past. Thus I find that the Willow Wren (*Sylvia Trochilus*), instead of the 16th or 18th of April, was not seen or heard before the 3rd of May; the same in regard to the Blackcap (*Curruca atricapilla*), the Tree Pipit (*Anthus arboreus*), the Whinchat (*Saxicola rubetus*); and the 13th of May had arrived before an individual of the Fly-catcher (*Muscicapa grisola*) was observed. Of the species just enumerated, a deficiency, such as I have already mentioned, was remarked; but I think it was even more striking in others, among which I may particularize the Sedge-warbler (*Salicaria phragmitis*), Greater Petty-chaps (*Curruca montana*), White-throat (*Curruca cinerea*). To this cold and long-retarded spring, succeeded a short and, with the exception of a few days in July, a moist and chilly summer, circumstances which affected not only the increase of animal life, but produced the more serious calamity of a deficient harvest. Fruits also did not ripen at all, or very imperfectly, and were devoid of their proper taste and flavour. In conclusion, I may add, that a great deficiency of the insect tribes was generally remarked, and, from having given a considerable degree of attention to the entomology of this district for some years past, I can confidently say, that in most of its great families or divisions the remark is correct, more particularly as it applies to the Coleopterous and Lepidopterous insects, upon a comparison with what was observed in 1835 and 1836, as well as years previous to that date.

XLII.—*Information respecting Botanical and Zoological Travellers.*

It will give satisfaction to many of our friends to learn that letters have been received from our valuable contributor Dr. Parnell. He is now about to leave Jamaica, after a residence of nearly nine months, during which time he has investigated much of the zoology of that island. His entomological collections have suffered considerably from insects, but in ornithology he states, "I have been more fortunate, having obtained 140 species in a good state, several of which are very rare, and two or three of them I suspect have never been before noticed. In ichthyology I have been most successful, having obtained about 500 specimens." At the date of his letter (22nd March), Dr. Parnell was about to sail for Cuba, whence he expected to return to Britain in November or December next.

WE have also letters from another gentleman, T. C. Jerdon, Esq., Assistant Surgeon 2nd Madras Light Cavalry, who has been for some

years resident in India in the prosecution of his profession, and has employed his leisure time in studying the zoology of that country, particularly its ornithology. Our parcel contains a partial result of researches in the latter department in the first part of a "*Catalogue of the Birds of the Peninsula of India, with brief Notes on their Habits and Geographical Distribution**;" and notwithstanding the information contained in the illustrated works of Hardwicke and Gould, and in the valuable Catalogues and Papers of Franklin, Sykes, Hodgson, and Eyton, several species among the Raptores are given as new, Mr. Jerdon divides the peninsula into four great districts or divisions. 1st, *The Northern Circars*, comprising a narrow tract of land (between 16° and 20° N. lat.) from the sea-coast on the eastern side of the peninsula to the Eastern Ghauts, by which it is separated from the Great Table-land; 2nd, *The Carnatic*, including the whole of the country lying south of the Northern Circars along the coast as far as Cape Comorin, and bounded on the west by the Eastern Ghauts, except the Coimbotoor district, where the eastern as well as western range is broken; 3rd, *Western coast*, including Travancore, Cochin, and Malabar, and comprising a strip of land of various width lying between the sea on the western side of India, and the range of Western Ghauts, which it includes; 4th, *The great central table land*, including Mysore, the Baramahl, the ceded districts (Bellary and Cuddapah), the kingdoms of Berar and Hyderabad, the Southern Mahratta country and the Decan.

The species already noticed in this range are 390, and the list will probably be extended before the completion of the catalogue, which now reaches only to a part of the Strigidæ. Of the Falconidæ 32 species are noted; and among those belonging to the British list we have *Pandion Haliaëtus*, *Aquila Chrysaëtus*, *Circus cineraceus* and *rufus*, *Falco peregrinus* and *Tinnunculus*, *Accipiter fringillarius*, and *Astur palumbarius*. It is possible however that some of these may require a more rigorous comparison with the birds of Europe. This part of the catalogue is illustrated by a lithographic figure of an owl (*Huhua pectoralis*), very neatly engraved; and if figures can be produced in India equal to that now attempted, they will be of much importance in illustrating the views of the gentlemen who may in future attend to the zoology of this very interesting region. Our correspondent states, "I have 50 or 60 drawings in the same style†, drawn by myself and finished by the native artists I kept at Trinco-

* Published in the Madras Journal of Literature and Science for September 1839. The Raptores.

† Specimens accompany the packet well drawn and beautifully finished.

nopoli, most of them of birds hitherto unfigured. I shall commence sending my specimens next month, and hope by the end of the year to have forwarded to you a series of all I have procured, for the identification of species, &c. As you requested, I now add a few remarks on the Indian Fox and Wolf. *Canis Bengalensis*, Shaw, *C. Kokree*, Sykes, lives chiefly on the open plains, burrows in the ground, generally four or five openings to the burrow, some of which communicate with each other; others are blind: it feeds chiefly on lizards, locusts, grasshoppers, beetles, small snakes, and occasionally crabs and rats; runs with remarkable speed; the chase with greyhounds is a favourite pursuit in India.—*Canis Lupus*, *C. pullipes*, Sykes, Wolf: hunts in small packs and runs down antelopes and hares, seizes also sheep in a very daring manner in daylight, and carries off young calves, goats, sheep, &c. during nights, and not unfrequently children. It possesses great speed and most extraordinary powers of endurance. Though often chased by the best horsemen, unless it is gorged, it always outlasts the fleetest horse, keeping generally 20 or 30 yards ahead at whatever pace the rider may go.”

Dr. Krauss's Return from Southern Africa.

It will be remembered, that about two years and a half since, Dr. Ferdinand Krauss of Stüttgard, left England for the Cape, on his way to explore the interior of Southern Africa, with a view to collect objects of Natural History from those regions. He has within the last month returned to London with his extensive collections of both animals and plants, collected principally in Natal and Amazoola land, where he resided about twelve months; during which period he assiduously devoted the whole of his time and attention to preserving objects in every department of natural history. The zoological collection comprises Mammalia, Birds, Fishes, Amphibia, Crustacea, Insects, Shells (land, freshwater, and marine,), Zoophytes, &c. The Botanical collection comprises about 3000 species of native plants, carefully preserved, and in most instances 30 specimens of each species; those of Natal, amounting to about 1000 species, are offered to botanists at forty shillings the hundred; and those collected in the Cape Colony at twenty-five shillings per hundred species. A series of the zoological and botanical collections we understand are about to be purchased by the British Museum; the remaining sets will be disposed of to those desirous of possessing them.

In addition to the above collections Dr. Krauss attentively ex-

amined the geological features of the country through which he travelled, with a view especially to record the exact position and situation of the *coalfields*, very imperfectly known to the farmers in the interior of Africa. He has brought with him specimens illustrative of the different formations, including the coal and fossils from the beds: we anticipate giving a more detailed account of this traveller's expedition in a future Number.

Mr. Schomburgk's recent Expedition in Guiana.

[Continued from p. 288.]

I HAVE been told of eight varieties of Opossum which inhabit Guiana, five of which have come under my notice. I have identified four species with those described by authors, as *Didelphis cancrivora*, L., *D. quica*, Temm., *D. philander*, Temm. and *D. dorsigera*, L. and Temm.; but the fifth appears to me to stand intermediate between *D. virginiana* and *D. Azaræ*, Screb. Temm. It differs from the latter in the absence of the black markings on the head, black neck, and the black and white ears, which in the Guiana species are of a uniform black colour. If we could reconcile the geographical distribution of *D. virginiana* over a space so different in temperature, I should consider the specimen which I am now describing a variety of that species: the circumstance that the ears are of a uniform black would scarcely constitute a specific difference. Its body from the nose to the insertion of the tail measures 15 inches and a half, the tail 15 inches. The latter, which is prehensile, is for the length of 3 inches clothed with thick fur, the remainder scaly for about 4 inches, of a black colour, and afterwards white. The scaly part is covered with a few short hairs, black on the back part, and white for the remainder. The fore leg to the malleolus measured 3 inches, the hind leg 4 inches. The fur is of a brownish yellow, short and silky, but intermixed with longer hair of white colour and somewhat stiff. These white hairs are along the vertebral line from 4 to 5 inches in length, intermixed with shorter silky hair, which being black above and white beneath, give it the appearance of a black band stretching from the head along the back to the insertion of the tail. The fore and hind feet are of a dark mouse colour, intermingled with a few white hairs. The ears somewhat compressed at the base, naked, black, and about 1.2 inch in length. Round the eyes is a dark spot of an oblong figure, but otherwise the head is almost entirely of a brownish yellow. The neck is covered with the same short fur of a brownish yellow as the belly, while in *D. Azaræ* it is of a black colour. The specimen which has served

me for description was shot in the neighbourhood of Georgetown, but as it was the only one of its kind which I ever saw, I hesitate to establish it as a separate species, until I have had opportunity of procuring individuals of the same appearance. It is said to be very common at the coast region, and is called the white Yawarri by the colonists, Nopu by the Warrau Indians, Yawarri by the Arawaks and Macusis. It does great injury to the feathered stock, and frequents the sugar-cane fields, being apparently partial to sweets.

The black Yawarri (*Didelphis quica*, Temm.), called so by the colonists from its appearance when at rest; the hair being long and black at the tip, but yellow towards the root. The tail is longer than the body, clothed with hair for one-fourth of its length, the remainder naked and scaly. Its size is that of a marten, but in its head it resembles a fox, and the muzzle ends with a whitish spot. I do not possess an actual measurement, but I should estimate the length of its body about twelve or thirteen inches, and the tail from fifteen to sixteen inches. The latter, which is prehensile, is of great assistance to them in climbing. They are very destructive to poultry and likewise to fruit. They are often found on those savannahs where the wild pine (*Bromelia*, spec.?) flourishes, to the fruit of which they appear to be partial. Like its congeners, the female possesses a pouch in which she carries and suckles her young until they are as large as half-grown rats. They produce from six to seven young at a time. They sleep during the day and hunt at night. They are sometimes eaten by the Creoles and Indians, but as they have a rank and disagreeable smell I doubt if they would prove palatable to us.

The *Didelphis cancrivora* is too well known to deserve more than a passing remark; moreover, I am not able to add anything about its habits, as it is more peculiar to the sea-coasts than to the interior of Guiana.

The Yawarri cusinai of the Macusi Indians, or Picanappa of the Warraus (*Didelphis philander*, Temm.) has an extensive range in Guiana. It is met with in the coast regions as well as in the interior. It resembles in size a full-grown rat; the fur, short and silky, is of a rust-colour, lighter beneath the belly; length of the body nine inches, tail ten inches and a half, clothed with fur for about two inches, the remainder naked and of a uniform brown colour. A deep furrow divides the nostrils, and the eyes are brown and very prominent, and surrounded by a reddish spot. Possessing all the peculiarities of its tribe, it appears to be more lively than the rest, and climbs with the alacrity of a squirrel. Although I have seen many

in the day time, I am inclined to think that the night is their favourable time for going abroad in search of food. I have had tame ones that slept the greater part of the day. In their wild state they live principally on fruits and insects, but I have been assured by the Indians that they have the art of surprising small birds, and in this I am corroborated by Mr. Vieth, who found animal food in their stomach. In a tame state scarcely anything comes amiss; boiled rice, yams, flesh and fish seem equally agreeable to them.

One of the Opossums of that species which I had in a tame state was a female. It was kept in a birdcage of wire-work which permitted me to watch its habits. I have already observed that it passed the greater part of the day in sleeping, and that it fed alike upon fish or flesh. It might have been in my possession for about a fortnight, when one morning, on feeding it, I observed five young ones of the size of a new-born mouse crawling about in the cage. They were perfectly naked and blind. The mother allowed them to crawl about and did not appear to care for them. Next morning I found only four; the fifth had been eaten by the mother during night; the four remaining ones had however returned to the pouch. The succeeding night two more were eaten by the mother, and the last two were crawling about in a helpless state, and the following day fell a prey to the voracity of their unnatural mother. It is remarkable, that although I had the animal longer than a fortnight, I never was aware that it had young ones until I found them crawling about, and it remains now a riddle to me how the mother could secrete them so well. I thought her with young all the time, but had no idea that they were already in a state so far advanced. Confinement no doubt was the reason of her acting so cruelly towards her offspring. She died a few weeks after.

The fifth species which I have observed during my journeys in Guiana is *Didelphis dorsigera*, L. and Temm. It is nearly the size of the former, its fur of a brownish-gray, the tail thin, covered with hair for about the fifth part of its length, the rest scaly, and of a uniform brown. The spot which surrounds the eyes is of a darker brown than in the former, but it is distinguished chiefly in the females being without an abdominal pouch, and merely provided with longitudinal folds near the thighs, within which the young continue to suckle, or which serves as a place of security in case of danger. I have seen this species in a tamed state; it appeared however shy, and was fed upon milk and bread, and plantains. They are said to be very partial to the latter, and they frequent therefore the plan-

tain fields in large numbers. They produce from six to seven young ones.

An individual of that kind, which had been kept for some time in the house where I resided during my stay in Georgetown, met with a tragical end. I had procured two young Jabirus (*Mycteria Americana*): the first exploit when landed and introduced to their new domicile was, that one assailed the cage which contained the opossum, and having seized the poor animal with its beak, drew it by force through the bars of the cage, and swallowed it without further hesitation.

Having brought these Jabirus under the notice of the reader, I shall leave the class Mammalia, and turn for a few moments to the Aves, in order to indulge in a biographical notice* of these two interesting individuals with an introductory remark on the whole tribe.

The Jabiru or Negrokoop, as it is generally known to such of the colonists who have seen this bird in its natural haunts, frequents the great savannahs of the interior and the marshy environs of the rivers Pomeroon and Guainia, where they live on mollusca, crabs, frogs, and other amphibious animals. While at Pirara, I saw them in flocks of several hundreds feeding at lake Amucu, or on the marshy tracts along the Pacaraima mountains. During our stay in that village several were shot. Their flesh is palatable, and when prepared with the necessary ingredients, as a steak, so strikingly resembles beef, that one unacquainted with the fact would pronounce it such. One was winged in shooting at a flock and was brought alive to us. The bill measured 13 inches; it was laterally compressed, thick at its base, and ended rather sharply. The upper mandible was straight and triangular, the lower rather thicker and slightly turned up. The nostrils are narrow, as the bird seeks its food in the water; the feet with three anterior toes slightly united by a membrane; the hallux, or hind toe, high up on the tarsus.

* These notices of animals which inhabit Guiana are gleanings from my Journal, taken at random as they occur, and without tying myself to any scientific arrangement or description. Those who have thought the preceding observations worthy of their perusal, will be aware that they do not pretend to scientific dissertations; it has been my wish to make the reader acquainted with the manners of such of the animated beings of Guiana as have come to my knowledge and under my personal observation, disclaiming all scientific descriptions and discussions, which we will leave to a period when I may have gained by experience, and when, not further urged by the desire of extending my travels, leisure may permit me to digest what practical knowledge I possess.

From the head to the toes, that is to say, standing upright, it measured $6\frac{1}{2}$ feet, from the tip of the beak to the tail 4 feet 4 inches, and to its end 4 feet 11 inches; from the end of the toe to the knee-joint $1\frac{1}{2}$ foot, from ditto to the thigh-joint 2 feet 10 inches. Its wings when spread out measured $8\frac{1}{2}$ feet; it has therefore, next to the Condor, the greatest extent of wings. Its plumage is pure white; the bill, head, and upper part of the neck are black, and with the exception of a few scattered downy feathers, quite naked. The lower part of the neck is red, and likewise set with a few downy feathers. The skin of the neck, but particularly of the gullet, is generally wrinkled, but the bird can extend it. The neck measured 1 foot 10 inches. A species of *Ampullaria* (*guyanensis*) is found in prodigious numbers in the lakes and swamps, as well as in the rivulets which meander through the savannahs, and it appears they constitute the chief food of the Jabiru. In spite of their unshapely beak, they are able to remove the operculum most admirably, and to draw the mollusc out of its shell. I have found it difficult to procure perfect specimens of that *Ampullaria* for my collections, although shells partly broken or devoid of the operculum covered the low savannahs extensively, while in other parts I found the opercula equally numerous, but no shells.

The Jabiru builds its nest generally on trees, sometimes on rocks. It is constructed of dry branches, lined with a few feathers, in which the female deposits two eggs, which are perfectly white and somewhat larger than a swan's egg. The young ones are gray and not roseate as has been asserted.

When the waters subside after the annual inundations, they frequent in small groups the sandbanks of the river Rupununy in search of crustaceous animals. Nothing can surpass the gravity with which they stalk along; their measured step and upright bearing frequently amused my military companion while on our first expedition in the interior, who was forcibly reminded of the parade, so that he could not refrain while passing the beach from giving these feathered recruits the word of command, and they ever afterwards among ourselves went by the name of his recruits. Before they rise on the wing they prepare for their flight by taking two or three hops, by which they are the better enabled to get on the wing. Their flight is light and graceful; and before they alight, or when rising, they first wheel round the place in gyral motions, either lessening or extending the circles according as it is their intention to do the former or the latter. They soar uncommonly high, and might vie with the eagle. Indeed they appear sometimes as a mere speck in the air.

It is a beautiful sight to see a numerous flock on the wing; all appears confusion when they are first disturbed and rise in the air: they cross each other in the flight, and one would think from below they could not avoid coming in contact; but scarcely have they reached a height of 80 or 100 feet, when order is restored, and they begin flying in circles, rising with each circle higher and higher. When on a more extensive journey, they fly in a horizontal line, and change the leader like the cranes. When feeding on the savannahs, a party is always on the alert while the others seek for their food.

The Macusis call them TARARAMU, the Brazilians JUJU, the Arawaks MORA-COYASEHAA, which signifies spirit of the Mora tree (*Mora excelsa*, Benth.), the Warraus DOIH.

[To be continued.]

Mr. Cuming, some letters from whom, while at Manilla, were given in the 1st vol. of Annals, pp. 57 and 147, we are most happy to state has lately arrived in London; bringing with him, as we understand, very extensive collections of the animals and plants found in the Philippine islands. Of shells, the quantity is large; there are said to be a very great proportion of new species. He has also brought alive, and presented to the Zoological Society, a fine specimen of a new species of Gibbon, a species of *Paradoxurus*, a large Flying Squirrel (*Pteromys nitidus*), the Argus Pheasant, a Fire-backed Pheasant, a Hornbill, &c.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

Sept. 10, 1839.—William Yarrell, Esq., Vice-President, in the Chair.

The following letter, addressed by M. Baillon to Mr. Waterhouse, was read. It is dated Abbeville, July 16, 1839:—

“M. De la Motte has just informed me that when he had the pleasure of seeing you in London you expressed a wish to know the name of a new species of Goose which I described in 1833 in the catalogue of the birds observed in the department of the Somme, and which I have inserted in the ‘Memoirs of the Society of Emulation of Abbeville.’ To this bird I gave the name *Anser brachyrhynchus*, because it appeared to me that one of its most striking characters consisted in the shortness of its beak. This species has been sent by me, under that name, to the museums at Paris, Turin, Mayence,

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