the forests and exclusively arboreal in its habits. It is a well-marked form, noticeable for its short limbs, long tail, long low body, and the great development of the canine teeth, in which it resembles the very singular fossil genus *Machærodus*. There is in Nepal a smaller species or variety of very nearly the same form as the present animal, named by Mr. Hodgson *Felis*

macrocelides, of which the Society received a single specimen in the year 1853.

THE CLOUDED TIGER.

The Caracal, (*Felis caracal,*) is another well-marked species, belonging to the cat-tribe, allied to the Lynxes by its pencilled ears, and wild and savage in its habits. It occurs both in Africa and India.

The Fennec Fox. (*Canis cerdo.*)

The Fennec Foxes are pretty and engaging little animals of the same hue as the deserts which they inhabit, and are playful and active in their habits. They are found both in the Egyptian and Algerian Sahara.

The Grey Ichneumon. (*Herpestes griseus.*)—**The Nepalese Ichneumon.** (*H. nipalensis*).—**The Marsh Ichneumon.** (*H. paludosus*)—**The Banded Ichneumon.** (*H. fasciatus.*)

The ICHNEUMONS are a group of Carnivores, spread over Africa and Southern Asia. One species—the *Herpestes widdringtoni*—discovered by the late Captain Widdrington in Andalusia, occurs in Europe. The Egyptian Ichneumon, which very closely resembles the European species, was one of the animals held sacred in ancient Egypt. It is of common occurrence throughout North Africa, and particularly abundant on the Nile, where it is said to attack the Crocodiles, and where without doubt it destroys great numbers of eggs. The Ichneumons are all extremely fond of eggs, whether of Reptiles or of Birds. They break them very cleverly, by tapping one end on the ground; and through the small aperture thus effected, they suck out the whole of the contents.

The Grison. (*Grisonia vittata.*)

The GRISON is a small carnivorous animal, found only in South America, nearly allied to the Gluttons, though much smaller in size.

The Masked Squirrel. (*Sciurus capistratus.*)—**The Grey Squirrel.** (*S. cinereus.*)—**The Black Squirrel.** (*S. niger.*)—**The Yellow-footed Squirrel.** (*S. ludovicianus.*)

These are all North American species, resembling in their habits the common English Squirrel (*S. vulgaris*).

The Alpine Marmot. (*Arctomys marmotta.*)—**The Quebec Marmot.** (*A. empetra.*)—**The Louisianian Marmot or Prairie Dog.** (*A. ludovicianus.*)

The Marmots form a small group of Rodents allied to the Squirrels, but strictly terrestrial in their habits. They are found in the northern portions of both hemispheres, and live generally in societies in mountainous districts. They excavate extensive galleries, in which they reside, passing the winter months in a state of torpidity. The Alpine Marmot is the commonest European species—another is the Bobac of Russia (*A. bobac*).

28. THE MARTENS' CAGE.

The Pine-Marten. (*Mustela martes.*)—**The Canadian Marten.** (*M. canadensis.*)

The MARTEN is one of the most graceful of our Wild Animals, and is rapidly becoming more and more rare, through the exterminating persecution which has been waged against it by our gamekeepers. The Marten family includes some of the most valuable fur-bearing animals, the Siberian Zabel, or Sable, and the American Sable, being among them.

29. THE GARGANEYS' PONDS.

The Japanese Teal. (*Querquedula formosa.*)—This very beautiful Teal is likewise a native of North-eastern Asia, being found in Japan and Mantchuria. It is one of the most recent acquisitions to the Society's series of living Water-fowl, and has not yet bred with us, though we hope it may do so this year.

The Paradise Shieldrake, of New Zealand (*Tadorna variegata*), of which scarce species the Society have only recently received examples for the first time, is remarkable for the striking diversity of colouring of the sexes—the head in the male being black, and in the female of a pure white. The Society are indebted to J. D. Tetley, Esq., for their first pair of this valuable bird, which now breeds regularly in the Gardens.

30. THE RACOONS' CAGES.

These cages have been lately erected for the more convenient reception of hardy Mammals of temperate and northern regions. Their present occupants are Racoons (*Procyon lotor*) of North America, presented to the Society by A. Arcedeckne, Esq., F.Z.S., the Crab-Eating Racoon (*P. cancrivora*), the Japanese Sand-Badger (*Meles ankuma*), and other animals, amongst which should be noticed—

The Ratels. (*Mellivora capensis* and *M. indica.*)

The Ratels are allied to the Badgers, and are found in India and Africa. In captivity, as regards man at least, the Ratel is one of the most playful beasts possible, soliciting the attention of visitors by throwing its clumsy body into all sorts of attitudes, and when noticed tumbling head over heels with every symptom of delight.

31. THE VULTURES' AVIARY.

The Osprey. (*Pandion haliaëtus.*)—This peculiar form of Hawk frequents the seas and lakes of nearly every part of the world—though varying slightly in plumage in distant localities. In England, like most of the larger birds of prey, it is now nearly extinct. It feeds exclusively on fish.

The Crowned Harpy. (*Harpyhaliœtus coronatus.*)—This fine bird is an inhabitant of the Pampas of the Argentine republic, where it preys on the smaller Mammals. It is one of the scarcest of the larger Raptors in Museums, and the present example, presented to the Society by E. W. Goodlake, Esq., is believed to be the only specimen of it ever imported alive.

The Condor (*Sarcoramphus gryphus*) is the most powerful of Vultures, although many of the accounts both of its size and strength are much exaggerated. The extent of wing in the Condor probably never exceeds twelve feet. The quill feathers are the strongest and largest yet known; its powers of flight are very great, and present some curious phenomena, which have been carefully noted by Mr. Darwin, in his "Naturalist's Journal."

The Eared Vulture. (*Vultur auricularis.*)—**The Black Vulture.** (*Vultur monachus.*)—**The Griffon Vulture.** (*Gyps fulvus.*)

Great discussion has at various times been maintained among naturalists as to whether the well-known faculty of Vultures, by which they discover a dying carcass from distances which appear almost incredible, is the result of sight or smell. There can, however, be but little doubt that it depends mainly on the eye; which is a largely developed organ in all the Birds of Prey, and in the Vultures enables them to discover their food at long distances, whilst soaring at an immense height above the horizon.

The Griffon Vulture is a well-known South-European species of the genus, and is doubtless the same bird as is so often spoken of by Homer under that name (γῦψ), as eating the dead bodies on the plains of Troy.

The Southern Bearded Vulture. (*Gypaëtus meridionalis.*)—The Bearded Vulture, though now scarce in Europe, is not uncommon in Algeria, frequenting the stupendous cliffs of the Eastern Atlas, and breeding there in the month of February. It is also found, in Abyssinia, and in Northern India. The Abyssinian variety, of which the present specimen is an example, has been described as a species under the name *G. meridionalis*, but its differences from the European form are not very well marked.

In a separate cage, a little further on, will be noticed several examples of

The Bateleur Eagle. (*Helotarsus ecaudatus.*)—This bird is too singular in its form to be passed over even by the most unobservant. The brilliant coral colour of its legs and cere (the naked base of the beak), and the alternation of chestnut, grey, and black in its plumage in the adult bird, would be sufficiently striking, even if the excessive shortness of the tail did not give it the appearance of being absolutely deficient of that important organ. The BATELEUR or SHORT-TAILED EAGLE is found in Africa, in the southern regions of which it is by no means uncommon. In Abyssinia, a curious variety, with the back almost white, occurs, which has been sometimes considered as a distinct species. The Society have lately obtained specimens of this interesting bird.

A little further on, to the left, the visitor passes the south entrance, a gate available only for pedestrians, as it opens from the broad walk of the park. It is distant 1570 yards from the Portland Road Station of the Metropolitan Railway, and 1460 yards from the Chalk Farm station of the North London Railway. Trains arrive and depart from the latter station every fifteen minutes for Fenchurch-street, Blackwall, and the intermediate points, Islington, Hackney, &c. At Gloucester Gate, which is only three hundred yards distant, an omnibus for all parts of London passes every ten minutes.

32. THE NEW DEER-HOUSE.

Upwards of twenty species of Deer, perfectly capable of becoming acclimatised in England, have at various times been exhibited in the Society's collection. The species usually living in the Vivarium are as follows:—

1. The Wapiti (*Cervus canadensis*), North America.
2. The Persian Deer (*C. maral*), Western Asia.
3. The Cashmerian Deer (*C. cashmerianus*), Cashmere.
4. The Red Deer (*C. elaphus*), Europe.
5. The Barbary Deer (*C. barbarus*), Algeria and Tunis.
6. The Mantchurian Deer (*C. mantchuricus*), Manchuria.
7. The Japanese Deer (*C. sika*), Japan.
8. The Formosan Deer (*C. taivanus*), Formosa.
9. The Barasingha Deer (*C. duvaucellii*), Northern India.
10. The Sambur Deer (*C. aristotelis*), India.
11. The Rusa Deer (*C. rusa*), Java.
12. The Equine Deer (*C. equinus*), Borneo.
13. The Molucca Deer (*C. moluccensis*), Moluccas.
14. The Timor Deer (*C. timorensis*), Timor.
15. Swinhoe's Deer (*C. swinhoii*), Formosa.
16. The Axis Deer (*C. axis*), India.
17. The Hog Deer (*C. porcinus*), India.
18. The Virginian Deer (*C. virginianus*), North America.
19. The Mexican Deer (*C. mexicanus*), Mexico.
20. The Pudu Deer (*C. pudu*), Chili.

The present building contains a fine series of the larger species of the genus *Cervus*, the smaller species being mostly located in the Deer-Sheds (p. 53), on the opposite side of the Gardens.

The Wapiti Deer. (*Cervus canadensis.*)—This magnificent Deer, which now breeds every year in the Society's Menagerie, is a native of the northern parts of America, being the only true Stag found in the New World. It is a noble animal, and attains the largest stature of the whole group. Horns of the Wapiti have been shed in the Vivarium weighing 32 lb. the pair, notwithstanding all the disadvantages of confinement and artificial food. Mr. Catlin has stated that he once found a pair of shed antlers at the foot of the Rocky Mountains, under which the tallest man in his party walked without touching them when set up on their points, and thus converted into an archway. The Wapiti has a wide range, extending from 57° N. downwards into Mexico.

The Red Deer (*Cervus elaphus*) is the prevalent species of the group of true Stags all over Europe and Northern Asia. In some of the old

German Castles pairs of horns of the animal are preserved which far exceed in dimensions anything we ever now meet with in this country or even in the forests of Central Europe, where the heads still attain greater dimensions than in Scotland.

The Barbary Deer (*Cervus barbarus*) is the representative of our Red Deer on the southern shores of the Mediterranean. The Stag at present possessed by the Society was presented by the Viscount Hill, having been selected from the fine herd of this Deer which adorn the park at Hawkstone.

The Persian Deer (*Cervus maral*) ranks next in size and in beauty of antler to the Wapiti and our Red Deer. The male from which the stock now in the Menagerie originated was captured in Circassia during the late war, and presented to the French Admiral by the Chief into whose possession it fell. A female having been obtained at some other point on the coast of the Black Sea, the animals were ultimately sent to the Earl of Ducie, who, after keeping them for three seasons at Tortworth, most liberally presented them to the Society. The first importation, and indeed the only other instance of this Deer having been brought to Europe, was made for the Society by Sir John McNeil, in the year 1841. These animals were transferred to the late Earl of Derby, but having been in bad condition, never recovered, and the last of them died in 1849.

THE BARASINGHA DEER.

The Cashmerian Deer, or Hungul. (*Cervus cashmerianus.*)—The only representative yet received by the Society of this fine species of Deer is a Stag presented by Capt. Lloyd, of the 89th Regt., in November, 1865. Col. Markham speaks of this Deer as follows :—

"The Hungul is a noble animal, called by the natives 'burra-sing wallah,' or the 'twelve-horned-fellow,' as he has six points on each horn . . . . They inhabit the hills which form the valley of Cashmere, and are but rarely found in the valley itself, and there only in winter. During the summer they are not often met with, from the immense extent of country which they have to wander over; but when the rutting season commences, they may be heard bellowing in the forests all day long, and are then easily found and shot. . . . The antlers, which are shed early in spring, are picked up in the forests by the villagers, and form an article of export traffic with Lädak."

The Barasingha. (*Cervus duvaucellii.*)—This beautiful Deer was first imported by the late Earl of Derby. It is a native of the swampy valleys of Assam, from which country it was first obtained for the Society by the Babu Rajendra Mullick in 1857. It occurs also in the Sâgur and Nerbudda territories and in parts of the Bengal Sonderbunds. The winter coat is of a dullish grey, but in summer it changes to a brilliant golden hue, which would make the Barasingha the most interesting addition which could possibly be introduced into a heavily-wooded park. The adult antlers, as will be seen from the woodcut (p. 40), are extremely elegant, and quite distinct in form from those of any of the other species.

The Sambur Deer. (*Cervus aristotelis.*)

Some half dozen species of Asiatic deer constitute the Rusine group, of which the Sambur may be taken as the type. Their antlers have but three points, are comparatively short in the beam; but, especially in Ceylon, these attain an immense thickness. Sir Samuel Baker informs us that he has killed bucks carrying heads which measured eight inches in circumference at the burrs. The Sambur is hardy, and seems very well adapted for a Deer park—attaining as it does a considerable size, and being quite hardy enough to bear our winter in this climate.

Swinhoe's Deer. (*Cervus swinhoii.*)—This deer, which belongs to the *Rusa* group, is one of the numerous recent discoveries of Mr. R. Swinhoe, F.Z.S., in the Island of Formosa, and has deservedly received the name of its discoverer. While the *Cervus taivanus* (see p. 55) inhabits the higher ranges of the island, the present deer is found upon the lower hills at an altitude of from 1000 to 5000 feet, and is generally known as the "Cheeang." Mr. Swinhoe's notes on this and other Formosan animals will be found in the Society's "Proceedings" for 1862.

33. THE CATTLE SHEDS.

These sheds have been recently erected for the purpose of bringing together the Society's series of the genus *Bos*, which contains the domestic Ox and its allies.

The Gayal. (*Bos frontalis.*)—By the kind exertions of the Society's correspondents and friends in the East, several pairs of this noble Ruminant, which inhabits the forests of the provinces on the eastern side of the Bay of Bengal, have been lately secured and shipped to this country. They have, however, most unfortunately been all lost, except the single individual which now represents the species.

The Zebu. (*Bos indicus.*)—The fine pair of Indian Sacred Oxen, or Brahmin cattle, now in this enclosure were presented to the Society by Her Majesty the Queen in 1862. There are many varieties, both large and small, of the Zebu, but they are all easily recognised by their hump, which distinguishes them from the varieties of the domestic Ox of Europe.

The Cape Buffaloe. (*Bubalus caffer.*)—There are two generally recognised wild species of Buffaloes—the Cape Buffaloe (*B. caffer*), and the Indian or Manilla Buffaloe (*B. buffalus*). There are many varieties of the latter animal, some of which are semi-domesticated, and used for agricultural purposes in Southern Europe, India, and the East.

34. THE SHEEP SHEDS.

This building is occupied by the Wild Sheep, of which the Society possess three species. All of these have bred in the Gardens.

The Barbary Sheep, or **Aoudad.** (*Ovis tragelaphus.*)—This animal is an inhabitant of the Atlas range of Northern Africa. It is not a very typical Sheep, and possesses some characters which have induced naturalists to place it in a separate genus (*Ammotragus*), leading off towards the Goats. In Algeria it appears known by the name of "Feshtall." Mr. Ormsby, in his recently published "Rambles in North Africa," gives the following interesting account of it :—

"The 'Feshtall' is the maned Mouffion of the Atlas, the *tragelaphus* of the old writers, and the 'Aoudad' of modern naturalists. The latter is always said to be its Arab name, but I never once found that it was recognised by the Arabs, who invariably called the animal by the name I have given. He is a magnificent wild sheep, in size far exceeding the Sardinian mouffion, and approaching more nearly to the Bighorn of the Rocky Mountains. In an old male, the horns are sometimes of enormous dimensions. I have seen some that must have been more than two feet in length, following the curve, and were thicker at the base than a man's arm. But his distinguishing feature is the thick flowing mane of light yellow hair which begins just under the jaws, and extends along the front of the neck and chest to the knees, sometimes in a well grown specimen actually sweeping the ground. Those who have seen the noble beast in the gardens in the Regent's Park will admit that he is game any sportsman might be proud to hunt: but they can form but a faint idea of the figure he makes in his native mountains as he stands on some lofty crag, his long mane waving in the breeze, and his head proudly thrown back as he snuffs the tainted air that tells of the neighbourhood of man, the hereditary enemy of mutton. Still less can they imagine the agility with which, when once he has satisfied himself of the quarter from which the enemy approaches, he carries that stout carcase of his up rocks that the boldest cragsman would at least look twice at before he attempted them, or the marvellous speed with which he dashes along ledges affording barely a hand-breadth of footing."

The Punjâb Wild Sheep. (*Ovis cycloceros.*)—For their original examples of these very interesting animals the Society were indebted to Brigadier-General Hearsey of the Bengal Army, and Major Bartlett, by whom they were obtained in the Punjâb. The other Wild Sheep of Northern India and Chinese Tartary are magnificent animals, and although extremely difficult to procure, might certainly be brought to Europe as successfully as the present, which having now bred in the Menagerie more than once would certainly thrive, as a wild animal, if placed in suitable ground.

The European Mouffion, (*Ovis musimon,*)—is indigenous to Sardinia and Corsica, and is the only Wild Sheep found within the limits of Europe. It is sometimes regarded as having been the original animal from which our domestic Sheep has been derived, but this is very doubtful. Many authors consider that in this case, as in that of other domestic animals, several wild species have been blended together to form the tame one. Besides the Wild Sheep exhibited here, seven or eight other distinct species are known, inhabiting the mountain ranges of Asia and North America.

35. THE WADERS' INCLOSURE.

In this inclosure there are always to be found, in addition to certain of the series of Ducks, a collection of Wading Birds, which usually includes the Godwits (*Limosa ægocephala* and *L. lapponica*); the Spoonbill (*Platalea leucorodia*); the Ruff (*Machetes pugnax*); the Whimbrel (*Numenius phæopus*); the Curlew (*Numenius arquata*); the Oyster-Catcher (*Hæmatopus ostralegus*); the Coot (*Fulica atra*); the Crested Coot (*Fulica cristata*), and several other European species.

During the summer a portion of it is set apart for the use of the Tree-ducks (*Dendrocygna*), of which the collection embraces several species.

36. THE THREE-ISLAND POND.

The water in this inclosure is of sufficient size to contain three islands, which are favourite breeding-places of the Pintail, the Shoveller, the Gadwall, the Widgeon, the Castaneous Duck, and the Tufted Duck. A few other species are kept here which have not yet bred in confinement, such as the Golden Eye, the Merganser, and the Maned Goose.

In order to keep the peace amongst the numerous inhabitants of this piece of water, it has been found advisable to divide it into several compartments, in one of which is placed a pair of the Trumpeter Swans of North America (*Cygnus buccinator*). For several years this pond was the only breeding-place in Europe of another very beautiful species, the Black-necked Swan (*C. nigricollis*), of which the Society have unfortunately now lost their females. Until this loss is repaired the remaining male has been removed to the Southern Ponds (p. 16). In the Black-necked Swan the Cygnets are of a milky

white, but the black neck shows at a very early age, and the whole adult plumage is assumed much sooner than in the common Swans. The Black-necked Swan is a native of the temperate parts of South America.

37. THE FISH-HOUSE.

This building was erected in 1852 for the purpose of exhibiting Fishes and the lower aquatic animals in a living state. The success which attended this experiment, then first publicly attempted on a large scale, has assisted in promoting the popular study of these most interesting creatures in a very remarkable manner, not only in this country but on the Continent.

On entering the house the visitor will perceive a row of slate and glass tanks on either side, carefully screened off with shades so as to allow the light only to pass into them from above. The row in front are filled with salt-water, and contain salt-water fishes—such as the Pipe-fishes, and various kinds of Gobies and Stickle-backs, and a large series of marine invertebrate animals of every description. On each side of the entrance to the right and left are fresh-water tanks, containing specimens of many of the common fresh-water fishes of this country. Amongst these will be found the Pike, Perch, Dace, Roach, Tench, and Trout, which may be all inspected to advantage in the clear water, and their habits studied without the slightest difficulty. At the north end of the house is a series of shallow gravel-bottomed tanks fitted up for fish-hatching—in which ova of various species of the Salmon-family are hatched every spring, so as to give an idea of the method pursued in this newly-invented branch of economy. Some fine Trout bred in the house several years since are placed in the lowest pool. The opposite end of the house has been converted into a small Aviary for Kingfishers and other aquatic birds: amongst which will be observed specimens of the Little Grebe or Dabchick, the Common Sand-piper, the Knot, and the Turnstone.

In the tanks in the centre of the house will be found some curious Crustaceans—such as the King-crab (*Limulus*). There are also a series of various species of Newts (*Triton*), and many examples of a very extraordinary aquatic Salamander found in the lakes of Central Mexico—the *Siredon mexicanum*, or Axolotl — which in its ordinary state possesses naked external gills.

38. THE REFRESHMENT ROOMS.

There are several other stations besides these buildings at which refreshments may be procured. The tenant of the Society is bound by his agreement to supply first-rate articles of their kind to Visitors at reasonable prices, a list of which is suspended at every station.

39. THE SALAMANDERS' POND.

This pond has been lately fitted up for the accommodation of several large specimens of the Water-Salamander of Japan (*Sieboldia maxima*), the largest of existing species of the Order of Batrachians. These are dull, sluggish animals, said to be endued with an extraordinary amount of vitality, and to live to a great age. They feed principally on fishes. Their native home is in the clear mountain streams of the Japanese Empire.

40. THE EAGLES' AVIARIES.

The Imperial Eagle. (*Aquila imperialis.*)

The Imperial Eagle is rare in the North of Europe—but not an

uncommon species in Turkey and the Danubian provinces. Mr. W. H. Simpson found it breeding in the Dobrudscha in April, 1860, the nest being placed in a pollard willow, only 10 feet above the ground.

The Sea-Eagle. (*Haliaëtus albicilla.*)—**The White-headed Sea-Eagle.** (*H. leucocephalus.*)—**The Australian Sea-Eagle.** (*H. leucogaster.*)

The ERNE, or WHITE-TAILED SEA-EAGLE, is the most common British species; but, like the Golden Eagle, is gradually disappearing before the persecution which the gamekeeper has long carried on against it. The WHITE-HEADED SEA-EAGLE is the adopted emblem of the United States of America. Wilson says of it—

"Formed by nature for braving the severest cold, feeding equally on the produce of the sea and of the land; possessing powers of flight, capable of outstripping even the tempests themselves; unawed by everything but man; and, from the ethereal heights to which he soars, looking abroad, at one glance, on an immeasurable expanse of forests, fields, lakes, and ocean, deep below him, he appears indifferent to the little localities of change of seasons; as, in a few minutes, he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold, and thence descend at will to the torrid or arctic regions of the earth."

All the Sea-Eagles, of which there are many species, feed on fish. The White-headed Eagle frequently avails himself of the superior activity of the Osprey to obtain a meal; watching quietly from his stand upon some elevated point along the shore, he waits until the Osprey, or Fish-Hawk, hunting over the waters below him, has made his plunge, and emerges with a fish in his talons.

"Launching into the air, he instantly gives chase, and soon gains on the Fish-Hawk; each exerts his utmost to mount above the other, displaying in their rencontres the most elegant and sublime aërial revolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when with a loud scream, probably of despair and honest execration, the latter drops his fish; the eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods."

The Golden Eagle. (*Aquila chrysaëtos.*)—**The Wedge-tailed Eagle.** (*A. audax.*)

The series of Wedge-tailed Eagles is rather numerous, being constantly replenished by the liberality of the Society's Australian correspondents. The Wedge-tailed Eagle represents our Golden Eagle in Australia, and is found in every part of that continent. Mr. Gould, in his great work on the Birds of Australia, gives us the following notes on its habits:—The natural disposition of the Wedge-tailed Eagle leads it to frequent the interior portion of the country rather than the shores or the neighbourhood of the sea. It preys indiscriminately on all the smaller species of Kangaroo which tenant the plains and the open crowns of the hills, and whose retreats, from the wonderful acuteness of its vision, it descries while soaring and performing those graceful evolutions and circles in the air so frequently seen by the residents of the countries it inhabits; neither is the noble Bustard, whose weight is twice that of its enemy, and who finds a more secure asylum on the extensive plains of the interior than most animals, safe from its attacks: its tremendous stoop and powerful grasp, in fact, carry inevitable destruction to its victim, be it ever so large and formidable. The breeders of sheep find in this bird an enemy, which commits extensive ravages among their lambs; and consequently in its turn it is persecuted unrelentingly by the shepherds of the stock-owners, who employ every artifice in their

power to effect its extirpation; and in Tasmania considerable rewards are offered for the accomplishment of the same end. The tracts of untrodden ground, and the vastness of the impenetrable forests, will, however, for a long series of years to come, afford it an asylum secure from the inroads of the destroying hand of man; still, with every one waging war upon it, its numbers must necessarily be considerably diminished.

The Tawny Eagle. (*Aquila nævioides.*)—This Eagle is nearly allied to the Imperial Eagle. It is a native of Asia and Africa, extending into Southern Europe. One of the specimens in the Society's collection was taken from the nest in Algeria by Mr. W. H. Simpson, F.Z.S., in 1858, and presented by him to the collection. The second, from the Cape Colony, was a gift from Mr. E. L. Layard, F.Z.S.

41. THE MUSIC-LAWN.

During the summer months, one of the bands belonging to the Household Brigade performs a selection of music on this spot every Saturday afternoon, from 4 to 6 o'clock.

42. THE DOVE-COTE.

This cage, originally built to contain doves, is now occupied by examples of several species of the Heron family, such as the European Night-heron (*Nyctocorax europeus*), the Nankeen Night-heron (*N. caledonicus*), and the Bittern.

43. THE VIRGINIAN OWLS' CAGE.

This Aviary is tenanted by the Virginian Eagle Owls, which have been already noticed in connection with the other species belonging to this family (p. 29).

44. THE REPTILE HOUSE.

This important addition to the Vivarium was effected in the spring of 1849, up to which period no attempt had been made in this country to exhibit the class of Reptiles under conditions which might make it possible to understand anything of their habits.

The success which attended the experiment was in every respect gratifying, and excited considerable attention among the correspondents of the Society abroad, and very instructive collections were forwarded almost immediately from various parts of the world.

The West African Python. (*Python sebæ.*)—**The Royal Python.** (*P. regius.*)—**The Reticulated Python.** (*P. reticulatus.*)—**The Boa Constrictor.** (*Boa constrictor.*)—**The Yellow Boa.** (*Chilobothrus inornatus.*)—**The Diamond Snake.** (*Morelia spilotes.*)—**The Carpet Snake.** (*Morelia variegata.*)

The Boas, Pythons, and their allies constitute one of the three principal groups into which the order of Serpents may be best divided, the others being the Venomous Snakes and the Colubrine or Harmless Snakes. The organisation of the Boas is directed to the slaughter of their prey by compression; and to this end are given to them the enormous dimensions and power of muscle which, even in these comparatively undeveloped specimens, excite our admiration and our wonder.

When a Boa dashes at his prey, he generally preserves his hold of the tree by a coil or two towards the tail. He seizes with wide-spread jaws, and from that point of attachment throws, with the rapidity of thought, the folds of his vast body round and round his victim. Tightening as they fall, and crushing rib and limb within their embrace, these folds relax not until life is pressed out; and then slowly and carefully withdrawing from the motionless carcass, the Serpent pauses for a few moments, either to recover from the writhings of his struggle, or to assure himself that death is real. Soon, however, he begins to touch the carcass gently with his muzzle, not, as popular belief will have it, to lubricate in preparation for the gorge, but to find the head, at which he likes best to begin. This preliminary settled, the jaws again and again dilate until the rami separate, and the skin is strained so tight that every scale is isolated. Then grasp following upon grasp, like wave after wave, gradually and irresistibly engulfs the body, which, in its passage through the folds, has been compressed and attenuated into the most convenient possible form for this final operation. Death inflicted by such overwhelming action is almost instantaneous, in small animals especially, and far less cruel than any method which can be practised by the hand of man.

The characteristic constricting organisation of the Boas is so uniform that the name of *Boa constrictor* has been popularly applied to all of them, and particularly by the English in India to the Python or Rock Snake. The visitor will have an opportunity of observing how much more delicate is the species to which Linnæus applied that name—the beautifully coloured inhabitant of the Tropics of the New World, to which the true Boas are confined—than the Pythons of Africa and India. It is to be remarked that the true Boa is also the most thoroughly arboreal of the group, and preserves its natural habits very constantly even in confinement.

The American Rattlesnake. (*Crotalus durissus.*)—**The Brazilian Rattlesnake.** (*C. horridus.*)—**The Indian Cobra.** (*Naia tripudians.*)—**The African Cobra.** (*Naia haje.*)—**The Water Viper.** (*Cenchris piscivorus.*)

These are our usual representatives of the Venomous Serpents. The power of defence and of securing prey, which in the Pythons is overwhelming force, has for its equivalent in this group a far more certain and effective organisation proportioned to their more slender dimensions. Of colours which assimilate so closely with foliage, herbage, sand, or stones, that in their peculiar haunts none but the most acute and practised eye can discover them, the Venomous Serpents are alike fearless of attack and, unless disturbed, equally unwilling to exert their deadly power.

The Chicken-Snake. (*Coluber quadrivittatus.*)—**The Rat-Snake of Bengal.** (*C. blumenbachii.*)—**The Viperine Snake.** (*Tropidonotus viperinus.*)

The COLUBRINE SNAKES are harmless and indeed most useful animals. The quantity of rats and mice and other injurious small animals destroyed by them is enormous. The Chicken Snake in North America and Rat-Snake in Bengal are both much esteemed and protected on account of these qualities.

The LIZARDS, or Saurians, constitute an order of Reptiles which has representatives in every region of the world within the temperate parallels and the tropics.

The most remarkable forms in the Society's collection are—

The Stumptail Lizard. (*Trachydosaurus rugosus.*)—**The Great Cyclodus.** (*Cyclodus gigas.*)—**The Ocellated Lizard.** (*Lacerta ocellata.*)—**The Australian Monitor.** (*Monitor gouldi.*)

45. THE PICTURE GALLERY.

This room, which was formerly part of the Old Museum, is now fitted up for the exhibition of a series of water-colour drawings by Wolf, in which most of the remarkable forms of animal life that have been contained in the Society's Collection of late years are portrayed.

46. THE MARSUPIALS' HOUSE.

In this House are assembled the smaller and more delicate members of the great family of Marsupials. These animals, which are only found in Australia and America, are remarkable for bringing forth their young in an incomplete state. After their birth the young Marsupials become attached to the teats of the mother, placed inside a pouch situated beneath the abdomen, and are there retained until sufficiently adult to be able to shift for themselves. This remarkable method of reproduction is exhibited every year in the Kangaroos, Opossums, and other species of Marsupials which breed in the Society's Menagerie.

Amongst the representatives of this family now exhibited here are—

The Vulpine Phalanger. (*Phalangista vulpina.*)—**The Short-headed Phalanger.** (*Belideus breviceps.*)

The Phalangers of Australia are essentially an arboreal group, climbing expertly, and living on leaves, buds, and fruit, though in some cases more or less carnivorous. Like most of the other Mammals of that singular country, they are more or less arboreal in their habits, remaining concealed during the day in the hollows of the trees, and quitting their retreats at night to seek for food among the branches.

Two of the large cages in front are devoted to two splendid specimens of one of the most eccentric of living Mammals.

The Great Ant-eater. (*Myrmecophaga jubata.*)

This singular animal is found in many parts of South America, one of the present specimens being from Brazil, and the other from New Granada. The head of this creature is produced into a long snout covered with skin, and has only a very small opening at the top for the protrusion of the tongue. The Great Ant-eater is further remarkable for its long bushy tail and its extraordinary mode of progression.

47. THE SLOTHS' HOUSE.

The Three-toed Sloth. (*Bradypus tridactylus.*) **The Two-toed Sloth.** (*Cholopus didactylus.*)

The Sloths are a very peculiar group of animals, found only in the forests of South America, where they pass their whole existence hanging

from the branches of trees with their backs downwards. For this mode of life their structure is expressly adapted, but on the ground they are the most awkward creatures imaginable.

In the same compartment as the Sloths are two specimens of a rare and curious carnivore, the Aard Wolf of Southern Africa (*Proteles cristatus*), which has been placed by some authors with the Hyenas, by others with the dogs. It is a skulking animal, and in a state of nature probably feeds entirely upon carrion.

In the adjoining compartment is what is believed to be the only living example in Europe of the Cape Ant-bear (*Orycteropus capensis*) —a distant relative of the Great American Ant-eater spoken of above.

48, 49. THE KANGAROO SHEDS.

Bennett's Kangaroo. (*Halmaturus bennetti.*)—**The Red-necked Kangaroo.** (*H. ruficollis.*)—**The Derbyan Kangaroo.** (*H. derbianus.*)

The Kangaroos are essentially an Australian form, and include a large number of species, the whole of which are figured with great accuracy in Mr. Gould's very beautiful Work on the Mammals of that country. BENNETT'S KANGAROO is the most abundant species in Tasmania, extremely hardy, and much the best calculated for acclimatisation in an English Park. In favourable localities it breeds with regularity, and with very little attention would rapidly increase in any of the Midland or Southern counties, where the soil is dry, and the character of the ground affords shelter from the north and east. Mr. Gould asserts the excellence of Kangaroo venison as a meat for the table; and the introduction of these animals would therefore be something more than a mere Zoological luxury. BENNETT'S KANGAROO, the RED-NECKED KANGAROO (its representative in New South Wales), and the little DERBYAN KANGAROO, all breed freely in their present position in the Society's Gardens; and the young ones may be seen at any moment peering out of their comfortable quarters in the maternal pouch.

The Great Kangaroo. (*Macropus gigas.*)—**The Black-faced Kangaroo.** (*M. melanops.*)—**The Red Kangaroo.** (*M. rufus.*)

The GREAT KANGAROO is now becoming scarce in the neighbourhood of the coast in New South Wales, and specimens seldom reach this country. Of the very scarce and beautiful RED KANGAROO, the Society possesses a fine pair, which have bred more than once.

The Yellow-footed Rock-Kangaroo. (*Petrogale xanthopus.*)—**The Long-tailed Rock-Kangaroo.** (*P. penicillata.*)

The Rock-Kangaroos differ from the ordinary forms in the structure of their feet, which are adapted to their rock-loving habits, and in their bushy dangling tails. About six species of this genus occur in different parts of Australia, amongst which the most elegantly marked is certainly the Yellow-footed Rock-Kangaroo of South Australia. Four examples of this animal were received in April, 1864, and bred for the first time in 1865.

50. THE WOMBATS' HOUSE.

In these small inclosures are located several species of the "squat, short, thick, short-legged, rather inactive," Marsupials called

Wombats. Of these the Society's collection contains three species, namely,—

The Tasmanian Wombat. (*Phascolomys ursinus.*)—**The Hairy-nosed Wombat.** (*P. latifrons.*)—**The Black Wombat.** (*P. niger.*)

The Wombats are peculiar to Australia, and, like the greater number of animals of that country, more or less nocturnal in their habits. The Tasmanian Wombats placed in an inclosure in 1855 excavated a burrow under the house which had been made for their reception. In this burrow they for a long time lived, at first showing themselves scarcely at all by day, and only coming out to feed at dusk. These Wombats bred in the Gardens in 1856.

Considering how many specimens of the Wombat have been brought to this country, and how easily they may be kept alive, it is not a little to be wondered at that the Koala, or Native Bear (*Phascolarctos cinereus*), which inhabits the country between Moreton Bay and Port Phillip, should still be a desideratum to the Menagerie. The arboreal habits of this animal, its delicate colour, and peculiar mode of carrying its young, were admirably depicted, in original sketches by Bauer, made many years ago, and indicate an animal that would be not less interesting to the public than to the scientific naturalist.

51. THE BRUSH-TURKEYS' INCLOSURE.

The Brush-Turkey. (*Talegalla lathami.*)—In the whole economy of the class of birds there is nothing more remarkable than the reproduction of the family of the Megapodes (*Megapodidæ*), to which the Talegalla, or, as the Australian colonists call it, the Brush-Turkey, belongs.

Instead of hatching their eggs by incubation in a nest, the whole of these birds, as far as their habits are yet known, construct a mound of earth, leaves, grass, sand, or other materials capable of generating and retaining heat, in which the eggs are buried by the birds, and carefully watched until the young birds are matured and issue forth from this "*eccaleobion*" of Nature, stout, strong, and so fully feathered as to be capable of flight on the second or third day of their existence.

Since the year 1854, the singular phenomenon of the mound-raising faculty of the Talegalla, which had been well ascertained in Australia by Mr. Gould, has been annually displayed in this country.

On being removed into an inclosure, with an abundance of vegetable material within reach, the male begins to throw it up into a heap behind him, by a scratching kind of motion of his powerful feet, which project each footful, as he grasps it, for a considerable distance in the rear. As he always begins to work at the outer margin of the inclosure, the material is thrown inwards in concentric circles, until sufficiently near the spot selected for the mound to be jerked upon it. As soon as the mound is risen to a height of about four feet, both birds work in reducing it to an even surface, and then begin to excavate a depression in the centre. In this, in due time, the eggs are deposited as they are laid, and arranged in a circle, about fifteen inches below the summit of the mound, at regular intervals, with the smaller end of the egg pointing downwards. The male bird watches the temperature of the mound very carefully: the eggs are generally covered, a cylindrical opening being always maintained in the centre of the circle for the purpose of giving air to them, and probably

to prevent the danger of a sudden increase of heat from the action of the sun or accelerated fermentation in the mound itself. In hot days the eggs are nearly uncovered two or three times between morning and evening.

On the young bird chipping out of the egg, it remains in the mound for at least twelve hours without making any effort to emerge from it, being at that time almost as deeply covered up by the male as the rest of the eggs.

On the second day it comes out, with each of its wing-feathers well developed in a sheath which soon bursts, but apparently without inclination to use them, its powerful feet giving it ample means of locomotion at once. Early in the afternoon, the young bird retires to the mound again, and is partially covered up for the night by the assiduous father, but at a diminished depth as compared with the circle of eggs from which it emerged in the morning. On the third day, the nestling is capable of strong flight, and on one occasion one of them, being accidentally alarmed, actually forced itself, while on the wing, through the strong netting which covered the inclosure. The account of the habits of the Talegalla, given by Mr. Gould in his "Birds of Australia," in 1842, strange as it appeared at the time, is thus perfectly verified in every respect.

52. THE MARKHORE'S HOUSE.

The Ibex. (*Capra ibex.*)—The Society's examples of the Ibex, or Stein-bock of the Alps, were received from H. M. the King of Italy. The Stein-bocks are not quite pure bred, but are hybrids between the male of this animal and the female of the common Goat.

The Markhore. (*Capra megaceros.*)—A male of this scarce species of Wild Goat, which inhabits the salt range of the Punjâb, was in the Society's Menagerie some years since, and is correctly figured in the second series of "Zoological Sketches." The pair at present belonging to the collection were presented in the autumn of 1866 by Major F. R. Pollock, Commissioner at Peshawur, and were obtained from the hills in the vicinity of Dera Ismail Khan.

53. THE REFRESHMENT STALL.

Here light refreshments are sold, the principal refreshment rooms being on the other side of the Gardens. (See p. 44.)

54. THE CROWS' CAGES.

This row of cages is appropriated to various representatives of the Corvine family, or Crows, amongst which will be noticed the Piping-Crows of Australia, the American Crow, and the Alpine Chough, besides examples of most of our native species.

55. THE PARROT HOUSE.

The collection of Parrots is remarkably rich, and will bear comparison with any in Europe. There are nearly eighty species now living in this house, among which some of the most remarkable are the Ganga Cockatoo (*Callocephalon galeatum*) of Australia, and the Kaka Parrot (*Nestor hypopoluis*) of New Zealand.

In addition to the Parrots several other forms of extreme interest will be found in this house, among which the TOUCANS (*Ramphastos carinatus*, and *R. toco*), the MOTMOTS, the BELL-BIRDS, and the GRAKLES, are conspicuous.

The collection of Australian Finches is likewise very attractive, embracing seven or eight species of those neat little birds—many of them of great brilliancy. For several of them the Society is indebted to the liberality of Alfred Denison, Esq., F.Z.S.

56. THE ELEPHANT HOUSE.

This large new building has been recently constructed to contain the Society's series of Elephants and Rhinoceroses. These are as follows:—

The Indian Elephant. (*Elephas indicus.*)—The species of Elephant now existing in the world are two in number, the African Elephant (*Elephas africanus*) being very distinct from the Indian, as will be seen at once on comparing together the Society's specimens of these two animals.

The adult female Indian Elephant now in the Society's possession was imported from India in 1851, being then quite a calf and suckled by its mother. The young male of the same species was liberally presented to the Society, in September, 1863, by C. H. R. Cocq, Esq., by whom it was imported from Southern India.

The African Elephant. (*Elephas africanus.*)—The young male African Elephant was acquired by exchange from the Jardin des Plantes at Paris, and is believed to be the first of this species ever brought alive to England. The younger female by his side was purchased in September, 1865. The African Elephant is usually less in size than the Asiatic species. The head is rounded, the front is convex instead of concave, the ears are much larger, and the general physiognomy is quite different from that of the Indian Elephant. The African Elephant is not now known to be used in a tamed state, although there is no doubt that the Carthaginians availed themselves of the services of this species in former days, and the Elephants exhibited in the Roman Arenas are known to have been African. The tusks of the adult males of this species are very large, and of great value. They are imported to England in great quantities from different parts of the African continent, in the unexplored interior of which this huge animal is still met with in great abundance.

The Indian Rhinoceros. (*Rhinoceros unicornis.*)—The Asiatic Rhinoceroses form a distinct group from those of Africa. There are at least three species of them,—two of which have one horn, and the third two horns on the nose. The two-horned species—the Sumatran Rhinoceros—is found in Sumatra, and of the two single-horned species, one, the *Rhinoceros sondaicus*, occurs in Java and Borneo, and the present—the Indian Rhinoceros—in continental India only. All the Asiatic Rhinoceroses which have hitherto been brought to Europe are of this species. The Society's full-grown specimen, which is a female, was purchased in 1851. The male was received from Calcutta in July, 1864.

The Two-horned Rhinoceros. (*R. bicornis.*)—Two very distinct forms of Rhinoceros are found in Africa, commonly called the Black Rhinoceros and the White Rhinoceros. The White Rhinoceros is known by its pale colour, its very long anterior horn, and its square, short-lipped mouth, which induced Mr. Burchell to name it *Rhinoceros simus*. In the Black Rhinoceros, which, however, is not really black, as will be seen by examination of the present specimen, but flesh-coloured, the upper lip is produced and slightly prehensile. The White Rhinoceros is a grass-eater,

and inhabits the more open districts, while the Black Rhinoceros resorts to the forests, and feeds much on shrubs and small branches. It is held by some authorities that there are two species of Black Rhinoceros—the true *bicornis* and the Keitloa; but this is not yet proved. The Society's African Rhinoceros, which is the only specimen of this animal that has been brought to Europe since the days of the Romans, was captured in Upper Nubia, near Casalá, in February, 1868, by the Arabs of the Beni-Ammer tribe, and arrived in the Gardens on the 11th of September following.

57. THE DEER SHEDS.

In this newly erected row of sheds are assembled a series of Deer from various parts of the Old World. Amongst them we may notice the following species:

The Formosan Deer. (*Cervus taivanus.*)—A male of this beautiful Spotted Deer was received from Robert Swinhoe, Esq., H.B.M.'s Vice-Consul in the Chinese Island of Formosa, in December, 1861, and was the first individual of the species received in Europe, either alive or dead. Additional examples of the same species have been subsequently obtained. The Formosan Deer appears to be allied to the Japanese Deer (*Cervus sika*), but is easily distinguished by its superior size and different markings. Before Mr. Swinhoe's first arrival in Formosa, nothing was known of the zoology of this island, which indeed has been seldom visited by Europeans.

The Mantchurian Deer. (*Cervus mantchuricus.*)—This is another newly-discovered species of Deer from Eastern Asia, of which at present the Society possesses only the male here exhibited. This individual was procured for the Society by Mr. Swinhoe in 1864, and is from Newchang, in Northern China. It belongs to the same spotted group as the Formosan Deer, but is much larger in size.

58. THE BEAVER POND.

This pond and the surrounding inclosure have been lately reconstructed for the benefit of a pair of Canadian Beavers (*Castor canadensis*), which have done remarkably well in this locality. The sagacity and social polity of these animals are well known, and every one has read of the wonderful works they execute in preparing their dams and houses of earth and sticks.

59. THE SUPERINTENDENT'S OFFICE.

This is the residence of the Officer of the Zoological Society who has the immediate superintendence of the Gardens. The Society's head-quarters and principal place of business are at No. 11, Hanover Square, W., where all communications should be addressed to the "Secretary."

60. THE HIPPOPOTAMUS HOUSES.

The block of buildings which the visitor now enters is the most important in the establishment, and contains a collection of animals, principally African, of the highest interest.

The Hippopotamus. (*Hippopotamus amphibius.*)—The fact of Hippopotami having been on many occasions exhibited by the Emperors of Rome in the great displays of wild beasts which were presented to the people in the Circus, was a sufficient proof that the animal could be transported from its haunts in the Nile with success. And, therefore, although 1500 years had elapsed since the last recorded instance of this kind, the Council of the Zoological Society, in the year 1849, undertook, with considerable confidence, the operation of obtaining one from Upper Egypt, all attempts to obtain it on the west coast having proved futile.

By the influence of the Hon. C. A. Murray, then H. M. Agent and Consul-General at Cairo, His Highness the Viceroy, Abbas Pasha, was induced to give orders that this object should be effected; and in the month of July in that year a party of hunters, specially organised for the purpose, succeeded in capturing a calf of some three days old on the island of Obaysch, in the White Nile. When found in the reedy covert to which the mother had confided him, the Hippopotamus, who now weighs at least four tons, was of such small dimensions that the chief huntsman took him up in his arms to carry him to the boat from which his men had landed. Covered, however, with a coat of slime more slippery than that of any fish, the calf glided from his grasp, and struggled to regain the safe recesses of the river. Quicker than he, the hunter used the gaff-hook fastened to his spear, of the same model as that used for a like purpose at the mouth of the Nile 3000 years before, and struck him on the side, where a scar still marks the wound, and safely held him.

From Obaysch, many hundred miles above Cairo, the Hippopotamus travelled down in charge of the hunters and a company of infantry, who finally landed him at the British Agency in the month of November, 1849.

By the obliging and liberal co-operation of the Peninsular and Oriental Company, an apparatus was constructed on board their steamer, the "Ripon," by which the peculiar requirements of the animal were perfectly accommodated, and the result was, as anticipated, that on the 25th of May, 1850, the first living Hippopotamus, since the tertiary epoch, was landed on English soil. A special train conveyed him to London; every station yielding up its wondering crowd to look upon the monster as he passed—fruitlessly, for they only saw the Arab keeper, who then attended him night and day, and who, for want of air, was constrained to put his head out through the roof.

The excitement created by the arrival of the Hippopotamus was immense; the number of visitors to the Gardens suddenly rose from 168,895 in 1849, to 360,402 in 1850, and the population of London thus attracted to the establishment, as suddenly discovered that it contained an unrivalled collection of the most interesting and instructive character, in which, if, as often happened, they failed to see the Hippopotamus, they still had the Rhinoceros, and a vast number of other objects to occupy them, which were scarcely, if at all, less attractive.

The Hippopotamus, which thus became a household word, has continued to be a prime favourite with the public, and the arrival of his mate, the more juvenile "Adhela," in 1853, has not diminished his attraction.

Many species of Hippopotamus are recognised in the fossil remains of Europe and Asia as formerly existing in England, in France, and especially in the Sewalick Hills in India, where the researches of Dr. Falconer and Sir Proby Cautley have revealed the most extraordinary assemblage of Pachydermatous and Ruminant Mammalia.

The Hippopotamus, apart from its historic interest, both biblical and profane, has great claims on our attention. It is widely spread over the

continent of Africa wherever the rivers are of sufficient magnitude to suit its habits, and in the south it even pushes out to sea along the coast, like an Otter or a Seal.

The flesh of the Hippopotamus is delicate and succulent; the layer of fat next the skin makes excellent bacon, technically denominated Hippopotamus "speck" at the Cape; and from the hide are made most punishing whips, of which a few have occasionally appeared in the shops of London. The ivory of the canines is singularly pure, although brittle, and realises a higher price than the best elephant tusk for particular purposes.

In some of the rivers of Liberia, and other parts, perhaps, of Western Africa, a second species of Hippopotamus exists (*H. liberiensis*), of which examples have not as yet reached the Museums of this country. The complete skeleton, however, which adorns the Museum of the Academy of Natural Sciences of Philadelphia, U.S.A., proves it to be a very distinct animal from *H. amphibius*; and it is to be hoped that a living individual will some day be placed by the side of "Obaysch" and "Adhela."

61. THE GIRAFFE HOUSE.

The Giraffe. (*Camelopardalis giraffa.*)—The first living Giraffe which appeared in England was transmitted to His Majesty George IV. in the year 1827, by H. H. Mohammed Ali, then Viceroy of Egypt. It lived, however, for a few months only in the Menagerie at Windsor.

About seven years afterwards, the Council of the Zoological Society entered into an arrangement with M. Thibaut to obtain for them four individuals of this species from Kordofan; his account of their capture is as follows,—it was written at Malta, where the Giraffes wintered, on the 8th of January, 1836:—

"Instructed by Colonel Campbell, His Majesty's Consul-General in the Levant, and desirous of rendering available for the purposes of the Zoological Society the knowledge which I had acquired by twelve years' experience in travelling in the interior of Africa, I quitted Cairo on the 15th of April, 1834. After sailing up the Nile as far as Wadi Halfa (the second cataract), I took camels, and proceeded to Debbat, a province of Dongolah; whence, on the 14th of July, I started for the desert of Kordofan.

"Being perfectly acquainted with the locality, and on friendly terms with the Arabs of the country, I attached them to me still more by the desire of profit. All were desirous of accompanying me in my pursuit of the Giraffes, which, up to that time, they had hunted solely for the sake of the flesh, which they eat, and of the skin, from which they make bucklers and sandals. I availed myself of the emulation which prevailed among the Arabs; and, as the season was far advanced and favourable, I proceeded immediately to the south-west of Kordofan.

"It was on the 15th of August that I saw the first two Giraffes. A rapid chase, on horses accustomed to the fatigues of the desert, put us in possession, at the end of three hours, of the largest of the two: the mother of one of those now in my charge. Unable to take her alive, the Arabs killed her with blows of the sabre, and, cutting her to pieces, carried the meat to the head-quarters which we had established in a wooded situation; an arrangement necessary for our own comfort, and to secure pasturage for the camels of both sexes which we had brought with us in aid of the object of our chase. We deferred until the morrow the pursuit of the young Giraffe, which my companions assured me they would have no difficulty in again discovering. The Arabs are very fond of the flesh of this animal. I partook of their repast. The live embers were quickly covered with slices of the meat, which I found to be excellent eating.

"On the following day, the 16th of August, the Arabs started at daybreak in search of the young one, of which we had lost sight not far from our camp. The sandy nature of the soil of the desert is well adapted to afford indications to a hunter, and in a very short time we were on the track of the animal which was the object of our pursuit. We followed the traces with rapidity and in silence, cautious to avoid alarming the creature while it was yet at a distance from us. Unwearied myself, and anxious to act in the same manner as the Arabs, I followed them impatiently, and at nine o'clock in the morning I had the happiness to find myself in possession of the Giraffe. A pre-

mium was given to the hunter whose horse had first come up with the animal, and this reward is the more merited as the laborious chase is pursued in the midst of brambles and of thorny trees.

"Possessed of this Giraffe, it was necessary to rest for three or four days, in order to render it sufficiently tame. During this period an Arab constantly holds it at the end of a long cord. By degrees it becomes accustomed to the presence of man, and takes a little nourishment. To furnish milk for it I had brought with me female camels. It became gradually reconciled to its condition, and was soon willing to follow, in short stages, the route of our caravan.

"The first run of the Giraffe is exceedingly rapid. The swiftest horse, if unaccustomed to the desert, could not come up with it unless with extreme difficulty. The Arabs accustom their coursers to hunger and to fatigue; milk generally serves them for food, and gives them power to continue their exertions during a very long run. If the Giraffe reaches a mountain, it passes the heights with rapidity: its feet, which are like those of a Goat, endow it with the dexterity of that animal; it bounds over ravines with incredible power; horses cannot, in such situations, compete with it.

"I was so fortunate as to collect five individuals at Kordofan; but the cold weather of December, 1834, killed four of them in the desert on the route to Dongolah, my point of departure for Bebbah. Only one was preserved; this was the first specimen that I obtained, and the one of which I have already spoken. After twenty-two days in the desert, I reached Dongolah on the 6th of January, 1835.

"Unwilling to return to Cairo without being really useful to the Society, and being actually at Dongolah, I determined on resuming the pursuit of Giraffes. I remained for three months in the desert, crossing it in all directions. Arabs in whom I could confide accompanied me, and our course was through districts destitute of everything. We had to dread the Arabs of Darfour, of which country I saw the first mountain. We were successful in our researches. I obtained three Giraffes, smaller than the one I already possessed. Experience suggested to me the means of preserving them.

"Another trial was reserved for me; that of transporting the animals, by bark, from Wadi Halfa to Cairo, Alexandria, and Malta. Providence has enabled me to surmount all difficulties. The most that they suffered was at sea, during their passage, which lasted twenty-four days, with the weather very tempestuous.

"I arrived at Malta on the 21st of November. We were there detained in quarantine for twenty-five days, after which, through the kind care of Mr. Bourchier, these valuable animals were placed in a good situation, where nothing is wanting for their comfort. With the view of preparing them for the temperature of the country to which they will eventually be removed, I have not thought it advisable that they should be clothed. During the last week the cold has been much greater than they have hitherto experienced; but they have, thanks to the kindness of Mr. Bourchier, everything that can be desired."

The Giraffes brought over by M. Thibaut succeeded in the most remarkable manner, and the female gave birth to no less than seven fawns before her death in October, 1852. In the autumn of 1866 an unfortunate fire occurred in this house, resulting in the death of two of the animals. Shortly afterwards the old male died, being rather more than twenty years old. The Society's stock thus became reduced to a female (born in 1853), and a male (born March 17th, 1867), to which a young female has been since added by purchase, imported in the summer of 1867.

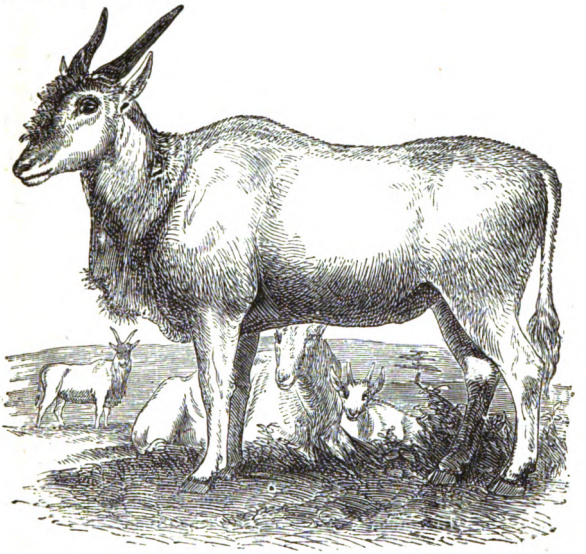
62. THE ELAND HOUSE.

The Eland. (*Oreas canna.*)—Among the known species of Antelopes, which are not less than eighty in number, there is none more imposing from its size or more interesting in an economic point of view, than the Eland.

"In shape and general aspect," says Sir Cornwallis Harris, "he resembles a Guzerat Ox, not unfrequently attaining the height of nineteen hands at the withers, and absolutely weighing from fifteen hundred to two thousand pounds! By all classes in Africa the flesh of the Eland is deservedly esteemed over that of any other animal. Both in grain and colour it resembles beef, but is far better tasted and more delicate, possessing a pure game flavour, and exhibiting the most tempting looking layers of fat and lean, the surprising quantity of the former ingredient with which it is interlarded exceeding that of any other game quadruped with which I am acquainted. The venison fairly melts in the mouth; and as for the brisket, that is

absolutely a cut for a monarch! . . . . During the greater part of our journey it was to the flesh of this goodly beast that we principally looked for our daily rations, both on account of its vast superiority over all other wild flesh, and from the circumstance of its being obtainable in larger quantities with comparatively less labour."

The Eland breeds readily in confinement, and has been proved by actual experiment to be perfectly capable of enduring all the vicissitudes of the English climate, with very little more protection than is usually bestowed upon valuable cattle.



THE ELAND.

Elands bred by the Society are now established by the Viscount Hill, in Hawkstone Park, in Shropshire, and in parts of the Continent. Future produce is already applied for in advance by other proprietors, and there is now every probability that in a few years hence this noble animal will become a permanent inhabitant of many other Parks in the United Kingdom.

"In its natural condition," continues Sir Cornwallis Harris, "the Eland frequents the open prairies and the low rocky hills interspersed with clumps of wood, but is never to be met with in a continuously wooded country. Rejoicing especially in low belts of shaded hillocks, and in the isolated groves of *acacia capensis* which, like islands in the ocean, are scattered over many of the stony and gravelly plains of the interior, large herds of them are also to be seen grazing like droves of oxen on the more verdant meadows, through which some silver rivulet winds in rainbow brightness betwixt fringes of sighing bulrushes."

Elands were first imported into England by the late Earl of Derby, in the year 1840. Accidental circumstances prevented that herd from multiplying to any extent, and a second importation was made in 1850, which upon the Earl's death was bequeathed to the Society, and became the foundation of the present stock.

63. THE OSTRICH HOUSE.

The Ostrich. (*Struthio camelus.*)

The distribution of the Struthious birds (to which group the Ostrich and its allies belong) is very peculiar. Each region of the world which they inhabit is tenanted by a separate form. The OSTRICH is found only in Africa; the RHEA, of which there are three species, only in South America; the EMEU, only in New Holland; and the CASSOWARIES, only in the Moluccas and adjacent islands. The Society's collection contains examples of all these forms, but unfortunately it has not yet been found possible to arrange them all together in one building. The Rheas and the Emeus are at present located near the Antelope House. (See p. 23.)

The Common Cassowary (*Casuarius galeatus*) is found in Ceram. This species is usually wild and difficult to manage, and can but very rarely be induced to breed in captivity. On several occasions, when eggs have been deposited by the birds of this species in the Society's Gardens, the male (who takes sole charge of the duties of incubation) has not succeeded in hatching them out. In the summer of 1866, however, we had better luck, and a fine young bird was successfully reared. The Common Cassowary is replaced in New Guinea by another species (the *Casuarius uniappendiculatus*), distinguished by having only a single caruncle on the throat, and in Northern Australia by a third species, of which living specimens have not yet reached this country.

The Bennett's Cassowary. (*Casuarius bennetti*).—This Cassowary, which is also called the Mooruk, is one of the most recent additions to our knowledge of this family, and as such an object of peculiar interest. It was discovered in the island of New Britain, by Captain Deolin, and after two unsuccessful attempts the living bird first received by the Society was taken by him to Sydney in the autumn of 1857. Having been purchased there by Dr. Bennett, that gentleman immediately presented it to the Society, and transmitted it to England. The specific characters of the bird were described by Mr. Gould in the Society's "Proceedings" for December, 1857, from drawings made in Sydney by Mr. Angas. The arrival of the bird in England confirmed the validity of Dr. Bennett's conjecture of its distinctness from the common Cassowary. Dr. Bennett subsequently presented to the Society a pair of this Cassowary, which arrived in England in May, 1858, under the care of Captain Duthie, in the same vessel which brought the first bird.

The Mantells Apteryx, or Kiwi. (*Apteryx mantellii.*) **The Owen's Apteryx.** (*A. owenni.*)—Although the existing species of the Ostrich family are so widely distributed over the earth's surface, and each genus has so wide a territory of its own, New Zealand has within the last twelve years yielded up irrefragable evidence in its bone deposits, that almost within the memory of man the comparatively limited area of the two principal islands was tenanted by nearly twenty species of wingless birds, varying in size from that of a Turkey to twice the stature of an Ostrich. These wonderful remains have been illustrated and interpreted with extraordinary felicity by Professor Owen, in a series of papers which have been published in the Transactions of this Society. The Maories designate these birds the "MOA," and it is by no means certain that some of the smaller species do not still linger in the untrodden recesses of the middle island, which even the Maories themselves have not explored.

The genus APTERYX, is usually supposed to include three species—*Apteryx australis, A. mantellii,* and *A. owenii.* There is some evidence of

the existence of a fourth, of considerably larger size than any of these, which is said to have been seen by the whalers, and is called by them "the Fire-man."

The first Kiwi acquired by the Society was a female, presented in 1852 by Lieut.-Governor Eyre, and most carefully brought from New Zealand by the kindness of Admiral Erskine, then in command of H.M.S. Havannah. It is purely nocturnal in its habits, and never shows itself to visitors during the daytime, unless brought out by the keeper for the purpose of being exhibited. After hastily swallowing one or two earth-worms which are provided for it, it invariably makes a hasty retreat to its den, and hides itself deep in its straw until again summoned forth to gratify the curiosity of a fresh band of sightseers. If, however, a visit be paid to the Apteryx in the night-time it will be found running about lively enough, probing into the ground and round every corner of the place where it is confined with its long and sensitive bill.

After being nearly seven years in the Gardens this bird laid an egg on the 9th of June, 1859, and has subsequently deposited others. The egg, when fresh, weighs 14½ oz., the contents thereof weighing 13½ oz. The weight of the living bird is nearly 60 oz., so that in this species the weight of the egg appears to be nearly equal to one-fourth of the whole weight of the bird.

A second Kiwi, believed to be a male, was added to the collection, in September, 1864, by Major Keane, by whom it was brought from New Zealand, and a third has been recently presented by Surgeon Henry Slade, of the Royal Navy.

For their unique example of OWEN'S APTERYX the Society are indebted to the Acclimatisation Society of Otago, New Zealand.

64. THE GAZELLES' SHEDS.

These sheds are appropriated to the smaller members of the great group of Antelopes, which are very abundant in Africa, numbering some thirty or forty species, and some of which are also found in Asia.

The Dorcas Gazelle. (*Gazella dorcas.*)—**Cuvier's Gazelle.** (*G. cuvieri.*) **The Indian Gazelle.** (*G. bennettii.*)

The Gazelles number some eight or nine species, one of which, (BENNETT'S, or the INDIAN GAZELLE,) is found in India, and is well known to the sportsmen of that country as the "Goat-Antelope," or "Ravine-Deer." The rest of the group are mostly African. The best-known species, to which no doubt Moore's celebrated lines were addressed, is the Dorcas Gazelle of Arabia and Northern Africa, which is often kept in a semi-domestic state by the wandering Arabs, and makes a most beautiful and sociable pet, though not unfrequently inclined to be mischievous.

The Isabelline Antelope. (*Heleotragus isabellinus.*)—The ISABELLINE ANTELOPE, or "Riet-bock," of the Boers, lives in the reedy marshes and among the grass of the damp flats of the Cape colony. Here it is wont to lie very close, and to wait until actually put up by the hunter or his dogs; so that it has now become nearly exterminated within the limits of the colony.

The Duiker-bock. (*Cephalophus maxwelli*)—**The Wood-loving Antelope.** (*C. sylvicultrix.*)

The genus *Cephalophus* embraces a number of small Antelopes with short simple horns, found in various parts of Africa. They are easily recognised by a peculiar tuft of hair rising from the top of their head between their horns.

ZOOLOGICAL SOCIETY OF LONDON.

This Society was instituted in 1826, under the auspices of Sir Humphry Davy, Bart., Sir Stamford Raffles, and other eminent individuals, for the advancement of Zoology, and for the introduction, exhibition, and acclimatisation of subjects of the Animal Kingdom.

During the period which has elapsed since the opening of the Gardens in the Regent's Park, in 1828, a very large number of species of Mammals and Birds has been obtained, detailed lists of which are to be found in the successive Annual Reports. To these there were added, in 1849, a collection of Reptiles, which has afforded great facilities to the scientific observer of this class of animals; and, more recently, a collection of Fishes and of the Lower Aquatic Animals, both marine and freshwater, which has given rise to many interesting discoveries in their habits and economy.

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PRIVILEGES OF FELLOWS.

Fellows have personal admission to the Gardens with two Companions daily. On Saturday they have the power of admitting Two friends to the Gardens, by Tickets, *instead of* by their personal introduction; on Sunday they have the power of admitting Two friends by Tickets, *in addition to* Two by their personal introduction. They receive also Twenty Tickets on payment of their Annual Subscription, for the admission of Friends to the Gardens at any time.

The Wife of a Fellow can exercise all these privileges in his absence.

Fellows, who pay a subscription of £1 1s. before the day of the Anniversary Meeting in each year, are entitled to receive all the Society's publications for the year. They are likewise entitled to purchase the publications of the Society at 25 per cent. less than the price charged to the Public.

Fellows may obtain, on the payment of One Guinea annually, an Ivory Ticket, which will admit a named person of their immediate family to the Gardens, with One Companion daily.

They may also obtain a Transferable Ivory Ticket admitting Two Persons, available throughout the whole period of Fellowship, on payment of Ten Pounds in one sum.

Fellows are expected to give their names on entering the Gardens.

The Gardens are open from Nine o'clock, A.M., till Sunset; and the Office, 11, Hanover Square, W., where all communications should be addressed, from Ten till Five and on Saturday from Ten till Two o'clock.

Gentlemen who wish to join the Society are requested to communicate with the Secretary.

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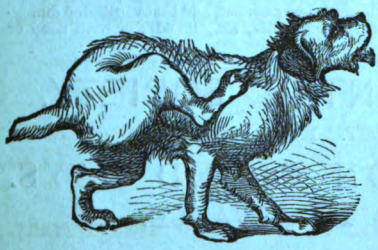

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