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THE  
**ZOOLOGY**  
 OF  
**THE VOYAGE OF H.M.S. BEAGLE,**  
 UNDER THE COMMAND OF CAPTAIN FITZROY, R.N.,

DURING THE YEARS

1832 TO 1836.

PUBLISHED WITH THE APPROVAL OF  
 THE LORDS COMMISSIONERS OF HER MAJESTY'S TREASURY.

Edited and Superinted by

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CORRESPONDING MEMBER OF THE ZOOLOGICAL SOCIETY,

AND NATURALIST TO THE EXPEDITION.

**BIRDS,**

BY

JOHN GOULD, ESQ. F.L.S. ETC.

WITH A NOTICE OF THEIR HABITS AND RANGES,

BY CHARLES DARWIN, ESQ.

LOND

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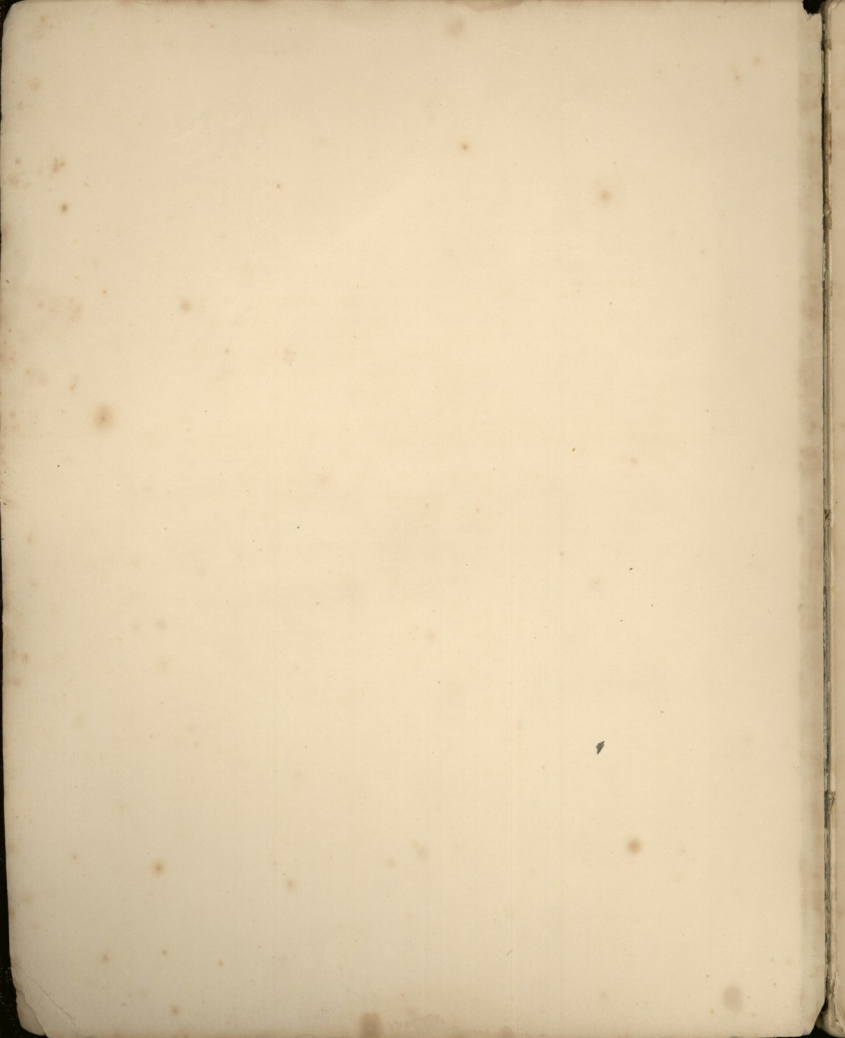
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VI.

Jan.

STEWART AND MUR

RAILEY.



These are the only two birds which were taken during our voyage. They have been taken on Falkland or on the other antarctic islands. In many respects their habits are very closely parallel to those of the *P. Braziliensis*. They feed almost entirely on dead animals, and on marine vegetation. On the islands to be visited upon our expedition, and therefore on land-animals, their food resources must depend upon the sea. At the Falkland Islands they are very gregariously associated together, and constantly around the neighbourhood of the houses to pick up all kinds of refuse. If a halting party of the crew is called to breakfast, these birds immediately congregated from all quarters of the vicinity and standing on the ground in a circle, they patiently awaited the table to be commenced. After eating, their movements were less largely perturbed, giving them a disgusting appearance. I mention this particularly, because Mr. PROBY says that the *P. Braziliensis* is the only bird of this family in which the crop is much developed. They readily attack wounded birds, and the officers of the Beagle told me because a circumstance in this respect is very common, where several of these birds immediately rushed upon it, and tore it to death by their beak and claws. I have been told that several have been seen to walk together at the mouth of a rabbit hole, and wait on the animal as it comes out. This is owing to a principle of order, which is extremely remarkable in birds of prey; but which is in strict conformity with the fact stated by Linnæus, namely, that several *Cathartes* walk together in pursuit of large birds, even such as herons.

The Grackle was at the Falkland Islands only during the early summer (March), but the officers of the Albatross, who were there in the winter, mentioned many extraordinary instances of the boldness and rapacity of these birds. The sportsmen had difficulty in preventing the wounded game from being seized before their eyes; and often, when having rashly looked round, they thought they had succeeded in killing a fine bird it was carried off the rocks, or that when they found, when intending to pick up their game, nothing but feathers. One of these birds secured on a dog which was lying asleep close by a party, who were out shooting; and they repeatedly flew on toward the animal lying in the bushes, so that it was necessary to keep a good lookout to prevent the birds' used about the ropes, being torn from the rigging, and the mast or yards from their sails. They are very mischievous and impetuous; and they will pick up almost anything from the ground: a large black glass hat was carried nearly a mile from a boat of heavy balls, used by crossing west coast. Mr. Johnson discovered, during the cruise, a money bag, in a small Kiver's magazine, in a salt-water cask, which was never recovered. These birds are extremely voracious, and constantly pass about it was common to behold them when they were coming up the grass with their bills full of eggs. They are not only



Tierra del Fuego, near Cape Horn, which was twice visited during our voyage. They are not found on Georgia, or on the other antarctic islands. In many respects these hawks very closely resemble in their habits the *P. Brasiliensis*. They live on the flesh of dead animals, and on marine productions. On the Ramirez Rocks, which support no vegetation, and therefore no land-animals, their entire sustenance must depend upon the sea. At the Falkland Islands they were extraordinarily tame and fearless; and constantly haunted the neighbourhood of the houses to pick up all kinds of offal. If a hunting party in the country killed a beast, these birds immediately congregated from all quarters of the horizon; and standing on the ground in a circle, they patiently awaited for their feast to commence. After eating, their uncovered craws are largely protruded, giving to them a disgusting appearance. I mention this particularly, because M. D'Orbigny says that the *P. Brasiliensis* is the only bird of this family in which the craw is much developed. They readily attack wounded birds; one of the officers of the Beagle told me he saw a cormorant in this state fly to the shore, where several of these hawks immediately seized upon it, and hastened its death by their repeated blows. I have been told that several have been seen to wait together at the mouth of a rabbit hole, and seize on the animal as it comes out. This is acting on a principle of union, which is sufficiently remarkable in birds of prey; but which is in strict conformity with the fact stated by Azara, namely, that several Carranchas unite together in pursuit of large birds, even such as herons.

The Beagle was at the Falkland Islands only during the early autumn (March), but the officers of the Adventure, who were there in the winter, mentioned many extraordinary instances of the boldness and rapacity of these birds. The sportsmen had difficulty in preventing the wounded geese from being seized before their eyes; and often, when having cautiously looked round, they thought they had succeeded in hiding a fine bird in some crevice of the rocks, on their return, they found, when intending to pick up their game, nothing but feathers. One of these hawks pounced on a dog which was lying asleep close by a party, who were out shooting; and they repeatedly flew on board the vessel lying in the harbour, so that it was necessary to keep a good look-out to prevent the hide used about the ropes, being torn from the rigging, and the meat or game from the stern. They are very mischievous and inquisitive; and they will pick up almost anything from the ground: a large black glazed hat was carried nearly a mile, as was a pair of heavy balls, used in catching wild cattle. Mr. Osborne experienced, during the survey, a severe loss, in a small Kater's-compass, in a red morocco case, which was never recovered. These birds are, moreover quarrelsome, and extremely passionate; it was curious to behold them when, impatient, tearing up the grass with their bills from rage. They are not truly

gregarious; they do not soar, and their flight is heavy and clumsy. On the ground they run with extreme quickness, putting out one leg before the other, and stretching forward their bodies, very much like pheasants. The sealers, who have sometimes, when pressed by hunger, eaten them, say that the flesh when cooked is quite white, like that of a fowl, and very good to eat—a fact which I, as well as some others of a party from the Beagle, who, owing to a gale of wind, were left on shore in northern Patagonia, until we were very hungry, can answer for, is far from being the case with the flesh of the Carrancha, or *Polyborus Brasiliensis*. It is a strange anomaly that any of the *Falconidæ* should possess such perfect powers of running as is the case with this bird, and likewise with the *Phalcoænus montanus* of D'Orbigny. It perhaps, indicates an obscure relationship with the Gallinaceous order—a relation which M. D'Orbigny suggests is still more plainly shown in the Secretary Bird, which he believes represents in Southern Africa, the *Polyborinæ* of America.

The *M. leucurus* is a noisy bird, and utters several harsh cries; of which, one is so like that of the English rook, that the sealers always call it by this name. It is a curious circumstance, as shewing how, in allied species, small details of habit accompany similar structure, that these hawks throw their heads upwards and backwards, in the same strange manner, as the Carranchas (the Tharu of Molina) have been described to do. The *M. leucurus*, builds on the rocky cliffs of the sea-coast, but (as I was informed) only on the small outlying islets, and never on the two main islands: this is an odd precaution for so fearless a bird.

#### 4. MILVAGO ALBOGULARIS.

##### PLATE I.

*Polyborus*, (*Phalcoænus*) *albugularis*, *Gould*, Proceedings of Zoolog. Soc. Part V. (Jan. 1837.) p. 9.

*M. Fæm. fuscescenti-niger, marginibus plumarum inter scapulas fulvis; primariis secundariisque albo ad apicem notatis; gula, pectore, corporeque subtus albis; lateribus fusco sparsis; rostro livido, lineis nigris ornato; cera tarsisque flavis.*

LONG. tot. 20 unc.  $\frac{1}{2}$ ; rostri, 1 $\frac{1}{2}$ ; alas, 15 $\frac{1}{2}$ ; caudæ, 9; tarsi, 3.

*Description of female specimen, believed to be applicable to both sexes.*

COLOUR.—Head, back, upper wing coverts pitch black, passing into liver brown; feathers on back of neck and shoulders terminating in a yellowish-brown tip, of which tint the external portion of the primaries, and nearly the whole of the tertiaries partake. Tail liver brown, with a terminal white band nearly one inch broad; base of the tectrices white, irregularly marked with brown: upper tail coverts white. All the feathers of the wing

tipped with white, their bases irregularly barred with transverse marks of brown and white. *Under surface*.—Chin, throat, breast, belly, thighs, under tail-coverts, under lining of wings, and edge of shoulders perfectly white. On the flanks, however, there are some brown feathers irregularly interspersed; and on the lower part of the breast, most of the feathers show a most obscure margin of pale brown. Bill horn-colour. Cere and tarsi yellow.

FORM.—Cere and nostril as in the *M. leucurus*, but the bill not quite so strong. Feathers on the sides and back of head narrow and rather stiff; those on the shoulders obtusely pointed,—which character of plumage is very general in this sub-family. Wing: fourth primary very little longer than the third or the fifth, which are equal to each other. First primary three inches shorter than the fourth or longest, and more nearly equal to the sixth than to the seventh. Extremity of wing reaching to within about an inch and a half of the tail. Tarsi reticulated, with four large scales at the base: upper part covered with plumose feathers for about three quarters of an inch below the knee; but these feathers hang down and cover nearly half of the leg. Middle toe with fifteen scales, outer ones with about nine. Claws of nearly the same degree of strength, curvature and breadth as in *Polyborus Brasiliensis*, or in *M. leucurus*, but sharper than those of the latter.

	Inch.	Inch.
Total length . . . . .	20½	Hind claw measured in straight line from tip to root . . . . . ¼ Claw of middle toe, a twentieth less than that of the hind one.
Tail . . . . .	9	
Wings when folded . . . . .	15¾	
From tip of beak to anterior edge of eye . . . . .	¾	
Tarsus from soles of feet to knee joint . . . . .	3½	

Habitat, Santa Cruz, 50° S. Patagonia. (April.)

Mr. Gould, at the time of describing this species, entertained some doubts whether it might not eventually prove to be the *Phalcoænus montanus* of D'Orbigny, in a state of change. I have carefully compared it with the description of the *P. montanus*, and certainly, with the exception of the one great difference of *M. albogularis* having a white breast, whilst that part in the *P. montanus* is black, the points of resemblance are numerous and exceedingly close. The *M. albogularis*, appears to be rather larger, and the proportional length of the wing feathers are slightly different; the cere and tarsi are not of so bright a colour; the middle toe has fifteen scales on it instead of having sixteen or seventeen. The black shades of the upper surface are pitchy, instead of having an obscure metallic gloss, and the feathers of the shoulders are terminated with brown, so as to form a collar, which is not represented in the figure of

*P. montanus*, given by M. D'Orbigny. Although the main difference between the two birds, is the colour of their breasts, yet it must be observed, that in the *M. albogularis* there is some indication of an incipient change from white to brown in the plumage of that part. But as M. D'Orbigny, who was acquainted with the young birds of the *P. montanus*, (of which he has given a figure), does not mention so remarkable a modification in its plumage, as must take place on the supposition of *M. albogularis* being an immature bird of that species; and as the geographical range of the two is so very different, I am induced to consider them distinct. Moreover, on the plains of Santa Cruz, I saw several birds, and they appeared to me similar in their colouring. The *M. albogularis* is remarkable from the confined locality which it appears to frequent. A few pair were seen during the ascent of the river Santa Cruz, (Lat. 50° S.) to the Cordillera; but not one individual was observed in any other part of Patagonia. They appeared to me to resemble, in their gait and manner of flight, the *P. Brasiliensis*; but they were rather wilder. They lived in pairs, and generally were near the river. One day I observed a couple standing with the Carranchas and *M. pezoporos*, at a short distance from the carcass of a guanaco, on which the condors had commenced an attack. These peculiarities of habit are described by M. D'Orbigny in almost the same words, as occurring with the *P. montanus*; both birds frequent desert countries; the *P. montanus*, however, haunts the great mountains of Bolivia, and this species, the open plains of Patagonia.

In the valleys north of 30° in Chile, I saw several pair, either of this species, or of the *P. montanus* of D'Orbigny, (if, as is probable, they are different) or of some third kind. From the circumstance of its not extending (as I believe) so far south even as the valley of Coquimbo, it is extremely improbable that it should be the *M. albogularis*,—an inhabitant of a plain country twenty degrees further south. On the other hand, the *P. montanus* lives at a great elevation on the mountains of Upper Peru; and therefore it is probable that it might be found in a higher latitude, but at a less elevation. M. D'Orbigny says, "Elle aime les terrains secs et dépourvus de grands végétaux, qui lui seraient inutiles; car il nous est prouvé qu'elle ne se perche pas sur les branches." In another part he adds, "Elle descend cependant quelquefois jusque près de la mer, sur la côte du Pérou, mais ce n'est que pour peu de temps, et peut-être afin d'y chercher momentanément une nourriture qui lui manque dans son séjour habituel; peut-être aussi la nature du sol l'y attire-t-elle; car elle y trouve les terrains arides qui lui sont propres."\* This is so entirely the character of the northern parts of Chile, that, it appears to me extremely probable, that the *P. montanus*, which inhabits the great mountains of Bolivia, descends, in Northern Chile, to near the shores of the Pacific; but that further

\* Voyage dans l'Amérique Meridionale Partie, Oiseaux, p. 52.



south, and on the opposite side of the Cordillera, it is replaced by an allied species,—the *M. albogularis* of Santa Cruz.

##### 5. MILVAGO MEGALOPTERUS.

*Aquila megaloptera*, *Meyen*, Nov. Act. Acad. Cass. Suppl. 1834, p. 64. Pl. VIII.

When ascending the Desplado, a branch of the valley of Copiapó in Northern Chile, I saw several brown-coloured hawks, which at the time appeared new to me, but of which I did not procure a specimen. These I have no doubt were the *A. megaloptera* of Meyen. In the British Museum there is a specimen, brought from Chile by Mr. Crawley. Mr. G. R. Gray suspects that this bird may eventually prove to be the young of the *Phalcobænus montanus* of D'Orbigny, and as I saw that bird (or another species having a close general resemblance with it) in the valleys of Northern Chile, although not in the immediate vicinity, this supposition is by no means improbable. Meyen's figure at first sight appears very different from that of the young of the *P. montanus*, given by M. D'Orbigny, for in the latter the feathers over nearly the whole body are more distinctly bordered with a pale rufous shade, the thighs barred with the same, and the general tint is of a much redder brown. But with the exception of these differences, which are only in degree, I can find in M. D'Orbigny's description no other distinguishing character, whilst on the other hand, there are numerous points of close resemblance between the two birds in the shadings, and even trifling marks of their plumage. Meyen, moreover, in describing the habits of his species, says, it frequents a region just below the limit of perpetual snow, and that it sometimes soars at a great height like a condor. Those which I saw had the general manners of a *Polyborus* or *Milvago*, and were flying from rock to rock amongst the mountains at a considerable elevation, but far below the snow-line. In these several respects, there is a close agreement with the habits of the *P. montanus*, as described by M. D'Orbigny. I will only add that the specimen in the British Museum appeared, independently of differences of plumage, distinct from the *M. albogularis* of Patagonia, from the thinness and greater prolongation of its beak, and the slenderness of its tarsi.

## SUB.-FAM.—BUTEONINÆ.

CRAXIREX. *Gould.*

*Rostrum Buteonis sed longius; mandibulæ superioris margo rectus; versus apicem subitò incurvus. Alæ elongatæ. Cera lata. Nares ferè rotundæ, apertæ. Tarsi mediocres, anticè squamis tecti. Digni magni, fortes; unguæ obtusæ.*

MR. GOULD was partly led to institute this genus from the facts communicated to him by me regarding the habits of the following species, which is found in the Galapagos Archipelago, and there supplies the place of the Polybori and Milvagine of the neighbouring continent of America. If a principle of classification founded on habits alone, were admissible, this bird, as will presently be shown, undoubtedly would be ranked with more propriety in the sub-family of Polyborinæ, than amongst the Buzzards. To the latter it is closely related in the form of its nostrils; in the kind of plumage which covers the head, breast, and shoulders; in the reticulation of the scales on its feet and tarsi, and less closely in the form of its beak. To the Polyborinæ it manifests an affinity in the great strength and length of its toes and claws, and in the bluntness of the latter; in the nakedness of the cere, in the perfectly uncovered nostrils, in the prolongation and bulk of the bill, in the straightness of the line of commissure, and in the narrow shape of the head. In these several respects, taken conjointly with its habits, this bird supplies a most interesting link in the chain of affinities, by which the true buzzards pass into the great American sub-family of carrion-feeding hawks. I am, indeed, unable to decide, whether I have judged rightly in placing this genus, as first of the Buteoninæ, instead of last of the Polyborinæ.

## CRAXIREX GALAPAGOENSIS. Gould.

## PLATE II.

Polyborus Galapagoensis. Proceedings of the Zoological Society for January, 1837, p. 9.

*C. Mas. adult.* Intensè fuscus; primariis nigris; secundariorum pogoniis internis transversim albo et fusco striatis; caudâ cinerascenti-fuscâ, transversim lineis angustis et numerosis intensè fuscis notatâ; rostro obscure corneo; pedibus olivaceo-flavis.

Long. tot. 20½ unc.; rostri, 1½; alæ, 15; caudæ, 8½; tarsi, 3½.

*Fem. adult. fæminæ juniore ferè similis, pectore tamen fusco.*

*Fem. juv.* Capite corporeque intensè stramineis, fusco-variegatis; illo in pectore et abdomine prævalente; primariis fusco-nigris; reetricum pogoniis externè cinerascenti-fuscis, internè pallide rosaceis; utrisque lineis angustis et frequentibus fuscis transversim striatis, apicibus sordide albis; rostro nigrescenti-fusco; pedibus olivaceo-flavis.

Long. tot. 24 unc.; rostri, 1¾; alæ, 17¼; caudæ, 10½; tarsi, 3½.

*Description of adult male.*

**COLOUR.**—Entire dorsal aspect umber brown: base of feathers on hind part of neck, white; base of those on back, irregularly banded with pale fulvous, and the scapulars with a distinct band of it. The inferior feathers of upper tail coverts banded in like manner to their extremities. Tail dusky clove-brown, obscurely marked with darkened transverse narrow bands. Primaries perfectly black towards their extremities, but with the outer edge of their base, gray: inner web banded and freckled with gray, brown, and white, which in the secondaries takes the form of regular bars. *Under surface*, entirely umber brown, but rather paler than the upper. Lining of wings gray, with irregular transverse brown bars: under-side of tail the same, but paler. Thighs of a rather yellower brown. Bill and cere horn colour, mottled with pale gray: tarsi yellow.

**FORM.**—Beak, with apex much arched, both longer and more pointed than it is in the group of the Polyborinæ. Cere naked, with few bristles; nostrils large, quite uncovered, irregularly triangular, with the angles much rounded, and situated rather above a central line between the culmen and commissure. Fourth primary longest, but third and fifth nearly equal to it; first, four inches and a half shorter than fourth, and equal to the eighth; second shorter than fifth. Extremities of wing reaching within half an inch of end of tail.

Tarsi strong, feathered for nearly a third of their length beneath the joint. Scales in narrow, undivided (with the exception in some instances of one) bands, covering the front of tarsus. Toes very strong and rather long, like those of the species of *Mitvago*, and much more so than in the genus *Buteo*. Hind-toe equal in length to the inner one; but not placed quite so high on the Tarsus as in *Polyborus*. Basal joints of middle toe covered with small scales, with five large ones towards the extremity. Claws very strong, thick and long, and rather more arched, and broader than in *Polyborus Brasiliensis*; their extremities obtuse, but not in so great a degree as in some species of *Mitvago*.

	Inches.
Total length from tip of bill to end of tail following curvature of body . . . . .	20½
Tail . . . . .	8½
Wing, from elbow-joint to extremity of longest primary . . . . .	15
Bill, from tip to anterior edge of eye measured in a straight line . . . . .	1⅞
Tarsus, from soles of feet to centre of joint . . . . .	3½
Hind claw from tip to root, measured in straight line . . . . .	1⅞
Claw of middle toe . . . . .	1⅞

*Old female.*

COLOUR.—Nearly as in young female, but with the breast dark brown.

*Young female.*

COLOUR.—Head, back of neck, back, wing coverts and tertiaries barred and mottled, both with pale umber brown (of the same tint as in the male bird) and with pale fulvous orange. On head and back of neck, each feather is of the latter colour, with a mere patch of the brown on its tip; but in the longer feathers, as in the scapulars, upper tail coverts, inner web and part of outer of the tertiaries, each is distinctly barred with the dark brown. Tail as in the old male. Primaries black as in male, with the inner webs nearly white, and marked with short transverse bars. Under surface and thighs of the same fulvous orange, but some of the feathers, especially those on the breast, are marked with small spots of umber brown on their tips. Some of the longer feathers on the flanks, on the under tail coverts, and on the linings of the wing, have irregular bars of the same.

FORM and SIZE.—Larger and more robust than the male. Total length 24 inches.

Tail ten and a half inches long, and therefore longer in proportion to the wings than in the other sex. Wings from joint to end of primaries, 17½.

Habitat, Galapagos Archipelago, (October).

This bird is, I believe, confined to the Galapagos Archipelago, where on all the islands, it is excessively numerous. It inhabits, indifferently, either the dry sterile region near the coast, which, perhaps, is its most general resort, or the damp and wooded summits of the volcanic hills. This bird, in most of its habits and disposition, resembles the *Mitvago leucurus*, or the *Falco Novæ Zelandiæ* of older authors. It is extremely tame, and frequents the neighbourhood of any building inhabited by man. When a tortoise is killed even in the midst of the woods, these birds immediately congregate in great numbers, and remain either seated on the ground, or on the branches of the stunted trees, patiently waiting to devour the intestines, and to pick the carapace clean, after the meat has been cut away. These birds will eat all kinds of offal thrown from the houses, and dead fish and marine productions cast up by the sea. They are said to kill young doves, and even chickens; and are very destructive to the little tortoises, as soon as they break through the shell. In these respects this bird shows its alliance with the buzzards. Its flight is neither elegant nor swift. On the ground it is able, like the *M. leucurus* and *Phalcobænus montanus* of D'Orbigny, to run very quickly. This habit which, as before observed, is so anomalous in the Falcons, manifests in a very striking manner the relation of this new genus with the *Polyborinæ*. It is, also, a noisy bird, and utters many different cries, one of which was so very like the shrill gentle scream of the *M. chimango*, that the officers of the "Beagle" generally called it either by this name, or from its larger size by that of *Carrancho*,—both names, however, plainly indicating its close and evident relationship with the birds of that family. The crow is feathered; and does not, I believe, protrude like that of the *P. Brasiliensis* or *M. leucurus*. It builds in trees, and the female was just beginning to lay in October. The bird of which the full figure has been given, is a young female, but of, at least, one year old. The old male-bird is of a uniform dusky plumage, and is seen behind. The adult female resembles the young of the same sex, but the breast is dark brown like that of the male. In precisely the same manner as was remarked in the case of the *M. leucurus*, these old females are present in singularly few proportional numbers. One day at James' Island, out of thirty birds, which I counted standing within a hundred yards of the tents, under which we were bivouacked, there was not a single one with the dark brown breast. From this circumstance I am led to conclude that the females of this species (as with the *M. leucurus*) acquire their full plumage late in life.

## 1. BUTEO ERYTHRONOTUS.

*Haliaëtus erythronotus*, King, in Zoological Journal, vol. iii. p. 424.

*Buteo tricolor*, D'Orbigny.

I obtained specimens of this bird from Chiloe and the Falkland Islands, and Captain King who first described it, procured his specimens from Port Famine, Lat. 53° 38' in Tierra del Fuego. M. D'Orbigny states that it has a wide range over the provinces of La Plata, central Chile, and even Bolivia; but in this latter country, it occurs only on the mountains, at an elevation of about 12,000 feet above the sea. The same author states, that it usually frequents open and dry countries; but as we now see that it is found in the dense and humid forests of Chiloe and Tierra del Fuego, this remark is not applicable. At the Falkland Islands, it preys chiefly on the rabbits, which have run wild and abound over certain parts of the island. This bird was considered by Captain King as a *Haliaëtus*; but Mr. Gould thinks it is more properly placed with the Buzzards. Captain King gave it the appropriate specific name of *erythronotus*, and, therefore, as Mr. Gould observes, the more recent one of *tricolor*, given by M. D'Orbigny, must be passed over.

## 2. BUTEO VARIUS. Gould.

*Buteo varius*, Gould, Proceedings of the Zoological Society, Part v. 1837, p. 10.

*B. vertice corporeque supra intensè fuscis, plumis fulvo marginatis vel guttatis; primariis secundariisque cinereis, lineis numerosis fuscis transversim striatis; caudâ cinerâ, lineis angustis numerosis fuscis transversim notatâ; singulis plumis flavescenti-albo ad apicem notatis; gulâ fuliginosâ; pectore fulvo, lineâ interruptâ nigrescente a gulâ tendente circumdato; abdomine imo lateribusque stramineo et rufescenti-fusco variegatis; femoribus crissoque stramineis lineis transversalibus anfractis rufescenti-fuscis ornatis; rostro nigro; cerâ tarsisque olivaceis.*

Long. tot. 21½; ala, 16½; cauda, 10; tarsi, 3½.

COLOUR.—Head and back of neck umber brown, with edges of the feathers fringed with fulvous, (or buff orange with some reddish orange) and their bases white. Shoulders brown, with the feathers more broadly edged. Back the same, with the basal part of the feathers fulvous, with transverse bars of the dark brown. Tail blueish gray, with numerous, narrow, transverse, faint black bars. Tail-coverts pale fulvous, with irregular bars of dark fulvous and brown. Wings: primaries blackish gray, obscurely barred; secondaries and tertiaries more plainly barred, and tipped with fulvous. Wing coverts, dark umber brown, largely tipped, and marked with large

spots, almost forming bars, of pale fulvous. *Under surface*.—Chin black; throat and breast ochre yellow, with a narrow dark brown line on the shafts of the feathers, which, in those on the sides of the throat and breast expands into a large oval spot. Feathers on belly reddish brown, fringed and marked at base with the ochre yellow. Lining of wings ochre yellow, with numerous transverse bars of dark brown. Under-side of tail, inner webs almost white, outer pale gray, with very obscure transverse bars. Thighs, ochre yellow, with numerous zigzag transverse bars of pale reddish brown. Bill pale blackish; iris brown; tarsi gamboge yellow.

**FORM.**—Fourth primary very little longer than third, and about half an inch longer than fifth. First rather shorter than seventh, and longer than eighth. Wings when folded reaching within two inches of the extremity of the tail.

	Inches.
Total length . . . . .	21½
Length of tail . . . . .	10
Wings when folded . . . . .	16½
From tip of beak to within anterior edge of nostril, measured in straight line . . . . .	11½
Tarsi from soles of feet to middle of knee joint . . . . .	3½
Middle toe, measured from basal joint to tip of claw . . . . .	2½

Habitat, Strait of Magellan, (*February*.) and Port St. Julian in Southern Patagonia, (*January*.)

### 3. BUTEO VENTRALIS. *Gould*.

*Buteo ventralis*, *Gould*, Proceedings of the Zoological Society, Part v. 1837, p. 10.

*B. vertice corporeque intensè nitide fuscis, plumis dorsalibus purpurascensibus; primariis nigris; caudâ fuscâ, lineis obscurioribus cancellatâ numerosis, ad apicem sordidè albâ; gulâ abdomine medio crissoque stramineo-albis; pectoris corporisque lateribus fuscâ abdominali femoribusque flavescens-albis fusco notatis, notis in femoribus rufescensibus; tarsi per mediam partem anticè plumosis, rostro nigro; cerâ tarsisque flavis.*

Long. tot. 23 unc.; *ala*, 15½; *caudâ*, 9½; *tarsi*, 3½.

**COLOUR.**—Head, back of neck, back, and wing-coverts, umber brown. Feathers on sides of throat edged with fulvous; those on lower parts of back with their basal parts marked with large white spots, edged with fulvous, but which do not show, until the feathers are ruffled. Tail of the same dark brown as the back, with many bars of pale brown, and extreme points tipped with dirty white. Tail-coverts same brown, with the more lateral ones marked with white and fulvous. Wings: primaries black, with the inner and basal webs brownish; secondaries and tertiaries brown, with obscure traces of paler

transverse bars. *Under surface*.—Chin almost white; throat and breast very pale ochre yellow, with narrow brown lines on the shaft of the feathers, which expand into large marks on the sides of the upper part of the breast, and into regular spots on those of the belly. Lining of wing white, with brown spots on the feathers near their tips, like on those of the belly. Thighs very pale ochre yellow, with transverse bars of pale brown, appearing like inverted wedge-formed marks, with the apex on the shafts. Under tail-coverts almost white; under side of tail pale gray, with darker gray bars on the inner side of shafts. Bill blueish black, with base of lower mandible and part of upper yellowish. Tarsi pale yellow.

FORM.—Fourth primary very little longer than either the third or fifth, which are equal. First nearly equal to the eighth. Extremity of wing when folded reaching within two inches and a half of the end of the tail.

	In.		In.
Total length . . . . .	23	Tarsi . . . . .	3½
Wing when folded . . . . .	15½	Middle toe from joint to tip of claw . . .	3
Tail . . . . .	9½	From extremity of beak to within nostril . .	1½

Habitat, Santa Cruz, Lat. 50° S. Patagonia, (*April*.)

Mr. Gould remarks that "this species has all the characters of a true *Buteo*, and will rank as one of the finest of this well defined group. In size it rather exceeds the Common Buzzard of Europe, which in its general style of colouring it somewhat resembles."

SUB-FAM.—FALCONINA, VIG.

FALCO FEMORALIS. *Temm.*

*Falco femoralis*, *Temm.* Pl. Col. 121 male; and 243 adult male.

*Sylv.*, Av. Sp. Nov. 1. p. 18.

This specimen was shot in a small valley on the plains of Patagonia, at Port Desire, in Lat. 47° 44'. It builds its nest in low bushes, and the female was sitting on the eggs in the beginning of January. Egg, 1·8 of an inch in longer diameter, and 1·4 in shorter; surface rough with white projecting points; colour nearly uniform dirty "wood brown," thickly freckled with rather a darker tint; general appearance, as if it had been rubbed in brown mud. M. D'Orbigny supposed that Latitude 34° was the southern limit of this species; we now find its range three hundred and thirty miles further southward. The same author states that this falcon prefers a dry open country with scattered bushes, which answers to the character of the valleys, in the plains near Port Desire.



TINNUNCULUS SPARVERIUS. *Vieill.**Falco sparverius, Linn. et Auct.*

I obtained specimens both from North and South Patagonia (Rio Negro and Santa Cruz), and Captain King found it at Port Famine in Tierra del Fuego. I saw it at Lima in Peru; and Mr. Macleay (*Zoological Journal*, vol. iii.) sent specimens from Cuba. According to Wilson it is common in the United States, and Richardson says its northern range is about 54°. The *Tinnunculus* therefore, ranges throughout both Americas over more than 107 degrees of latitude, or 6420 geographical miles. It is the only bird, which I saw in South America, that hovered over one particular spot, in the same stationary manner, as the common English kestrel (*Falco tinnunculus*, Linn.) is so frequently observed to do.

## SUB-FAM.—CIRCINÆ.

1. CIRCUS MEGASPILUS. *Gould.**Circus megaspilus, Gould*, in Proceedings of the Zoological Society, Part V. 1837, p. 10.

*C. vertice corporeque supra intensè fuscis, lineâ stramineâ a naribus supra oculos ad occiput tendente; hoc rufescenti-fusco; primariis intensè fuscis ad basin cinereis, lineis nigris cancellatis; caudæ tectricibus albis; reetricibus intermediis cinereis, externis cinereo-stramineis, omnibus lineis latis fuscis transversim notatis, lineâ ultimâ latissimâ, apice sordidè stramineo; gulâ pectoreque stramineis, fusco variegatis; corpore subtus stramineo; plumis pectoris laterunquæ striâ centrali fusca notatis; rostro nigro; cerâ tarsisque flavis.*

Long. tot. 22 unc.; rostri, 1½; ala, 17; caudæ, 10½; tarsi, 3½.

**COLOR.**—Head, back of throat, whole back, and wing-coverts umber brown, of a nearly uniform tint, and not very dark. Front, over the nostrils, with few fulvous bristly feathers; over the eyes, extending backward, a pale almost pure white streak, which joins an irregular band, extending across the nape of the neck, from below ear to ear, of brown feathers, edged with pale fulvous, giving a streaked appearance to that part. The wing-coverts are just tipped with dirty white. Wings: primaries of the same brown as the back, the inner ones assuming a gray tinge; these, and the basal parts of the inner webs of all, are obscurely barred; secondaries and tertiaries of a paler brown than the interscapular region. Tail grayish brown, with five well-defined bars,

about  $\frac{3}{4}$  of an inch wide, of the same brown, as the rest of the upper surface; extremities tipped with very pale dirty brown. Tail-coverts; upper ones brown, and the under ones white, with small brown spots on the shaft towards their extremities. *Under surface*.—Chin, pale fulvous, or ochre yellow. Breast, belly, thighs and under tail-coverts the same; the feathers on the lower part of the breast and on the belly have a dark brown mark along the shaft, which widens but very little towards the extremity; the brown on those on the upper part of the breast and on the throat is broader, and some of the feathers are of a darker fulvous, and as the dark brown of the back encroaches on each side, this part is much darker than the rest of the under surface. Above this, and just beneath the chin, a kind of collar is formed from ear to ear, of short feathers of a more strongly pronounced fulvous tint, with a narrow brown streak on their shafts. Lining of wings, and flanks almost white, with transverse brown bars. Under side of tail pale gray passing into fulvous, with the terminal dark brown bars seen through. Bill, horn-coloured, with some white markings towards its base; tarsi bright yellow.

FORM.—Third primary rather longer than fourth, second equal to fifth; first more nearly equal to the sixth than to the seventh. Wings reaching within an inch of the end of the tail. Feathers on thighs depend but little below the knee.

Total length . . . . .	In. 22	Tarsi . . . . .	In. $3\frac{1}{2}$
Wings folded . . . . .	17	Middle toe to end of claw . . . . .	$2\frac{3}{4}$
Tail . . . . .	$10\frac{1}{2}$	From tip of bill to nearest part of cere . . . . .	$1\frac{1}{10}$

Habitat, Maldonado, La Plata, (*July*.)

This hawk was not uncommon on the grassy savannahs and hills in the neighbourhood of the Rio Plata. Mr. Gould remarks "that in size it fully equals the *Circus æruginosus* of Europe, which it doubtless represents in the countries it inhabits. This species has a remarkable specific character in the lanceolate and conspicuous stripes down its breast."

## 2. *CIRCUS CINERIUS*. *Vieill.*

*Circus cinerius*, *Vieill. Ency. Meth.*

*Falco histrionicus*, *Quoy and Gaim. Voy. autour du monde*, Plate 15.

*Circus histrionicus*, *Vigors, Zoological Journal*, vol. iii. p. 423, note.

My specimens were obtained at the Falkland Islands, and at Concepcion in Chile. M. D'Orbigny states that it is a wild bird; but at the Falkland Islands it

was, for one of its order, very tame. The same author gives a curious account of its habits: in a different manner from other raptorial birds, when it has killed its prey, it does not fly to a neighbouring tree, but devours it on the spot. It roosts on the ground, either on the top of a sand hillock, or by the bank of a stream: it sometimes walks, instead of hopping, and when doing so, it has some resemblance in general habit to the *Milvago chinango*. It preys on small quadrupeds, molluscous animals, and even insects; and I find in my notes, that I saw one in the Falkland Islands, feeding on the carrion of a dead cow. Although in these respects this *Circus* manifests some relation in its habits with the *Polyborinae*, yet it has the elegant and soaring flight, peculiar to its family; and in form it does not depart from the typical structure. Mr. Gould remarks that "we see in this elegant bird as perfect an analogue of the *Circus cyaneus* of Europe, as in the preceding species of the *Circus æruginosus*."

#### FAMILY.—STRIGIDÆ.

##### SUB-FAM.—SURINÆ.

##### ATHENE CUNICULARIA. *Bonap.*

*Strix cunicularia*, *Mol. Bonap.* Am. Orn. I. 68. pl. 7. f. 2.

This bird, from its numbers and the striking peculiarities of its habits has been mentioned in the works of all travellers, who have crossed the Pampas. In Banda Oriental it is its own workman, and excavates its burrow on any level spot of sandy soil; but in the Pampas, or wherever the Bizcacha is found, it uses those made by that animal. During the open day, but more especially in the evening, these owls may be seen in every direction standing frequently by pairs on the hillock near their habitation. If disturbed, they either enter the hole, or, uttering a shrill harsh cry, move with a remarkably undulatory flight to a short distance, and then turning round, steadily gaze at their pursuer. Occasionally in the evening they may be heard hooting. I found in the stomachs of two which I opened the remains of mice; and I saw a small snake killed and carried away by one. It is said that reptiles are the common object of their prey during the day time. Before I was aware, from the numbers of mice caught in my traps, how vastly numerous the small rodents are in these open countries, I felt much surprise how such infinite numbers of owls could find sufficient means of support. I never saw this bird south of the Rio Negro, (Lat. 41° S.) In North America they frequent only the trans-Mississippian territories in the neighbourhood of the Rocky Mountains. The account given by Say of their habits, agrees with what

may every day be observed in the Pampas ; but in the northern hemisphere they inhabit the burrows of the Marmot or Prairie dog, instead of those of the Bizcacha ; and it would appear that their food is chiefly derived from insects, instead of from small quadrupeds and reptiles. Mr. Gould says he has compared my specimens from La Plata and Chile, on opposite sides of the Cordillera, with those from Mexico and the Rocky Mountains of North America, and he cannot perceive the slightest specific difference between them.

## SUB-FAM.—ULULINÆ.

1. OTUS GALAPAGOENSIS. *Gould.*

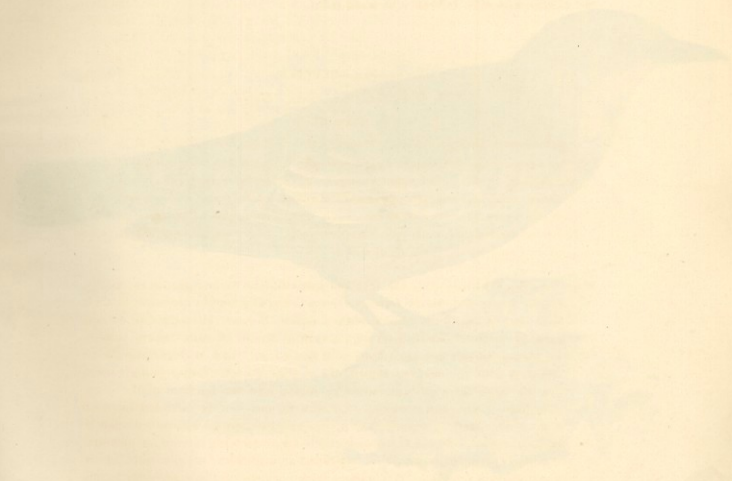
## PLATE III.

Otus (*Brachyotus*) *Galapagoensis*, *Gould*, in *Proceedings of the Zoological Society*, Part V., 1837, p. 10.

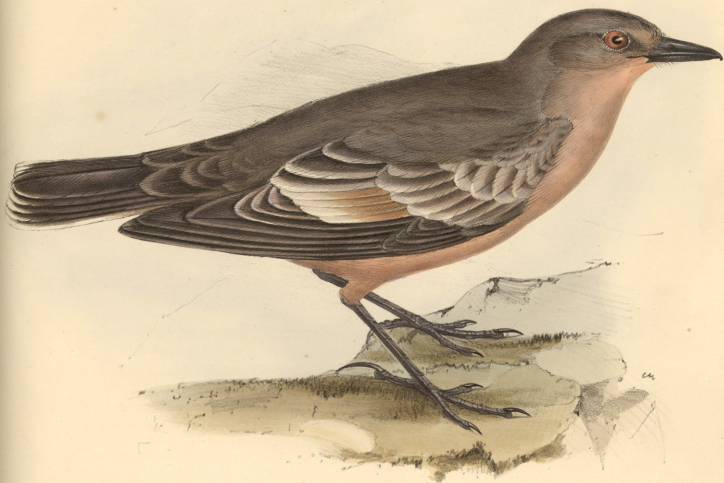
*O. fuscâ circa oculos fuliginosâ; strigâ superciliari, plumis nares tangentibus et circa angulum oris, gulâ et disci facialis margine, albis; vertice corporeque supra intensè stramineo fuscoque variegatis; primariis ad apicem intensè fuscis, ad basin stramineo fasciatis; corpore subtus stramineo, notis irregularibus fuscisq; fuscis ornato; femoribus tarsisque plumosis rufescenti-stramineis; rostro unguibusque nigris.*

Long. tot. 13½; rostri, 1; alæ, 11; caudæ, 6; tarsi, 2.

COLOUR.—Facial disc ; plumose feathers immediately around the eyes, nearly black, tipped with glossy fulvous ; those nearer the margin are white at their base, and only slightly tipped with a darker brown. Between the eyes a band of small fulvous feathers with a central streak of dark brown, passing backward, blends into the plumage of the nape. Back of head and throat streaked with fulvous and brown, the centre of each feather being brown, and its edge fulvous. Interscapular region and the feathers of the wing, coloured in the same manner, but the fulvous part is indented on each side of the shaft in the brown, giving an obscurely barred appearance to these feathers. Primaries brown, with large rounded marks of fulvous ; those on the first feather being smaller, and almost white : wing-coverts brown, and but little mottled. Tail with transverse bars of the same brown and fulvous, the latter colour much clearer and stronger on the external feathers ; in the central ones, the fulvous part includes irregular markings of the dark brown. *Under surface*.—Throat and breast, with center of each feather brown, edged with fulvous ; the former colour being predominant. On the belly and under tail-coverts the brown coloured marks on the shafts are narrow, but they are united to narrow transverse bars, which form at the







*Taniptera variegata*











*Agriornis micropterus*





*Fregata aquila*





*Agriornis leucurus.*







*Zonotrichia albicollis*





*Pachyramphus albescens*





The University of Chicago Libraries

*Pachyramphus minimus.*



*Fregata aquila*

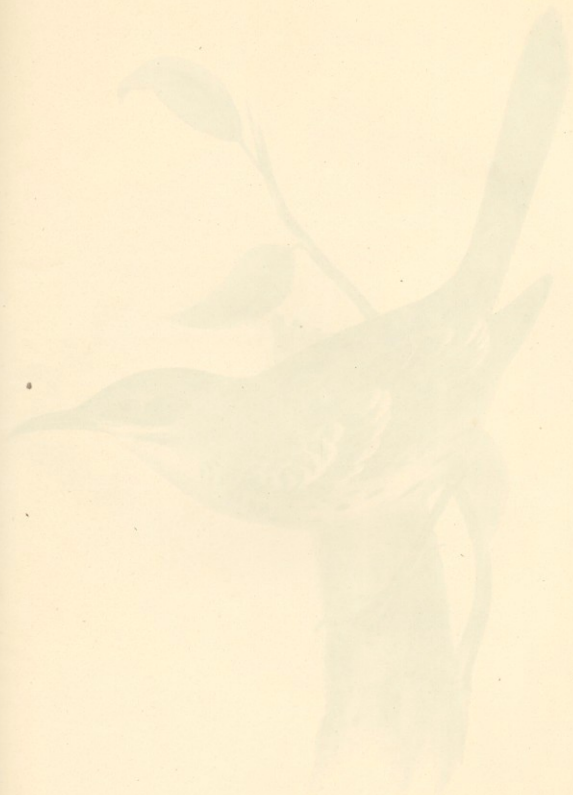




*Mimas trifasciatus.*



















*Mimus parvulus.*







*Fregata aquila*





*Urococcyx danieli.*





*Sterna bergii*





*Cephalorhynchus lanceolatus*.











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## ILLUSTRATIONS OF THE ZOOLOGY OF SOUTH AFRICA:

Consisting chiefly of Figures and Descriptions of the Objects of Natural History collected during an Expedition into the Interior of South Africa, in the years 1834, 1835, and 1836, fitted out by  
"The Cape of Good Hope Association for Exploring Central Africa."

TOGETHER WITH

A SUMMARY OF AFRICAN ZOOLOGY,  
AND AN INQUIRY INTO THE GEOGRAPHICAL RANGES OF SPECIES IN THAT QUARTER OF THE GLOBE.

BY ANDREW SMITH, M.D.

SERGEON TO THE FORCES, AND DIRECTOR OF THE EXPEDITION.

### Prospectus.

The Cape of Good Hope is now acknowledged to be one of the greatest avenues as yet opened for the researches of the Naturalist. Our Colony in that part of Southern Africa is the key to a large portion of an extensive continent which is still but very partially explored; and the field to which it admits the scientific traveller is rich to exuberance in the variety and novelty, both of animal and vegetable life.

Stimulated by the prospect of Discovery in a quarter so fertile in interest, "The Cape of Good Hope Association for Exploring Central Africa" was established in 1833; and in 1836, an Expedition fitted out by that body, consisting of thirty-four persons, and directed by Dr. Smith, after an absence of nineteen months, and penetrating as far as 23° 28' South latitude, returned to Cape Town laden with a variety of curious and important specimens in Natural History, &c.

Previously to this period little information has been furnished, in a shape calculated to enable the public to form accurate ideas of the various animated beings by which these regions are inhabited. The splendid publication of Le Vaillant, no doubt, should be mentioned as forming an exception, *pro tanto*; but this includes only a portion of the Birds of the most southern extremity of the country, and a work therefore extensive enough to comprehend the various departments of Zoology is still a desideratum.

The Members of *The Cape of Good Hope Association for Exploring Central Africa* found themselves, on the return of the recent Expedition, in a situation to supply at least some portion of the existing deficiencies; but their funds, even if it had been possible to divert them to such an object, were altogether inadequate to defray the expense of laying the result of their labours before the world. Under such circumstances, it was decided that Dr. Smith, the director of the Expedition, should be authorised, on his arrival in England, to wait upon Lord Glenelg, for the purpose of making him acquainted with the position and views of the Society, in the hope that Government might be induced to assist in the publication of their materials.

This hope has not been disappointed. At the recommendation of the Secretary of State for the Colonial Department, the Lords Commissioners of Her Majesty's Treasury have been pleased, by a pecuniary grant, to enable the Society to publish the result of its labours, without infringing upon the funds raised solely for the purposes of discovery; and in a form which, while it places the work within reach of most of the friends and promoters of science, will not, it is hoped, be found inconsistent with the interest and importance of the subject.

The materials for the work now offered, under such patronage, to the public, will consist of pictorial illustrations of between three and four hundred subjects of the animal kingdom, all of which have been collected to the south of 23° 28' South latitude; and will comprise,

First, and principally, unknown animals;

Secondly, animals known, but not yet figured; and

Lastly, such as have been imperfectly figured; but of which the Association is in possession of accurate drawings.

The Entomological portion of the work will be from the pen of W. S. Macleay, Esq., who has kindly undertaken that department. The rest of the descriptions will be furnished by Dr. Smith, who will add a summary of African Zoology, and an inquiry into the Geographical ranges of species in that quarter of the Globe.

#### Conditions of Publication.

The Work will appear periodically; and it is estimated that the whole will be completed in about thirty-four parts, price, on an average, Ten Shillings each. As it will be necessary that the plates be published promiscuously, they will be arranged in five divisions, *viz.* MAMMALIA, AVES, PISCES, REPTILIA, and INVERTEBRATA. The plates of each of these divisions will be numbered independently, and the letter-press descriptions left unpagod, so that on the work being completed, they may be arranged either agreeably to the general classified order which will accompany the last number, or according to the particular views of the purchasers.

The whole of the Plates will be engraved in the highest style of Art, from Drawings taken expressly for this Work, and beautifully coloured after Nature.

THE FIRST FOUR PARTS ARE NOW READY.