

**Report on the collection of Australian vertebrata contained in the museum of the Asiatic Society, Calcutta / [Edward Blyth].**

**Contributors**

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REPORT  
ON THE  
COLLECTION OF  
AUSTRALIAN VERTEBRATA  
CONTAINED IN THE MUSEUM  
OF THE  
ASIATIC SOCIETY. CALCUTTA  
BY E. BLYTH

1848

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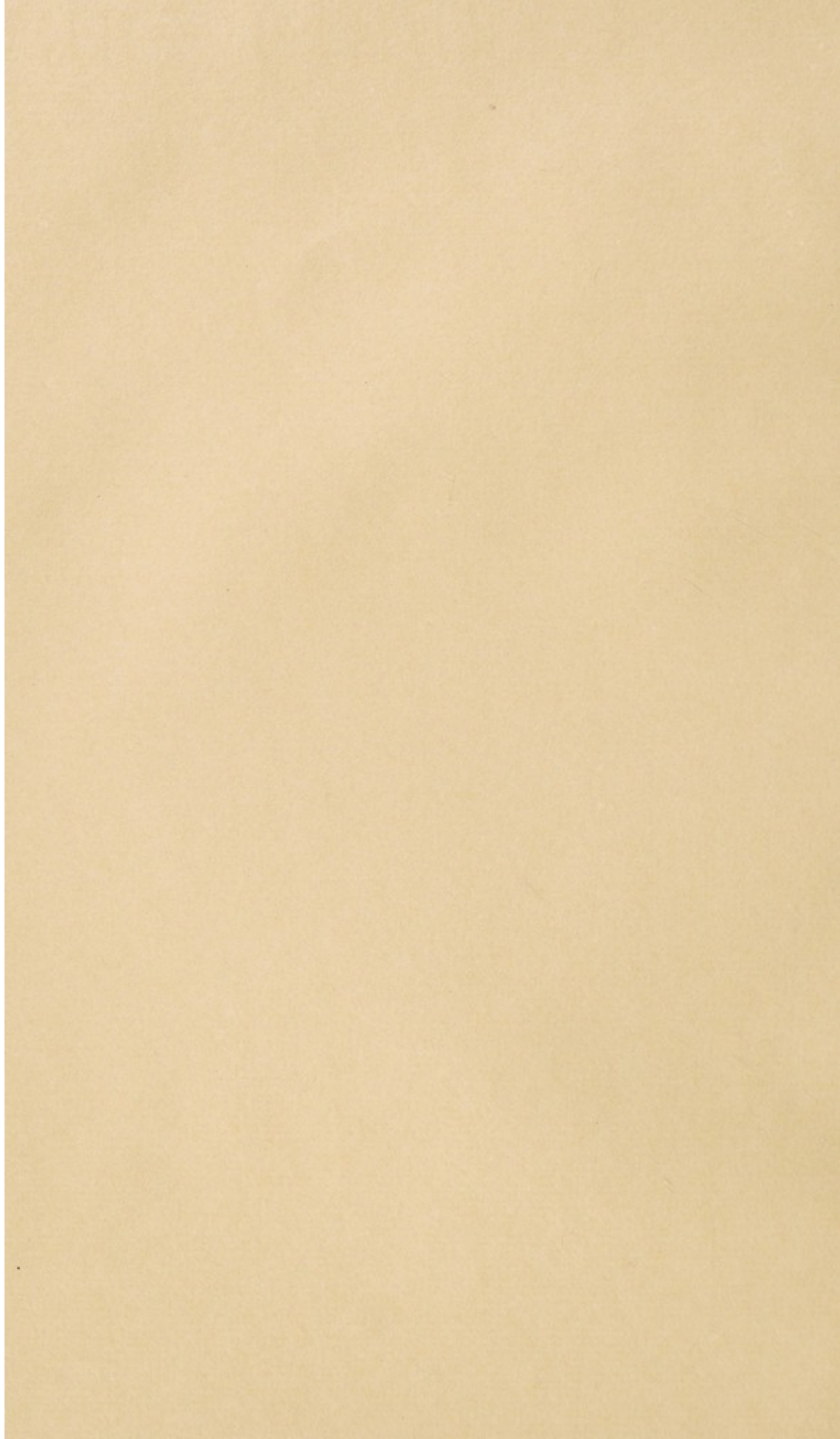


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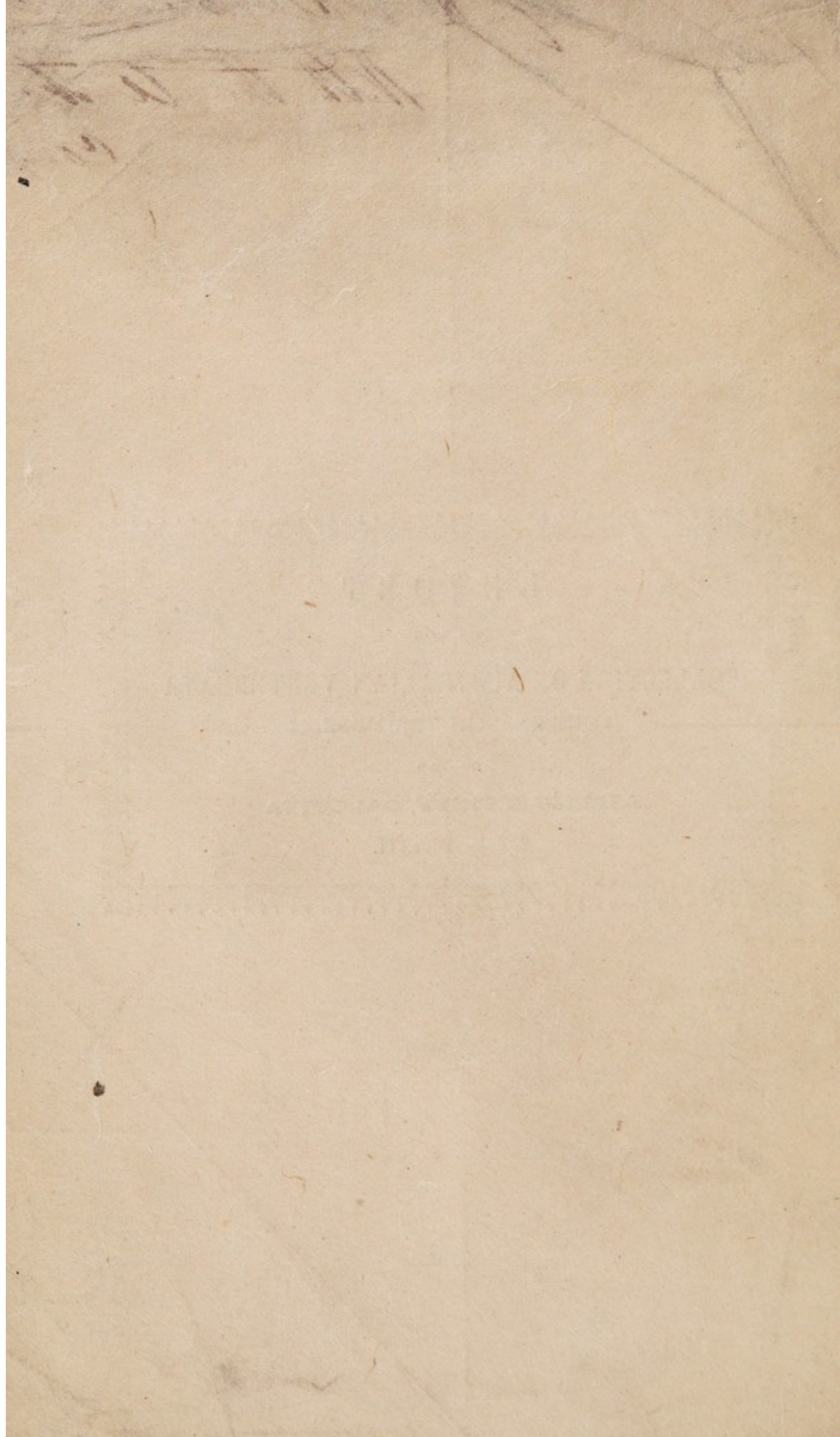






*G. R. Waterhouse Regd  
With the Author's  
Compliments*

REPORT  
ON THE  
COLLECTION OF AUSTRALIAN VERTEBRATA  
CONTAINED IN THE MUSEUM  
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ASIATIC SOCIETY, CALCUTTA.  
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*With the Authors  
Comp*

*Report of Curator, Zoological Department.\**

The donations received by the Society since its last meeting are as follow:—

1. Rustomjee Cowasjee, Esq. A dead female Ostrich, which has been mounted as a stuffed specimen, and the bones also are preserved. A fine skeleton of a male is likewise in the museum (IX, 727).

2. Baboo Rajendro Mullick. A living adult female Monkey, of a species nearly allied to *Macacus cynomolgus* and *M. carbonarius*, the habitat of which remains to be ascertained. This animal resembles *M. cynomolgus*, except that (as in *M. carbonarius*) there is no sign of crest upon the vertex, and it is particularly distinguished by its long and erect greyish beard and whiskers, surrounding the face, with the help of a considerable fringe of projecting hair upon the brows, causing the eyes to appear deep sunk and altogether imparting a very peculiar physiognomy. Also the living Squirrel, No. 14 a, described in XVI, 872.

3. The Raja Buddenath Roy. A dead female white English Turkey, equaling in size the males of the race bred in this country. The specimen has been mounted; and I have presented the Society with a fine male of the same breed, which has been prepared as a skeleton.†

\* For December, 1847. The Zoological Curator's Report for November, 1847, was printed with the 'Proceedings of the Society' for December of that year.

† The Turkies of Bengal, or more properly of Chittagong (where great numbers are bred), are of small size, with the pendulous appendage and wattles of the head and neck greatly developed. Degenerate in the extreme from the wild race of America, they are incapable of flight, and are singularly helpless and dependent. If suffered to drink at will, they will continue sipping till they distend their huge craws, and inconvenience themselves not a little by so doing. They are almost invariably black, which was doubtless the colour of their imported ancestors. But for the table they are excellent, and in great demand; and most of those brought hither from Chittagong are purchased by people of French descent, who fatten them at Chandernagore for the Calcutta market. In Calcutta, the reputed Chittagong Turkies are at a discount, for it is not generally known that the Chandernagore birds are received from Chittagong in the first instance: the management, however, of the newly imported Chittagong Turkies is little understood in Calcutta. Although this bird was necessarily unknown in the Old World before the discovery of the New, it is regarded by the Mussulmans of India as unclean, the tuft of bristles on its breast inducing them to suppose that it partakes of the nature of the Hog: moreover, the bare head and neck of the Turkey imparts a somewhat Vulturine appearance, which may well help this prejudice in the East; and it is worthy of remark, that some English Turkies which I possessed would constantly associate with a pair of the *Otogyps pondicerianus* that were secured each by a chain, themselves evidently assuming the degrading consanguinity.

4. Mr. Birch, of the Pilot Service. A variety of *Crustacea* procured at the Sandheads, comprising some interesting specimens, and among them some of a Crab allied to *Gonoplex* and *Macrophthalmus*, which is new to the Society's collection.

5. From the Barrackpore menagerie. A fine dead specimen of a Lory (*Eos ornata*).

6. Mr. W. Johnson. A young living Monkey, of the species *Macacus radiatus*.

7. Major Jenkins, Gowhatti. A perfect skin of a black Leopard; and skins of various species of *Anatidæ*.

8. Capt. E. F. Smith, 2nd Command 1st Assam Lt. Infantry, Sadyia. A skin of *Felis marmorata*, Martin, and one of *Sciurus bicolor*: Assam being a new locality for the former species; and a variety of *F. bengalensis* occurring there, which is apt to be mistaken for *F. marmorata*. This variety is the *F. Charltoni*, Gray, v. *Ogilbii*, Hodgson, and is connected by intermediate grades of variation with ordinarily marked individuals of *F. bengalensis*.\* As compared with Malacca examples of *F. marmorata*, the skin from Assam is more fulvous than usual, and the markings somewhat more nearly approximate those of *F. macrocelis* (v. *Diardii*); but the much smaller size of the feet at once distinguishes it from that species, whether old or young: the under-parts are also whiter than usual, spotted with fuscous-brown; and the dark markings of the tail are rusty-brownish instead of black. Nevertheless, the species is decidedly true *F. marmorata*.

9. Mr. Pinsent, of the 'Precursor' S. V. A living young female of *Gazella dorcas*, from Aden.

10. R. W. G. Frith, Esq. Some skins of Malacca birds, comprising the novelties described in my Report for September last (XVI, 1179). Also a young specimen of what I consider to be *Tupaia javanica*, Horsf., from Malacca, identical with *T. peguana*, Lesson, from Arracan and Tenasserim, and quite distinct from the ordinary *T. ferruginea*; Raffles, of the Malayan peninsula, which alone is included in Dr. Cantor's list.† Among the birds presented, are the *Alcedo nigricans* and *Batrachostomus affinis*; *Spizaetus nipalensis* (*niger*);

\* Some time ago, Major Jenkins favored us with living specimens of *F. bengalensis*, both of the ordinary marking and of the variety referred to, which have since died and are mounted in the Society's museum; and I have now received, from Mr. Elliot, for transmission to Barrackpore, a living specimen of his *Wagati* Cat of the Eastern Ghâts, termed *Leopardus Elliotti* by Mr. Gray; and I do not consider that this differs specifically: the markings of the individual being merely of a somewhat bolder pattern than usual, and more filled up with black than I remember to have seen previously.

† That a *Tupaia* exists in Central India, I was informed some time ago, I think by Capt. Tickell; and it has now been procured by Mr. Walter Elliot.



and *Buceros rhinoceros* with half-grown casque, *B. malayanus* (v. *bicolor*, v. *anthracinus*? Tem., with white supercilia), *B. nigristrois* (fæm.), and *B. carinatus* (v. *galeritus*? Tem., juv.); also *Philentoma velatum* (*Drymophila velata*, Tem., v. *Muscicapa pectoralis*, A. Hay), and two or three other small species.

11. Mr. E. Lindstedt. A specimen of the common *Megaderma lyra*,<sup>†</sup> procured in the Soonderbuns.

12. J. W. Laidlay, Esq. An exceedingly rusty-tinged specimen of *Presbytis entellus*, procured in the vicinity of Junghypore; also some skins of *Paradoxurus typus*, F. Cuv., and sundry other specimens, comprising the skin of a young *Pteromys* from Cherra Poonjee. This I recognise as of the large Assamese race mentioned in XVI, 866, 868; but would like to examine and compare more specimens of it, before asserting its peculiarities of colouring to be constant. It seems intermediate to the grizzled variety of *Pt. magnificus* and the *Pt. oral* of peninsular India. From the former (like *Pt. albiventer*, v. *innotatus*), it differs in the absence of the great pale patch upon the shoulders; the anterior toes and the entire hind-feet are black; the tail is grizzled like the back to near its tip, which is largely terminated with black, and less abruptly so than in the Himalayan races; the under-parts are strongly tinged with rufous-brown; and the general hue is darker than in the grizzled variety of *Pt. magnificus*, and more grizzled with pure white than in *Pt. albiventer*. Whether it would attain the size of the latter cannot be determined from the present young specimen, though I think I can safely aver that it does so; and, upon the whole, it more resembles *Pt. albiventer* than the grizzled variety of *Pt. magnificus*, although very closely allied to both of these named *Pteromydes*.<sup>†</sup>

E. BLYTH.

*Al. carinata*, Ellis, v. *schistacea*, *Megad.*  
 & other synonyms of species under  
 the *Acrididae*, best offence be given to  
 those of them! Thus, *Caland. ochracea*  
 group = *Fulva*, his *Felis mooraeensis* = *Heumina*

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1848.

+ I have since seen a large one, like  
 it in having much more white towards  
 the from Upper Assam.



# R E P O R T

ON THE

## COLLECTION OF AUSTRALIAN VERTEBRATA,

CONTAINED IN THE MUSEUM

OF THE

### ASIATIC SOCIETY, CALCUTTA.\*

My supplementary exhibition for this evening consists of the Society's present collection of Australian *Vertebrata*: which is comparatively rich in the bird department, and comprises a few interesting mammalia; but has little indeed to boast of in the classes of reptiles and fishes. We have likewise a tolerable series of *testacea* from that country, and a few insects from the Swan River settlement; which I am not at present prepared to report upon.

#### MAMMALIA.

Subclass *FÆTIPARA*. The terrene species of this grand series, indigenous to Australia, consist (so far as known) exclusively of *Cheiroptera* and the murine family of *Rodentia*:†—the native Dog—though somewhat peculiar in its features—having probably been introduced by Man. The aquatic species inhabit the surrounding ocean, and—unless the Duyong constitute an exception—are not peculiar to the Australian coasts.‡ The Society's Museum

\* As exhibited at the Meeting of the Society for October, 1847.

† The *Dipus Mitchelli*, Ogilby, is referred to *Hapalotis* by Mr. Gray; vide also *Proc. Zool. Soc.* 1840, p. 151.

‡ The Duyong of the northern coast of Australia has recently been distinguished from that of the Malayan seas, by Prof. Owen; vide appendix to Jukes's "Narrative of the surveying Voyage of H. M. S. 'Fly.'" According to Mr. Gray, however, the Crocodile of the Victoria River of Stokes is identical with one of the two Gangetic species—*Cr. palustris*, Lesson. Both the Gangetic species have been received by the Society from Java; and Crocodiles are known to abound in Timor, from which island they may well have passed to Australia. Gov. Grey met with them in the N. W. The only marine mammalia of the Australian seas hitherto determined, that I am aware of, besides the Duyong—*Halicore australis*, Owen, are one Seal—*Otaria Peronii*, and but two Cetals—*Delphinorhynchus permattensis* and *Balæna antipodaram*; but the number of these will doubtless be much increased. Capt. King remarks that the coasts of New South Wales, and the north-western side of New Holland, abound in Cetaceous animals. Vide his Appendix, p. 415.



contains five species, three of *Vespertilionidæ* and two of *Muridæ*; of which the first four have been presented by the Directors of the Sydney Institution.

*Pteropus poliocephalus*, Tem. This seems only to differ from the common Indian and Malayan *Pt. edulis* in the colour of its head.

*Nyctophilus Geoffroyi*, Leach.

*Scotophilus* (v. *Nycticejus*) *Gouldii*, Gray.

*Mus Gouldii*, Waterhouse : *M. Greyi*, Gray.

*Hydromys chrysogaster*, Geoffroy : also *H. leucogaster*, Geoff., and *H. fulvigaster*, Jourdain : two specimens, from Port Philip; presented by Mr. Benson.\*

Subclass *EMBRYOPARA*. The determination of the species of this subclass is now rendered easy, by the publication of the first volume of Mr. Waterhouse's excellent 'Natural History of the Mammalia;' previously to receiving which, however, all the following species were correctly ascertained.

Order *Marsupiatæ* : fam. *Dasyuridæ*.

*Thylacinus cynocephalus*, (Harris) : *Th. Harrisii*, Tem. Two skulls (apparently of adult male and female, judging from their relative size, and a remarkable difference to be noticed in the sequel); most of the limb-bones of the individual to which the larger skull belonged; and part of its skin, as recorded in X, 661. These have been derived from the stuffed specimen formerly in the Museum, as noticed in II, 97; which having become so much decayed (from not being properly prepared with poison) as to be deemed useless in that form of preparation, was destroyed, and portions only of it retained, as noticed in V, 250. This specimen was brought from Van Dieman's Land by Dr. F. Henderson, and is described in the 'Gleanings of Science,' III, 175, and further noticed in p. 412. Dr. Pearson mentions it to have been presented to the Society by Dr. H., in IX, 524; and there also first mentions the second skull, which was probably among the "large variety of objects of Natural History, collected by Mr. W. Cracroft during his residence in New South Wales and Van Dieman's Land," and by him presented to the Society, as recorded in VI, 79. This smaller skull is nearly perfect in its outlines and dentition (the outermost left superior incisor being alone wanting, and one præ-molar broken, from injuries received during life); but the cranial portion of the skull is much fractured, and pieces of it are deficient: while the larger skull is defective in much of the back part of the head. In the latter (or presumed male), there are but four inferior incisors; one pair having been displaced by the development of the canines; while the other

\* I am not aware of this gentleman's initials; but he is nephew to Mr. Cuming, who collected so largely in the Philippine Islands, &c. The Society is indebted to him for a handsome donation of Port Philip specimens.

*Tr. porphyrocephalus*, (Dietrichsen), *B. A.* pt. I. Specimen received from the Sydney Institution.

*Tr. coccinnus*, (Shaw), *B. A.* pt. XIII. Two specimens, presented by Mr. Benson.

*Tr. pusillus*, (Lath.), *B. A.* pt. XIII. Three specimens, two presented by Mr. Cracroft, the other by Lord A. Hay.\*

Order *Raptores*. Fam. *Falconidæ*.

*Falco melanogenys*, Gould, *B. A.* pt. V. Female, from Port Philip; presented by Mr. Benson. This fine species approaches the 'Shahin' (*F. peregrinator*, Sundevall,) of India, as much as it does the Peregrine, though its size is that of the latter or superior to that of the former species.

*Tinnunculus cenchroides*, (Vigors and Horsfield), *B. A.* pt. X. Young male: Sydney Institution.

*Astur Novæ Hollandiæ*, (Latham), var. *albus*, *B. A.* pt. XII. Female, from the Sydney Institution.

*Ninox boobook*, (Latham), *B. A.* pt. XVIII. Specimen from the Sydney Institution. This species is referred to *Athene* by Mr. Gould, but it is a typical example of Mr. Hodgson's genus *Ninox*, founded on *Strix scutulata*, Raffles (v. *hirsuta*, Tem., &c.); and to the same group, which appears to me

\* This nectar-feeding genus belongs to the *Lory* group of highly frugivorous Parrots, and is exemplified in the Moluccas by *Tr. hæmatodus*, (L.), which is nearly allied to *Tr. Novæ Hollandiæ*, and also to the *Eos ornata* of the oriental archipelago; while other species of *Trichoglossus*, as *Tr. concinnus* and *Tr. pusillus*, approximate the Loricules of India and the eastern islands—*Loriculus*, nobis, founded on *Psittacus pumilus*, Scopoli, v. *galgulus*, Shaw,—*Psittaculus vernalis*, Swainson,—and *Ps. rubrifrons*, (Vigors). These latter are altogether distinct from the seed-eating type (*Agrapornis*?) exemplified by *Ps. canus*, Shaw, of the Mauritius, &c., which is allied to my *Psittinus* (founded on *Ps. malaccensis*, Lath., but of which a more characteristic species exists in *Ps. macrorhynchos*, Gm., the female of which is *Ps. sumatranus*, Raffles; and as this is the type of *Tanygnathus*, Wagler, my name *Psittinus* must yield precedence;) and to *Palæornis*, malgré the difference in shape of tail. The *Trichoglossi* might be exclusively styled 'Lorikeets': the so called 'Lories' of Australia (*Aprosmictus*) belong to another and seed-eating division; as does also *Eclectus*, the species of which are true granivorous Parrots, that prefer farinaceous seeds to any other food, and only touch fruit occasionally, when both are constantly before them. The manners of the *Eclecti* are also altogether different from those of the Lories. In Calcutta, *Eclectus polychoros*, (Scopoli, the 'Heeramán') and *Ecl. grandis*, (Gm., the Lálmán), are very commonly to be purchased of the bird-dealers, also several species of true Lory (*Lorius* and *Eos*), *Trichoglossus hæmatodus*, and *Loriculus vernalis*, with sometimes *L. pumilus*, and rarely *Tanygnathus macrorhynchos* and *T. malaccensis*; all of which species I have had opportunities of studying alive. The true Lories are fond of eating soft maggots.

to be well distinguished from *Athene*, should also be referred *Ath. maculata*, (V. and H.), Gould, and *Ath. connivens*, (Lath.), Gould.

*Strix personata*, Vigors, *B. A.* pt. XIX. Specimen purchased.

Order *Insessores*. Fam. *Halcyonidæ*.

*Todiramphus sacer*, (Gm.): *Halcyon sanctus*, Vig. and Horsf., Gould, *B. A.* pt. I. Two specimens, from the Sydney Institution; three others (one of them in immature garb), from Pt. Philip, presented by Mr. Benson.\*

*Alcyon azurea*, (Lath.), *B. A.* pt. XIX. Specimen received from the Sydney Institution. To judge from Mr. Gould's figure of *A. pusilla*, (Tem.), the latter would seem to approximate true *Ceyx* in form as well as in its diminutive size.

Fam. *Meropidæ*.

*Merops ornatus*, Lath., *B. A.* pt. VII: *M. melanurus*, Vig. and Horsf. A pair, received from the Sydney Institution.

Fam. *Coracidæ*.

*Eurystomus pacificus*, (Lath.): *Eu. australis*, Swainson, Gould, *B. A.* pt. XII. A pair, from the Sydney Institution.

Fam. *Cuculidæ*.

*Cuculus inornatus*, Vigors and Horsfield, *B. A.* pt. XXV. Two specimens, from the Sydney Institution.

*C. cineraceus*, Vigors and Horsf., *B. A.* pt. XXIX; Jardine and Selby's 'Illustrations of Ornithology,' pt. LXVII. Two specimens, from the Sydney Institution: an example of the young, presented by Mr. Benson.

*Chrysococcyx lucidus*, (Gm.): *Cuculus metallicus*, Vigors and Horsfield; *B. A.* pt. XXIX. A pair, from the Sydney Museum; another, presented by H. E. Strickland, Esq.

*Eudynamys australis*, Swainson: "*Eu. orientalis* apud Vigors and Horsfield; *Cuculus cyanocephalus*, Latham, Vieillot (a name, however, which can scarcely be adopted). Two males, and a female, purchased.

*Centropus phasianinus*, (Latham), *B. A.* pt. XXIX. Adult and young, purchased. There is no sexual difference of colouring.

\* The group *Todiramphus*, Lesson, appears to me to be a well defined division; comprising the Australian species referred to *Halcyon*, as *T. sacer*, *T. McLeayi*, *T. pyrrhopygia*, *T. incinctus*,—*T. cinnamominus* and *T. vagans*, (Lesson,) of New Zealand,—*T. saurophaga*, (Gould), of New Guinea,—*T. collaris*, (Scopoli), of the Malay countries—extending up the eastern coast of the Bay of Bengal as far as the Soonderbuns,—*T. occipitalis*, nobis, of the Nicobars, and *T. varius*, (Eyton), of Malacca; which last alone is somewhat aberrant, and approximates the *Halcyon atricapillus*. Among other distinctions, all the species of true *Halcyon* known to me have a coral-red bill; while in all the *Todiramphi* the bill is black above, with more or less whitish or bright yellow below.

Fam. *Caprimulgidae*.

*Podargus strigoides*, (Lath.): *P. humeralis*, Vigors and Horsfield, Gould, B. A. pt. I. Specimen from Port Philip, presented by Mr. Benson.

*Ægotheles Novæ Hollandiæ*, (Lath.), B. A. pt. I. Specimen purchased.

Fam. *Gymnorhinidae*.

*Strepera graculina*, (White), B. A. pt. XV. Two specimens, from Port Philip (!); presented by Mr. Benson.

*Gymnorhina leuconota*, Gould, B. A. pt. XVII. Adult and young, from Port Philip; presented by Mr. Benson.

*G. organicum*, Gould, B. A. pt. XXVII. Two specimens, presented by Mr. Cracroft.

*G. tibicen*, (Lath.), B. A. pt. XVII. Specimen purchased.

*Cracticus nigrogularis*, Gould, B. A. pt. XXII. Specimen purchased.

*Cr. torquatus*, (Lath.): *Vanga destructor*, Tem. Two specimens, adult male, and young; presented by the Sydney Institution and Mr. Benson.

Fam. *Paradiseidae*: subfam. *Chlamyderinæ*.

*Ptilonorhynchus holosericus*, (Tem.), B. A. pt. IV. Male and female (or young); Sydney Institution: two females (or young), purchased.

*Pt. Smithii*, Vigors and Horsfield, B. A. pt. XXI. Specimen from the Sydney Institution; another, purchased.

Subfam. *Paradiseinæ*.

*Sericulus chrysocephalus*, (Lewin), B. A. pt. XXVI. Male and female, from the Sydney Institution: another male, female, and young male; purchased.

Subfam. *Epimachinæ*?

*Ptiloris paradiseus*, Swainson, B. A. pt. XXVII. Male, presented by Mr. Cracroft; female, purchased. N. B. This genus is approximated to *Climacteris* by Mr. Gould.

*Corcorax leucopterus*, (Tem.), B. A. pt. XXIV. Specimen presented by Mr. Benson.

Subfam. ———?

*Grallina picata*, (Lath.): *Gr. australis*, (Oppel), Gould, B. A. pt. XI. Male (now in bad order), presented by Mr. Cracroft; female, received from the Sydney Institution.

Fam. *Fringillidae*: subfam. *Estreldinæ*.

*Amadina Lathamii*, (V. and H.), B. A. pt. XIII.\* Specimen from the Sydney Institution; another, presented by Lord Arthur Hay.

\* This should be a typical *Amadina*, Swainson; for that systematist remarks—"The most perfect example we have yet seen of this modification is the beautiful *Amadina Lathamii* of New Holland." (Nat. Libr., 'Birds of W. Africa, Art. *Am. fasciata*, Gm.) But it is merely a thick-billed *Estrela*, Swainson; and the Indian and Malayan species

*Estrela bella*, (Latham), *B. A.* pt. XVIII. Two specimens (now in bad condition), presented by Mr. Cracroft.

*Estr. temporalis*, (Lath.), *B. A.* pt. VI. Two specimens, from the Sydney Institution: another, presented by Lord A. Hay.

Fam. ———?

*Pardalotus punctatus*, (Lath.), *B. A.* pt. XV. Four specimens, presented by Mr. Benson, and purchased.

*P. striatus*, (Lath.), *B. A.* pt. XV. Three specimens, presented by Mr. Benson.

Fam. *Paridæ*.

*Falcunculus frontatus*, (Lath.), *B. A.* pt. V. Pair, presented by Mr. Benson.

*Oreoica cristata*, (Lewin): *O. gutturalis*, (V. and H.), Gould, *B. A.* pt. XII: a *Parus* apud Strickland, but the dissimilarity of the sexes is rather at variance with this arrangement. Male; Sydney Institution.

Fam. *Certhiadæ*.

*Sittella chrysoptera*, (Lath.), *B. A.* pt. XIV. Two specimens (now in bad condition); presented by Mr. Cracroft.

*Climacteris scandens*, Tem., *B. A.* pt. IV. Two specimens, presented by Mr. Benson.

*Cl. leucophæa*, (Lath.): *Cl. picumnus*, Tem., Gould, *B. A.* pt. IV. Two specimens, presented by Mr. Benson.

Fam. *Motacillidæ*.

*Anthus australis*, Vieillot, also Vigors and Horsfield, *B. A.* pt. XXVII. Vide *J. A. S.* XVI, p. 434. Specimen from the Sydney Institution.

Fam. *Myiotheridæ*.

*Brachyurus strepitans*, (Tem.), *B. A.* pt. VI. Specimen purchased.

Fam. *Laniadæ*? (Allied to *Tephrodornis*?)

commonly referred to *Amadina*, are more akin to *Donacola* of Gould. *Poëphila* of the latter seems again to be identical as a group with *Erythrura*, Sw., as founded upon *Fringilla prasina*, Sparrman.—The origin of the name *Amadina* is curious. It is obviously founded on the common English name *Amaduvat*, applied to the *Estrela amandava*, (L.) And this derives from the city of Ahmedabad in Guzerat! The curious plain-spoken old traveller "John Fryer, M. D., Cantabrig.," remarks (in his 'New Account of East India and Persia,' 1698, p. 116), among other curiosities brought to Surat—"From Amidivad small birds, who besides that they are spotted with white and red no bigger than measles, the principal chorister beginning, the rest in concert, fifty in a cage, make an admirable chorus." *Lonchura* of Sykes should therefore stand for the Indian species referred to *Amadina*; and should this be forestalled, *Munia* of Hodgson. The "Amidivad" birds of Dr. Fryer are typical *Estrelæ*, Sw.

*Colluricincla harmonica*, (Lath.), B. A. pt. XXIII. Specimen from the Sydney Institution.

*C. Selbii* (?), Gould? *C. Selbii* inhabits Van Dieman's Land. I have no description of it. Rather larger than the preceding species, the wing measuring  $5\frac{1}{4}$  in., the bill to forehead 1 in., and the tarse  $1\frac{1}{8}$  in.; the colours similar, but purer; and the feathers of the under-parts can scarcely be termed dark-shafted. The orbital plumelets are not whitish, but concolorous with the rest; and the bill is black. From Port Philip, presented by Mr. Benson.

Fam. *Merulidæ*. Subfam. *Saxicolinæ*.

*Pachycephala olivacea*, Vigors and Horsfield, B. A. pt. XXII: *Timixos meruloides*, nobis, XI, 195. Specimen presented by Mr. Cracroft; another, purchased.

*P. pectoralis*, (Lath.): *P. gutturalis*, Vig. and Horsf. Male and female, presented by Mr. Benson; another male, purchased.

*P. rufiventris*, (Lath.): *P. pectoralis*, Vigors and Horsfield, Gould, B. A. pt. IV. Two males; Mr. Benson.

*Eopsaltria australis*, (Lath.), B. A. pt. XIII. Male, presented by Lord A. Hay; another (retaining many of its nestling feathers), Mr. Cracroft.

*Petroica phænicea*, Gould, B. A. pt. VIII. Male, Sydney Institution: another, purchased.

*P. multicolor*, (Gmelin), B. A. pt. VIII. Male, Sydney Institution: another, Mr. Cracroft.

*Erythrodryas rosea*, Gould, B. A. pt. VIII. Pair, from the Sydney Institution.

*Butalis*-like bird: probably a female, the male being brighter-coloured. Length of wing  $3\frac{1}{2}$  in., of tail  $2\frac{1}{2}$  in., and of tarse  $\frac{5}{8}$  in. Colour greyish-brown, paler below, and whitish on the throat, abdomen, and lower tail-coverts; the outermost tail-feather wholly white, the next nearly so, and the ante-penultimate having its tip and most of its outer web white; tertiaries margined whitish, and a slight whitish wing-band formed by the tips of the greater coverts: bill and feet dusky. Received from the Sydney Institution.

Subfam. *Praticolinæ*.

*Chthonicola sagittata*, (Lath.): *Anthus minimus*, Vigors and Horsfield, B. A. pt. XXVII. Two specimens, from Port Philip; Mr. Benson.

*Sericornis humilis*, Gould, B. A. pt. XIX. Two specimens, from Port Philip; Mr. Benson.

*Acanthiza chrysorrhæa*, (Quoy and Gaymard), B. A. pt. XVI. Specimen, from the Sydney Institution.

*A. lineata*, Gould, B. A. pt. XX. Specimen from Port Philip; Mr. Benson.

*A. nana*, Vigors and Horsfield, *B. A.* pt. XX. Specimen from the Sydney Institution.

*Ephthianura albifrons*, (Jardine and Selby), *B. A.* pt. VI. Male, from Port Philip; Mr. Benson.

Subfam. *Malurinæ*.

*Malurus cyaneus*, (Lath.), *B. A.* pt. III. Two males, presented by Mr. Benson: female, Lord A. Hay.

*M. splendens*, (Quoy and Gaymard), *B. A.* pt. III. Two males, from Van Dieman's Land (!); presented by C. Huffnagle, Esq.

*Stipiturus malachurus*, (Lath.), *B. A.* pt. III. Male, from V. D. Land; C. Huffnagle, Esq.: another, from Port Philip; Mr. Benson: female (in bad condition); Mr. Cracroft.

Subfam. *Cinclorhamphinæ*.

*Cinclorhamphus cantillans*, Gould, *B. A.* pt. XXVIII. Male, from the Sydney Institution. This specimen has the lores and throat sooty-black, with deciduary (?) whitish tips to some of the feathers; and there are some sooty-brown feathers on the breast, like those which constitute the abdominal patch. Length of wing  $4\frac{1}{2}$  in.

*C. rufescens*, (Vigors and Horsfield), *B. A.* pt. XXVI. Two specimens, presented by the Sydney Institution and Mr. Benson.\*

*Cinclosoma punctatum*, (Lath.), *B. A.* pt. I. Specimen (in bad order); Mr. Cracroft.

Subfam. ———?

*Pomatorhinus trivirgatus*, Tem., Jardine and Selby's 'Illustrations of Ornithology,' pl. XLIX. Specimen, from the Sydney Institution. This species is nearly allied to *P. rubeculus*, Gould, *B. A.* pt. XVI; which, like it, may be presumed to exhibit the remarkable difference in the proportion of the primaries from the various Asiatic species, noticed in the work cited; but to judge from Mr. Gould's figure of *P. superciliosus*, Vig. and Horsf., *B. A.* pt. XVI, this difference does not characterize apart the other Australian species from their Asiatic affines. I know of no Asiatic species with the white upon the tail-feathers which occurs upon all (?) of the Australian; but

\* This species is intermediate in its characters to the last, and to the nearly allied *Megalurus palustris*, Horsfield, of Bengal and Java; insomuch that it ranges as well with the one as with the other. In *C. cruralis*, the three first primaries are equal, the fourth being somewhat shorter: in *C. rufescens*, the first is but two-fifths of the length of the second, which is a little shorter than the third, fourth, and fifth: and in *M. palustris* the first is three-fifths of the length of the second, which is considerably shorter than the three next, which are even and longest. In *C. rufescens*, however, the disparity of size in the sexes is much less than in either *C. cruralis* or *M. palustris*, or in the *Sphenura striata* of India, which in many of its characters approximates the *Megalurus*.

not upon *P. Isidorei*, Drapiez, of New Guinea, according to the description in the *Dict. Class.*, which approximates it to those of Asia.

Fam. *Menuridæ*?

*Psophodes crepitans*, (Lath.), *B. A.* pt. III. Specimen from the Sydney Institution.

*Orthonyx spinicauda*, Tem. Specimen from the Sydney Institution.

Fam. *Ceblephyridæ*.

*Grauculus melanops*, (Lath.), *B. A.* pt. XIX. Two specimens, from the Sydney Institution: two others, presented by Mr. Benson. These illustrate the variation of plumage to which this species is subject.

*Gr. mentalis*, Vigors and Horsfield. Two specimens, from the Sydney Institution.

*Lalage humeralis*, (Gould), *P. Z. S.* 1837, p. 143. Specimen, from the Sydney Institution. This species differs from the nearly allied *L. orientalis* of the Malay countries, in the absence of the white supercilium and lores, and in having longer wings and tail, the relative proportion of the primaries likewise differing.

Fam. *Tchitreadæ*.

*Monarcha carinata*, Swainson, *B. A.* pt. XXV. Two specimens; presented by Lord A. Hay, and by the Sydney Institution.

*Seisura inquieta*, Lath.: *S. volitans* apud Vigors and Horsfield, and *Nat. Libr.*, 'Flycatchers,' pl. XII: nec *S. volitans*, (Lath.), apud G. R. Gray. Specimens from Port Philip, presented by Mr. Benson.

*Myiagra plumbea*, Vig. and Horsf., *B. A.* pt. XXIII: *Muscicapa leucogastra*, nobis, XIII, 336,—the male; and *M. rubecula*, fœm., nobis, *ibid.*,—the female, which is also *Todus rubecula*, Lath., and *Myiagra rubeculoides*, Vigors and Horsfield. Two males and two females, presented by the Sydney Institution and Mr. Benson.

*M. platyrostris* (?), Gould, mentioned in the Appendix to Stokes's narrative.\* *Muscicapa rubecula*, nobis, XIII, 336; and probably *Platyrrhynchus ruficollis*, Vieillot. Differs from the female of the preceding species in its larger size, broader bill, the more nigrescent colouring of the head, and the deeper rufous of the throat and breast. Length of wing  $3\frac{1}{2}$  in., and of tail  $3\frac{1}{4}$  in. Specimen presented by Mr. Cracroft.

*Rhipidura albiscapa*, Gould, *B. A.* pt. I. Specimen from the Sydney Institution. This bird is perfectly congeneric with *Chelidorhynæ*, Hodgson, as distinguished from *Leucocerca*, Swainson.

\* Is this distinct from *M. latirostris*, Gould, *P. Z. S.* 1840, p. 172, also from the N. W. coast? For the Society's bird does not at all correspond to the description of *M. latirostris*.

Fam. *Hirundinidæ*.

*Hirundo neoxena*, Gould, B. A. pt. IX. Specimen from the Sydney Institution.

*H. arborea*, (Gould), B. A. pt. IX: *H. pyrrhonota*, Lath., and V. and H. Ditto do.

Fam. *Artamidæ*.

*Artamus superciliosus*, Gould, B. A. pt. VI. Three specimens, from Port Philip; Mr. Benson.

*A. sordidus*, (Lath.), B. A. pt. VI. Specimen presented by Mr. Cracroft.

*A. leucopygialis*, Gould, B. A. pt. VI. Ditto do.

Fam. *Oriolidæ*.

*Oriolus viridis*, (Lath.), B. A. pt. XXI. Three specimens, from the Sydney Institution and Mr. Benson.

Fam. *Meliphagidæ*. Div. 1, with short bills.

*Sphecotheres viridis*, Vieillot; J. and S., Ill. Orn. pl. LXXIX.: *Turdus maxillaris* (?), Lath. Two specimens, from the Sydney Institution..

*Manorhina garrula*, (Lath.), B. A. pt. XV. Two specimens, from the Sydney Institution and Mr. Benson.

*M. obscura*, Gould, B. A. pt. XV. Specimen presented by Willis Earle, Esq.

*M. melanophrys*, (Lath.), B. A. pt. XXII. Specimen from the Sydney Institution.

*Melithreptus melanocephalus*, Gould, B. A. pt. XIX: *Hematops atricapilla* of Jardine and Selby, nec *Certhia atricapilla*, Lath. Two specimens, presented by Mr. Cracroft and Lord A. Hay.

*M. lunulatus*, (Shaw.) Specimen from the Sydney Institution: another adult, and two young specimens, presented by Mr. Benson.

*Zosterops cerulescens*, (Lath.): *Z. dorsalis*, Vig. and Horsf., Gould, B. A. pt. XI. Two specimens, from the Sydney Institution and Mr. Cracroft.

## Div. 2. With bills of medium length.

*Entomyza cyanotis*, (Lath.), B. A. pt. II. Two specimens, from the Sydney Institution.

*Tropidorhynchus corniculatus*, (Lath.), B. A. pt. II. Three specimens, from the Sydney Institution and Mr. Benson.

*Anthochaera inauris*, Gould, B. A. pt. XVI. Two specimens (in bad condition); Mr. Cracroft.

*Anth. carunculata*, (Lath.), B. A. pt. XXVI. Two specimens, from the Sydney Institution.

*Anth. mellivora*, Vig. and Horsf., B. A. pt. II. Two specimens, presented by Mr. Benson.

*Acanthogenys rufogularis*, Gould, *B. A.* pt. XVI. Specimen presented by Mr. Benson.

*Meliphaga phrygia*, (Lath.), G. R. Gray, *B. A.* pt. XII. Three specimens, from the Sydney Institution, Lord A. Hay, and Mr. Cracroft.

*Ptilotis flavigula*, (Gmelin). Specimen presented by Mr. Cracroft.

*Pt. leucotis*, (Lath.), *B. A.* pt. XXV. Two specimens, from Lord A. Hay, and Mr. Benson.

*Pt. chrysops*, (Lath.), *B. A.* pt. XXII. Two specimens, from the Sydney Institution.

*Pt. penicillatus*, Gould, *B. A.* pt. XVIII. Specimen presented by Mr. Benson.

*Pt. fuscus*, Gould, *B. A.* pt. IV. Ditto do.

Div. 3. With more elongated bills.

*Meliornis Novæ Hollandiæ*, (Lath.), *B. A.* pt. X. Two specimens, from the Australian Institution.

*M. sericea*, Gould, *B. A.* pt. X. Two specimens, from Van Dieman's Land (!); presented by C. Hufnagle, Esq.: two others; Mr. Cracroft.

*M. australasiana*, (Shaw), *B. A.* pt. I. Two specimens, presented by Mr. Benson.

*Glyciphila fulvifrons*, (Vig. and Horsf.), *B. A.* pt. X. Specimen from the Sydney Institution.

*Acanthorhynchus tenuirostris*, (Lath.), *B. A.* pt. XI. Three specimens, presented by Lord A. Hay, Mr. Benson, and the Sydney Institution.

*A. superciliosus*, Gould, *B. A.* pt. XI. Specimen from Van Dieman's Land (!), presented by C. Hufnagle, Esq.

*Myzomela dibapha*, (Lath.); *B. A.* pt. XI. Two specimens, from the Sydney Institution.

Fam. *Nectariniidæ*: subfam. *Dicæinæ*.

*Myzanthæ hirundinacea*, (Lath.), *B. A.* pt. V. Specimen presented by Lord A. Hay. This species is nearly allied to *M. ignipectus*, Hodgson, of Nepal and Bootan.

Order *Gemitores*.

Fam. *Columbidæ*: subfam. *Treroninæ*.

*Ptilinopus* (?) *magnificus*, (Tem.), *B. A.* pt. XXV. Two specimens, presented by the Sydney Institution: another, purchased.\*

*Pt. Swainsonii*, Gould, *B. A.* pt. VII. Two specimens, purchased.

\* This fine species, with *Columba zealandica*, Lath. (v. *C. princeps*, Vigors, figured in the 2nd series of Jardine and Selby's 'Illustrations of Ornithology'), is more nearly allied to *Ptilinopus* than *Carpophaga*, but should range as an intermediate division to these two genera.

Subfam. *Gourinæ*.

*Phaps picata*, (Lath.), *B. A.* pt. XIII. Specimen, from the Sydney Institution.

*Ph. chalcoptera*, (Lath.), *B. A.* pt. XIII. Pair, presented by Mr. Benson.

Subfam. *Columbinæ*.

*Lopholaimus antarcticus*, (Shaw), *B. A.* pt. V. Specimen purchased; another, presented by H. E. Strickland, Esq.

*Alsocomus leucomelas*, (Tem.), *B. A.* pt. XII. Two specimens, one presented by Mr. Strickland, the other purchased.\*

*Chalcophaps chrysochlora*, (Wagler), *B. A.* pt. XIII. Male and female, from the Sydney Institution; another female, purchased.

*Geopelia humeralis*, (Tem.), *B. A.* pt. XV. Specimen, from the Barrack-pore menagerie.

*G. tranquilla*, Gould, *B. A.* pt. XIX. Specimen from the Sydney Institution: another, purchased. These accord with Gould's figure of *G. tranquilla*: but I have several living specimens, and there is one now stuffed in the Society's collection, of a species closely allied, and which were brought to Calcutta in a Sydney vessel;† but which differs from *G. tranquilla* in having the barring of the breast carried much further down, and extending across the breast, (which is not the case in *G. striata* of the Malay countries,) and the abdomen and lower tail-coverts are pure white, without any rufescent tinge. This seems allied to *G. Maugei*, (Tem.), of the Eastern Islands: and, if hitherto undistinguished, may bear the name *G. albiventris*, nobis.

*Macropygia phasianella*, (Tem.), *B. A.* pt. XVII. Two specimens, from the Sydney Institution; another, purchased.

Order *Rasores*.

Fam. *Megapodiidæ*.

*Talegalla Lathamii*, Gray, *B. A.* pt. I. Specimen, from the Sydney Institution.

Fam. *Gallinidæ*.

*Synoicus australis*, (Lath.), *B. A.* pt. XII. Two specimens, from the Sydney Institution; another, purchased.

*Coturnix pectoralis*, Gould, *B. A.* pt. XXV. Three specimens, presented by Mr. Benson.

\* The species of this division are true *Columbinæ*, with 12 tail-feathers only, by which they may readily be distinguished from the *Carpophagæ*, which pertain strictly to the *Treroninæ*; but *Alsocomus*, Tickell, and *Lopholaimus*, are scarcely separable.

† Since writing the above, I have ascertained that it inhabits Timor, together with *Turtur bitorquatus*, and *Chalcophaps chrysochlora* of Australia.

*Turnix varius*, (Lath.), B. A. pt. XXI. Specimen presented by Mr. Benson: another (in bad condition); Mr. Cracroft.

*T. melanotus*, (Gould), B. A. pt. XXI. Injured specimen, presented by Mr. Cracroft.

Order *Cursores*.

Fam. *Casuaridæ*.

*Dromaius Novæ Hollandiæ*, (Lath.) The Emeu. Old female; and a young (almost full grown) male, reared in Calcutta; presented by C. Prinsep, Esq.: a skeleton of a large male, purchased (dead). Two specimens of the egg; from Mr. Cracroft's collection.

Order *Grallatores*.

Fam. *Ardeidæ*.

*Botaurus melanotus*, G. R. Gray, Appendix to Dr. Dieffenbach's 'New Zealand,' II, 196. Specimen presented by the Sydney Institution: another (more approximating *B. stellaris*, except on the sides of its neck); purchased.

*Nycticorax caledonicus*, (Lath.), B. A. pt. XXIV: probably *N. manillensis*, Vigors, P. Z. S. 1831, p. 98.\* Specimen (in bad condition), presented by Mr. Cracroft.

Fam. *Charadriadæ*.

*Lobivanellus lobatus*, (Lath.), B. A. pt. VII. Male (in bad condition); Mr. Cracroft: female, purchased.

*Sarciophorus pectoralis*, (Cuv.), B. A. pt. IX. Specimen in immature plumage, purchased.

*Erythrogonyx cinctus*, Gould, B. A. pt. III. Specimen presented by Lord A. Hay.

*Hiaticula nigrifrons*, (Cuv.), B. A. pt. XIX: *Charadrius russatus*, Jerdon. Specimen from the Sydney Institution.

Fam. *Scolopacidæ*.

*Tringa subarquata*, (L.) Specimen in winter dress, purchased; in no way distinguishable from the common Indian and European species, in corresponding garb.

Fam. *Recurvirostridæ*.

*Recurvirostra rubricollis*, Tem. Specimen (now in bad condition), presented by Mr. Cracroft.

Fam. *Rallidæ*.

*Porphyrio melanotus*, Tem. Specimen presented by H. E. Strickland, Esq. Hab. also New Zealand.

*Rallus* (?) *pectoralis*, Cuv., B. A. pt. XXIV. Specimen purchased.†

\* This is mentioned as distinct, however, in Mr. G. R. Gray's British Museum Catalogue.

† This is not a typical *Rallus*; but with *R. striatus*, L. (v. *gularis*, Horsf.), of India and the Malay countries, and various other species, it pertains to a group intermediate

Order *Natatores*.Fam. *Anatidæ*.

*Cygnus atratus*, (Lath.), *B. A.* pt. XX. Specimen (with head injured), presented by C. Hufnagle, Esq.

*Anas superciliosa*, Gm., *B. A.* pt. XIX. Specimen, from the Sydney Institution. Hab. also New Zealand.

*Biziura lobata*, (Shaw), *B. A.* pt. XVI. Male, from the Sydney Institution.

*Nettapus pulchellus*, Gould, *B. A.* pt. VI. Specimen purchased.

Fam. *Laridæ*.

*Larus pacificus*, (Lath.), *B. A.* pt. XXVIII. Specimen, in immature plumage; presented by Capt. Fox.

*Xema Novæ Hollandiæ*, (Shaw). Two specimens, from the Sydney Institution.

*Sylochelidon caspia*, (Pallas): *S. strenua*, Gould, *B. A.* pt. XXII. Specimen presented by H. E. Strickland, Esq.

Fam. *Pelicanidæ*.

*Phaëton phænicurus*, Gmelin. Specimen presented by L. C. Stewart, Esq.

Of various sea-fowl common to the Australian seas, and the rest of the southern hemisphere, as the *Procellariidæ* (Albatrosses and Petrels) in particular, and the Noddy Terns (*Anous*), the Society's Museum contains, of course, several species procured in different parts of the Southern Ocean. Such are

*Diomedea exulans*, Lin., *B. A.* pt. XIV.

*D. melanophrys*, Tem., *B. A.* pt. XIV. Adult and young.

*D. chlororhynchos*, Lath., *B. A.* pt. XV.

*D. fuliginosa*, Gm.

*Procellaria gigantea*, Gm. (vide VI, 709), in bad condition.\*

*Pr. (?) Cookii*, G. R. Gray, *B. A.* pt. XXV.

*Daption capensis*, Stephens, *B. A.* pt. XXIX. Two specimens mounted.

*Prion vittatus*, (Gm.), *B. A.* pt. XVI. Ditto do.

*Pr. (?) turtur*, (Forster), *B. A.* pt. XVI.

*Thalassidroma Wilsonii*, Bonap., *B. A.* pt. XXII. (In bad condition.)

*Pelicanoides urinatrix*, (Lath.), *B. A.* pt. XV. Specimen from Chili; purchased.†

to *Rallus* and *Porzana*. Indeed, it is hardly separable from the last. The present species, of several allied to it, appears to be that figured as the Philippine Rail, in Griffith's *An. Kingd.* VIII, 451; and it is doubtless the *R. philippensis* of the Appendix to King's narrative. It is even considered identical with *R. philippensis*, L., in Mr. G. R. Gray's British Museum Catalogue; but so, a page or two on, is the Indian *Porphyrion* with *P. smaragdinus*, Tem., erroneously termed *P. indicus* by Dr. Horsfield, whereas it is a conspicuously different species,—the *P. poliocephalus*, Latham.

\* The flight of this bird not a little resembles that of *Cypselus apus*, and many are generally seen in company.

† *Fulmarus glacialis*, A. Smith, may be added to this list of Petrels, if, as I suspect, it also inhabits the Australian seas.

*Anous stolidus*, (Lath.), B. A. pt. XXII. Two specimens. Also Indian examples of the species of *Anous* common to the India and Australian seas, to be noticed presently.

## CLASS REPTILIA.

Order *Sauria*. Fam. *Monitoridæ*.

*Monitor varius*, (Shaw) : *Varanus varius*, Dum. and Bibr., *Hist. Rept.* III, 491 ; *Hydrosaurus varius*, Gray. Specimen nearly 3 ft. long, presented by J. McClelland, Esq.

Fam. *Agamidæ*.

*Moloch horridus*, Gray, *Ann. Mag. N. H.*, April 1841. Two specimens, in spirit ; presented by J. McClelland, Esq.

Fam. *Scincidæ*.

*Cyclodus flavogularis*, Wagler : *C. Boddaërtii*, Dum. and Bibr., *Hist. Rept.* V, 752 : *C. gigas*, (Boddaërt) Gray. Two fine specimens, from Port Philip ; presented by Mr. Benson.

Order *Ophidia*.

*Coluber* ? Stuffed skin of a "Diamond Snake," with head imperfect ; about 7 ft. long, presented by Mr. Cracroft : the cast exuviae of another species, 7 ft. long ; purchased with an Australian collection of birds.

## CLASS PISCES.

Order *Chondropterygii* : fam. *Squalidæ*.

*Scyllium ocellatum*, Gm. ; pl. XXV, fig. 2, ante.

Order *Plectognathi*. Fam. *Balistidæ*.

*Aleuter Blochii* (?) : *Balistes monoceros* (?), Bloch, nec Linnæus. Presented by Mr. Cracroft.

From the foregoing catalogue, it may be seen that the Society's present collection of Australian *Vertebrata* consists of 29 (undoubtedly Australian) specimens of mammalia, appertaining to 20 species ;\* of 293 specimens of birds, referable to 163 species ;† of at most but 7 specimens of reptiles, of 5 species ; and 2 marine fishes only, believed to have been caught near the Australian coast. Nearly the whole of this collection is in excellent order, chiefly excepting the specimens presented by Mr. Cracroft in 1837, which were (with few exceptions) spoiled by exposure to the dust and weather prior to my taking charge of the museum ; and with some half-dozen exceptions only, the remainder of this collection has been accumulated during the six years of my incumbency,—no especial attention having been bestowed, on my part, upon the productions of that part of the world, more than upon those of other regions,—as opportunities occurred for enriching our museum. The handsome present received from the

\* This is not counting the skull only of a *Hypsiprymnus*.

† Such a dubious Australian species as *Platycercus pacificus* is not counted, nor the *Procellariidæ*, &c. mentioned at the end of the list of birds.

Australian Institution at Sydney, was sent in return for a collection of duplicate specimens of Indian species which I forwarded, in behalf of the Society, to the Sydney Museum; and Mr. Benson's collection, from Port Philip, was presented by that gentleman upon my representation to him that the great majority, if not all, of the species collected by him were sufficiently well known in England to render them far more acceptable to this Society than to Institutions already provided with them. All have proved to be described species, but which have supplied us with many desiderated types of form: and there are others which I have added by purchase. It remains to show the utility of such a collection, by adding some remarks on the relations of the Australian fauna with that of India.

As regards the mammalia, these relations are of course confined to those of the *Fœtiparous* or placental series, as no *Marsupialia* have been discovered nearer than in the Moluccas and Philippines, where species of the subgenus *Cuscus* represent the *Phalangers* of the Australian continent. Among the *Fœtipara*, the *Pteropus poliocephalus* of Australia is remarkable for being only distinguishable by the colour of its head from *Pt. edulis* of India and the Malay countries; and the beautiful *Hipposideros fulvus*, J. E. Gray, (v. *fulgens*, Elliot), of India—vide XIII, 489,—is rivalled in the intensity of its vivid colouring, resembling that of the S. American 'Cock of the rock' (*Rupicola aurantia*), by the Australian *Rhinolophus aurantius*, Gray. Another Australian 'Horse-shoe Bat' is the *Rh. mycrophyllus*, Gray. The genus *Dysopus* has its representatives in *Molossus australis*, Gray, and in *M. norfolcensis*, Gray, obtained hitherto only in Norfolk Island. The genus *Nycticejus* (vel *Scotophilus*, Leach, apud Gray), so very numerous in individuals in India and the Malay countries, has at least three described Australian constituents: and finally the *Nyctophilus Geoffroyi* of Australia finds its nearest known affine in *Barbastellus Daubentonii*, Bell, a European species, which Capt. Hutton has forwarded to the Society from Mussooree: at least I can trace no distinction of the Himalayan species, following descriptions and figures only; but actual comparison with a European specimen is necessary to establish satisfactorily its identity with the European *Barbastelle*. Of *Muridæ*, the described Australian species are fast becoming very numerous, among which are two or three only which have doubtless been introduced by the shipping, as *Mus setifer*, Horsf., from the Malay countries, and *M. musculus*, Lin. (v. *adelaidensis*, Gray, in Gov. Grey's Appendix), which with *M. decumanus* and *M. rattus*, must be looked for wherever vessels resort. Lastly, the Malayan *Halicore dugong* is represented on the northern coast of Australia by the recently discriminated *H. australis*, Owen.\*

\* Australia was long supposed to contain no indigenous placental mammal, unless the native Dog be regarded as an exception. The following hastily prepared list, however, will convey some idea of the number of *Vespertilionidæ* and *Muridæ* which have at present been ascertained.

The birds afford extensive materials for comparison: and there are many which are specifically identical in India, the Malay countries, and Australia. Such are—

*Cypselus pacificus*, (Lath.): *C. australis*, Gould, B. A. pt. IX. Common about Penang, but represented in India by the nearly allied *C. micropus*, nobis.

*Caprimulgus macrourus*, Horsf., B. A. pt. XVII. Common in Arracan, the Tenasserim provinces, Malayan peninsula, and Java; but represented in Northern India by the nearly allied *C. albonotatus*, Tickell, and in Southern India and Ceylon by the equally allied *C. mahrattensis*, Sykes; the former a larger species,

*Vespertilionidæ.*

*Pteropus poliocephalus*, Tem.

*Rhinolophus megaphyllus*, Gray.

„ *aurantius*, Gray.

*Nyctophilus Geoffroyi*, Leach.

*Scotophilus Gouldii*, Gray.

„ *australis* (also *Sc. morio*), Gray.

„ *pumilus*, Gray.

„ *Greyi*, Gray, (Br. Mus. Catal.)

*Molossus australis*, Gray.

„ *norfolcensis*, Gray.

*Muridæ.*

*Hapalotis albipes*, Licht.: *Conilurus destructor*, Ogilby; *Dipus Mitchellii*, Ogilby, apud Gray.

„ *hirsutus* (*Mus hirsutus*, Gould): *H. Gouldii*, Gray.

„ *longicaudatus*, Gould.

„ *murinus*, Gould.

„ *melanura*, Gould (Brit. Mus. Catal). Hab. unknown; but the genus is exclusively Australian, so far as hitherto observed.

*Mus fuscipes*, Waterhouse: *M. lutreola*, Gray.

„ *vellerosus*, Gray.

„ *Gouldii*, Waterhouse; *M. Greyi*, Gray.

„ *Novæ Hollandiæ*, Waterhouse.

„ *penicillatus*, Waterhouse.

„ *delicatulus*, Waterhouse.

„ *lineolatus*, Gould.

„ *gracilicauda*, Gould.

„ *albocinereus* Gould.

„ *fuscus*, Gray, (Brit. Mus. Catal.)

„ *australasiacus*, Gray, (Brit. Mus. Catal.)

„ (?) *platurus* Mitchell.

„ (?) *Hovellii*, Mitchell.

*Pseudomys australis*, Gray.

„ *Greyi*, Gray.

*Hydromys chrysogaster*, Geoff.

In New Zealand, the *Embryopara* are wanting, and the only known indigenous land mammalia are one Bat, *Mystacina tuberculata*, (Forster), Gray, vide Dieffenbach's

the latter a smaller one. I have never seen, however, the lower white band on the breast represented in Gould's figure : and it may be remarked that his specimens were obtained at Port Essington, where "moderately plentiful."

*Motacilla boarula*, Lin. Common to Europe, Asia, and the islands of the eastern seas, southward to Australia.

*Synoicus chinensis*, (Lath.), B. A. pt. XII. Inhabits India, China, and the Malay countries.

*Squatarola helvetica*, (Lin.) A specimen from Port Philip, in winter dress, entirely corresponds with the common European, Asiatic, and American bird.

*Charadrius virginicus*, Borkh. Undistinguishable from the common Golden Plover of South-eastern Asia and both Americas, but constantly differing from *Ch. pluvialis* of Europe and the adjacent parts of Asia and Africa in its smaller size. It likewise inhabits New Zealand.

*Hiaticula nigrifrons*, (Cuv.), B. A. pt. XIX. A solitary specimen obtained by Mr. Jerdon in S. India, and named by him *Charadrius russatus*.

*Streptilas interpres*, (L.) Of universal distribution, on all sea-coasts.

*Himantopus leucocephalus*, Gould, B. A. pt. IV. Much less common in India than the European *H. candidus*, but still far from rare. It predominates in the Malay countries.

*Glottis glottoides*, (Vigors), B. A. pt. XVI: true *Gl. canescens*, (Gm., v. *chloropus*), of Europe? Very common in India and the Malay countries.

*Gl. Horsfieldi*, (Sykes): true *Gl. totanus*, (L.)? *Totanus stagnatilis*, Bechst. ? Very common in India and the Malay countries.

*Gallinago australis*, (Lath.): *Scolopax stenura*, Tem. The common Malayan Snipe, and equally so in India with *G. scolapacinus*, Bonap., (v. *Sc. gallinago*, Lin.)

*Xenus cinereus*, (Gould): *Terekia javanica*, Bonap.

Appendix, p. 296, and one small-sized frugivorous Rat, which I believe has not yet been scientifically described,—these representing the only two families of *Fatipara* indigenous to Australia.

The native Dog of New Zealand is somewhat different from the Australian Dingo, and the natives have a tradition that it was brought, together with the taro plant (*Caladium esculentum*), by their ancestors when they first peopled the country.—Gov. Grey observed a second race of Dogs domesticated with the Australians, similar to the common breed of Timor (vide his Journal, I, 239): and he also twice came upon the foot-steps of "a large quadruped, with a divided hoof" (p. 242). The common Buffalo has now gone wild in the vicinity of Port Essington, where lately observed by Dr. Leichhardt and others; and European cattle in other districts.

For remarks on the distribution of the species of Australian mammalia, vide especially the first volume of Mr. Waterhouse's History of the class, and the review of this in the 'Annals and Magazine of Natural History,' XIX, 53. Mr. J. E. Gray had previously treated on this subject in the Appendix to Gov. Grey's narrative, II, 397.

(or presumed female), with smaller canines, has six inferior incisors. This fact, if general, does not appear to have been heretofore stated.

*Dasyurus ursinus*, (Harris,) Geoffroy; subgenus *Sarcophilus*, F. Cuv., v. *Diabolus*, Gray. A small adult specimen, with the fur in bad order; picked up in the public street by Dr. Pearson!\* The perfect skull taken out, and preserved in the Museum. This individual has an intermixture of whitish hairs on the shoulders and croup. Both this and the preceding species are peculiar to Van Dieman's Land.

*D. viverrinus*, (Shaw,) Geoffroy,—the black variety: *D. Maugei*, Geoffroy,—the brown variety. A small specimen of the former, from N. S. Wales; purchased: and two of the latter, formerly in the Macao Museum. Mr. Gould observed both varieties in the same litter of young; and the difference is not sexual. Inhabits N. S. Wales and Van Dieman's Land.

*Phascogale (Antechinus) flavipes*, Waterhouse. Specimen received from the Sydney Institution. Inhabits N. S. Wales and V. D. Land.

Fam. *Phalangistidæ*.

*Phalangista (Trichosurus) vulpina*, (Shaw,) Desmarest. Male, from Port Philip; presented by Mr. Benson: female, from N. S. Wales, purchased:

\* The number of valuable carcasses of animals that, in the course of every year, are wasted by being thrown into the river, from Calcutta and its environs, instead of being forwarded to the Society's Museum, to be prepared either as stuffed specimens, skeletons, or both not unfrequently, as the case may require, or which may be wanted for anatomical examination, is surprisingly considerable, and such waste of them is not a little vexatious to all who feel interested in the progress of our Zoological collections. Even if not wanted for our own Museum, such specimens are oftentimes extremely acceptable, to send in return for what the Society receives from other Institutions; and they would thus indirectly contribute to the enrichment of our own, by promoting the continuance of such intercourse. It matters not that an animal had died in bad order externally, so as to be unfit for being set up as a stuffed specimen; as its skeleton would still be available. The following are some instances of this inconsiderate waste that have chanced to come to my knowledge within the last twelvemonth or thereabouts; and many more have certainly occurred, more especially of animals belonging to native gentlemen, (some of whom are fond of visiting our collections, and might thus become efficient supporters of the Museum without cost to themselves).—A splendid male Ostrich, in perfect plumage. Two fine Cassowaries, ditto. A male *Bara Singha* Deer, also in fine order, shot by its proprietor for being vicious; as all Deer are during the period of the rutting excitement. A very fine male Nilghai. A large male Tiger. A *Kustoor* or Musk Deer (being the second that had been promised to me, whenever it died). A pair of English Swans. And Gazelles, Monkeys, Parrots, &c. &c., in no small number. There really appear to be few persons in Calcutta who seem conscious that a Museum of Natural History exists; though certainly as well located as need be, and open every day to the public.

and skull and limb-bones of a non-adult individual. Hab. also N. and W. Australia.

*Petaurus (Petaurista) taguanoides*, Desmarest. Fine dark specimen, white below, with whitish at base of tail; and imperfect skin of another, much grizzled on the sides, but no trace of grizzling along the middle of the back; from N. S. Wales, purchased: pale grey specimen, with whitish head and ears, and the greater portion of the tail also whitish; presented by J. Shave, Esq.

*P. (Belideus) australis*, (Shaw,) Waterhouse. Old specimen, bleached by exposure to the sun, and otherwise injured. From the dispersed Macao Museum. Hab. N. S. Wales.

*P. (B.) sciureus*, (Shaw.) Specimen much discoloured, and otherwise in bad order. From the Macao Museum. Inhabits N. S. Wales.

*P. (Acrobata) pygmæus*, (Shaw.) Fine specimen, received from the Sydney Institution. Inhabits N. S. Wales.

Fam. *Macropodidæ*.

*Macropus giganteus*, (Schreber,) Shaw; also *M. major*, Shaw. A young specimen, received from the Barrackpore menagerie: both skin and skeleton prepared.

*M. (Halmaturus) ruficollis*, (Desmarest,) var. *Bennettii*, Waterhouse. "Brush Kangaroo" of V. D. Land. Mounted skin and skeleton of a male; presented by C. Hufnagle, Esq.: and do. do. of a female, presented by H. T. Prinsep, Esq., VIII, 688.

*M. (H.) ualabatus*, Lesson and Garnot. Fine specimen of a male, received from the Sydney Institution. Inhabits N. S. Wales.

*M. (H.) thetidis*, F. Cuv. and Geoffroy. Ditto, do, do. There are also in the Museum two skulls of Kangaroos, of different species from either of the two first, but neither of them from adult animals; one being probably that of *M. ualabatus*, the other of a smaller and allied species: also the skull of a *Hypsiprymnus* (noticed in VII, 285), apparently that of *H. (Bettongia) penicillatus*, Gray: all these having probably been presented with Mr. Cracroft's collection.

#### Order *Monotremata*.

*Ornithorhynchus anatinus*, Shaw. Two specimens, well set up; presented by H. T. Prinsep, Esq.:\* also a specimen preserved in spirit.

*Echidna aculeata*, (Shaw.) Two specimens; one of them presented by Lieut. Vicary, VII, 465.

\* These have replaced the two presented respectively by Mr. E. K. Irwin, VI, 158, and Lieut. Vicary, VII, 465; which had been spoiled by exposure.

Here may be noticed the portions of a Whale skeleton presented by Mr. Swinton, as recorded in the 'Gleanings of Science,' II, 71. They consist of a nearly perfect skull, with the basal portion of each ramus of the lower jaw sawn off; a rib; an injured scapula; and 34 vertebræ. The species seems to agree with the *Rorqual du Cap* of Cuvier, *Oss. Foss.* VIII, 276, and *tab.* 227, *figs.* 1—4.\* We have also one ramus, and a portion of the other, of the lower jaw of a much larger species of Whale, which is not improbably the *Balæna antipodarum*, Gray, figured in the "Fauna of New Zealand" appended to Dr. Deiffenbach's narrative of his Travels and Observations in that country. Likewise the two scapulars and humeri, and two vertebræ, of probably the same species, presented by Lieut. Montrieu, of the Indian Navy, VII, 466.

#### AVES.

For the determination of species in this class, we have the important aid derivable from 29 numbers of Gould's (generally admirable) 'Birds of Australia,' the figures of which are referred to by citing the *parts* containing them, with the initials *B. A.* The nomenclature is, however, altered in some cases from that adopted at the time by Mr. Gould, in conformity with the rectifications indicated by Mr. G. R. Gray, Mr. H. E. Strickland, and Mr. Gould himself, in the 'Annals and Magazine of Natural History' for March and May, 1843. Some modern catalogues of Australian birds, which we shall find of much utility in the sequel, (as referring to various species not yet figured by Mr. Gould,) are given in the appendices to the published Journals of Gov. Grey, Capt. Eyre, Count Strezelecki, and Capt. Stokes, R. N.; whose exertions, with those of the associates of some of these gentlemen, and those likewise of Capt. King and others, to make known the Natural History of the extensive regions explored by them, are deserving of all praise and of more extensive imitation in this country.

Order *Scansores*. Fam. *Psittacidæ*.

*Calyptorhynchus funereus*, (Shaw), *B. A.* pt. XXIII. Two specimens: one from N. S. W., purchased; the other from Port Philip, presented by Mr. Benson.

*Callocephalon galeatum*, (Lath.), *B. A.* pt. XXVI. Male, presented by W. Cracroft, Esq.

*Cacatua galerita*, (Lath.), *B. A.* pt. X. From the Sydney Institution.

*Licmetis nasicus*, (Tem.), *B. A.* pt. XXVII. Sydney Institution.†

\* A *Megapteron* apud Gray, vide *Proc. Zool. Soc.*, June 1847, or *Ann. Mag. N. H.*, 1847, p. 282.

† The *Cacatua galerita* and *C. eos* are occasionally procured by the Calcutta bird-dealers; but much less numerously than the Molucca, Philippine, and Timor species, *C. cristata*, *C. sulphurea*, and rarely *C. philippinarum*.

*Aprosmictus scapulatus*, (Bechst.), B. A. pt. VIII. Male and female, from the Sydney Institution. Another male, presented (dead) by M. C. R. Bell; and a young male, purchased (dead).

*Platycercus Pennantii*, (Lath.), B. A. pt. XXVI. Male and female, from the Sydney Institution. Adult and young males, purchased.

*Pl. eximius*, (Shaw), B. A. pt. XXII. Three specimens, of several presented to the museum by Mr. Cracroft, Lord A. Hay, Mr. Benson, and others.

*Pl. flaveolus*, Gould, B. A. pt. IV. Specimen received from the Sydney Institution.

*Pl. flaviventris*, (Tem.), B. A. pt. XX. Two specimens (now in bad order); Mr. Cracroft.

*Pl. Barnardi*, Gould, B. A. pt. II. Two specimens, from the Sydney Institution and Mr. Benson.

*Pl. pacificus*, (Lath.) Two specimens; one presented by Mr. Cracroft, the other purchased. Both appear to have been caged birds, which had been taken to N. S. Wales from some part of Polynesia. They accord with the Tahiti race described by Latham.

*Psephotus pulcherrimus*, Gould, B. A. pt. XIX. Specimen presented by the Sydney Institution.

*Ps. hematonotus*, Gould, B. A. pt. XXII. Ditto ditto.

*Euphema pulchella*, (Shaw), B. A. pt. XIV. Two specimens; Mr. Cracroft.

*Eu. chrysostoma*, Wagler, B. A. pt. I. Specimen presented by Mr. Cracroft.

*Melopsittacus undulatus*, (Shaw), B. A. pt. I. Three specimens, purchased.

*Pezoporus, formosus*, (Lath.), B. A. pt. XVIII. Specimen presented by Mr. Cracroft; another, purchased.\*

*Polytelis Barrabandi*, (Swainson), B. A. pt. XVIII. Male, from the Sydney Institution.†

*Lathamus discolor*, (Shaw), B. A. pt. I. Two specimens; Mr. Cracroft.

*Trichoglossus Novæ Hollandiæ*, (Gm.): *Tr. Swainsonii*, Jardine and Selby; *Psittacus cyanogaster*, Shaw: B. A. pt. IX. Four specimens, of many presented to the Society by Mr. Cracroft and others.

*Tr. chlorolepidotus*, (Kuhl), B. A. pt. X. Two specimens, from the Sydney Institution; another, purchased.

\* All the above series, following the Cockatoos, appertain to the extensive group of granivorous Ground-Parrots, peculiar to Australia and the Southern Islands. Some of them, especially the first three, are often to be procured alive at the shops of the Calcutta bird-dealers.

† This pertains to the same immediately superior division as our common Indian Parrakeets—*Palæornis*, Vigors.

*Tringa subarquata*, (Lin.) Of very general diffusion.

*Falcinellus igneus*, (Gm.), B. A. pt. XVII. Old world generally.

*Mycteria australis*, Lath., B. A. XXVIII. India and Australia.

*Sylochelidon caspia*, (Pallas). An Australian specimen of *S. strenua*, Gould, B. A. pt. XXII, agrees perfectly with Indian specimens of *S. caspia* of Europe, Asia, and Africa, the bill of which latter is also "orange red" in the fresh specimen.

*Thalasseus cristatus*, (? Stephens) : *Sterna poliocerca*, Gould. We have a specimen obtained in the Tenasserim provinces, which accords with the description of this species.

*Sterna paradisea*, Brunnich : *St. Dougallii*, Tem. Europe, Asia, America, and Australia.

*St.* (?) *melanauchen*, Tem., B. A. pt. XXIII. Bay of Bengal, Nicobar Islands, Malayan Peninsula.

*Dendrocygna arcuata*, (Horsf.) Very abundant in India and the Malay countries.

*Nettapus coromandelianus*, (Gm.), B. A. pt. VI. Contrary to what Mr. Gould avers, the Indian specimens of this bird correspond exactly in size with the Australian specimens figured by him : but it may be remarked that the birds of this genus are totally incapable of standing up on their legs as he represents them to do. I doubt, indeed, if they ever alight except on trees or in the water ; and a favorite breeding place for the common Indian Cotton Teal is the interior of an unemployed factory chimney. To the genus *Nettapus* I consider that the so called *Bernicla jubata*, (Lath.), B. A. pt. XXI, is allied much rather than to the Bernacle Geese. Its habits, as described by Mr. Gould, entirely bear out this view of its affinities.

*Thalassidroma Wilsonii*, Bonap., B. A. pt. XXII, may be here referred to, as being common to the Australian seas and the northern Atlantic.

*Sula fusca*, Brisson, B. A. pt. XXIII. Bay of Bengal. The *S. piscator*, L., is also common in the China seas ; and Mr. G. R. Gray, in his British Museum catalogue, assigns Jamaica as the locality of one of his specimens.

Various other species are probably quite identical, as the following :—

*Milvus affinis*, Gould, B. A. pt. VIII, with *M. ater*, Gm. (v. *govinda*, Sykes), of India and the Malay countries, which differs from *M. parasiticus*, (Daud.), of Africa. If so, the cere and toes are represented by Mr. Gould to be of too deep a yellow ; I can perceive no other difference.\*

\* Mr. Gould remarks (*P. Z. S.* 1837, p. 140), that the chief difference from *M. ater* consists in its being somewhat smaller, and he gives the wing as 15½ in., which may be matched by many Indian specimens of *M. ater* ; though fine males generally measure about 17 in., and females 19 in. or more, in length of wing. *M. ater* being common in the Malay countries, there can be less doubt of its identity with *M. affinis*.

*Strix delicatula*, Gould, *B. A.* pt. XXII, (as figured,) with *Str. flammea*, Lin., very common in India. Mr. Gould remarks, however, that "good specific differences are found to exist," and elsewhere that "it has a longer bill and is considerably smaller."

*Acanthylis caudacuta*, (Lath.), *B. A.* pt. IX. I can perceive no difference whatever between this as figured by Mr. Gould, and by Mr. Swainson (*Zool. Ill.*), and *Ac. nudipes*, (Hodgson), of the S. E. Himalaya; though I see Mr. G. R. Gray (in his *Illustrated Genera of Birds*) regards them as distinct. The Society's Himalayan specimens have, it is true, no white on the loreal region; but that no importance attaches to this character is shown by our specimens of the allied *Ac. gigantea*, (Tem.), from Arracan, Penang, the Nilgherries, and Ceylon, which differ from each other in this respect only.

*Anthus australis*, Vigors, *B. A.* pt. XXVII, with *A. Richardi*, Vieillot; vide *J. A. S.* XVI, 434.

*Grus antigone*, (L.) Identified with a note of doubt in some of Mr. Gould's catalogues, and without doubt by Mr. Strickland, *An. Mag. N. H.* 1843, p. 338. "Native Companion" of the colonists of Australia.

*Herodias symmatophorus*, Gould, *B. A.* pt. XXIV. This seems perfectly identical with *H. alba*, (L.), very common in India: the specimen figured having been shot late in the breeding season, when the bill and loreal skin had re-assumed the orange-yellow colour; the dorsal train being retained for some time afterwards. The colour of the tibia should be greenish-white.

*H. immaculata*, Gould, *B. A.* pt. XXV. Except in being rather smaller, this seems to differ in no respect whatever from *H. garzetta*, (L.), extremely common in India: being evidently drawn from the dry skin of a bird of the second year, at which age they appear never to have the occipital crest; at least very many specimens may be obtained with a small dorsal train and without a crest. The toes, when fresh, were probably pale yellow: in old birds, deep orpiment-yellow. These Egrets are the "White Cranes" of Dr. Leichhardt and others.

*Ardetta* (?) *flavicollis*, Lath., *B. A.* pt. XXI, with *A. nigra*, (Vieillot, the young of which is *Ardea picta*, Raffles), of India, China, and the Malay countries. The deep rusty-brown hue of the inner web of each feather along the front of the neck, above its terminal black spot, conspicuous in Asiatic specimens, is not shown in Mr. Gould's figures; and the black marks of these feathers should be much more elongated and slender. There can be little doubt, however, of the identity of the species in the two regions.

*Limosa melanuroides*, Gould, *B. A.* pt. XXIV, with *L. ægocephala*, (Lin., v. *melanura*, Leisler.) A very common Indian bird, varying exceedingly in size: being often as small as Mr. Gould represents it. *Numenius arquata*, Lin., varies equally in size and length of bill.

*Tringa minuta*, Leister. Mentioned with a note of doubt in one or two of

Mr. Gould's catalogues of Australian species. Exceedingly common in India and the Malay countries.

*Anous leucocapillus*, Gould, *B. A.* pt. XXV, with *A. tenuirostris*, (Tem.): specimens referred to which latter, procured at the mouth of the Ganges, possess the black lores and white feathers above and below the eye posteriorly, which Mr. Gould suspects do not occur in *A. tenuirostris*.

The preceding series consists of birds suggested to be probably identical. The next are a degree more dubious.

*Blagrus dimidiatus*, (Raffles), and *Bl. leucogaster*, v. *Ichthyæetus leucogaster*, Lath.), Gould, *B. A.* pt. II. If Mr. Gould's figure be correct, the Australian species would differ from the Indian and Malayan species in having the tail considerably longer than the wings; whereas the wings are longer than the tail in the Indian birds. The size, also, assigned to the Australian species is much greater than I think is ever attained by its Indian affine. Mr. Gould states that his figure of the adult is about half the natural size, in which case the wings should be about 26 in. long: whereas the wings of the largest Indian specimens examined by me do not exceed 22 in., being nevertheless longer than the tail; though I am not sure but what these specimens are of the smaller or male sex. Mr. G. R. Gray considers them to be identical.

*Cuculus optatus*, Gould, *B. A.* pt. XXI, with the European and Indian *C. canorus*, Lin. Mr. Gould states that "the ornithologist can always distinguish an Australian specimen from one killed in Europe. In the Australian bird the black bands on the breast are broader and more defined than in the European, and in the former a light fawn tint pervades the abdomen, which part is white in the latter; the claws of the Australian bird are also smaller and more delicate than those of its northern ally; the breast, head, and neck, of the immature Australian bird are more broadly and distinctly barred with black and white, while the rufous tint which pervades the body of the immature European Cuckoo is almost, if not wholly, wanting. The northern part of Australia is the only locality in which this bird has been found." These distinctions are not wholly satisfactory. In some specimens of *C. canorus* before me, from England and India, "a light fawn tint pervades the abdomen," as in the Australian Cuckoo; and as regards the immature plumage, non-rufous specimens are common enough both in India and Europe: again, *C. canorus* has been traced as far as Java, and there would be nothing extraordinary in a bird of such migrant habits to extend its range, like sundry other species, also to Australia. Mr. Swainson's African *C. lineatus* would seem to be somewhat better characterized apart from *C. canorus*.\*

\* The distinction, however, which he points out in the extent to which the tarse is feathered, I doubt considerably; an English Cuckoo before me has the left tarse quite naked, though of course accidentally.

*Oreocincla lunulata*, (Lath.), v. *O. Novæ Hollandiæ*, Gould, with *O. varia*, (Horsf.), of Java. I have not a specimen of either to compare with *O. nilgherriensis*, nobis, of S. India; and all are sufficiently distinct from *O. dauma*, (Lath., v. *Turdus Whitei*, Eyton), of India generally.\*

*Podiceps australis*, Gould, B. A. pt. XVII, with the European, Indian, African, and N. American *P. cristatus*, Lin. "In describing this bird as distinct from the *P. cristatus*," remarks Mr. Gould, "I admit that I am making a species on very slender grounds; it will be seen, however, that the Australian bird is rather larger in size, and has the frill fuller and of a blacker colour than the European species. My own opinion is," he adds, "that birds may be quite as nearly alike as these, and yet have had a distinct origin, and consequently be distinct species."† In such cases, however, would they not merge and blend together, if living in the same locality; and have not many species, particularly those of wide geographical distribution, thus descended from a plurality of original stocks? I think that there is every probability of such being the case.

Numerous Australian species differ only in very slight, though constant, characters from their Indian affines; and would be regarded as local varieties merely of the same by naturalists who, with Dr. Schlegel, consider even the Himalayan Jay to be a local variety of the European Jay. The whole of the following species approximate more nearly than does *Garrulus ornatus* (v. *bispecularis*) to *G. glandarius*, and would therefore be considered as local varieties of the same by zoologists who think with Dr. Schlegel.

*Falco hypoleucos*, Gould, B. A. pt. V, and *F. jaggur*, Gray, of India. The only difference seems to consist in the Indian bird having its forehead and ear-coverts white, with a slight supercilium of the same, instead of these parts being uniformly coloured with the general upper surface. I can perceive no affinity for *F. islandicus*, as Mr. Gould intimates.

*F. frontatus*, Gould, B. A. pt. V, similarly approximates *F. subbutco* of

\* *O. nilgherriensis* is described in J. A. S. XVI, 141; and in the following page an *O. spiloptera*, nobis, from Ceylon, which approaches exceedingly close to Dr. A. Smith's figure of the S. African *Turdus guttatus*, Vigors. The Ceylon species is however smaller, with the white of the tail reduced to the extreme tip of the outermost feather only. Dr. A. Smith's preceding plate, representing *T. libonyanus*, also very much resembles my male *T. dissimilis*; but in this the rufous of the sides is more developed and of a deeper colour, there are spots on the breast, and no trace of supercilium. *T. dissimilis* is, I now find, distinct from the nearly allied *T. unicolor* of the Himalaya..

† This I believe to be sounder doctrine than what Mr. Gould teaches, in his notice of the white race of *Astur Novæ Hollandiæ*, that "wherever a specific difference is found to exist, it is always accompanied by a difference in the dimensions of the whole or parts of the structure." We certainly require to be more agreed as to what constitutes diversity of species, before we can venture to predicate anything of the kind. *Eurystomus pacificus*, for instance, neither differs in size nor structure from *Eu. orientalis*.

Europe and India, differing merely (it would seem) in the rufous colouring of the vent, lower tail-coverts, and tibial plumes, extending over the belly and breast; \* perhaps there is also a little more white on the forehead. *F. melanogenys*, Gould, is a degree, perhaps, better distinguished from the allied *F. peregrinus* and *F. peregrinator* of India.

*Elanus axillaris*, (Lath.): *E. notatus*, Gould, *B. A.* pt. IX. This seems to differ only from *E. melanopterus* of India, Java, and Africa, in the much greater development of the black spot on the under surface of the wing. The adult Indian species has the irides blood-red: soon after death these fade to an orange colour; and Mr. Gould states those of *E. axillaris* to be reddish-orange, and colours them of a yellow-orange. The irides of the American *E. dispar*, according to Mr. Bridges (*P. Z. S.* 1843, p. 109), are yellow; but the Prince of Canino describes those of a recent specimen to be "brownish-red" (vide description of *E. dispar* in the continuation to Wilson's 'American Ornithology').

*Haliastur leucosternus*, Gould, *B. A.* pt. XI, differs only from *H. pondicerianus* of India and the Malay countries in the absence of the narrow black central lines to the white feathers of the head, neck, and breast.

*Pandion leucocephalus*, Gould, *B. A.* pt. XI, differs only from *P. haliaëtus* of Europe, America (?), and India, in having the crown wholly white, and (according to Mr. Gould,) "in the much lighter colouring of the tarsi, which are yellowish-white slightly tinged with grey."

*Eurystomus pacificus*, (Lath.): *Eu. australis*, Swainson, Gould, *B. A.* pt. XII. As remarked in *J. A. S.* XV, 53, Mr. Gould's distinctions of this species from the Indian and Malayan *Eu. orientalis*, are very erroneous. The two exactly agree in size and structure: but the Australian bird is readily distinguished by having the black of its head confined to the lores, and by the brownish hue of its crown and nape, of which no trace occurs in the other; the latter having the whole head and cheeks black, and the nape and back concolorous with the scapularies, in addition to its blue being of a deeper tint.

*Todirhamphus sacer*, (Gm.): *Halcyon sanctus*, Vig. and Horsf., Gould, *B. A.* pt. I. Differs from *T. collaris*, (Scopoli), of the Bengal Soonderbuns, Malay countries, &c., only in being constantly smaller (the wing measuring at most  $3\frac{3}{4}$  in., instead of 4 to  $4\frac{1}{4}$  in.), and in the strong fulvescent tinge of its collar and under-parts, which in the Asiatic bird are invariably much whiter.

*Cuculus cineraceus*, Jardine and Selby. This differs from the exceedingly variable *O. tenuirostris* of India in its considerably larger size—(the wing mea-

\* *F. severus* of India and the Malay countries has the rufous thus disposed, but of a much deeper tint; this, however, is obviously distinct as a species, having more of the Peregrine build, and the head and cheeks as in *F. melanops*.

suring  $5\frac{1}{2}$  in., instead of  $4\frac{1}{2}$  in. or rarely  $4\frac{3}{4}$  in., and the rest in proportion); also in the constantly greater development of the festooned white borders of the tail-feathers in adults. Moreover it does not appear to be nearly so variable in its hues. The Indian *C. tenuirostris* extends its range to the Tenasserim provinces, but at Malacca is replaced by the closely allied *C. flavus* of the Malay countries, which only differs in being constantly smaller (having the wing but 4 in.); while in the intermediate locality of Penang it would seem that the two races had blended, as specimens from thence are of intermediate size, which I have never found to be the case with Malacca specimens.\*

At Port Essington, it is remarkable that an allied species to *C. cineraceus* and *C. tenuirostris*, of intermediate size (with wing 5 in.), exists,—the *C. dumetorum*, Gould, *P. Z. S.* 1845, p. 19; and a third Australian species of the same group was procured by Mr. Gould; his *C. insperatus*, *loc. cit.*, and *B. A.* pt. XXV.† Of the latter he remarks (though I can perceive it only in common with the other species of the subgroup), that—"In its structure and colouring it will be found to depart from the true *Cuculi*, and to approximate to the members of the genus *Chalcites*" (subgenus *Chrysococcyx*), "and in fact to form one of the links which unite the two groups,"

Again, Mr. Gould has recently described and figured a *Chalcites osculans*, *B. A.* pt. XXIX; so named "because in it are united, in a remarkable degree, the characters of the genera *Cuculus* and *Chalcites*; but as those of the latter genus predominate," he remarks, "I have retained it therein."‡

*Chrysococcyx lucidus* (Gm.). This has been considered identical in India, the Malay countries, and Australia; but in *J. A. S.* XV, 53, I have pointed out the distinctions of the races respectively inhabiting the three regions. The young of the Malayan race (*Chr. basalis*), Horsf., v. *Cuc. malayanus*, Raffles, and *C. chalcites*, Tem.), is indeed scarcely, if at all, distinguishable, except in being smaller, from that of the Australian *Chr. lucidus*: but the Indian *Chr. smaragdinus*, nobis (nec Swainson, which is *Chr. cupreus* of S. Africa), may be described briefly to resemble the Malayan and Tenasserim *Chr. zanthorhynchus*, (Horsf., v. *Lampromorpha amethystina*, Vigors), except that the lovely amethystine-purple of the latter is replaced, above and below, by as brilliant emerald-green, bronzed or rather aureous in some specimens; the bills of both being yellow, fading to pale straw-colour in the dry specimen, and generally in *Chr. smaragdinus* more

\* Precisely the same holds in the same localities with *C. dicruroides* of India and Tenasserim, and *C. lugubris* of the Malay countries.

† An African representative of the same subtype would seem to exist in *C. rubeculus*, Swainson, 'Birds of W. Africa,' *Nat. Libr.*

‡ The question is, are these two "genera" (as Mr. Gould calls them,) fairly separable? The difference seems to me to consist solely in size and colour, and not in structure.

or less tipped with black. I have never seen *Chr. lucidus* with the throat and breast concolorous with the upper-parts, as in the adults of the other species. *Chr. basalis* resembles *Chr. smaragdinus*, except in its inferior size; as in the Malayan *Cuc. lugubris* and *C. flavus*, compared with the Indian and Tenasserim *C. dicruroides* and *C. tenuirostris*.

*Eudynamys australis*, Swainson. This differs from *Eu. orientalis* of India, China, and the Malay countries, in being constantly larger; the wing, in three males examined, measuring  $8\frac{1}{4}$  in. instead of  $7\frac{1}{4}$  in.; and the tail  $8\frac{1}{2}$  in. instead of  $7\frac{1}{2}$  in.: the female is somewhat larger in both. One of the Society's male specimens has two unmoulted secondaries in each wing, of its first plumage, which are barred rufous and black, but very unlike the corresponding feathers of a young male of the Asiatic species. The Society's Australian female has a certain general aspect which distinguishes it from an Asiatic female Cœl; but which I will not venture to describe as constant, upon inspection of one specimen only of the former.

*Mirafra Horsfieldii*, Gould, B. A. pt. XXVII. This not only approximates *M. javanica*, but the nearly allied *M. affinis*, Jerdon, of India (which is probably a variety only of *M. erythroptera*, Jerdon). The Indian species would seem, however, to have the breast-spots much larger and blacker, and the white represented on the outer tail-feathers of *M. Horsfieldii* is replaced by fulvous, being also (as it would seem) less developed. The *Mirafrae* are squat, crouching birds, which never stand up as represented by one of Mr. Gould's figures of *M. Horsfieldii*.

*Cisticola*, Lesson. Mr. Gould figures at least three apparent species of this form, very closely allied to *C. schænicola* of S. Europe and *C. cursitans* of India, if not also to *C. terrestris*, (A. Smith), of S. Africa; viz. his *C. exilis*, (Lath.), B. A. pt. XXIV,—*C. isura*, pt. XXVI,—and *C. lineocapilla*, pt. XXVII; for I have little doubt that his *C. ruficeps* will prove to be the young of *C. isura*, the adult and young of the Indian *C. cursitans* being analogously distinguished, i. e. the crown of the young being plain brown, lineated only at the occiput; whereas the adults are lineated from the forehead. The Indian species would seem to be intermediate to *C. exilis* and *C. isura*, so far as can be judged from Mr. Gould's figures of the two latter. He likewise represents a *C. magna*, pt. XXIV, which however is considerably inferior in size to the *Drymoica natalensis* of Dr. A. Smith's 'S. African Zoology,' this also being, to all appearance, a true *Cisticola*: and a *C. campestris* has been described by him.

*Hirundo neoxena*, Gould, B. A. pt. IX. This only differs from *H. domicola*, Jerdon (*H. javanica* apud Latham and Shaw), in being rather larger, with the outermost tail-feathers more elongated (vide J. A. S. XVI, 118). Two other Australian Species of true Swallow are erroneously referred to the Cypseline genus

*Collocalia* by Mr. Gould, the *H. ariel* and *H. arborea* : these are allied to the Asiatic *H. daurica* and African *H. capensis* and *H. senegalensis*, Sw., the two former of which are known to build similar nests to those represented in Mr. Gould's plate of *H. ariel*.

*Carpophaga luctuosa*, (Tem.), *B. A.* pt. XII. This closely approximates *C. bicolor*, (Scop., v. *Columba alba*, Lath., and *C. littoralis*, Tem.), of the Malay countries : differing merely in its smaller size, in the bill having its corneous tip yellow,\* in the black tips to its lower tail-coverts, and (it would seem) in having the black less developed upon the tip of its outermost tail-feather. Both are remarkable for keeping always to the vicinity of the sea ; and together they form a little section of the genus *Carpophaga*, *C. luctuosa* being the only Australian species known to me which I would retain under this generic head.

*Macropygia phasianella*, (Tem.), *B. A.* pt. XVIII. From *M. amboinensis*, (L.), of Java and the Moluccas, this differs only in its very superior size ; and *M. rufipennis*, nobis, of the Nicobar Islands only differs from the Australian species in being rather smaller, with conspicuous rufous margins to the great alars externally, and the whole interior of the wing deep rufous-bay instead of dusky.

*Chalcophaps chrysochlora*, (Wagler), *B. A.* pt. XIII. Differs only from *Ch. indica* of India and the Malay countries in the colour of the top of its head, which is uniform with the breast ; whereas in *Ch. indica* the crown and median line of nape are pure ashy, and the forehead and supercilium white,—this white being less developed in the female, which has the crown also much less ashy. Mr. Gould seems to think that two very closely allied species inhabit Australia.†

*Geopelia tranquilla*, Gould, *B. A.* pt. XIX. Differs only from *G. striata*, (L., v. *Col. malaccensis*, Gm.), of the Malay countries, in the pectoral dusky transverse lines passing across the breast, instead of being separated in the middle by a broad "dove-coloured" interval, and in these bars not being continued down the flanks as in *G. striata*. A third closely allied race, from Timor, is my *G. albiventris* (p. 16 ante). A fourth, which would seem to differ chiefly from the last in its superior size, is *G. Maugei*, Tem., of the Eastern Islands. A fifth is *G. placida*, Gould, from Port Essington, merely differing from *G. tranquilla* in its smaller size. A sixth, which is a degree further removed than the rest are from each other, is the delicate little *G. cuneata*, (Lath.), *B. A.* pt.

\* This corneous tip is partially yellow in some specimens of *C. bicolor*, and perhaps wholly so in others.

† The species of Timor appears perfectly identical with that of N. S. Wales ; and I can perceive no difference in specimens of *Ch. indica* from India, the Malayan peninsula, and Java. Those of the Nicobar Islands are more bronzed, with the barring on the rump much less conspicuous.

XVIII: and the large *G. humeralis*, (Tem.), pt. XV, allied in its markings to all but the last, approximates in its size and less gracile build to the members generally of the allied division *Turtur*, which in Australia is wholly represented by *Geopelia*; though in Timor we already find the *T. bitorquatus*, (Tem.)

*Eupodotis australasianus*, (Gould), B. A. pt. VIII. This approaches so exceedingly close to the Indian *Eu. Edwardii*, that I can trace no difference whatever, comparing an Indian specimen with Mr. Gould's figure and description, except it be that the upper-parts of the Indian bird are more rufescent, and I do not observe that "some of the feathers towards the hinder parts of the body are tinged with grey." Actual comparison of specimens would probably elicit some further discrepancy.

*Esacus magnirostris*, (Geoffroy), B. A. pt. XXI. This seems to differ chiefly from the Indian *E. recurvirostris* in having a rather thicker bill, which does not distinctly bend upward from the symphysis of the lower mandible; in the continuation of the black above and below the eye round in front of that organ; and in its colours generally being more brought out and contrasting: the legs also differ in colour, those of *E. recurvirostris* being albescent with a plumbeous tinge; and if Gould's figure can be depended upon in this particular, the Indian bird has longer tarsi. The affinity is, however, evidently very close; and the *Ædicnemus grallarius*, (Lath.), represented in Mr. Gould's next plate, is as interesting a representative of the common *Æd. crepitans*, (L.), of Europe and India.

*Hæmatopus longirostris*, Vieillot, B. A. pt. XVIII; *H. picatus*, King. It does not very clearly appear, from Mr. Gould's figure and description, in what this differs from the European *H. ostralegus*, L., except that the truncated bill is  $\frac{1}{4}$  in. longer than the truncated bill of a British specimen before me,—the black of the tail would seem to extend further up, and no mention is made of the white secondaries of the European and Indian Oyster-catchers. In a fine adult specimen from the Bay of Bengal, with untruncated bill, the latter measures exactly 4 in. to the forehead; and in another, from Java, with the bill truncated, just 3 in., or the same as in Mr. Gould's figure of *H. longirostris*, also with truncated bill. In a young specimen from the Arracan coast, the tip of the lower mandible had just been broken off, the fracture being still rough and splintered; while that of the upper mandible is abruptly bent at the same place, probably by the same wrench that had broken off a large portion of the tip of the lower mandible, leaving it 3 in. long, as in the Javanese specimen. It certainly is to be regretted that Mr. Gould has not been more particular in pointing out the distinctions of many of the species which he has figured, from those to which they are very closely allied: in the description accompanying the following plate, for instance, of *Hæmatopus fuliginosus*, Gould, he surely

should have mentioned wherein consists the difference of that bird from the black Oyster-catchers of the Cape of Good Hope and Cape Horn respectively.\*

*Threskiornis strictipennis*, Gould, *B. A.* pt. XVII. This species, writes Mr. Gould, "may at all times be distinguished from its near ally, *Thr. æthiopica*, inhabiting the banks of the Nile, as well as from the *T. melanocephala* (of India), by the lengthened plumes which hang down from the front of the neck, and from which its specific appellation has been taken." The name is therefore infelicitous: for the Indian species, and I doubt not the Egyptian one also, present the same pendent plumes from the breast during the breeding season only, to which period I presume they are similarly confined in the Australian bird. Moreover, the Indian one has occasionally the same pink marks along the back of the neck as in Mr. Gould's figure, sometimes being more developed and confluent: but its tertiaries (except the uppermost of them in some specimens) have always an ashy appearance, caused by each plumelet having its central line dark and edges whitish; and the primaries of the Australian species are described to be "tipped with deep bluish-green," whereas those of *Thr. melanocephalus* are always wholly white in adults, though the first and second are deeply marked with dusky-black in some specimens only of the young.

*Platalea regia*, Gould, *B. A.* pt. VII. Differs from *Pl. leucorodia* of India and Europe in the much greater extent of the nude portion of its face, which, with the entire bill, is always black.

*Rhynchæa australis*, Gould, *B. A.* pt. XIX. Appears to differ only from the common Indian *Rh. bengalensis*, externally, in having much shorter toes; and the female from that of the Indian species by a very remarkable prolongation of the trachea described by Mr. Gould, and which is peculiar to this sex. In other respects, the sexual diversity of size and plumage corresponds in the two species, and the nestling young are similar to the adult males. So extraordinary a difference, however, as that of the trachea of the females, occurring in species otherwise so very closely allied as are the Indian and Australian "Painted Snipes," supplies one of several useful cautions that might be cited against the too hasty presumption of allied and nearly similar species being local varieties merely of the same species, brought about by difference of habitat and climate.†

*Tringa australis*, Jardine and Selby, *B. A.* pt. XXVIII. Nearly allied to *Tr. canutus*, (L.), of Europe, America, &c.; but smaller, and it has not been ascer-

\* Is *H. fuliginosus* distinct from *H. unicolor*, Forster, of New Zealand, enumerated in Mr. G. R. Gray's British Museum Catalogue? The distinctions of *H. longirostris* from *H. ostralegus* are given in King's Appendix.

† Mr. G. R. Gray, in his British Museum Catalogue, calls the Chinese *Rynchea picta*, Gray, the "long-toed Painted Snipe," *Rh. bengalensis* the "short-winged" do., and *Rh. australis* the "short-toed" do.

tained to assume the rufous summer plumage of *Tr. canutus*.\* The latter is very rare in India: Mr. Jerdon having hitherto obtained but a single specimen in S. India; and myself another, in Bengal; which are all that are on record.

*Ardea rectirostris*, Gould, *P. Z. S.* 1843, p. 22. Nearly allied to *A. cinerea*, L., of Europe and India; but with the bill much straighter and more robust.

*Botaurus melanotus*, G. R. Gray. Rather larger, perhaps, on the average, than the European and Indian *B. stellaris*, (L.), with the sides of the neck uniform dusky-brown, the ear-coverts pale and contrasting, and the back more or less uniform fuscous-brown, with the lateral margins of the dorsal feathers barred paler in some specimens. In all other respects like *B. stellaris*, to which it approaches very closely indeed. The little Bitterns (*Ardetta minuta* and *exilis*) have also their Australian representative in *Ardetta pusilla*, (Wagler).

*Porzana plumbea*, (Gray): *P. (?) immaculata*, (Swainson), Gould, *B. A.* pt. XXIV. This is specially allied to *P. akool*, (Sykes), of India; but differs in its much smaller size, black bill, and general deeper colouring. *P. fluminea*, Gould, and *P. palustris*, Gould, *B. A.* pt. X, are analogous representatives of *P. maruetta* and *P. pusilla* of India and Europe; *P. palustris*, indeed, it would seem scarcely differing from *P. pusilla* (v. *Bailloni*), except in having a shorter wing.

*Gallinula tenebrosa*, Gould, *B. A.* pt. XXIV. Differs from *G. chloropus* of India and Europe in being considerably larger, with no white marks on the flanks. *Fulica australis*, Gould, pt. XXIV, is, on the contrary, much smaller than the European and Indian *F. atra*, L., but differs very little in other respects.

*Rallus pectoralis*, Cuv., of Australia, is very closely allied to *R. philippensis*, L., of the Philippines, as well as to certain Polynesian species described as varieties of the latter.

*Plotus Novæ Hollandiæ*, Gould, *B. A.* pt. XXVIII. Stated to be "very nearly allied to the *Plotus* inhabiting Java" (which is the common Indian one), "but distinguished from it by the shortness of the scapularies and by its larger size." (*P. Z. S.* March 23, 1847.) The latter is decidedly not the case, following the admeasurements given by Mr. Gould: but the tarse of the Indian species scarcely exceeds 1½ in., instead of being 2 in. The scapularies, also, as shown by Mr. Gould's figures, are of the same proportionate length as in the Indian bird; but there would seem to be some marked differences in the colouring of the head and neck only. In the Indian *Plotus*, it may be remarked that the gular skin is black during the breeding season, and the white throat is then

\* I observe, however, that while *Tr. canutus* and *Tr. maritima* are classed as *Tringa* by Mr. G. R. Gray, in his British Museum Catalogue, he there makes a *Schœniclus* of *Tr. australis*; but he very properly unites *Tringa* with *Schœniclus* in his illustrated work on the genera of birds, placing however *Tr. australis* as a doubtful species; which I do not at all understand.

speckled over with black feathers : the young are covered with snow-white down, having a slight brownish tinge upon the back.

*Sula australis*, Gould, *B. A.* pt. XXIV, would seem chiefly to differ from *S. bassana*, (L.), in the very deep fulvous colouring of the crown and nape : and *Graculus carboides*, (Gould), *P. Z. S.* 1837, p. 156, is described as being "closely allied" to *G. carbo*, L., of Europe and Asia, common in some parts of India.

*Catarracta antarctica*, (Lesson) : considered by Latham and others as identical with *C. skua* of the northern seas, its distinctions from which I have not seen described.\*

This list might still be considerably extended, if all the species of birds which may be said to represent each other in India and Australia, without being so very closely allied, were to be noticed in like manner ; or even if all were to be thus treated of, which do not differ more than *Garrulus ornatus* from *G. glandarius*. The progress of discovery in the great southern continent has certainly revealed an unexpected number of genera common to Australia and other portions of the globe ; while, on the other hand, many of its peculiar groups have been further confirmed as such, and some such groups (of greater or less value and extent) are now recognised where solitary species were formerly known.† I will next proceed briefly to review the leading peculiarities of Australian Ornithology, and at the same time continue to notice some of its relations with the fauna of other regions.

*Psittacidae*. The great abundance of Parrots, both of species and individuals, many of the most brilliant colouring, is a striking feature of the fauna of Australia. All the numerous species, however, resolve into a few leading types of form,—viz. that of the Black and of the White Cockatoos (to which the genus *Nestor*, which scarcely belongs to New Holland, is but doubtfully referable),—the great granivorous (*i. e.* subsisting on grain and grass-seeds, dry farinaceous diet,) type of ground Parrakeets,—that of the nectar-feeding division of Lories,—and the small genus *Polytelis*, which is allied to *Palæornis* of Asia and Africa. The three preceding types are peculiar to Australia and the neighbouring countries ; species of White Cockatoo and of *Trichoglossus* (peculiar ones, however,) inhabiting so far off as the Philippines, if not also the Moluccas. The true *Calyptrorhynchi*, I believe, are exclusively found in Australia proper ; being represented in New Guinea by the still more extraordinary *Microglossa* :

\* *C. antarctica* is probably the species noticed by Dr. Hooker at the Auckland Islands. Vide Ross's Antarctic Voyage, I, 149.

† As interesting examples, may be noticed the second species of *Psophodes*, and the second and third of *Cinclosoma*, figured by Mr. Gould ; also the second and third species of *Falcunculus*.

and a few species of the great austral type of ground Parrakeets are met with in New Zealand\* and in the Polynesian Isles.

*Falconidæ*. Australia presents species of nearly all the Old World types: viz: *Falco* (*melanogenys*, *subniger*, *hypoleucos*, and *frontatus*), *Tinnunculus* (*cenchroides*), *Baza* (*subcristata*), *Elanus* (*scriptus* and *axillaris*), *Circus* (*assimilis* and *Jardinii*), *Accipiter* (*torquatus*), *Nisastur* (*approximans* and *cruentus*), *Astur* (*Novæ Hollandiæ* and *radiatus*), *Hieraëtus* (*morphnoides*), *Aquila* (*fuscosa*), *Buteo* (*melanosternon*), *Pandion* (*leucocephalus*), *Blagrus* (*leucogaster*), *Haliastur* (*sphenurus* and *leucosternon*), and *Milvus* (*isurus* and *affinis*, v. *ater*?). There are no *Circaëtinae* (as yet discovered†), nor do any of the following forms appear to have been hitherto met with; *Hierax*, *Pernis*, *Poliornis*, *Spizaëtus*, *Tolmaëtus*, *Ictinaëtus* (Jerdon, nec Kaup), *Archibuteo*, *Pontoaëtus* (verus†), and *Haliaëtus* (verus§); all of which occur in India or upon the Himalaya. The only peculiar forms are the Falconine genus *Ieracidea* (*berigora* and *occidentalis*, B. A. pt. XV, and pt. XVI), and perhaps the great *Astur radiatus*, B. A. pt. XIII (v. *Haliaëtus Calei* of Vigors and Horsfield), should be thus distinguished. No other region is known to possess two distinct species of true *Elanus*.|| *Baza cristatella*, (Gould), B. A. pt. XIV, seems intermediate to the Indian *B. lophotes* and the Malayan *B. Jerdoni*, nobis (which is perhaps the Philippine *B. magnirostris*, G. R. Gray, of the British Museum Catalogue). *Hieraëtus*, Kaup, is confirmed by a second representative in *H. morphnoides* (Gould), B. A. pt. VII.

There are no Australian species of *Vulturidæ*; as there are no large indigenous quadrupeds upon whose carcasses they could subsist.

\* Only four species of *Psittacidæ* are mentioned in Mr. G. R. Gray's list of ascertained New Zealand birds: viz. *Nestor meridionalis*, (Gm.), *Platycercus Novæ Seelandiæ*, (Sparm., v. *Psittacus pacificus*, var. *b*, Gm.), *Pl. auriceps*, (Kuhl, v. *Ps. pacificus*, var. *d*, Lath.), and *Trichoglossus aurifrons*, Wagler. The third of these is doubtful, at least as a New Zealand species; but another and most remarkable nocturnal Parrot from that country has recently been discovered, the *Strigops habroptilus*, G. R. Gray, figured in that gentleman's "Illustrated Genera of Birds." A second species of *Nestor* is figured by Mr. Gould from Philip Island, near Norfolk Island, to which it is wholly confined, with every prospect of being soon exterminated. The geographical position of these islands would connect them rather with New Zealand than with New Holland, and the general character of their flora would do the same; but among the birds of Norfolk Island is a representative of the Australian genus *Petroica*, B. A. pt. XXVII, which I believe does not occur in new Zealand.

Since the above was penned, I have chanced to alight on Dr. Dieffenbach's speculation that "there is every probability that the continent of which New Zealand, Chatham Island, and Norfolk island, are the ruins and fragments, formerly occupied a very large space," &c. &c. Vide "Travels in New Zealand," II, 94.

† To this group I refer *Circaëtus*, *Hæmatornis*, *Cachinna*, and *Polyboroides*.

‡ As *P. ictinaëtus*, (Horsf.), and *P. nanus*, nobis.

§ As *H. leucocephalus*, *H. albicilla*, and *H. Macei*.

|| *Gampsonyx*, however, of S. America is not far removed.

*Strigidae*. Of this family there are no *Hiboux*, or Horned Owls : and Mr. Gould refers the Australian Owls to two genera only, *Strix* and *Athene* ; the former has several representatives (as *Str. cyclops*, *castanops*, *personata*, *tenebri-cosa*, and *delicatula* v. *flammea* ?) ; and the latter comprises species of *Ninox*, Hodgson (as *N. marmoratus*, *maculatus*, *connivens*, and *boobook*, the last allied to the Indian and Malayan *N. scutulatus*), and other species (as *strenua*, *rufa*, and *fortis*), seemingly referable to true *Athene*, but which are very remarkable for their great size and strength, contrasting exceedingly with their diminutive congeners.\*

Australia has no Hornbills ; nor Hoopoes : no true Rollers (*Coracias*) ; but a species of short-billed partially frugivorous Roller (*Eurystomus pacificus*), allied to that of S. E. Asia : one Bee-eater only (*Merops ornatus*†) : and numerous *Halcyonidae*, confined to three sub-types of form, either peculiar to New Holland and its vicinity, or which merely reach the coasts of S. E. Asia ; as *Dacelo* (*giganteus*, *Leachii*, and *cervinus*, remarkable for their gigantic size), *Todirhamphus* (*sacer*, *pyrrhopygius*, *McLeayi*, *incinctus*, and *cinnamominus* ?‡), and *Alcyone* (*azurea*, *diemensis*, *pulchra*, and *pusilla*).

There are no Australian *Bucconidae*, nor *Picidae* ; the latter a remarkable circumstance, as Woodpeckers occur in all other habitable parts of the world, unless in the Polynesian Isles, and excepting also New Zealand.

The *Cuculidae* are tolerably numerous, presenting several species of true Cuckoo (*Cuculus* and *Chrysococcyx*), two of Coël (*Endynamys australis* and

\* In New Zealand, two species of *Falco* (verus), and one of *Athene*, constitute all the *Raptores* enumerated by Mr. G. R. Gray, in 1843 ; but his list is doubtless very defective. Mr. Gould, up to the 29th No. of his work, has figured a very few of the more remarkable New Zealand species, as *Apteryx australis*, B. A. pt. II, *Neomorpha Gouldii*, pt. III, *Himantopus Novæ Zealandiæ*, pt. IV, and *Graculus* (v. *Phalacrocorax*) *punctatus*, pt. V : also the *Gnathodon strigirostris*, pt. XXIII, the present claim of which (certainly austral) bird to be admitted among the birds of Australia is more questionable, unless the Pacific Islands generally are to be put in requisition. We may therefore hope to see the remainder of the New Zealand birds illustrated by Mr. Gould's pen and pencil.

† The Rollers and Bee-eaters have their metropolis in Africa. Of the former, there successively occur in Asia, from west to east, *Coracias garrula*, *C. indica*, and *C. affinis* ; and *C. pileata*, Reinwardt, inhabits eastern Malasia : *Eurystomus orientalis* inhabits India, China (?), and the Malay countries. Of the *Meropidae*, I know but 6 true Bee-eaters in all Asia and its islands (*Merops apiaster*, *persica*, *philippinensis*, *sumatranus*, *quinticolor*, and *viridis*), two of these occurring also in Africa ; but the genus *Alcemerops* (*Athertonii* and *amictus*) is peculiar to S. E. Asia, i. e. so far as known, of course.

‡ I do not find this species noticed in either of Mr. Gould's lists, but only in that of Messrs. Vigors and Horsfield. Mr. Swainson's specimen is stated to be from New Zealand : but the species is not included in Mr. G. R. Gray's list of New Zealand birds, in Dieffenbach's Appendix.

*Flindersii*),\* and two or three closely allied races of Coucal (*Centropus phasianinus*, B. A. pt. XXIX, which *vide*) : but no *Oxylophus*, nor *Phænicophaus*. A very remarkable form exists in the *Scythrops Novæ Hollandiæ*, B. A. pt. XXIX, which some systematists have strangely enough associated with the *Ramphastidæ* peculiar to S. America.

The *Trogonidæ* have no Australian representative.

The *Caprimulgidæ* present four generic types—*Ægotheles* (*Novæ Hollandiæ* and *leucogaster*), peculiar; *Podargus* (several species), from which *Batrachostomus*, Gould, of the Malay countries is barely separable; *Eurystopodus* (*albo-gularis* and *guttatus*), generically identical with *Lyncornis* of the Burmese and Malay countries; and the *Caprimulgus macrourus* of Port Essington, identical with that of the Malay countries generally, and of the eastern shores of the Bay of Bengal.

*Cypselidæ*. Australia possesses true *Cypselus* (*pacificus*), *Acanthylis* (*caudacuta*), and *Atticora* (*leucosternon*)—very remarkable for being elsewhere a S. American division: but no *Collocalia* nor *Macropteryx*; forms peculiar to India and the Malay countries.

The *Corvidæ* have a single representative in a true *Corvus* (*coronoides*); there are no true Magpies, Jays, or allied forms: also no *Sturnidæ* (Starlings, Mainas, &c.); unless the genus *Aplonis*, Gould (*P. Z. S.* 1836, p. 173), with which I am unacquainted. The place of both these families seems to be partly supplied by the *Gymnorhinidæ* (as *Strepera*, *Gymnorhina*, and *Cracticus*), a group which I believe is wholly peculiar to Australia, or which merely passes into New Guinea.

Then follow what I can only at present regard as the *Paradisidæ*, consisting of a varied series of forms, of which New Guinea may be considered the geographical focus; and when that most interesting country comes to be explored, it is probable that various less showy forms appertaining to this great austral group will be discovered, that may confirm the classification here suggested. In New Holland, these present themselves under three principal modifications of structure: viz. that of *Ptilinorhynchus* and *Chlamydera*—the “Bower-birds,” so curious in their habits, if not also *Struthidea*, and *Callæas* (v. *Glaucopis*, Gm.), of New Zealand, with short and robust bills; that of *Sericulus* (*chrysocephalus* and *magnirostris*, *P. Z. S.* 1837, p. 145), which is surely allied to the *Parotia aurea*, (Gm.), of New Guinea, and has the coronal and nuchal feathers of a true Bird of Paradise; and the *Promerops* or *Epimachus* subtype, represented by *Ptiloris*, *Corcorax*, and *Neomorpha* of New Zealand:† *Grallina* will pro-

\* Another true Coël inhabits New Zealand, the *Eu. taëtensis*, (Sparm.)

† These must not be confounded in the same group with *Irrisor* and *Upupa*, which are allied to *Buceros*; nor *Corcorax* with the Corvine genus *Fregilus*. We have no true *Promerops* nor *Epimachus* for comparison; but I observe that Mr. Swainson remarks

bably be found to exemplify a fourth subdivision of the same great natural series. Much as the form of bill may differ in the Australian genera which I have here referred to the *Paradiseidæ*, let the feminine plumage\* of *Ptilinorhynchus holosericus*, *Sericulus chrysocephalus*, and *Ptiloris paradisea*, be compared, and the near affinity of these genera will become apparent. The similarity of the manners of *Struthidea* to those of *Corcorax* is remarked by Mr. Gould: and various other indications might be mentioned, among the most dissimilar genera which I refer to this peculiarly austral group, as the wattles of *Callæas* compared with those of *Neomorpha* (both New Zealand forms), &c.†

The *Fringillidæ* comprehend no *Fringillinæ*, corresponding to the Finches of northern countries; no *Passerinæ*, or Sparrows; no *Emberizinæ*, or Buntings; also no *Ploceinæ*, or Weavers: but a considerable number of *Estreldinæ*, (arranged by Mr. Gould under *Donacola*, *Poëphila*, *Amadina*, *Estrela*, and *Emblemma*); and the *Alaudinæ* are alone represented by *Mirafra* (of one or two species only.‡) *Xerophila leucopsis*, Gould, B. A. pt. XV, with much the habits of a House Sparrow, is a curious form, the affinities of which are not obvious, at least judging from Mr. Gould's figures alone.§

The *Pardaloti* are a peculiar group, which in style of plumage approximate the *Leiotrichidæ* of the S. E. Himalaya; but the form of wing is altogether (Griffith's 'Animal Kingdom,' VIII, 689), that "the generic characters" of *Epimachus superbus* are totally different from those of *Ptiloris*. "The two genera," he adds, "do not, in all probability, belong to the same family." In the same Appendix, Mr. Swainson remarks (p. 684), that "a minute examination of a very fine and perfect specimen of *Paradisea aurea*, in the Paris Museum, has fully confirmed the suspicion we formerly expressed on the affinity which this magnificent bird bears to *Sericulus*." This passage I had not remarked when penning the above.

\* Common to both sexes of *Ptilinorhynchus Smithii*, and of *Clamydera maculata* and *Chl. nuchalis*.

† *Turnagra crassirostris*, (Gm.), G. R. Gray, of New Zealand, not improbably belongs to the *Ptilinorhynchus* section; and *Aplonis* either to the same *major* group, or to the *Meliphagidæ*: *Creadion carunculatus* of New Zealand, from recollection of the living bird, caged, several years ago, I should say pertained strictly to the *Meliphagidæ*. Mr. Gould described two species of *Aplonis*, respectively from southern Australia, and the Friendly Isles; and Mr. G. R. Gray enumerates three additional species in New Zealand, one of them being the *Turdus australis*, auctorum.

‡ *Alauda Novæ Seelandiæ*, Gm., inhabits New Zealand: but no other *Fringillidæ* have been ascertained there, unless the *Fringilla albicilla* of Lesson.

§ The *Fringillidæ* of India and the Malay countries approximate the Australian type, in the prevalence of *Estreldinæ*, to the total or all but total absence of the *Fringillinæ*. The latter abound in the Himalaya, but southward of that range are represented solely by the *Carpodacus erythrinus*. We have, however, a few *Passerinæ*, *Emberizinæ*, and many *Alaudinæ*; also three species of *Ploceinæ*, additional to which another inhabits Java: all the rest of the *Ploceinæ* (including *Vidua*) are African, as are likewise numerous *Estreldinæ*, neither of these groups occurring in Europe or America. In the New World,

different, and I doubt whether they can be brought under any other natural family.

The *Paridæ* are represented by two peculiar generic forms—*Falcunculus* (*frontatus*, *leucogaster*, and *flavigulus*), and *Oreoica* (*cristata*). These have been referred to the *Laniadæ*, a form which has no Australian representative; unless, indeed, *Colluricincla* can be approximated to *Tephrodornis*.\*

The *Certhiadæ* likewise exhibit peculiar genera,—as *Sittella* (of which Mr. Gould figures three species), replacing *Sitta* of Europe, Asia, and N. America,† —and *Climacteris* (six species figured), more allied to true *Certhia*, though soft-tailed.

The *Merulidæ*, subfam. *Merulinæ*, present two species only (so far as I am aware) of true Thrushes; viz. *Oreocincla lunulata*, (Lath.), to which it is doubtful whether *O. varia*, (Horsf.), should not be referred‡; and *Merula fuliginosa*, (Lath.), v. *M. nestor*, Gould. The *Colluricinclæ* are decidedly not *Meruline*.

The *Saxicolinæ* are numerous, and generically peculiar. Among them the genus *Pachycephala* is remarkable for its large head and thickened bill: the allied division *Eopsaltria* indicating, however, its true position. Then follow *Petroica*, *Erythrodryas*, and *Drymodes*; and *Micræca* is evidently one of the various fly-catching modifications of the same great rubeculine subtype.

The *Praticolinæ* constitute an extensive series, which is nearly peculiar to Australia. Such are the divisions *Praticola*, Sw. (v. *Calamanthus*, Gould), *Hylacola*, *Chthonicola*, *Sericornis*, *Origma*, *Ephthianura*, *Pyrrholæmus*, *Symmorphus* (?), *Acanthiza*, and *Gerygone* (olim *Psilopus*): species of the two last inhabit eastern Malasia.

The *Myiotherinæ* are represented by three species of *Brachyurus* (v. *Pitta*); allied in form to those of India proper.

The *Cinclorhamphinæ* comprise true *Cinclorhamphus*, so nearly allied to *Megafringillinæ* inhabit every latitude, keeping chiefly however, to more elevated land within the tropics; where, in the hot regions, they are mainly represented by the *Tanagrinaæ*. A curious little *Fringilline* bird, from the Sandwich Islands, is figured by Mr. Gould by the name *Linaria? coccinea* (*Zoology of H. M. S. 'Sulphur.'*) Again, a peculiar group of *Fringillidæ* exists in *Geospiza*, *Cactornis*, &c. of Gould, from the Gallapagos Islands, figured in the *Zoology of the 'Beagle,'* and one species from Bow Island in that of the 'Sulphur.' *Scissirostrum Pagei*, Gúerin, of the Moluccas is a very peculiar *Fringillidous* form, which I think, however, is allied to the *Estreldinæ*.

\* Compare more particularly the species which I presume to be *C. Selbii*, Gould, with one of the larger species of *Tephrodornis*, as *T. sylvicola*, Jerdon.

† In New Zealand, replaced by *Acanthisitta*, G. R. Gray; several species.

‡ In this remark I have followed Mr. Strickland, but have since met with an old memorandum on the subject, which I give in the Appendix. Mr. Gould distinguishes *O. macrorhyncha* (P. Z. S. 1837, p. 145), from New Zealand.

*lurus palustris* of Bengal and Java; also, I suspect, *Atrichia*; *Sphenura* (v. *Dasyornis* of Vigors and Horsfield, adopted by Gould), which has a doubtfully separable Indian representative; and *Sphenæacus* leads thence to *Cisticola*. *Cinclosoma* (of which Mr. Gould figures three species) seems to approximate this group more than any other.\*

The *Malurinae* comprehend the genera *Malurus*, *Malachurus*, and *Amytis*; all peculiar to Australia.

The *Menuridae* should, I suspect, be recognised as a distinct family; to which, besides the *Menura* *superba*, one of the most remarkable of birds, should, I think, be referred *Orthonyx*,† and (as more aberrant genera) *Psophodes* and *Sphenostoma*. Mr. Gould suggests also the affinity of the S. American genera *Pteroptochos*, *Scytalopus*, and their allied forms; but I am disposed rather to regard these as exhibiting a relationship of analogy.

There are several species of *Pomatorhinus*, Horsf., some at least of which differ remarkably in structure of wing, and somewhat in that of bill, from the *Pomatorhini* of India and the Malay countries; which latter would seem to have a typical representative in *P. Isidorei* of New Guinea. The Australian species have, generally, if not always, a broadly white-tipped tail, the two middle feathers excepted.

With the exception of two typical species of *Acrocephalus* (v. *Calamoherpe*, one of which is stated to sing very like and equal to the British Nightingale, and the other to be also a superior songster), Australia possesses no birds congeneric with, or nearly allied to, the Indian (and European) types of "Warblers," which are analogically represented chiefly by the *Acanthizæ* and other small *Praticolinæ*.

The *Motacillidæ* are represented by the genus *Anthus*, of which but a single Australian species is clearly ascertained; and by the *Motacilla boarula*, L., of Europe, Asia, and the eastern islands.

The *Dicruridæ* have but a single known representative—*D. bracteatus*, Gould, (mistaken for the Malayan *D. balicassius* by Messrs. Vigors and Horsfield).

The *Artamidæ* would seem to have their geographical focus in Australia, and to diminish in number of species as we recede thence. One only inhabits India; and there are others (or of the scarcely separable division *Analcipus*, Sw.) in Madagascar and continental Africa: two or three more inhabit the islands of the eastern seas, as one in Java, another in the Philippines, and it would appear one or more of the Australian species in Timor: and I believe

\* *Cinclorhamphus cruralis* of Australia, and *Megalurus palustris* and *Sphenura* (?) *striata* of India, are remarkable for the great disparity of size of the sexes. Here, too, may be mentioned the *Orthotomus longirostris*, Sw. (if correctly classified): the genus being otherwise Indian and Malayan exclusively.

† Replaced by *Mohoua* in New Zealand.

that there are some also in the Polynesian Isles. From Australia alone Mr. Gould has figured seven species. The affinities of the group remain to be ascertained.

The *Hirundinidæ* present but three Australian species, that I am aware of.

The *Ceblephyridæ* belong to India, Africa, the Malay countries, and Australia. The southern continent has at least four species of true *Grauculus*, and three of *Lalage* (i. e. the *Campepaga humeralis* of Gould is a typical *Lalage*, and *C. leucomela* of Vigors and Horsfield is stated to be nearly allied to it, and with *C. tenuirostris*, Gould, is classed in the same minimum group by that gentleman): besides the very remarkable *Pteropodocys phasianella*, Gould, B. A. pt. XXV, exhibiting a modification for ground habits and great power of wing.

The *Tchitreadæ* appear in the genera *Monarcha*, *Myiagra*, *Piezorhynchus*, *Seisura*, and *Rhipidura*.

Australia has no Bulbous (Pycnonotidæ), a group so abundantly developed in India and the Malay countries: but in place of them the very extensive family *Meliphagidæ*, constituting one of the most marked features of the Ornithology of that part of the world. The affinity of *Oriolus* for this family is well shown by the genus *Sphecotheres*, and in a less prominent degree by *Entomyza*, *Plectorhyncha*, and others.\* Again, the affinity of the Bulbous for the *Meliphagidæ* is exhibited by the Indian and Malayan genera *Phyllornis* and *Iora*, which together form a peculiar subfamily of *Pycnonotidæ*. The genus *Oriolus*, most developed in Asia and Africa, one species only visiting Europe, comprises also one proper to Australia, which under the generic name *Mimeta* has been currently referred to the *Meliphagidæ*: but, if here admitted, it can only come within the extreme confines of the group; and a more typical representative of the family exists in *Zosterops*, species of which inhabit Africa, Madagascar, the Mauritius, with one or more also in Africa, and another (*Dicaeum flavum*, Horsf.,) in Java and the Philippines. In the latter region, at least one other form of the great group *Meliphagidæ* is perhaps exemplified by the *Mino calvus*: but the vast bulk of the family, and all of its most typical representatives, are peculiar—even as genera—to Australia; a few only inhabiting New Zealand and other austral lands within moderate distance.

There are no typical *Nectarinidæ* in Australia;† but forms of *Meliphagidæ* (as *Acanthorhynchus*) which rival them in length and attenuation of bill. The *Dicaeum* group, however, is represented by *Myzanthus hirundinacea*, which differs from *M. ignipectus* of the S. E. Himalaya in its superior size, the greater development of the crimson upon the breast and of the black below it—the lower

\* The remarkable nest of *Plectorhyncha lanceolata*, as figured by Mr. Gould, B. A. pt. IV, resembles that of an Oriole.

† A true *Nectarinia* from New Ireland is figured by Mr. Gould, in the 'Zoology of the Voyage of H. M. S. 'Sulphur.'

tail coverts also being weak crimson, in its upper-parts being glossed with steel-blue untinged with green, and the breast white where the other is fulvescent.\* *Smicrornis flavescens*, Gould, B. A. pt. XXI, seems also to be congeneric with my *Piprisoma agile*, (Tickell,) of India, in which case the latter generic name yields precedence.

*Columbidæ*. This family is largely developed in Australia, where the numerous swift-flying ground Pigeons seem to replace in their economy not only the Partridges, but the Gangas (*Pterocles* and *Syrnhaptes*), of the anciently known continents. Of the *Treroninæ*, there are no Hurrials (*Treron*): and the only typical *Carpophaga* is allied in colour and habit to the littoral *C. alba* of the Malay countries; but the very beautiful *C. (?) magnifica*, together with *C. (?) Novæ Zealandiæ*, (Gm., v. *Columba princeps*, Vigors, figured in the 2nd series of Jardine and Selby's 'Illustrations of Ornithology,'†) is intermediate to the true *Carpophagæ* and the *Ptilinopodes*, rivalling the former in size and the latter in vividness of colouring. Of *Ptilinopus*, at least three species (*Swainsonii*, *Ewingii*, and *superbus*,) occur, all of the oceanic subgroup with lake-coloured coronal patch. There is, however, a genus of true *Columbinæ* (easily distinguished by having but 12 rectrices, instead of 14 as in the *Carpophagæ*), which repeats most of the characters of *Carpophaga*, and numbers several species in India, Africa, and Australia. This is *Alsocomus*, Tickell, to which may be referred *C. spadicea* and *C. leucomela* of Australia; and the *Lopholaimus antarcticus* is barely separable as a distinct subdivision. Other *Columbinæ* exist in the *Macropygia phasianella*, so nearly allied to the Nicobarian *M. rufipennis*, and *M. amboinensis* of the Eastern Islands; and in the several *Geopeliæ*, which, so far as known, with the exceptions of *G. striata* and *G. Maugei* of the Eastern Islands,‡ are peculiar to Australia, and there replace the allied division *Turtur* of Europe, Asia, and Africa. *G. humeralis*, like *Ectopistes carolinensis* of America, is very remarkable among the *Columbinæ* (inclusive of the other species of its genus) for possessing 14 rectrices, like the *Treroninæ* and *Gourinæ*: and as the columbine genus *Alsocomus* approximates *Carpophaga* among the former, so do the columbine genera *Chalcophaps*, *Peristera*, and *Chamæpelis* (peculiar to America§), approximate the latter; *Chalcophaps* only being represented in Australia, by a species (if not two?) very closely allied to *Ch. indica* of India and the Malay countries,—the species assigned to *Peristera* in Mr. Gould's work pertain-

\* This form must not be confounded with *Myzantha* of Vigors and Horsfield, adopted in Mr. Gould's work; but which bears the prior name *Manorhina*, Vieillot.

† Dr. Dieffenbach remarks—"I doubt the existence in New Zealand of more than one species of Pigeon, the *Columba argetræ* of Forster" (i. e. *C. Novæ Zealandiæ*, Gm.)

‡ Very slight varieties of plumage exist, but not sufficient to constitute species."

§ If not also *Zenaida*.

§ Also *G. albiventris*, nobis, of Timor, if distinct from *G. Maugei*.

ing to the gourine genus *Phaps*, the distribution of which is peculiar to Australia. This *Phaps* group, (to which *Leucosarcia*, *Ocyphaps*, *Geophaps*, and *Petrophassa* of Gould are subordinate,) comprises the various swift-flying and more or less exclusively ground Pigeons to which allusion has already been made; some of them being (strangely) adorned with a *Peewit*-like occipital crest, and most of them exhibiting the metallic colouring upon the wings which has obtained the name of "Bronze-wing" for the group.

The Gallinaceous tribes of Australia, with the exception of three known species of the exceedingly remarkable family *Megapodiidæ*, consist exclusively of species of small size, either Quails (*Coturnix*) or *Turnices*, or forms closely allied to them. There is one typical Quail (*C. pectoralis*), most allied to *C. coromandelicus* of India;\* and three or four species of *Synoicus*, Gould, barely separable from *Coturnix*, and comprising the *C. sinensis*, (Lath.), common to India, China, the Malay countries, and Australia. The *Turnices* (or Three-toed Quails, so called,) are numerous, and present two leading modifications of form; one stout-billed, the other with comparatively slender bill, like those of other regions: besides the *Pedionomus torquatus*, Gould, B. A. pt. I, which is essentially a *Turnix* with a hind-toe, analogous to *Squatarola* among the Plovers, and some other instances of the kind that might be mentioned.† The only large, or comparatively large, *Gallinacæ* of Australia are the *Megapodiidæ*, consisting of the "Brush Turkey" of the colonists, or "New Holland Vulture" (!) of some systematists (*Talegalla Lathamii*, Gray),—the so called "Pheasant" of the colonists, (*Leipoa ocellata*, Gould), B. A. pt. I,—and the so called "Jungle-fowl" (*Megapodius tumulus*, Gould), B. A. pt. VI, of Port Essington. This extraordinary group, so very remarkable and even anomalous among birds for the non-incubation of the eggs, which are hatched either by solar heat or that of fermentation,‡ has its geographical focus in New Guinea and the countries adjacent; but we have obtained one species of true *Megapodius* from the Nicobar Islands (*M. nicobariensis*, nobis), closely allied to that of northern Australia, from which it differs, however, in being considerably smaller, of a lighter and more uniform brown colour, with the crest much less developed and not peaked, and the legs appear to have been olive-brown instead of "bright orange." The *Pavonidæ* or *Phasianidæ* of authors have no Australian representative.

The *Cursoræ* are exemplified by the Emeu, of which the nearest living affine is the Cassowary of the Eastern Islands. New Zealand was the focus of an

\* *C. Novæ Zealandiæ*, Quoy and Gaymard, is, I believe, another proper to the islands from which it takes its name.

† A second species of *Pedionomus* has also been described by Mr. Gould.

‡ In which latter case, the experiments of Haller (upon hatching by dung-heat,) seem to show that it is necessary the air should be admitted to them when the chick is nearly ready for exclusion.

allied group, when its various species of *Dinornis* were in existence: and there is reason to suspect that one at least of the smaller species of *Dinornis* is not yet wholly extinct in the middle island; while a second species of *Apteryx*, with transversely striated plumage, supposed also to be from the middle island, has recently been described by Mr. Gould by the name *A. Owenii*.\* I do not remember to have seen any notice of extinct species of this order, the remains of which had been discovered in Australia.

The *Grallatores* are chiefly remarkable for presenting nearly every generic form found in India and other countries of the Old World: and if the *Scolopacidae* seem to be less numerous in species than elsewhere, it is perhaps because they have not yet been sufficiently discriminated; for it is probable that many more of the Asiatic species will eventually be found to extend their range to Australia, than have hitherto been observed there. But one species of Bustard is known, which, as we have seen, scarcely differs from the Great Bustard of India. The only Crane is believed to be identical with *Grus antigone* of India: and the only Stork is the *Mycteria australis* of India; but there are two peculiar Spoonbills, one closely allied to the Indian and European species, the other beautifully exhibiting the affinity of the genus for *Threskiornis* (in its pendent neck-plumes, the peculiar form of its tertiaries,† &c.) Of three Ibises, one is a *Threskiornis*, very closely allied to the Sacred Ibis of Africa and to *Thr. melanocephalus* of India; another, a very remarkable *Geronticus* (also an Indian form), with solid straw-like plumes pendent from the breast, analogous to the scapularies of the male *Gallus Sonneratii*;‡ and the third is the common *Falcinellus igneus* of India and Europe. Of *Ardeinæ*, the *Ardea cinerea*, *Botaurus stellaris*, and *Nycticorax griseus* of Europe and India, are severally replaced by *A. rectirostris*, *B. melanotus*, and *N. caledonicus*. There are also the *Ardea pacifica*, *Demigretta* (?) *Novæ Hollandiæ*, and *D. picata*;§ and the *Herodias symmetrophorus* and *H. immaculata* of Gould, are very doubtfully separable from *H. alba* and *H. garzetta* of India and Europe. *Ardetta* (?) *flavicollis* is believed to be identical with the Indian and Chinese *A. nigra*; and there is said to be a small typical *Ardetta* allied to *A. minuta* of Europe and the Himalaya.|| These

\* *Proc. Zool. Soc.* June 8th, 1847. This cannot well be the "Fire-man" of the sealers, *P. Z. S.* April 13th, 1847, which is not improbably a small *Dinornis*.

† A tendency to this structure is shown in the beautiful pink tertiaries of *Tantalus leucocephalus*.

‡ The African *Anastomus laminigerus*, Tem., affords another instance of this structure of feather in a Grallatorial bird, also belonging to the Ibis group.

§ *Herodias Greyi*, from S. Australia, enumerated in Mr. G. R. Gray's British Museum Catalogue, is probably another *Demigretta*; as likewise his *H. jugularis*, Forster, from New Zealand.

|| Probably *A. punctata* of Mr. G. R. Gray's British Museum Catalogue. Is not this *Ardea pusilla*, Wagler?

being all the Australian Herons which I have heard of, or about half the number that are met with in India.\* *Ardeola leucoptera* was originally described as Australian; but no such species appears to have been lately encountered in that country, and the Indian *A. malaccensis* is doubtless referred to, with the habitat erroneously assigned.

The *Charadriadæ* number *Squatarola helvetica*, common to India, Europe, and N. America; *Charadrius virginiacus*, common to India, China, and both Americas;† and *Hiaticula nigrifrons*, which has once only been obtained in India. No *Cursorius* has yet been observed (a form which would seem to be peculiarly suitable to Australia); but a singularly long-winged and long-legged Pratincole (*Glareola grallaria*, Tem., B. A. pt. XXIII). *Esacus recurvirostris* of India is replaced by the allied *E. magnirostris*; and *Ædicnemus crepitans* of India and Europe by two species, a northern and a southern, in the opinion of Mr. Gould. The Dottrels of Europe and N. Asia have also a very interesting representative in *Eudromias australis*, Gould, B. A. pt. XIII; and another *Eudromias* (according to Mr. G. R. Gray) exists in the *Charadrius xanthocheilus*, Wagler, of V. D. Land and New Zealand. There are at least six peculiar species of Ring Dottrel (*Hiaticula*);‡ besides the *Erythrogonyx cinctus*, a peculiar form with a small hind-toe and more lengthened bill, which links the Ring Dottrels with the Lapwing group. Of the latter, I know only *Lobivanellus lobatus* and *L. personatus*, and *Sarciophorus pectoralis*. There are two species of *Hæmatopus*, one closely allied to that of Europe, and perhaps not differing from the Indian Oyster-catcher; the other distinguished by Mr. Gould (though he does not state how§) from the Black Oyster-catchers of S. Africa and Cape Horn. The Turnstone is common to the Australian coasts, with those of all other countries.||

\* We should hardly indeed have expected so many in Australia, considering the character of the country generally: but it is probable that others remain to be discovered, especially about the rivers that flow into the Gulf of Carpentaria, where (as Dr. Leichardt's narrative abundantly testifies) the numbers of *Pteropodes*, and the kinds of Grallatorial and Natatorial birds so numerous met with, also the plague of Kites, &c. &c., vividly recal to mind the prominent features of the Indian vertebrated fauna in similar localities.

† *Ch. virginiacus* inhabits also New Zealand; where there are likewise *Ch. obscurus*, Gm., and *Hiaticula Novæ Seelandiæ*, (Gm.)

‡ *H. inornata*, Gould, is considered by that gentleman to be a beautiful representative of *H. Wilsonii* of N. America; but he need hardly have gone so far, for in India we have *H. Geoffroyi* and *H. Leschenaultii*, both of which are more nearly allied to it.

§ The distinctness is here not doubted, and I observe that it is recognised in Mr. G. R. Gray's British Museum Catalogue; but it would be satisfactory to be informed of what the difference consists in.

|| Mr. G. R. Gray, in his British Museum Catalogue, gives *Strepsilas interpres*, from "Abrolhas;" and another *Strepsilas*, unnamed, from "Houtman's Abrolhas."

The *Recurvirostridae* comprise an Avocet, allied in colouring to that of N. America; a Stilt identical with that of the Malay countries, and with the less common of two species found in India; and a peculiar intermediate form, the *Cladorhynchus pectoralis*, Gould, B. A. pt. II: besides which Mr. Gould figures a *Himantopus Novæ Zealandiæ*, B. A. pt. IV.

Of *Scolopacidae*, the only known Snipe is *Gallinago australis*, (Lath.), common in India, China, and the Malay countries: there is no Woodcock. The distinctions of the Australian Painted Snipe (*Rhynchea australis*) from that of India have already been remarked. The only *Totani* I find noticed are the two Indian species of Greenshank (*glottoides* and *Horsfieldi*), and probably the little *T. hypoleucos*.\* The only observed *Tringæ* seem to be *Tr. australis*, *Tr. subarquata* of India, Europe, &c., and *Tr. minuta* (or a nearly allied species?)† *Xenus cinereus* occurs; and a *Limosa* doubtfully separable from *L. agocephala*:‡ and finally three peculiar species of Curlew—*Numenius cyanopus*, Vieillot, *N. uropygialis*, Gould, and *N. minutus*, Gould; the first and second replacing the large and the Whimbrel Curlews of India and Europe.

The *Rallidae* comprise two species of *Porphyrio*, respectively inhabiting the east and west; one of *Gallinula*; a Coot; at least four of Water-crake (*Porzana*); an aberrant Rail, allied to the Indian and Malayan *R. (?) striatus*; and two new forms described and figured by Mr. Gould—*Tribonyx ventralis*, B. A. pt. XX, (a large and robust Gallinule-like Crake, of which a second Australian species has since been discovered—*Tr. Morticri*, Dubus),—and *Eulabeornis castaneiventris*, B. A. pt. XVII, (a gigantic large-bodied and long-tailed Rail, from Port Essington.) Most of the first-named are nearly allied to Indian and European species.

The *Natatores*, like the *Grallatores*, exhibit few peculiar types; but representatives of most of the forms found in other countries. As peculiarities of the southern hemisphere generally, may be mentioned the substitution of the Penguins for the *Alcadæ*—one species only appearing to inhabit the Australian coasts; and the great development of the Petrel group, contrasted with the paucity of Gulls, though the *Sterninæ* or Terns are fully represented. I know but of two Gulls (*pacificus* and *Novæ Hollandiæ*), and one Skua (*antarctica*), found about Australia and V. D. Land; but two other Gulls are met with at New Zealand (according to Mr. G. R. Gray), one of them the *L. fuscus*

\* *Tringa aurita*, Lath., is referred doubtfully by Mr. G. R. Gray to *Tot. hypoleucos*, which is a very likely species to extend its range to Australia. A *Totanus*, also, with no specific name attached, from Pt. Essington, is enumerated in Mr. G. R. Gray's British Museum Catalogue,

† In Mr. G. R. Gray's Brit. Mus. Catalogue, I observe two Australian species, unnamed, placed one on either side of "*Schœniclus minutus*."

‡ A *Limosa brevipes*, from New Zealand, is enumerated in Mr. G. R. Gray's Brit. Mus. Catalogue.

of Europe, which is not rare in the Bay of Bengal and Persian Gulf:\* the *Sterninæ*, however, comprise a *Rhynchops*; a *Sylochelidon* (very doubtfully separable from *S. caspia*);† two species of *Thalasseus* (*poliocercus* and *Torresii*); five of restricted *Sterna* (*Dougallii*, of very general distribution, *melanura*, *gracilis*,‡ *velox*, and *melanauchen*); a *Sternula* (*nereis*); a *Hydrochelidon* (*fluviatilis*); an *Onychoprion* (*fuliginosus*), and as many as four species of *Anous* (*stolidus*, *melanops*, *tenuirostris*, and *cinereus*). The last, with the Albatrosses and Petrels, belong chiefly to the oceanic fauna. There are no Loons (*Colymbus*); but at least three species of Grebe (*Podiceps*), and a fourth inhabits New Zealand. The *Pelecanidæ* are represented by a peculiar Pelican,—at least four species of Gannet (of which one is nearly allied to the common Atlantic species, and two extend their range to the China seas, and one of these also to the Indian Ocean),§—several of Cormorant, three of which, figured by Mr. Gould, are remarkable (like certain of the Herons of Australia) for having their entire under-parts pure white,||—a *Plotus*, nearly allied to that of India,—and at least one Tropic-bird (*Phaëton phænicurus*), if not also the two other species: a peculiar Frigate-bird (*Fregata*), from the vicinity of Port Essington, is further enumerated in Mr. G. R. Gray's British Museum Catalogue. Finally, the *Anatidæ* are well represented by at least the following species—the Swans by the well known Black Swan, formerly deemed so anomalous,¶—the Geese, if at all, by the very peculiar form *Cereopsis*\*\*—the Spur-wing or Whistler group by *Anseranas melanoleuca*, and by *Dendrocygna Eytoni* and the common Indian *D. arcuata*,—the Girra group by the so called *Bernicla jubata*, and by *Nettapus*

\* Here, also, the species of true Gulls are very few. The only species I know of in the Bay of Bengal, besides *L. fuscus*, are *L. ichthyætus*, Pallas, (with a wholly jet-black hood during the breeding season,) which is common towards the mouths of the Ganges; and *L. ridibundus* and *L. brunnicephalus*, the common small Gulls of the Gangetic delta. I have seen no Petrel whatever; but am aware of the occurrence of a species in the Bay of Bengal, abounding towards the mouths of the Ganges in stormy weather, when difficult to procure. Mr. Jerdon informs me that he has seen such a bird in Madras Roads, and possesses a specimen of it—"Dark, about 12 or 13 in. long."

† *Sterna pelicanoides*, King, is probably no other.

‡ Nec *St. gracilis*, Ruppell, which is a *Thalasseus*.

§ *Sula rubripes*, Gould, (since identified by him with *S. piscator*, L.,) referred to above as occurring in the China seas, is enumerated in Mr. G. R. Gray's British Museum Catalogue, from Jamaica.

|| Mr. G. R. Gray, in the Ornithological portion of the Appendix to Dieffenbach's New Zealand, enumerates seven species of Cormorant as inhabiting that country, to which an eighth is added in his Brit. Mus. Catalogue. Most of them occur also in Australia.

¶ Another austral Swan, *C. nigricollis* of S. America, has a black neck.

\*\* An *Anser*, with no specific name attached, is included in the Ornithological Appendix to Gov. Grey's work. *Anseranas melanoleuca* is the "Wild Goose" of the colonists.

*pulchellus* and the common Indian *N. coromandelianus*,—the Shieldrake group by *Casarca tadornoides* and *Tadorna radjah*,—the true Ducks by *Anas Novæ Hollandiæ*, *A. superciliosa*, *A. nævosa*,\* *A. punctata*, *Spatula rynchotis*, and *Malacorhynchus membranaceus*,—and the diving Ducks (with lobated hind-toe,) by *Fuligula australis*, *Biziura lobata*, and *Erismatura australis*.† Of these, the *Cereopsis*, *Anseranas*, *Malacorhynchus*, and *Biziura* are acknowledged generic types peculiar to Australia: Mr. Gould also separates the *Dendrocygna Eyttoni*, by the name *Leptotarsus*, but it does not appear on sufficient grounds; the *Bernicla jubata* has a much better claim to be thus distinguished, being obviously allied to *Nettapus* rather than to the Bernacle Geese. *Cereopsis* is another remarkable type, the nearest affinity of which is less apparent. It may lastly be added that no Flamingo has been hitherto observed in Australia; a genus which Mr. Swainson rightly referred to the *Anatidæ*, however anomalous in its proportions.

The foregoing rapid sketch of the Ornithology of Australia will convey some general notion of the *ensemble* of the birds of that region, and of the present state of information on the subject, for which we are so much indebted to Mr. Gould. I believe that I have omitted no prominent member of the class observed in Australia, to the period of the latest available information; though some allowance must of course be made for disadvantage of position, compelling oftentimes a reference to figures and descriptions rather than to specimens, and for isolation from other students of Ornithology. A sketch is all that can be expected under such circumstances; and the present one comprises a few novel approximations of genera, which may lead to ulterior improvement in classification.

#### REPTILIA ET PISCES.

Had we the space now left, there are no materials in the Society's museum for an original analysis of the Australian species of these two classes. Mr. J. E. Gray, in the Appendix to Gov. Grey's work (1841), gives a catalogue of 107 species of Australian reptiles; to which, in the Appendix to Mr. Eyre's work (1845), he remarks, that, since preparing that list, "the British Museum has received from the different travellers various other species from that country. The Lizards have been described in the catalogue of the museum collection, recently published (1845), and are being figured in the Zoology of H. M. S. 'Erebus' and 'Terror.'" Mr. Gray then proceeds to describe two species of a new genus of Frog; and Mr. Eyre adds some remarks on the habits of certain other Australian reptiles. The British Museum Catalogue gives a list of 97

\* *A. nævosa*, as figured by Mr. Gould, *B. A.* pt. V, is certainly in the abnormal plumage put forth after the breeding season. Mr. G. R. Gray refers it to *Tadorna*!

† The New Zealand *Anatidæ* enumerated in the Appendix to Dieffenbach's work are *Casarca variegata*, *Anas superciliosa*, *Spatula rynchotis*, *Hymenolaimus malacorhynchus*, and *Fulica Novæ Zealandiæ*.

species of Australian lizards, exclusive of those peculiar to Van Dieman's land, and comprising two only of which the habitat requires confirmation. And we have, lastly, in the Appendix to Capt. Stokes's narrative, (1845,) new additional species described by Mr. Gray; if there be not also some other descriptions of which I am unaware. The fishes of Australia will, I believe, be extensively illustrated by Dr. Richardson, (who has devoted so much attention to this branch of the Australian fauna,) in the forthcoming Zoology of H. M. S. 'Erebus' and 'Terror;' and we may then look for a conspectus of all that is known of Australian Ichthyology, embracing the various fragmentary contributions which have hitherto been published. A catalogue of 92 species of New Zealand fishes has been contributed by Dr. Richardson to the Appendix to Dr. Dieffenbach's 'Travels in New Zealand' (1843); and (so late as 1845,) Count Strzelecki estimated the number of known Australian species, including the contributions made by the French and others, as not exceeding 60! The fresh-water species of Australia would appear to be extraordinarily few; but comparatively little has, that I am aware of, been yet effected towards their investigation.

#### ADDITIONS AND CORRECTIONS.

Page 7. For *Trichoglossus* "*coccinnus*," read *concinus*.

P. 22, last line. For "Gould," read (*Guld.*), i. e. Guldenstadt.

Pp. 26, 39. *Oreocincla dauma* (v. *Whitei*), *O. varia*, and *O. lunulata*. I find among my papers the following memorandum made in England, of the differences observable between these three allied species of Thrush. "The Javanese species" (*O. varia*) "has the bill and feet larger and coarser than in the others. The Himalayan bird" (*O. dauma*) "exceeds it in size, and is much more uniformly mottled, particularly on the least wing-coverts and crown of the head; the feathers being everywhere more broadly margined with black, and the colours brought out better by contrast: the wings of the latter are longer, and the tips of the tertiaries are 2 in. or more distant from those of the primaries; whereas those of *O. varia* reach to within 1½ in. of the tips of the primaries: in *O. varia*, the fourth developed primary rather exceeds, if anything, the third in length; whilst in *O. dauma*, these proportions are constantly reversed. Several minor points of distinction likewise exist, of which it will be sufficient to remark that the barred markings of the tail-feathers, so conspicuous on the inner vanes of those of the Javanese species, do not exist in either of the others. The Australian bird" (*O. lunulata*) "is very inferior in size to *O. dauma*, but resembles it more in form than it does *O. varia*, which latter it however approximates in its markings and more silky texture of plumage." From these notices it is further obvious that *O. nilgherriensis*, nobis, is distinct from *O. varia*.



