THE BIRDS OF AUSTRALIA.

BY J. GOULD, F.R.S. &c

DEDICATED BY PERMISSION TO HER MAJESTY.

PART XVII.

CONTENTS.

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vii,	Jun, 1st, 1842	
viii,	Sep 1st, 1842	
ix,	Dec 1st, 1842	
x,	Mar 1st, 1843	
xi,	Jun 1st, 1843	
xii,	Sep 1st, 1843	
xiii,	Dec 1st, 1843	
xiv,	Mar 1st, 1844	
xv,	Jun 1st, 1844	
xvi,	Sep 1st, 1844	
xvii,	Dec 1st, 1844	
xviii,	Mar 1st, 1845	
xix,	Jun 1st, 1845	
xx,	Sep 1st, 1845	
xxi,	Dec 1st, 1845	
xxii,	Mar 1st, 1846	
xxiii,	Jun 1st, 1846	
xxiv,	Sep 1st, 1846	
xxv,	Dec 1st, 1846	
xxvi,	Mar 1st, 1847	
xxvii,	Jun 1st, 1847	
xxviii,	Sep 1st, 1847	
xxix,	Dec 1st, 1847	
xxx,	Mar 1st, 1848	
xxxi,	Jun 1st, 1848	
xxxii,	Sep 1st, 1848	
xxxiii,	Dec 1st, 1848	
xxxiv,	Dec 1st, 1848	
xxxv,	Dec 1st, 1848	
xxxvi,	Dec 1st, 1848	

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THE

BIRDS OF AUSTRALIA.

BY

JOHN GOULD, F.R.S.,

F.L.S., F.Z.S., M.E.S., F.ETHN.S., F.R.GEOG.S., M. RAY S., HON. MEMB. OF THE ROYAL ACADEMY OF SCIENCES OF TURIN, OF THE ROY. ZOOL. SOC. OF IRELAND, OF THE PENZANCE NAT. HIST. SOC., OF THE WORCESTER NAT. HIST. SOC., OF THE NORTHUMBERLAND, DURHAM AND NEWCASTLE NAT. HIST. SOC., OF THE NAT. HIST. SOC. OF DARMSTADT AND OF THE TASMANIAN SOCIETY OF VAN DIEMEN'S LAND, ETC.

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1848.

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Oct. 24th 1861

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for wh please find
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Edwin Prince
for J. Gould.

Gerard Krefft Esq

London Oct 31st 1861

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for J. Gould

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GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

GENERAL INDEX.

The References to the Pages in the above Index will be found correct if the Subscribers will cause them to be numbered in the order in which the respective volumes are arranged, which could not be done in the course of publication.

PREFACE.

HAVING in the summer of 1837 brought my work on the "Birds of Europe" to a successful termination, I was naturally desirous of turning my attention to the Ornithology of some other region; and a variety of concurring circumstances induced me to select that of Australia, the Birds of which, though invested with the highest degree of interest, had been almost entirely neglected. Dr. Shaw, in his "Zoology of New Holland," had devoted a few plates to the subject, from specimens collected by Sir Joseph Banks during the first voyage of Captain Cook; the "Birds of New Holland" by Lewin comprised not more than twenty-six plates; and figures and descriptions of a few species were given in the earlier voyages of Phillip, White and Collins, and the more recent one of King. At a subsequent period the late Mr. Vigors and Dr. Horsfield commenced an elaborate memoir on the Collection of Australian Birds in the possession of the Linnean Society; but unfortunately, they did not proceed farther than the *Meliphagidæ*, and the non-completion of their labours is the more to be regretted, inasmuch as the Linnean Society's collection of Australian birds, at that time the finest extant, comprised many species collected by Mr. Brown during his voyage with the celebrated navigator Flinders, and was moreover enriched with some interesting notes by the late Mr. George Caley, by whom the collection was chiefly formed. Descriptions of many Australian birds were also included in the works of Latham, Shaw, Cuvier and Vieillot, as well as in several of the recent French voyages of discovery; still no general work on the subject had been undertaken, and nearly all that had been recorded by the various writers above enumerated, had reference almost exclusively to the productions of New South Wales and Van Diemen's Land, these being almost the only explored portions of that great country. In the absence, then, of any general work on the Birds of Australia, the field was comparatively a new one, and of no ordinary degree of interest, from the circumstance of its being one of the

finest possessions of the British Crown, and from its natural productions being as remarkable for the anomalous nature of their forms, as for their beauty, and the singularity of their habits. In the attempt to supply this desideratum I commenced publishing from the materials then accessible, but soon found, from the paucity of information extant upon the subject, that it could not be executed in a manner that would be satisfactory to my own mind or commensurate with the exigencies of science; I therefore determined to proceed to Australia and personally investigate (so far as a stay of two years would allow) the habits and manners of its birds in a state of nature. Accordingly in May 1838 I left England, provided, by the liberality of Government, with letters from Lord Glenelg, at that time Secretary of State for the Colonies, Sir George Grey, Bart., and Gordon Gairdner, Esq., of the Colonial Office, recommending me to the countenance and protection of the various Governors, and requesting them to afford me such aid and assistance in furtherance of my objects as they might have it in their power to render; similar favours were also granted me by the authorities of the Admiralty, who, through their Secretary, Sir John Barrow, directed the captains and commanders of Her Majesty's ships and vessels employed on the coasts of Australia to further my views, by giving myself and my assistant a passage to such part of the coasts as either of us might be desirous of visiting, only stipulating that the ships under their command should not be detained on any parts of the coasts they were not ordered to visit. His late Royal Highness the Duke of Sussex, in his capacity of President of the Royal Society, was pleased to favour me with a letter addressed to the authorities, civil and military, of Her Majesty's Colonies, recommending me to their kind offices and protection, as he felt assured that my exertions would materially promote the interests of Natural History. I was also under considerable obligations to the kindness of Captain Washington, R.N., at that time Secretary of the Royal Geographical Society, who furnished me with introductions to Captains Sir John Franklin and Sir Gordon Bremer, R.N., and other influential persons. Having thus acknowledged the facilities afforded me by the home authorities, it becomes my pleasing duty to state that their recommendations and wishes were responded to in the warmest manner by Captain Sir John Franklin, R.N., Governor of Van Diemen's Land; Sir George Gipps, Governor-General of New South Wales; Lieut.-Colonel Gawler, Governor of South Australia; John Hutt, Esq., Governor of Western Australia; and Captain M'Arthur, Commandant of Port Essington; all of whom rendered me every assistance compatible with the instructions under which they were acting. I should be wanting, however, both in courtesy and gratitude, did I not especially acknowledge the warm friendship, and the many acts of genuine kindness which I received at the hands of my valued

friends Sir John and Lady Franklin, who, besides facilitating my views in every way, both publicly and privately, with the most generous hospitality received myself and family into their house, where Mrs. Gould and my eldest son, who had accompanied us, remained for nearly ten months, while I pursued my researches in various parts of Van Diemen's Land and the continent of Australia; and it is only by those who, like myself, have had the advantage of residing in the bosom of this amiable family, that the kindness of their nature and the goodness of their hearts can be duly appreciated, and which can never be erased from my memory. I must acknowledge not less gratefully the many acts of kindness rendered to me by Sir George and Lady Gipps during my stay in Sydney. After exploring Van Diemen's Land, the islands in Bass's Straits, South Australia, and New South Wales, into the interior of which country I penetrated to the distance of nearly four hundred miles from the coast-line, I despatched my able assistant, Mr. Gilbert, to explore the western and northern portions of the country, and returned to England in August 1840; I immediately commenced the work *de novo*, and the result of my labours is now before the public. It fortunately happened at the commencement and during the progress of the work, Her Majesty's ships the Beagle, under the command of Captains Wickham and Stokes; the Britomart, under Captain Stanley; the Fly, under Captain Blackwood, and the Pelorus under Captain Chambers were employed in surveying the northern and north-western coasts of Australia; and the Erebus and Terror under Captain Sir James C. Ross, in a voyage of discovery towards the south pole. While engaged in the performance of their arduous duties, the officers of those vessels succeeded in procuring many interesting novelties, which, with the greatest liberality, were communicated to me for the present work, whereby its value has been much enhanced. This liberality will be found duly acknowledged in the histories of the species, for the use of which I am indebted to the kindness of B. Bynoe, Esq., Surgeon R.N., Lieut. Emery, R.N., Commander J. M. R. Ince, R.N., Edward Dring, Esq., Purser R.N., Dr. Robertson and Robert M'Cormick, Esq., Surgeons R.N., and John M'Gillivray, Esq.

After spending two years in Western and Northern Australia, Mr. Gilbert returned to England in September 1841, bringing with him the result of his labours, which proved of sufficient value and importance to induce me to believe that much yet remained to be discovered in those countries, and to direct him to return thither, which he accordingly did in the ensuing spring; and after again visiting Swan River, and sedulously exploring the interior so far as practicable, he proceeded to Sydney, and, unfortunately for himself, allowed his love

of science, in the advancement of which no one was more ardent, to induce him to join Dr. Leichardt in his overland journey from Moreton Bay to Port Essington. On this expedition, he, as usual, displayed his wonted zeal and activity until the 28th of June, when, the party being treacherously attacked by the natives, his valuable life was sacrificed, I lost a most able coadjutor, and science has to deplore one of her most devoted servants; fortunately, however, in despite of the many difficulties and dangers which beset the party during the remainder of their journey, his journals and notes, together with the specimens he had been able to procure, were preserved and transmitted to me by Dr. Leichardt, and proved of valuable assistance in determining the range of many of the species.

My own researches commenced immediately after passing the Equator, from whence, throughout the entire route to Australia, I omitted no opportunity of studying the habits, and collecting the different species of the oceanic birds that came under my notice: these observations were again resumed on my return to England; and as the outward passage was by the Cape of Good Hope, and the homeward one by Cape Horn, they extended round the globe, and, as will be seen in the course of the work, have led to some important results. And here I must acknowledge my obligations to the various captains with whom I sailed, namely Captain M^{c}Kellar of the "Parsee," which vessel conveyed me to Van Diemen's Land; Captain Harding of the "Black Joke," in which I proceeded from Launceston to Adelaide; Captain Fell of the "Catherine Stewart Forbes," in which I returned from Adelaide to Hobart Town; Captain Gilchrist of the "Potentate," in which I sailed from Hobart Town to Sydney; and Lieutenant Mallard, R.N., of the "Kinnear," which brought me to England; all of whom rendered me every assistance in their power, and the use of a boat and crew whenever the weather would admit of one being lowered, by which means I was enabled to obtain nearly forty species of Petrel, being the finest collection of the *Procellaridæ* ever brought together.

At the commencement of the work it was not expected that it would prove so extensive as it has become, since not more than about 300 species were then known, which number has now been increased, by the united efforts of myself and those who have so kindly aided my views, to upwards of 600 species, among which are comprised many forms remarkable for their novelty, the anomalous character of their structure, and the singularity of their habits, such as the Bower Birds (*Ptilonorhynchi* and *Chlamyderæ*) and the Mound-raising Birds (*Talegalla*, *Leipoa* and

Megapodius). The singular runs or bowers of the *Chlamydera* were considered by some explorers to be the cradles of the infants of the aborigines, and the mounds of the *Megapodius* to be tumuli, errors which have been rectified in the present work.

It is not to be supposed that an undertaking of such magnitude as the present could have been brought to a successful termination by the unaided efforts of a single individual, and I have, therefore, very great pleasure in stating that my views were most ably seconded by every one with whom the nature of my investigations brought me in contact; but by none more than by the Rev. Thomas James Ewing, who, besides manifesting the warmest friendship, has ever taken especial interest in promoting the success of the present work; nor must I omit to mention R. C. Gunn, Esq., Lieut. Breton, R.N., the Hon. Henry Elliot, Aide-du-camp to the Governor, Lieut. Friend, R.N., and Captain Booth, all of Van Diemen's Land. In New South Wales my best thanks are due to George Bennett, Esq., who, like Mr. Ewing, favoured me with his warmest friendship, and evinced an equal anxiety for the success of my undertaking; the Messrs. James and William M'Arthur, of Camden; the Messrs. Stephen and Charles Coxen, of Yarrundi; Charles Throsby, Esq., of Bong-bong; Alexander and William S. MacLeay, Esqs.; Captain P. P. King, and many others. Much valuable information has been communicated to me by George Grey, Esq. (now Governor of New Zealand), whose exertions during his expedition along the north-western coasts of Australia were characterized by a degree of energy of character and perseverance but rarely equalled; whose ornithological collection made during this arduous enterprise, although small, was by no means destitute of interest; and who, upon succeeding Colonel Gawler in the Governorship of South Australia, found time amidst his multifarious occupations to devote considerable attention to Natural History, and to send me some interesting drawings and other details respecting the mounds raised by the *Leipoa*, &c. In South Australia I received many acts of kind attention and assistance from my friend Captain Sturt, whom I accompanied on one of his expeditions into the interior; and I have much pleasure in acknowledging my obligations to Mr. Eyre, now Lieut.-Governor of New Zealand, and the late J. B. Harvey, Esq.

Nor must I conclude my acknowledgements of the kindness of those who have rendered me their aid, without especially recording the liberality of the Right Hon. The Earl of Derby, who has at all times most readily submitted to my inspection every collection of which he has become the possessor, and allowed me the free use of any objects desirable for the enhance-

ment of the "Birds of Australia;" neither is the kindness of His Highness the Prince of Canino, Sir Wm. Jardine, Bart., Robert Brown, Professor Owen, H. E. Strickland, W. Yarrell, T. C. Eyton, J. J. Bennett, D. W. Mitchell, and E. Blyth, Esqs., forgotten by one whom they have ever been sedulous to oblige. My thanks are also due to the Trustees, to J. E. Gray, and G. R. Gray, Esqs., of the British Museum; and to the authorities of the Linnean and Zoological Societies of London, the Royal Museums of Berlin, Leyden and Paris, and the Museum at Sydney. I am also considerably indebted to my friend W. C. L. Martin, Esq., author of many valuable works and papers on natural history, for the readiness with which his varied literary attainments and critical acumen have at all times been rendered, whenever solicited, to enhance the accuracy of my labours.

At the conclusion of my "Birds of Europe," I had the pleasing duty of stating that nearly the whole of the Plates had been lithographed by my amiable wife. Would that I had the happiness of recording a similar statement with regard to the present work; but such, alas! is not the case, it having pleased the All-wise Disposer of Events to remove her from this sublunary world within one short year after our return from Australia, during her sojourn in which country an immense mass of drawings, both ornithological and botanical, were made by her inimitable hand and pencil, and which has enabled Mr. H. C. Richter, to whom, after her lamented death, the execution of the Plates was entrusted, to perform his task in a manner highly satisfactory to myself, and I trust equally so to the Subscribers. The colouring, as in the case of the "Birds of Europe," and my other works, has been entirely executed by Mr. Bayfield, to whose unwearied exertions and punctuality I must not fail to bear testimony, as well as to the minute accuracy with which his labours have been performed. The printing of the Plates, by Messrs. Hullmandel and Walton, and the letter-press, by Messrs. R. and J. E. Taylor, has also been equally satisfactory.

And I cannot refrain from speaking in the highest terms of my assistant, Mr. Edwin C. Prince, who has been with me from the commencement of my various works. I left him in charge of the whole of my affairs during my absence from England, with a perfect conviction that he would zealously exert himself for my interest, and the confidence I reposed in him has been fully realized, not only during my absence, but during the long period of eighteen years.

It was my most anxious wish that the unique and perfect collection of Australian Birds,

forming the originals of the present work, should have found a resting-place in the National Museum of this country, inasmuch as it comprised examples of both sexes of nearly every known species in various stages of plumage, each carefully labelled with its correct scientific appellation, the date when and the place where killed, the sex ascertained by dissection, and the colouring of the soft parts; besides which, it comprised the finest specimens I had been able to procure during the long period of ten years, collected together at an expense of more than £2000, and at the cost of three valuable lives, namely, that of Mr. Gilbert above referred to; that of Mr. Johnson Drummond, who was killed by a native while seeking for specimens in Western Australia; and that of a fine young man, one of the attendants assigned to me by Sir John Franklin, who was accidentally killed by the explosion of a gun he was removing from a boat when landing on one of the islands in Bass's Straits. Regretting that I could not afford to make a donation of it, I addressed a letter to J. E. Gray, Esq., the chief Zoological officer of the British Museum, in which, after stating that the entire collection amounted to nearly 600 species, and upwards of 1800 specimens, with the full complements of eggs of more than 300 species, I made the following offer,—"I believe that in some instances the Government has lent its aid and support to works of such magnitude as the 'Birds of Australia' by taking a certain number of copies; were this done in my own case, and not less than twenty-five copies were taken, I should be most happy to present to the Museum both the Collections above-mentioned, but should such an arrangement be declined then I beg to offer them to the Trustees for the sum of £1000." To my own, as well as to the regret of nearly every scientific man in Europe, my offer was declined by the Trustees. Upon this circumstance becoming known to Edward Wilson, Esq., of Lydstip House, near Tenby in Pembrokeshire, that gentleman immediately purchased the entire collection for his brother, Dr. T. B. Wilson, of Philadelphia in North America, whither it will be shortly removed, and where it will be at all times available for the purposes of science, and form a portion of perhaps the most extensive ornithological collection in the world.

In conclusion I would beg to say, that having brought the "Birds of Australia" to a close, after devoting nearly ten years to its production, I trust it will be admitted that it has been terminated in the same spirit with which it was commenced, and that any errors which may be found will be viewed with leniency, when the extent of the work, and the difficulty of procuring and arranging so large a mass of materials, is taken into consideration; should my labours, such as they are, merit the approbation of those who have so liberally supported it,

my own efforts will be amply repaid. Although the work comprises every species known to inhabit Australia up to the present time, it is not to be supposed that it contains the whole of the birds of that vast country, of which so large a portion is yet a *terra incognita*. Every new district towards the north-west that may be explored will doubtless afford additional species, and which may hereafter form the materials for a supplement.

I originally intended to include the Birds of New Zealand in the present work, but upon further investigation of the subject I found that they belong to a distinct Fauna, which fact, coupled with the vast accession of new species from the continent of Australia, induced me to omit all but those that had been published in the first instance, and one or two others remarkable for their great interest.

Enjoying, by the blessing of Providence, constant good health, and energies as yet unimpaired, I propose still to devote my humble efforts to the advancement of Ornithology, that science which treats of one of the most pleasing portions of the Almighty's many wonderful works; and with ample materials at my command for illustrating the Birds of another magnificent portion of the domains of the British Crown—India—my next work will probably be on "the Birds of Asia," which will, irrespective of all other considerations, be of no little interest as forming the connecting link between the Birds of Europe and the Birds of Australia.

JOHN GOULD.

June 12, 1848.

INTRODUCTION.

GEOLOGICAL researches into the structure of the globe show that a succession of physical changes have modified its surface from the earliest period up to the present time, and that these changes have been accompanied with variations not only in the phases of animal and vegetable life, but often in the development also of organization; and as these changes cannot be supposed to have been operating uniformly over the entire surface of the globe in the same periods of time, we should naturally be prepared for finding the now existing fauna of some regions exhibiting a higher state of development than that of others; accordingly, if we contrast the fauna of the old continents of geographers with the zoology of Australia and New Zealand, we find a wide difference in the degree of organization which creation has reached in these respective regions. In New Zealand, with the exception of a *Vespertilio* and a *Mus*, which latter is said to exist there, but which has not yet been sent to this country, the most highly organized animal hitherto discovered, either fossil or recent, is a bird; in Australia, if compared with New Zealand, creation appears to have considerably advanced, but even here the order *Rodentia* is the highest in the scale of its indigenous animal productions; the great majority of its quadrupeds being the MARSUPIATA (Kangaroos, &c.) and the MONOTREMATA (*Echidna* and *Ornithorhynchus*), which are the very lowest of the Mammalia; and its ornithology being characterized by the presence of certain peculiar genera, *Talegalla*, *Leipoa* and *Megapodius*; birds which do not incubate their own eggs, and which are perhaps the lowest representatives of their class, while the low organization of its botany is indicated by the remarkable absence of fruit-bearing trees, the *Cerealia*, &c.

My investigation of the natural productions of Australia induces me to believe, that at some remote period that country was divided into at least two portions, since, with a few exceptions, I find the species inhabiting the same latitudes of its eastern and western divisions differing from, but representing each other. Some writers, Captain Sturt and Mr. Jukes, *e. g.* are of opinion that its subdivision was even greater, and that the sandy deserts now met with in the interior were formerly the beds of the seas that flowed between the archipelago of islands of which they suppose it to have been composed. In a valuable paper by Mr. Jukes, entitled 'Notes on the Geology of the Coasts of Australia,' read at the meeting of the Geological Society on the 17th of November 1847, that gentleman stated, that "The eastern coast is occupied by a great range of high land, appearing like a continuous chain of mountains when seen from the sea, and rising in several places to 5000 feet or more above the sea-level. This chain has an axis of granite, with occasional

large masses of greenstone, basalt and other igneous rocks. It is flanked on both sides by thick beds of palæozoic formations, chiefly sandstone, but also containing limestone and coal. In the northern portion of the chain Dr. Leichardt found similar formations—and especially trap and granite near the Burdekin river. In the Port Phillip district there are similar igneous rocks, and on the coast tertiary formations resting on the edges of upturned palæozoic beds. In West Australia, the Darling range consists of granite below, covered by metamorphic rocks; and between it and the sea is a plain composed of tertiary beds. In the colony of North Australia there is a great sandstone plateau, rising about 1800 feet above the sea, and probably of palæozoic age; whilst on the immediate shore and round the Gulf of Carpentaria are beds supposed to belong to the tertiary period. Similar formations constitute the substratum of the central desert; in which Captain Sturt was compelled to turn back, when half-way to the Gulf of Carpentaria, from the southern coast. Hence these tertiary rocks are probably continuous through the whole centre of the island, and during the tertiary period all this portion of the country was submerged, whilst the high lands on the coast rose like four groups of islands from the shallow sea."—*Athenæum*, *Nov.* 24, 1847.

Whichever of these opinions be the correct one, we certainly find the natural productions of all these portions of the country composed of precisely the same types, the generality of which differ entirely from those of the islands of the Indian Archipelago on the one hand, and of New Zealand and Polynesia on the other.

With respect to the position of Australia, it will only be necessary to state that it is situated between the 10th and 45th degrees of south latitude, and the 112th and 154th degrees of longitude east from Greenwich; its extent, in round numbers, may therefore be said to be 3000 miles in length, or from west to east, and inclusive of Van Diemen's Land nearly the same in breadth, or from north to south. In its present uplifted position its form is nearly square, with a depressed centre bounded by an almost continuous range of hills and plateaux, which, varying in altitude from one to six thousand feet above the level of the sea, in some places approach the coast and present lofty and inacessible cliffs to the ocean, while in others they trend towards the interior of the country at a distance of from twenty to eighty miles from the coast-line; but inasmuch as these elevations are all of an undulating and not of a precipitous character, no part of the country can be considered as strictly alpine. Nothing can be more different than the features of the country on the exterior and interior of this great barrier, particularly on the eastern coast, where, between the mountains and the sea, the vegetation partakes to a great extent of a tropical character; it is there, on the rich alluvial soil, formed by the debris washed down from the hills, that we find various species of *Eucalypti*, *Fici*, and other trees, many of which attain an immense altitude, and forests of towering palms; the surface of the ground beneath clothed with a dense and impervious underwood, composed of dwarf trees, shrubs and tree-ferns festooned with creepers and parasitic plants in the richest profusion, the continuity of which is here and there broken by rich open meadow-like districts admirably adapted for the pasturing of cattle, and to which, from the frequent occurrence of the *Angophoræ*, a tribe of trees in which the settlers see a fancied resemblance to the apple-trees of Europe, the name of Apple-tree Flats has been given. Within the ranges, on the other hand, we find immense open downs and grassy plains, studded here and there with detached belts and forests of *Eucalypti*, *Acaciæ*, &c., presenting a park-like appearance, to which, as we advance farther towards the interior, succeed either extensive marshes or land of a most sterile description. The face of this vast country consequently presents much variety of aspect; the

infrequency of rain tends much to give a sombre brown hue to the surface of the ground, which however is relieved by the constant verdure of its trees, the peculiar lanceolate form and the pendent position of which render them almost shadowless. It is in the neighbourhood of the few rivers which intersect the country, and in the lower flats flooded by the waters, when floods occur, that we find the vegetation more luxuriant and the trees attaining a far greater size; the sides of the rivers are moreover fringed with *Casuarinæ* and other trees, which, although of large size, never arrive at the altitude of the stately *Eucalypti*, which attain, under favourable circumstances, a size and height which appear perfectly incredible. Mr. Backhouse states that one measured by him on the Lopham Road, near Emu Bay in Van Diemen's Land, which, "was rather hollow at the bottom and broken at the top, was 49 feet round at about 5 feet from the ground; another that was solid, and supposed to be 200 feet high, was 41 feet round; and a third, supposed to be 250 feet high, was 55½ feet round. As this tree spread much at the base, it would be nearly 70 feet in circumference at the surface of the ground. My companions spoke to each other when at the opposite side of this tree from myself, and their voices sounded so distant that I concluded they had inadvertently left me, to see some other object, and immediately called to them. They in answer remarked the distant sound of my voice, and inquired if I were behind the tree! When the road through this forest was forming, a man who had only about two hundred yards to go, from one company of work-people to another, lost himself: he called, and was repeatedly answered; but getting further astray, his voice became more indistinct, till it ceased to be heard, and he perished. The largest trees do not always carry up their width in proportion to their height, but many that are mere spars are 200 feet high."

A prostrate tree noticed by Mr. Backhouse in the forest near the junction of the Emu River with the Loudwater "was 35 feet in circumference at the base, 22 feet at 66 feet up, 19 feet at 110 feet up; there were two large branches at 120 feet; the general head branched off at 150 feet; the elevation of the tree, traceable by the branches on the ground, was 213 feet. We ascended this tree on an inclined plane, formed by one of its limbs, and walked four abreast with ease upon its trunk! In its fall it had overturned another 168 feet high, which had brought up with its roots a ball of earth 20 feet across." There are other remarkable features, which, as they appertain to districts frequently alluded to in the course of the work, it becomes necessary to notice, namely the immense deltas formed by the descent of the waters of the interior, such as the valley of the Murray near its embouchure into the sea, spoken of as the great Murray scrub of South Australia; this enormous flat of nearly one hundred miles in length by more than twenty in breadth is clothed with a vegetation peculiarly its own, the prevailing trees which form a belt down the centre consisting of dwarf *Eucalypti*, while the margins are fringed with shrub-like trees of various kinds. Nor must the immense belts of *Banksiæ*, which grow on the sand-hills bordering the sea-coast and in some parts of the interior, or the districts clothed with grass-trees (*Xanthorrhœa*), be passed over unnoticed; in the intertropical regions of Australia, of which at present so little is known, we find, besides the *Eucalypti*, *Banksiæ* and other trees of the southern coast, dense forests of canes, mangroves, &c. Each of these districts has a zoology peculiarly its own: for instance, the *Banksiæ* are everywhere tenanted by the true *Meliphagi*; the *Eucalypti* by the *Ptiloti* and *Trichoglossi*; the towering fig-trees by the Regent and Satin birds; the palms by the *Carpophagæ* or fruit-eating Pigeons, and the grassy plains by the ground Pigeons, Finches and grass Parrakeets. The circumstance of the boles of the trees being destitute of a thick corrugated rind or bark will doubtless account for the total absence of any member of the genus *Picus* or

Woodpeckers, a group of birds found in all parts of the world with the exception of Australia and Polynesia.

Such then is a transient view of a few of the great physical features of Australia to which I have thought it requisite to allude in the Introduction of the present work, and I cannot conclude this portion of the subject without mentioning the very remarkable manner in which many of the Australian Birds represent other nearly allied species belonging to the Old World, as if some particular law existed in reference to the subject, the species so represented being evidently destined to fulfil the same offices in either hemisphere. As instances in point, I may mention among the Falconidæ the *F. hypoleucus* and *F. melanogenys*, which represent the *F. Islandicus* and *F. Peregrinus*; our Merlin and Kestril are equally well represented by the *Falco frontatus* and *Tinnunculus Cenchroïdes* of Australia; the Osprey of Europe also is represented by the *P. leucocephala*; among the wading birds, the Curlew and the Whimbrel of Europe are beautifully represented by the *Numenius Australis* and *N. uropygialis*, and the bar-tailed and black-tailed Godwits by the *Limosa uropygialis* and *L. Melanuroïdes*. Both Europe and Australia have each one Stilted Plover, one Dottrell (*Eudromias*), and one Avocet. Among the water birds the Cormorants and Grebes of Europe are similarly represented by the *Phalacrocorax Carboïdes*, &c., and *Podiceps Australis*, *P. Nestor* and *P. gularis*; and other instances might be noticed, but as they will all be found in the body of the work, it will not be necessary to recapitulate them here. Although so many curious instances of representation and of nearly allied species are found to occur, no country possesses so many genera peculiar to itself as Australia, such as *Ægotheles*, *Falcunculus*, *Colluricincla*, *Grallina*, *Gymnorhina*, *Strepera*, *Cinclosoma*, *Menura*, *Psophodes*, *Malurus*, *Sericornis*, *Ephthianura*, *Pardalotus*, *Chlamydera*, *Ptilonorhynchus*, *Struthidea*, *Licmetis*, *Calyptorhynchus*, *Platycercus*, *Euphema*, *Nymphicus*, *Climacteris*, *Scythrops*, *Myzantha*, *Talegalla*, *Leipoa*, *Pedionomus*, *Cladorhynchus*, *Tribonyx*, *Cereopsis*, *Anseranas*, and *Biziura*.

In a country of such vast extent as Australia, spreading over so many degrees of latitude, we might naturally expect to find much diversity in the climate, and such is really the case. Van Diemen's Land, from its isolated and more southern position, is cooler and characterized by greater humidity than Australia; its vegetation is therefore abundant, and its forests dense and difficult of access. The climate of the continent, on the other hand, between the 25th and 35th degrees of latitude, is much drier, and has a temperature which is probably higher than that of any other part of the world; the thermometer frequently rising to 110°, 120°, and even 130° in the shade; and this high temperature is not unfrequently increased by the hot winds which sweep over the country from the northward, and which indicate most strongly the parched and sterile nature of the interior. Unlike other hot countries, this great heat and dryness is unaccompanied by night dews, and the falls of rain being uncertain and irregular, droughts of many months' duration sometimes occur, during which the rivers and lagoons are dried up, the land becomes a parched waste, vegetation is burnt up, and famine spreads destruction on every side. It is easier for the imagination to conceive than the pen to depict the horrors of so dreadful a visitation. The indigenous animals and birds retire to the mountains, or to more distant regions exempt from its influence. Thousands of sheep and oxen perish, bullocks are seen dead by the road-side or in the dried-up water-holes, to which, in the hope of relief, they had dragged themselves, there to fall and die; trees are cut down for the sake of the twigs as fodder; the flocks are driven to the mountains in the hope that water may there be found, and every effort is made to avert the impending ruin; but in spite of all that can be done the loss is extreme. At

length a change takes place, rain falls abundantly, and the plains, on which but lately not a blade of herbage was to be seen, and over which the stillness of desolation reigned, become green with luxuriant vegetation. *Orchideæ* and thousands of flowers of the loveliest hues are profusely spread around, as if nature rejoiced in her renovation, and the grain springing up vigorously gives promise of an abundant harvest. This change from sterility to abundance in the vegetable world is accompanied by a correspondent increase of animal life, the waters become stocked with fish, the marshy districts with frogs and other reptiles; hosts of caterpillars and other insects make their appearance, and spreading over the surface of the country commence the work of devastation, which however is speedily checked by the birds of various kinds that follow in their train. Attracted by the abundance of food, hawks of three or four species, in flocks of hundreds, depart from their usual solitary habits, become gregarious and busy at the feast, and thousands of Straw-necked Ibises (*Ibis spinicollis*), and other species of the feathered race, revel in the profusion of a welcome banquet. It must not however be imagined that this change is effected without its attendant horrors; the heavy rains often filling the river-beds so suddenly, that the onward pouring flood carries with it everything that may impede its course; and woe to the unhappy settler whose house or grounds may lie within the influence of the overwhelming floods! A painful instance of the desolating effects of this sudden irruption of the waters came under my own observation while travelling in the plains bordering the Lower Namoi in New South Wales. On pulling up my horse at one of the huts erected by the stock-keepers charged with the flocks and herds depastured in this vast grazing-ground, I found it occupied by Lieut. Lowe and his nephew, who had gone thither for the purpose of being present at the shearing of the flocks belonging to the former gentleman. Although strangers, their reception of me was warm and hospitable, and I left them with a promise of making their abode a resting-place on my return. My second welcome was such as friends receive from friends, and rejoicing that I had made the acquaintance of persons so worthy and estimable, I left them busy in their operations, happy and prosperous. Seven days after my departure from their dwelling heavy rains suddenly set in; the mountain-streams swelled into foaming torrents, filling the deep gullies; the rivers rose, some to the height of forty feet, bearing all before them. The Namoi having widely overflowed its banks, rolled along with impetuous fury, sweeping away the huts of the stock-keepers in its course, tearing up trees, and hurrying affrighted men and flocks to destruction. Before there was time to escape, the hut in which Lieut. Lowe and his nephew were sojourning was torn up and washed away, and the nephew and two men, overwhelmed by the torrent, sank and perished. Lieut. Lowe stripped to swim, and getting on the trunk of an uprooted tree, hoped to be carried down the eddying flood to some part where he could obtain assistance. But he was floated into the midst of a sea of water stretching as far as he could discern on every side around him. Here he slowly drifted; the rains had ceased, the thermometer was at 100°, a glaring sun and a coppery sky were above him; he looked in vain for help, but no prospect of escape animated him, and the hot sun began its dreadful work. His skin blistered, dried, became parched and hard, like the bark of a tree, and life began to ebb. At length assistance arrived—it came too late; he was indeed just alive, but died almost immediately. He was scorched to death.

Sir Thomas Mitchell, in his recently published "Journal of an Expedition into the interior of Tropical Australia," has given a most vivid picture of the manner in which floods occasioned by distant rains fill the river-beds, and which I beg leave to transcribe. Sir Thomas being somewhat unwell while encamped on the banks of the Macquarie, the channel of which was deep and dry, sent Mr. Stephenson, one of his party, to Mount Foster, to make inquiries about the river and the stations on it lower down. Mr.

Stephenson returned early with two of the mounted police. To his most important question, "What water was to be found lower down in the river, the reply was, 'Plenty, and a *flood coming down* from the Turon mountains.' The two policemen said that they had travelled twenty miles with it on the day previous, and that it would still take some time to arrive near our camp. . . . . In the afternoon, two of the men taking a walk up the river, reported on their return, that the flood poured in upon them when in the river-bed so suddenly, that they narrowly escaped it. Still the bed of the Macquarie before our camp continued so dry and silent, that I could scarcely believe the flood coming to be real, and so near to us, who had been put to so many shifts for the want of water. Towards evening I stationed a man with a gun a little way up the river, with orders to fire on the flood's appearance, that I might have time to run and witness what I so much wished to see, as well from curiosity as from urgent need. The shades of evening came, however, but no flood, and the man on the look-out returned to the camp. Some hours later, and after the moon had risen, a murmuring sound, like that of a distant waterfall, mingled with occasional cracks, as of breaking timber, drew our attention, and I hastened to the river-bank. By very slow degrees the sound grew louder, and at length so audible as to draw various persons besides from the camp to the river-side. Still no flood appeared, although its approach was indicated by the occasional rending of trees with a loud noise. Such a phænomenon in a most serene moonlight night was new to us all. At length the rushing sound of waters, and loud cracking of timber, announced that the flood was in the next bend. It rushed into our sight, glittering in the moonbeams, a moving cataract, tossing before it ancient trees, and snapping them against its banks. It was preceded by a point of meandering water, picking its way, like a thing of life, through the deepest parts of the dark, dry and shady bed, of what thus again became a flowing river. By my party, situated as we were at that time, beating about the country, and impeded in our journey solely by the almost total absence of water,—suffering excessively from thirst and extreme heat,—I am convinced the scene never can be forgotten. Here came at once abundance, the produce of storms in the far-off mountains that overlooked our homes. . . . . The river gradually filled up the channel nearly bank-high, while the living cataract travelled onward much slower than I had expected to see it; so slowly, indeed, that more than an hour after its first arrival the sweet music of the head of the flood was distinctly audible, as the murmur of waters and diapason crash of logs travelled slowly through the tortuous windings. . . . . The next morning the river had risen to within six feet of the top of its banks, and poured its turbid waters along in fulness and strength, but no longer with noise. All night that body of water had been in motion downwards, and seemed to me enough to deluge the whole country."

So little has as yet been ascertained respecting the climatology of western, north-western and northern Australia, that it is not known whether they also are subject to these tremendous visitations; but as we have reason to believe that the intertropical parts of the country are favoured with a more constant supply of rain as well as a lower degree of temperature, it is most probable that they do not there occur.

Independently of the vast accession of birds attracted by the great supply of food, as mentioned above, there are many species which make regular migrations, visiting the southern parts of the continent and Van Diemen's Land during the months of summer, for the purpose of breeding and rearing their progeny, and which retire again northwards on the approach of winter, following in fact the same law which governs the migrations of the species inhabiting similar latitudes of the Old World. There are also periods when some

species of birds appear to entirely forsake the part of the country in which they have been accustomed to dwell, and to betake themselves to some distant locality, where they remain for five or ten years, or even for a longer period, and whence they as suddenly disappear as they had arrived. Some remarkable instances of this kind came under my own observation. The beautiful little warbling Grass Parrakeet (*Melopsittacus undulatus*), which, prior to 1838, was so rare in the southern parts of Australia that only a single example had been sent to Europe, arrived in that year in such countless multitudes on the Liverpool plains, that I could have procured any number of specimens, and more than once their delicate bodies formed an excellent article of food for myself and party. The *Nymphicus Novæ-Hollandiæ* forms another case in point, and the Harlequin Bronze-winged Pigeon (*Peristera histrionica*) a third; this latter bird occurred in such numbers on the plains near the Namoi in 1839, that eight fell to a single discharge of my gun; both the settlers and natives assured me that they had suddenly arrived, and that they had never before been seen in that part of the country. The aborigines who were with me, and of whom I must speak in the highest praise, for the readiness with which they rendered me their assistance, affirmed, upon learning the nature of my pursuits, that they had come to meet me. The *Tribonyx ventralis* may be cited as another species whose movements are influenced by the same law. This bird visited the colony of Swan River in 1833, and that of South Australia in 1840, in such countless myriads, that whole fields of corn were trodden down and destroyed in a single night; and even the streets and gardens of Adelaide were, according to Captain Sturt, alive with them.

If we compare the ornithology of Australia with that of any other country in similar latitudes and of the same extent, we shall find that it fully equals, if it does not exceed them all, in the number of species it comprises; and those parts of the country that are still unexplored doubtless contain many yet to be added to the list of its Fauna.

In the course of the present work it will be found that I have given a wide range of habitat to some of the species, and that I have at the same time pointed out slight variations, not amounting to a specific difference, in individuals from different localities. This difference I am unable to account for. I do not believe the birds to be distinct species, but am inclined to regard them as varieties or races of the same species, modified by the character of the situations they frequent. I may mention some curious instances in point: the *Artamus sordidus* is a migratory bird in Van Diemen's Land, and is partially stationary in New South Wales, yet all the examples procured in the former country are the largest and most vigorous, which we should naturally attribute to the excess of food afforded by its more humid climate; but precisely the reverse of this occurs with regard to the *Graucalus parvirostris*, which is also a migratory bird in Van Diemen's Land, and examples of which, killed in that island, are much more feeble and diminutive than the *Graucali* obtained in New South Wales. The *Halcyon sanctus*, again, whose distribution is universal in Australia, varies somewhat in size in every colony, still not sufficiently so as to afford any tangible specific characters.

Upon taking a general view of the Australian ornithology, we find no species of Vulture, only one typical Eagle, and indeed a remarkable deficiency in the number of the species of its birds of prey, with the exception of the nocturnal Owls, among which the members of the restricted genus *Strix* are more numerous than in any other part of the world; a circumstance which is probably attributable to the great abundance of small nocturnal quadrupeds.

Among the perching birds there is a great excess of the INSECTIVORÆ—*Podargi*, *Meliphagidæ*, *Maluridæ*, *Gymnorhinæ*, &c., of the GRANIVORÆ, such as various species of the *Fringillidæ*, and of the *Psittacidæ*. The latter tribe of birds is more numerous in Australia than in any other part of the world, and forms four great groups, viz. the *Calyptorhynchi*, which mainly procure their food from the *Banksiæ*, *Casuarinæ*, and *Eucalypti*; the *Cacatuæ*, which feed upon the terrestrial *Orchideæ*, &c.; the *Trichoglossi*, which subsist upon the nectar they extract from the flower-cups and blossoms of the *Eucalypti*; and the ground and grass Parrakeets, which feed almost exclusively on the seeds of the various grasses that abound on the plains; the united groups amounting to nearly sixty species.

Of the Rasorial forms,—while the Pigeons and Hemipodes are numerous, the larger and typical GALLINACEÆ are entirely wanting; their only representatives being a few species of *Coturnix* and *Synoïcus*. The Grallatorial birds are about equal in number to those of other countries; and among the water birds the true Ducks are but few, while the *Procellaridæ* which visit the coast are more abundant than in any other part of the world. On a retrospect of the whole we find a greater number of nocturnal birds than is comprised in the ornithology of any other section of the globe. I must not omit to mention too the extraordinary fecundity which prevails in Australia, many of its smaller birds breeding three or four times in a season; but laying fewer eggs in the early spring when insect life is less developed, and a greater number later in the season when the supply of insect food has become more abundant. I have also some reason to believe that the young of many species breed during the first season, for among others I frequently found one section of the Honey-eaters (the *Melithrepti*) sitting upon eggs while still clothed in the brown dress of immaturity; and we know that such is the case with the introduced GALLINACEÆ, three or four generations of which have been often produced in the course of a year.

Another peculiar feature connected with the Australian ornithology is that of its comprising several forms endowed with the power of sustaining and enjoying life without a supply of water, that element without which most others languish and die; for instance, the Halcyons, which I found living and even breeding on the parched plains of the interior during the severe drought of 1838–39, far removed from any water; the food of these birds being insects and lizards.

A considerable number of the older-known of the Australian birds have been described in the general works of Vieillot, Latham, Shaw and others; but their descriptions are so vague, and the species themselves so frequently referred to genera widely different from those to which they really belong, that it has been impossible to identify the whole of them; but wherever they could be identified with certainty their names have been adopted, or quoted in the synonyms.

The "Birds of Europe" were arranged according to the views of the late Mr. Vigors; and in the "Birds of Australia" the arrangement is mainly the same, with some modifications of my own which appeared to me to be necessary.

I have been constrained, for the sake of uniformity in size, to divide the present work into seven volumes; the first of which comprises the RAPTORES, the small number of which will account for its being somewhat thinner than the others; the second, third, fourth, fifth and sixth volumes comprise the INSESSORES, RASORES and GRALLATORES in one continuous series, and the seventh the NATATORES.

The following synoptical table will give a general view of the whole; it contains all the additional information I have received, or been able to procure, during the progress of the work; the characters of the new genera I have found it necessary to institute, &c.; and the references to the volumes in which the respective plates are arranged will render it easy to consult and to quote them.

Order RAPTORES, *Ill.*

Family FALCONIDÆ, *Leach.*

Genus Aquila, *Briss.*

Numerous species of this genus exist in Asia and Europe; the form also occurs in Africa, and in North America; so far as I am aware it is not found in South America, and two species are all that are known in Australia.

1. Aquila fucosa, *Cur.* . . . . . Vol. I. Pl. 1.

Vultur audax, Lath. Ind. Orn. Supp., p. ii.
Aquila cuneicaudata, Brehm, Isis, 1845, p. 356.
—— (*Uroaëtus*) *audax*, Kaup, Classif. der Säug. und Vög., p. 12.

This fine Eagle ranges over the whole of the southern portion of Australia and Van Diemen's Land, but I have no positive evidence of its having been seen in the intertropical regions of the country.

2. Aquila Morphnoïdes, *Gould* . . . . . Vol. I. Pl. 2.

A beautiful representative of the *Aquila pennata* of Europe and India. Since the discovery of this bird at Yarrundi in New South Wales, when I obtained only a single specimen, T. C. Eyton, Esq. has received a second example in a collection obtained at Port Phillip, and a third was procured by Captain Sturt at the Depôt in South Australia.

Genus Ichthyiaëtus, *Lafr.*

The members of this genus inhabit India and the whole of the Indian Islands, and enjoy an equally extensive range over the continent of Africa. Their natural abode is the margins of large rivers and inlets of the sea; and their chief food consists of fish, dead cetacea and carrion.

3. Ichthyiaëtus leucogaster . . . . . Vol. I. Pl. 3.

Haliaëtus (*Pontoaëtus*) *leucogaster*, Kaup, Classif. der Säug. und Vög., p. 122.
Cuncuma leucogaster, List of Birds in Brit. Mus. Coll., Part I. 2nd edit. p. 24.

Found all round the coast of Australia, and said to extend its range to India and even to Africa; but this wants confirmation.

An opinion has been lately expressed that the enormous nests observed by Captains Cook and Flinders had been constructed by some species of *Dinornis*; but it is quite evident from the account given by Flinders that they must have been formed by a bird of the Raptorial order, and I have no doubt that they were the nests of the present bird.

"Near Point Possession," says Flinders, "were found two nests of extraordinary magnitude. They were built upon the ground, from which they rose above two feet; and were of vast circumference and great interior capacity, the branches of trees and other matter, of which each nest was composed, being enough to fill a small cart. Captain Cook found one of these enormous nests upon Eagle Island, on the east coast." Subsequently Flinders found another of these nests in which were "several masses resembling those which contain the hair and bones of mice, and are disgorged by the Owls in England after the flesh is digested. These masses were larger, and consisted of the hair of seals and of land animals, of the scaly feathers of penguins, and the bones of birds and small quadrupeds. Possibly the constructor of the nest might be an enormous Owl; and if so, the cause of the bird being never seen, whilst the nests were not scarce, would be from its not going out until dark; but from the very open and

exposed situations in which the nests were found, I should rather judge it to be of the Eagle kind; and that its powers are such as to render it heedless of any attempts of the natives upon its young."—Flinders' Voyage, vol. i. pp. 64 and 81.

The accumulation of so large a mass of materials is readily accounted for when we remember that the bird is in the habit of resorting to the same eyry for a long succession of years, and of annually carrying additional materials to reconstruct the nest.

I myself found and took young birds of this species from similar nests placed on the points of rocks and promontories of the islands in Bass's Straits.

Genus Haliastur, *Selby*.

The range of the members of this genus extends over Australia and all the islands to India.

4. Haliastur leucosternus, *Gould* . . . . . Vol. I. Pl. 4.

Falco Ponticerianus, Shaw, Nat. Misc., pl. 389.

Haliaëtus (*Ictinoaëtus*) *leucosternon*, Kaup, Isis, 1847, p. 277.

Confined, so far as I am aware, to Australia, and forming a beautiful representative of the *Haliastur Ponticerianus* of India.

5. Haliastur sphenurus . . . . . Vol. I. Pl. 5.

Milvus sphenurus, Swains. Class. of Birds, vol. ii. p. 211.

Haliaëtus (*Ictinoaëtus*) *canorus*, Kaup, Isis, 1847, p. 277.

Inhabits all parts of Australia yet visited by travellers, even the Depôt in the interior.

Genus Pandion, *Sav.*

Of the genus *Pandion* four species are now known; one inhabiting America, another Europe and Asia, a third the Indian Islands, and the fourth Australia.

6. Pandion leucocephalus, *Gould* . . . . . Vol. I. Pl. 6.

Pandion Gouldii, Kaup, Isis, 1847, p. 270.—List of Birds in Brit. Mus. Coll., Part I. 2nd edit. p. 22.

This species of *Pandion* performs precisely the same office in Australia that the *P. haliaëtus* does in Europe and the *P. Carolinensis* in America; to both of which species it is very nearly allied.

Genus Falco, *Linn.*

As they are the most typical of all the Hawks, so are the members of the genus *Falco* the most universally dispersed over the face of the globe; and I question whether the law of representation is in any case more beautifully and clearly shown than by the members of the present group.

7. Falco hypoleucus, *Gould* . . . . . Vol. I. Pl. 7.

Up to the present time only four examples of this fine Falcon have been procured; it is a species admirably adapted for the sport of Falconry, and is a beautiful representative of the *Falco Gyrfalco* of Europe. Its native habitat is the interior of the southern and western portions of Australia.

8. Falco melanogenys, *Gould* . . . . . Vol. I. Pl. 8.

Falco macropus, Swains. Anim. in Menag., p. 341.

—— *melanogenys*, Kaup, Isis, 1847, p. 75.

India, Europe, and North America on the one hand, and Cape Horn, the Cape of Good Hope and Australia on the other, are all inhabited by Falcons so nearly allied to each other as to favour the opinion that they are merely varieties of each other; but I agree with the Prince of Canino and Professor Kaup in considering them to be distinct and representatives of each other in the respective countries they inhabit. It will doubtless be found that the habits

and economy of the whole are as similar as they are in outward appearance; and that the *Falco melanogenys* is as destructive to the ducks of the interior of Australia as the *Falco Anatum* is in North America.

9. Falco subniger, *Gray* . . . . . Vol. I. Pl. 9.

A powerful Falcon differing somewhat in structure from the *F. hypoleucus* and *F. melanogenys*. Nothing is known of its habits, and as yet I have only seen four examples, all of which were procured in the interior of South Australia.

10. Falco frontatus, *Gould* . . . . . Vol. I. Pl. 10.

Falco lunulatus, Lath. Ind. Orn. Suppl., p. xiii.?
Sparvius lunulatus, Vieill. Nouv. Dict. d'Hist. Nat., tom. x. p. 324.
Falco longipennis, Swains. Anim. in Menag., p. 341.?
—— *subbuteo*, Brehm, Isis, 1845, p. 347.?
—— (*Hypotriorchis*) *frontatus*, Kaup, Isis, 1847, p. 65.

A little Falcon with the habits of the Hobby and Merlin combined; found in all parts of Australia to the southward of the 25th degree of S. lat.; among other birds it preys upon the Quails and the little Partridges belonging to the genus *Synoïcus*.

Genus Ieracidea, *Gould*.

Generic characters.

Bill and general form of *Falco*, but the *wings* less powerful, and the third quill-feather the longest; *tarsi* more elongated, slender, and covered anteriorly with hexagonal scales; *toes* more feeble, the hind-toe shorter, and the *claws* less robust.

So far as our present knowledge extends, the members of this genus are only three in number, all of which are confined to Australia and New Zealand.

11. Ieracidea Berigora . . . . . Vol. I. Pl. 11.

Ieracidea Berigora, Kaup, Class. der Säug. und Vög., p. 112.

Professor Kaup considers this species and the succeeding one, *I. occidentalis*, to be identical, but having had numerous opportunities of observing them, I am satisfied that they are distinct; and in confirmation of this opinion I may state that the *I. Berigora*, which is from the eastern coast, is always the largest, has the cere blue-grey, and the plumage of the adult light brown, sparingly blotched with white on the breast; while the *I. occidentalis*, from the western coast, is a more delicately formed bird, has the cere yellow and the breast white, with faint lines of brown down the centre of each feather.

12. Ieracidea occidentalis, *Gould* . . . . . Vol. I. Pl. 12.

Genus Tinnunculus, *Vieill.*

13. Tinnunculus Cenchroïdes . . . . . Vol. I. Pl. 13.

Cerchneis immaculatus, Brehm, Isis.

A beautiful representative of the Kestrils of Europe and India, where, as well as in Africa and in most parts of America, members of this group are to be found.

The range of the *Tinnunculus Cenchroïdes* extends over the whole of the southern parts of Australia, and that it extends far towards the northern portion of the country is proved by Mr. Gilbert having found it, as well as its nest, during the expedition of Dr. Leichardt from Moreton Bay to Port Essington.

The following is an extract from his Journal:—"October 2. Found, for the first time, the eggs of *Tinnunculus Cenchroïdes*, four in number, deposited in a hollow spout of a gum-tree overhanging a creek; there was no nest, the eggs being merely deposited on a bed of decayed wood." They are freckled all over with blotches and minute dots of rich reddish chestnut on a paler ground, and are one inch and five-eighths in length by one inch and a quarter in breadth.

Genus Astur, *Lacep.*

14. Astur Novæ-Hollandiæ . . . . . Vol. I. Pl. 14.
15. Astur Novæ-Hollandiæ, albino . . . . . Vol. I. Pl 15.

Astur Novæ-Hollandiæ, Cuv. Règ. An., 1817, p. 320.
Sparvius niveus, Vieill. Nouv. Dict. d'Hist. Nat., tom. x. p. 338.
Dædalion candidum, Less. Traité d'Orn., p. 66.
Falco leucaetos, Forst. Descr. Anim. and Drawings, No. 35.
Astur (Leucospiza) Novæ-Hollandiæ, Kaup, Class. der Säug. und Vög., p. 119.

I think Professor Kaup is right in proposing a new generic title for this species, differing as it does both in structure and habits from the true *Asturs*; he also, like myself, considers the white birds to be merely albino varieties of the other; but my friends, the Rev. T. J. Ewing and Ronald C. Gunn, Esq. of Van Diemen's Land, are both most decidedly opposed to this view of the subject, and found their dissent upon the circumstance of there being none other than white individuals in Van Diemen's Land.

So far as it is at present known, the southern and eastern portions of Australia and the island of Van Diemen's Land constitute the habitat of the species.

16. Astur radiatus . . . . . Vol. I. Pl. 16.

Astur testaceus (*Ernest.*), Kaup, Isis, 1847, p. 367.

A curious form not quite agreeing with *Astur*; it is very rare, and nothing whatever is known of its habits.

17. Astur approximans, *Vig. & Horsf.* . . . . . Vol. I. Pl. 17.

Astur radiatus, Cuv. Règ. An., 1829, p. 332.
Nisus (*Urospiza*) *radiatus*, Kaup, Mus. Senckenb., 1845, p. 259.
—— (———) *approximans*, Kaup, Isis, 1847, p. 182.
Accipiter approximans, List of Birds in Brit. Mus. Coll., Part I. 2nd edit. p. 74.

The *Astur approximans* has been with propriety removed to the genus *Accipiter* by Mr. G. R. Gray, and to this genus my *A. cruentus* is also referable; for although of a larger size than the other members of that form, their structure, except in the shorter middle toe, is very similar.

18. Astur cruentus, *Gould* . . . . . Vol. I. Pl. 18.

Astur cruentus, Gould in Proc. of Zool. Soc., Part X. p. 113.

This species and the preceding are representatives of each other in the eastern and western portions of the continent.

I have lately seen specimens from Port Essington.

Genus Accipiter, *Briss.*

19. Accipiter torquatus . . . . . Vol. I. Pl. 19.

Sparvius cirrhocephalus, Vieill. Nouv. Dict. d'Hist. Nat., tom. x. p. 328.
——— *tricolor*, Vieill. ibid. p. 329.
Falco melanops, Lath. Ind. Orn. Supp., p. 12?
Sparvius melanops, Vieill. Nouv. Dict. d'Hist. Nat., tom. x. p. 239?
Astur (Micronisus) torquatus, Kaup, Mus. Senckenb. 1845, p. 259.
Nisus (*Urospiza*) *torquatus*, Kaup, Isis, 1847, p. 181.
Accipiter cirrhocephalus, List of Birds in Brit. Mus. Coll., Part I. 2nd edit. p. 73.

Precisely similar in all its actions and in its economy to the Sparrow Hawk, *Accipiter nisus* of Europe.

Genus Buteo, *Cuv.*

Species of the genus *Buteo* are dispersed over the great continents of Europe, Asia, Africa and America, but only one has yet been discovered in Australia.

20. Buteo melanosternon, *Gould* . . . . . Vol. I. Pl. 20.

This bird departs somewhat in form from the typical species of the genus *Buteo*; but so little is known respecting it that we are ignorant how far this departure may influence its habits and economy. One most singular story has been transmitted to me and is here given as I received it; without vouching for its truth, I may remark that the testimony of the natives may generally be relied upon.

"The natives, Mr. Drummond, and his son Mr. Johnson Drummond, tell me," says Mr. Gilbert, "that this bird is so bold, that upon discovering an Emu sitting on her eggs it will attack her with great ferocity until it succeeds in driving her from them; when it takes up a stone with its feet, and while hovering over the eggs lets the stone fall upon and crush them, and then descends and devours their contents. I have had numerous opportunities of observing the bird myself, and can bear testimony to its great powers of scent or vision; for upon several occasions, when the natives had placed a small kangaroo or kangaroo-rat in the fork of a tree or on the top of a *Xanthorrhœa* with the intention of taking it again on our return, we have found that the bird during our short absence had discovered and devoured every part of it except the skin, which was left so perfect, that at first I could not believe that it had not been done by the hand of man."

Genus Milvus, *Cuv.*

Asia is the great stronghold of the Kites or restricted genus *Milvus*; a few species occur in Europe, Africa, and the Indian Islands, and two are natives of Australia.

21. Milvus affinis, *Gould* . . . . . Vol. I. Pl. 21.

Milvus (*Hydroictinia*) *affinis*, Kaup, Isis, 1847, p. 118.

This representative of the *Milvus ater* of Europe is found all over Australia, even at Port Essington: Captain Sturt observed it flying over the far interior of South Australia in great numbers.

22. Milvus isurus, *Gould* . . . . . Vol. I. Pl. 22.

This species, which is sparingly dispersed over the whole of the southern part of Australia, is an equally beautiful representative of the common Kite, *Milvus regalis* of Europe.

Genus Elanus, *Sav.*

Species of this well-defined genus inhabit nearly every part of the world: two are natives of Australia.

23. Elanus axillaris . . . . . Vol. I. Pl. 23.

Elanus melanopterus, Vig. & Horsf. in Linn. Trans., vol. xv. p. 185.

The *Elanus axillaris* is a representative of the *Elanus melanopterus* of Europe.

24. Elanus scriptus, *Gould* . . . . . Vol. I. Pl. 24.

A fine new species rendered conspicuously different from all the other members of the genus by the black-lettered form of the markings under the wings.

Captain Sturt found this bird abundant at the Depôt towards the interior of Australia.

Genus Lepidogenys, *J. E. Gray.*

Of this genus three species are known; they inhabit India, the Indian Islands and Australia.

25. Lepidogenys subcristatus, *Gould* . . . . . Vol. I. Pl. 25.

Baza subcristata, G. R. Gray, List of Birds in Brit. Mus. Coll., Part I. p. 19. 2nd edit. p. 41.
Pernis (*Hyptiopus*) *subcristatus*, Kaup, Isis, 1847, p. 343.

I have no additional information respecting this noble species; all the examples of which, that have come under my notice, have been obtained in the brushes of the east coast of Australia.

Genus Circus, *Lacep.*

Two if not three kinds of Harriers inhabit Australia, consequently the number of species is nearly equal in Europe, Asia, Africa, America, and Australia; those inhabiting the latter country are precisely of the same form, and perform the same offices as their near allies do in the other parts of the world.

26. Circus assimilis, *Jard. & Selb.* . . . . . Vol. I. Pl. 26.
27. Circus Jardinii, *Gould* . . . . . Vol. I. Pl. 27.

Circus (*Spilocircus*) *Jardinii*, Kaup, Isis, 847, p. 102.

Family STRIGIDÆ, *Leach.*

Genus Strix, *Linn.*

While as a general rule other countries are only inhabited by a single species of the restricted genus *Strix*, the Fauna of Australia comprises no less than four, all of which appear to be necessary in order to prevent an inordinate increase of the smaller quadrupeds which there abound.

28. Strix castanops, *Gould* . . . . . Vol. I. Pl. 28.
29. Strix personata, *Vig.* . . . . . Vol. I. Pl. 29.
30. Strix tenebricosus, *Gould* . . . . . Vol. I. Pl. 30.
31. Strix delicatulus, *Gould* . . . . . Vol. I. Pl. 31.

Strix flammea? Vig. & Horsf. in Linn. Trans., vol. xv. p. 190.

Genus Athene, *Boie.*

A genus of diurnal Owls, of which five species are natives of Australia; the smaller kinds are represented in Europe and Asia by the *Athene noctua*, *A. Cuculoïdes* and *A. Brama*; the larger kinds have no representatives in the northern hemisphere.

32. Athene Boobook . . . . . Vol. I. Pl. 32.
33. Athene maculata . . . . . Vol I. Pl. 33.
34. Athene marmorata, *Gould.*

Athene marmorata, Gould in Proc. of Zool. Soc., Part XIV. p. 18.

All the upper surface, wings and tail dark brown, obscurely spotted with white round the back of the neck, on the wing-coverts and scapularies; inner webs of the primaries at their base, and the inner webs of the lateral tail-feathers crossed by bands, which are buff next the shaft and white towards the extremity of the webs; face and chin whitish; under surface dark brown, blotched with white and sandy brown; legs and thighs fawn-colour; bill horn-colour; feet yellow.

Inhabits South Australia, is much larger than *A. maculata*, but so nearly allied to, and so much like that species, that I have not thought it necessary to give a separate figure of it.

35. Athene connivens . . . . . Vol. I. Pl. 34.
Buteo connivens, Vieill. Nouv. Dict. d'Hist. Nat., tom. iv. p. 481.
36. Athene strenua, *Gould* . . . . . Vol. I. Pl. 35.
37. Athene rufa, *Gould* . . . . . Vol. I. Pl. 36.

Order INSESSORES, *Vig.*

Family CAPRIMULGIDÆ, *Vig.*

Genus ÆGOTHELES, *Vig. & Horsf.*

The known species of this genus are two in number, both of which, so far as has yet been ascertained, are confined to Australia. In many of their actions, and in their nidification, they are very owl-like, depositing, like those birds, their four or five round white eggs in the hollows of trees, without any nest.

38. Ægotheles Novæ-Hollandiæ . . . . . Vol. II. Pl. 1.
Inhabits the whole of the southern parts of Australia and Van Diemen's Land.

39. Ægotheles leucogaster, *Gould* . . . . . Vol. II. Pl. 2.
Inhabits the northern or intertropical parts of Australia, where it represents the *Æ. Novæ-Hollandiæ*.

Genus PODARGUS, *Cuv.*

With no one group of the Australian birds have I had so much difficulty in discriminating the species as the genus *Podargus*. It is almost impossible to determine with certainty the older species described by Latham; could this have been done satisfactorily, even in a single instance, it would have greatly facilitated the investigation of the remainder. Messrs. Vigors and Horsfield regarded the specimens in the Linnean Collection as referable to three species, and have described them under the names of *Stanleyanus*, *humeralis*, and *Cuvieri*; Latham's description of the species named by him *megacephalus* accords so well with the *P. Stanleyanus*, that I suspect both those terms have been applied to one and the same species, an opinion strengthened by Latham's remarks as to the great size of the head and mandibles of his bird, the total length of which he states to be thirty inches, which is evidently an error.

After examining a large number of specimens comprising individuals of all ages, I have come to the conclusion that the Australian members of this genus constitute six species; four of which, namely, *P. megacephalus*, *P. humeralis*, *P. Cuvieri*, and *P. brachypterus*, are most closely allied to each other; and two, namely, *P. plumiferus* and *P. Phalænoides*, which present specific characters that cannot be mistaken. We have then in Australia a large group of nocturnal birds of this form destined, as it would seem, to keep in check the great families of *Cicadæ* and *Phasmidæ*, upon which they mainly subsist; but they do not refuse other insects, and even berries have been found in their stomachs. They are an inanimate and sluggish group of birds, and do not procure their food on the wing so much as other *Caprimulgi*, but obtain it by traversing the branches of the various trees upon which their favourite insects reside; at intervals during the night they sit about in open places, on rails, stumps of trees, on the roofs of houses and on the tombstones in the churchyards, and by superstitious persons are regarded as omens of death, their hoarse disagreeable voice adding not a little to the terrors induced by their presence.

In their nidification the *Podargi* differ in a most remarkable manner from all the other *Caprimulgidæ*, inasmuch as while the eggs of the *Ægothelæ* are deposited in the holes of trees, and those of the members of the other genera of this family on the ground, these birds construct a flat nest of small sticks on the horizontal branches of trees for the reception of theirs, which are moreover of the purest white.

Although I have no satisfactory evidence that these birds resort to a kind of hybernation for short periods during some portions of the year, I must not omit to mention that I have been assured that they do occasionally retire to and remain secluded in the hollow parts of the trees; and if such should prove to be the case, it may account for the extreme obesity of many of the individuals I procured, which was often so great as to prevent me from preserving their skins. I trust that these remarks will cause the subject to be investigated by those who are

favourably situated for so doing; for my own part I see no reason why a bird should not pass a portion of its existence in a state of hybernation as well as some species of quadrupeds, animals much higher in the scale of creation.

So great a similarity in plumage reigns throughout the first four of the species enumerated below that I have thought it unnecessary to figure more than two, viz. *P. humeralis* and *P. Cuvieri*; the other two may be readily distinguished by the descriptions I have given of them, particularly if the localities be attended to.

40. Podargus megacephalus.

Caprimulgus megacephalus, Lath. Ind. Orn. Supp., p. lviii.

Great-headed Goatsucker, Lath. Gen. Syn. Supp., vol. ii. p. 265.—Shaw, Gen. Zool., vol. x. p. 141.—Lath. Gen. Hist., vol. vii. p. 364.

Wedge-tailed Goatsucker, Lath. Gen. Hist., vol. vii. p. 368?

Podargus Stanleyanus, Lath. MSS., Vig. & Horsf. in Linn. Trans., vol. xv. p. 197?

In the general colouring, form and arrangement of its markings, this species so closely resembles the *P. humeralis*, that one description applies equally to both; but it may be distinguished by its being somewhat larger in the body and much larger in the head, and by the very great development of the mandibles.

It inhabits the brushes of the east coast, and in its habits and economy resembles the other species of the group.

41. Podargus humeralis, *Vig. & Horsf.* . . . . . Vol. II. Pl. 3.
42. Podargus Cuvieri, *Vig. & Horsf.* . . . . . Vol. II. Pl. 4.
43. Podargus brachypterus, *Gould*.

Podargus brachypterus, Gould in Proc. of Zool. Soc., Part VIII. p. 163.

In its general appearance this bird closely resembles the *P. humeralis*, but is even smaller in size than *P. Cuvieri*, while at the same time the bill is larger than that of the former species, and projects much farther from the face than in any other of its congeners; it also differs in the shortness of its wings, which circumstance suggested the specific appellation I have assigned to it.

It is a native of Western Australia.

44. Podargus Phalænoïdes, *Gould* . . . . . Vol. II. Pl. 5.
45. Podargus plumiferus, *Gould* . . . . . Vol. II. Pl. 6.

Genus Eurostopodus, *Gould*.

Generic characters.

Bill somewhat more produced and stouter than in *Caprimulgus*: *nostrils* lateral and linear; *rictus* entirely devoid of bristles, but furnished with short, weak, divided and branching hairs; *wings* longer and more powerful than in *Caprimulgus*; first and second quills equal and longest; *tail* moderately long and nearly square; *tarsi* stout, and clothed anteriorly for their whole length; *toes* short, thick and fleshy; outer ones equal, and united to the middle one by a membrane for more than half their length; nail of the middle toe strongly pectinated on the inner side.

This genus, so far as is yet known, comprises but two species, both of which are natives of and confined to Australia. They differ considerably in their habits from the true *Caprimulgi*. Their wing-powers being enormous, they pass through the air with great rapidity, and while hawking for insects during the twilight of the early dawn and evening, they make the most abrupt and sudden turns in order to secure their prey. Like the typical *Caprimulgi*, they rest on the ground during the day. In every instance in which the site employed for incubation has been discovered, a single egg only has been found; it is deposited on the bare ground, and differs from those of the other *Caprimulgi* in being much more round in form, and of a dull olive-green spotted with jet black.

The members of this genus are very nearly allied to the *Lyncorni*, a group of birds inhabiting the Indian Islands.

46. Eurostopodus albogularis . . . . . Vol. II. Pl. 7.
47. Eurostopodus guttatus . . . . . Vol. II. Pl. 8

Fichtel's Goatsucker, Lath. Gen. Hist., vol. vii. p. 345.

Genus Caprimulgus, *Linn.*

Europe, Asia and Africa are the great strongholds of the members of this genus as at present restricted. A single species only has yet been discovered in Australia, where it frequents the northern or intertropical parts of the country.

48. Caprimulgus macrurus, *Horsf.* . . . . . Vol. II. Pl. 9.

This bird is found in Java, and I believe in Southern India.

Family HIRUNDINIDÆ, *Vig.*

Genus Acanthylis, *Boie.*

A group of birds possessing enormous powers of flight, and the members of which are distributed over the Indian Islands and Asia; the form is also found in Africa and in America, but in those countries the species are fewer in number: one species only has yet been discovered in Australia.

49. Acanthylis caudacuta . . . . . Vol. II. Pl. 10.

A migratory bird in most parts of Australia, but whence it comes or whither it goes has not yet been ascertained; of its nidification also nothing is known.

I have alluded to the great wing-powers of the birds of the genus *Acanthylis*, and in confirmation of which I may mention that an individual of this species was killed in England during the past year: it would be interesting to know the route pursued by the bird in travelling so great a distance as it must have done.

Genus Cypselus, *Ill.*

Of this genus, as of *Acanthylis*, there is but one species peculiar to Australia: other members of the group inhabit the continents of Europe, Asia and Africa, but not America.

50. Cypselus Australis, *Gould* . . . . . Vol. II. Pl. 11.

Hirundo pacifica, Lath.?

Genus Atticora, *Boie.*

The members of this genus are principally American.

I am not fully satisfied of the propriety of placing the bird I described in the 'Proceedings of the Zoological Society' as *Hirundo leucosternon* in the present genus: if on a further knowledge of the Australian birds it should prove that I have been correct in so doing, the species will be found to inhabit Australia, Africa and America.

51. Atticora leucosternon, *Gould* . . . . . Vol. II. Pl. 12.

Since I described and figured this species I have received numerous examples from Swan River, where Mr. Gilbert observed it on the 19th of August flying about the holes of the Boodee (*Bettongia Grayii*) in pairs; but it was not until the latter end of September that he succeeded in finding their nests placed at the extremities of holes bored in the side of a bank. All the holes that he saw were perfectly round, not more than two inches in diameter, running horizontally, and of the same dimensions, for three feet from the entrance, and then expanding to the extent of four inches and forming the receptacle of the nest, which is constructed of the broad portions of dried grasses and the dry dead leaves of the Acacia. Mr. Johnson Drummond informed him that he had frequently found seven and even nine eggs in a single nest, from which he inferred that more than one female lays in the same nest: the eggs are white, somewhat lengthened, and pointed in form. It would seem that the holes are not constructed exclusively for the purpose of nidification, for upon Mr. Gilbert's inserting a long grass stalk into one of them five birds made their way out, all of which he succeeded in catching; upon his digging to the extremity in the hope of procuring their eggs, no nest was found, and hence he concludes that their holes are also used as places of resort for the night.

Genus Hirundo, *Linn.*

The members of the genus *Hirundo*, or true Swallows, inhabit Europe, Asia, Africa, North America, the Indian Islands and Australia, where the European and American chimney Swallows, *Hirundo rustica* and *H. rufa*, are beautifully represented by the *H. neoxena*.

52. Hirundo neoxena, *Gould* . . . . . Vol. II. Pl. 13.

Hirundo neoxena, Gould in Proc. of Zool. Soc., Part X. p. 113.

Genus Chelidon, *Boie.*

I find that by some unaccountable mistake I have placed the Australian members of this genus in that of *Collocalia*,—an error which I take this opportunity of correcting.

The two species inhabiting Australia are both represented by others in Europe, Asia, Africa and America. They differ somewhat from each other in habits, one always resorting to the holes of trees for the purpose of nidification, and the other building a clay nest similar to those constructed by the martins of Europe and America.

53. Chelidon arborea.

Collocalia arborea, *Gould* . . . . . Vol. II. Pl. 14.

54. Chelidon Ariel.

Collocalia Ariel, *Gould* . . . . . Vol. II. Pl. 15.

Family MEROPIDÆ, *Vig.*

Genus Merops, *Linn.*

India and Africa may be said to be the great nursery of this lovely group of birds; one species of which, common in the southern parts of Europe, is beautifully represented in Australia by the *Merops ornatus*, the only species inhabiting that country.

55. Merops ornatus, *Lath.* . . . . . Vol. II. Pl. 16.

Family —— ?

Genus Eurystomus, *Vieill.*

One species of this genus is found in Australia, and others inhabit India and Africa. They are closely allied to the Rollers, and not very distantly related to the Halcyons.

56. Eurystomus Australis, *Swains.* . . . . . Vol. II. Pl. 17.

Family HALCYONIDÆ, *Vig.*

Genus Dacelo, *Leach.*

The members of the genus *Dacelo* comprise the largest species of the great family of the *Halcyonidæ*, and form a conspicuous portion of the ornithology of Australia; but remarkably enough are confined to the south-eastern and northern portions of the country, the south-western parts being uninhabited by any species of this group. I believe that water is not essential to their existence, and that they seldom if ever drink. They feed almost

exclusively upon animal substances, small quadrupeds, birds, snakes, lizards, and insects of every kind being equally acceptable.

Three species inhabit Australia.

57. Dacelo gigantea . . . . . Vol. II. Pl. 18.

Inhabits the south-eastern portion of Australia, from South Australia to Moreton Bay.

58. Dacelo Leachii, *Vig. & Horsf.* . . . . . Vol. II. Pl. 19.

Inhabits the north-eastern portion of Australia, and is common at Cape York.

59. Dacelo cervina, *Gould* . . . . . Vol. II. Pl. 20.

Inhabits the north-western parts of Australia, particularly the Cobourg Peninsula.

In his 'Journal of an Overland Expedition from Moreton Bay to Port Essington,' Dr. Leichardt states that when near the Gulf of Carpentaria, "The laughing jackass (Dacelo Cervina, *Gould*) of this part of the country is of a different species from that of the eastern coast, is of a smaller size and speaks a different language; but the noise is by no means so ridiculous as that of *Dacelo gigantea*; he is heard before sunrise, and immediately after sunset, like his representative of the eastern coast; the latter was observed as far as the upper Lynd, where the new one made its appearance."—P. 326.

Genus Halcyon, *Swains.*

The members of this genus, as now restricted, are found in all the islands of the Indian Archipelago, Australia, and New Zealand. The Australian species, which are four in number, have many habits in common with the *Dacelos*, and like them dwell among other places on the open plains, far away from water, and consequently must live for considerable periods without a supply of that element.

60. Halcyon sanctus, *Vig. & Horsf.* . . . . . Vol. II. Pl. 21.

61. Halcyon pyrrhopygia, *Gould* . . . . . Vol. II. Pl. 22.

Captain Sturt found this species at the Depôt, and I have received specimens from the Swan River Settlement; consequently it has a very wide range, but is more an inhabitant of the interior than of the districts near the coast.

62. Halcyon sordidus, *Gould* . . . . . Vol. II. Pl. 23.

63. Halcyon MacLeayii, *Jard. & Selb.* . . . . . Vol. II. Pl. 24.

Independently of the Cobourg Peninsula, I have received specimens of this bird from Moreton Bay and other parts of the east coast.

Genus Alcyone, *Swains.*

The Australian members of this genus are so intimately allied that I have only deemed it necessary to figure two species, viz. *Alcyone azurea* and *A. pusilla*; the two species not figured are both nearly allied to *A. azurea*, and may be considered its northern and southern prototypes, since the one to which I have given the name of *pulchra* inhabits the north coast, and the other, which I have called *Diemenensis*, inhabits Van Diemen's Land. The *A. azurea* inhabits the intermediate or rather the south-eastern portions of the country, but no species of the genus has yet been found in Western Australia. They all frequent the margins of rivers, and live on small fish and insects, and have many habits in common with the members of the genus *Alcedo*, of which the Kingfisher of Europe, *A. Ispida*, is the type. Although some species are found in New Guinea and the Indian Islands, Australia is the country in which birds of this form are most abundant.

64. Alcyone azurea . . . . . Vol. II. Pl. 25.

65. Alcyone Diemenensis, *Gould.*

Alcyone Diemenensis, Gould in Proc. of Zool. Soc., Part XIV. p. 19.

All the upper surface deep blue, becoming more vivid on the rump and upper tail-coverts; wings black

washed with blue; throat buff; under surface of the body and wings ferruginous orange; on each side of the chest a patch of bluish black; lores and a small patch behind the ears buff; crown of the head indistinctly barred with black; irides and bill black; feet orange. Total length 6½ inches; bill, 2; wing, 3⅛; tail, 1⅝; tarsi, ½.

Inhabits Van Diemen's Land.

More robust than *Alcyone azurea*, or *A. pulchra*, and differing from both in the blue of the upper surface being tinged with green.

66. Alcyone pulchra, *Gould*.

Alcyone pulchra, Gould in Proc. of Zool. Soc., Part XIV. p. 19.

All the upper surface shining purplish blue; wings brownish black; lores, tuft behind the ear, and throat buff; under surface deep ferruginous orange; sides of the chest fine purplish blue, passing into a rich vinous tint on the flanks; irides and bill black; feet orange. Total length 6 inches; bill, 2; wing, 2⅞; tail, 1½; tarsi ½.

Inhabits the north coast of Australia.

This is the finest coloured species of the Australian *Alcyones*, and is distinguished by the beautiful vinous colouring of the flanks.

67. Alcyone pusilla . . . . . Vol. II. Pl. 26.

Family —— ?

Genus Artamus, *Vieill.*

The members of this singular genus are distributed over New Guinea, Ceram, the Indian Islands and the continent of India, but are more numerous in Australia than elsewhere, its fauna comprising no less than seven well-defined species.

68. Artamus sordidus . . . . . Vol. II. Pl. 27.
69. Artamus minor, *Vieill.* . . . . . Vol. II. Pl. 28.

Mr. Gilbert found this species breeding in the interior of the country during Dr. Leichardt's overland journey to Port Essington.

70. Artamus cinereus, *Vieill.* . . . . . Vol. II. Pl. 29.
71. Artamus albiventris, *Gould* . . . . . Vol. II. Pl. 30.
72. Artamus personatus, *Gould* . . . . . Vol. II. Pl. 31.
73. Artamus superciliosus, *Gould* . . . . . Vol. II. Pl. 32.
74. Artamus leucopygialis, *Gould* . . . . . Vol. II. Pl. 33.

Family —— ?

Genus Dicæum, *Cuv.*

The continent of India, the Indian Islands and New Guinea are the countries in which the members of this genus abound: as yet only a single species has been found in Australia.

75. Dicæum hirundinaceum . . . . . Vol. II. Pl. 34.

Family PIPRIDÆ, *Vig.*

Genus Pardalotus, *Vieill.*

This form is peculiar to Australia, in every portion of which great country, including Van Diemen's Land, one or other of the species I have figured are to be found; some of them associated in the same district, and even inhabiting the same trees, while in other parts only a single species exists; for instance, the *P. punctatus*,

P. quadragintus and *P. affinis* inhabit Van Diemen's Land; on the whole of the southern coast of the continent from east to west *P. punctatus* and *P. striatus* are associated; the north coast is the cradle of the species I have called *P. uropygialis*, and the east coast that of *P. melanocephalus*, from both of which countries the others are excluded; the true habitat of the beautiful species I have figured and described as *P. rubricatus* is not yet known.

The seven species of this little group are each individually very numerous, which, together with their general distribution, may enable them to effect some important operation in the economy of nature; their chief food consisting of the larvæ of insects.

Family LANIADÆ, *Vig.*

Genus Strepera, *Less.*

Prior to the commencement of the present work only two species of this form (*S. graculina* and *S. Anaphonensis*) had been described, and these had been referred to a different genus by almost every author who had occasion to mention them; the older writers assigning them to *Corvus*, *Coracias* and *Gracula*, and the more modern ones to *Cracticus* and *Barita*: finding that their structure did not agree with the character of either of those genera, I (in 1837) proposed to make the first-mentioned species the type of a new genus (*Coronica*), not being aware at the time that this had been done some years before by M. Lesson, whose name, having the priority, is necessarily the one adopted.

My researches in Australia have enabled me to add four other species to the group, three possessing well-defined specific characters, and one, the distinctive markings of which are not so apparent, but which, in my opinion, is equally distinct; the specific characters of some groups of birds are, in fact, so difficult to be determined, both from the similarity of the species and the want of a knowledge of their natural habits, as to cause the naturalist no little trouble and research in properly distinguishing them; and to no group does this remark more strongly apply than to the one under consideration; the ample materials, however, at my command, and the possession of a large number of specimens, the sexes of which have all been ascertained by dissection, and the habits of which have been observed in their native localities, enables me to give as perfect an account of this curious group as any I have yet attempted.

On a careful examination of the members of this genus, it will be perceived that their relationship to the *Corvidæ*, to which they have been usually assigned, is very remote, their size and colour being, in fact, the only features of resemblance; their whole structure and economy is indeed very different from those of every other bird known, except those of *Gymnorhina* and *Cracticus*, with which genera they form a very natural group among the great family of *Laniadæ* or Shrikes.

All the species yet discovered are not only peculiar to Australia, but are strictly confined to the southern portion of that continent; their range being limited to the country comprised within the 25th and 40th degrees of south latitude; future research may, however, add both to the number of species and to the extent of their range; still their great stronghold is undoubtedly the most southern portion of the Australian continent, the islands of Bass's Straits and Van Diemen's Land.

Most of these birds seek their food on or near the ground, sometimes in swampy situations, and even on the sea-shore, at others on the most sterile plains far distant from water; grasshoppers and insects of every order are eaten by them with avidity, and to these grain, seeds and fruits are frequently added; they hop with remarkable agility over the broken surface of the ground, and leap from branch to branch with great alacrity: their flight is

feeble and protracted, and they seldom mount high in the air, except for the purpose of crossing a gully, or for passing from one part of the forest to another, and then merely over the tops of the trees; during flight they usually utter a peculiar shrill cry, which is frequently repeated and answered by other birds of the same troop, for they mostly flit about in small companies of from four to six in number, apparently the parents and their offspring of the year. All the species occasionally descend to the cultivated grounds, orchards and gardens of the settlers, and commit considerable havoc among their fruits and grain; in many parts of Australia, particularly in Van Diemen's Land, they form an article of food, and are considered good and even delicate eating. They usually build open cup-shaped nests as large as that of the Crow, composed of sticks and other coarse materials, lined with grasses or any other suitable substance that may be at hand; the eggs are generally three, but are sometimes four, in number. The sexes are similar in plumage, and the young assume the livery of the adult from the time they leave the nest.

83. Strepera graculina . . . . . Vol. II. Pl. 42.
84. Strepera fuliginosa, *Gould* . . . . . Vol. II. Pl. 43.
85. Strepera Arguta, *Gould* . . . . . Vol. II. Pl. 44.
86. Strepera Anaphonensis . . . . . Vol. II. Pl. 45.

Corvus versicolor, Lath.?

87. Strepera melanoptera, *Gould*.

Strepera melanoptera, Gould in Proc. of Zool. Soc., Part XIV. p. 20.

All the upper surface, wings, and tail black; under surface brownish black, tinged with grey on the abdomen; under tail-coverts and tips of all but the two centre tail-feathers white; irides yellow; bill and feet black.

Total length, 19 inches; *bill*, 2; *wings*, 11; *tail*, 9; *tarsi*, $2\frac{3}{8}$.

This species inhabits South Australia, and is distinguished from all its congeners by the total absence of any white mark on the wings; in other respects it is so similar to *S. Arguta*, that I have not considered it necessary to give a figure of it.

Genus Gymnorhina, *G. R. Gray*.

Like *Strepera* this is strictly an Australian form, all the species of which frequent exclusively the southern parts of the country. Their structure is a mere modification of that of the members of the last genus adapted to a somewhat different mode of life and habits. They are more pastoral than the *Streperæ*, frequenting as they do the open plains and grassy downs, over which they run or rather hop with great facility. Their chief food consists of grasshoppers and other insects, to which berries and fruits are added, when such kinds of food are procurable. If unmolested in their natural haunts they may be considered a more familiar race than the *Streperæ*, but if persecuted they become extremely shy and distrustful. Few birds are more ornamental, or give a more animated appearance to the country than the members of this genus, either when running over the surface of the lawn-like ground, or when pouring forth their singular choral-like notes while perched together on the bare branches of a fallen *Eucalyptus*. The form and situation of the nest is the same as those of the *Streperæ*, larger, but not unlike that of the European Crow.

Specimens of this form from Western Australia exhibit some trifling differences, but I have not as yet been able to satisfy myself whether they are or are not distinct.

88. Gymnorhina Tibicen . . . . . Vol. II. Pl. 46.
89. Gymnorhina leuconota, *Gould* . . . . . Vol. II. Pl. 47.
90. Gymnorhina organicum, *Gould* . . . . . Vol. II. Pl. 48.

Genus Cracticus, *Vieill.*

The members of this genus, which are universally dispersed over Australia, prey upon small quadrupeds, birds, lizards and insects, which they frequently impale after the manner of the ordinary Shrikes. Their

nidification resembles that of the species belonging to the genera *Strepera* and *Gymnorhina*, the nest being a large round structure placed among the branches of the trees, and the eggs four in number. So great a similarity exists between the birds inhabiting New South Wales, Van Diemen's Land, and Swan River, that I have thought it unnecessary to figure the whole, but the annexed descriptions, with a due attention to the localities, will obviate all difficulty in determining the species.

91. Cracticus nigrogularis, *Gould* . . . . . Vol. II. Pl. 49.

Lanius robustus, Lath. Gen. Hist. vol. ii. p. 67 ?

92. Cracticus picatus, *Gould* . . . . . Vol. II. Pl. 50.

93. Cracticus argenteus, *Gould* . . . . . Vol. II. Pl. 51.

94. Cracticus destructor . . . . . Vol. II. Pl. 52.

Lanius curvirostris, Lath. Gen. Hist. vol. ii. p. 52.

Lanius torquatus, Lath. Gen. Hist. vol. ii. p. 70.

95. Cracticus cinereus, *Gould.*

Vanga cinerea, Gould in Proc. of Zool. Soc., Part IV. p. 143.

Inhabits Van Diemen's Land, and may be distinguished from *C. destructor* by its much longer bill, and, when fully adult, by its grey back.

96. Cracticus leucopterus, *Gould.*

Inhabits Western Australia; is of the same size as *C. destructor*, but has the white mark on the wings much larger and more clearly defined.

97. Cracticus Quoyii . . . . . Vol. II. Pl. 53.

Genus Grallina, *Vieill.*

Only one species of this genus is at present known. It is peculiar to Australia, over every portion of which country it is dispersed; and it may be considered one of the anomalies of the Australian ornithology, since its alliance to any group of birds with which we are acquainted is very remote.

98. Grallina Australis . . . . . Vol. II. Pl. 54.

Genus Graucalus, *Cuv.*

The woods of every part of the Old World from India to Australia are tenanted by species of this genus, which, from their great size, their being strictly insectivorous, and individually very numerous, must tend to keep insect life in check, and consequently perform a most important part in the economy of nature.

In my description of *Graucalus melanops*, I have stated that New South Wales, Van Diemen's Land, Swan River and Port Essington, are each inhabited by *Graucali* so nearly allied to each other that it was questionable whether they were not one and the same species, and that the slight differences they present were attributable to some peculiarity in the districts they inhabit; after much attention to the subject, I have been induced to regard the Van Diemen's Land bird as distinct, and I have therefore assigned it a name, *parvirostris*; those of the other countries appear to be local varieties or races peculiar to their respective habitats.

All the members of the group build a flat slight nest of fine short dead twigs, curiously joined together with cobwebs, on which they lay two eggs.

99. Graucalus melanops . . . . . Vol. II. Pl. 55.

Graucalus melanotis, Gould in Proc. of Zool. Soc., Part V. p. 143; and in Syn. Birds of Australia, Part IV. Young.

100. Graucalus parvirostris, *Gould.*

Graucalus parvirostris, Gould in Proc. of Zool. Soc., Part V. p. 143; and Syn. Birds of Australia, Part. IV.

Forehead, sides of the face and the throat jet black; crown of the head, all the upper surface and centre of

the wings delicate grey; primaries and the inner webs of the secondaries deep brownish black, the former narrowly and the latter broadly margined with greyish white; tail grey at the base, passing into deep brownish black and largely tipped with white, the grey colour predominating on the two centre feathers, which are destitute of the white tips; chest grey, into which the black of the throat gradually passes; lower part of the abdomen, under surface of the wing and under tail-coverts white; flanks and thighs grey; bill and feet brownish black.

Total length, 12 inches; *bill*, 1¼; *wing*, 7½; *tail*, 6; *tarsi*, 1.

Inhabits Van Diemen's Land.

Genus Pteropodocys, *Gould.*

Generic characters.

Bill small, shorter than the head, nearly cylindrical; *tomia* curved and pointing downwards; a well-defined notch at the extremity of the upper mandible; *nostrils* basal, round, and covered with the short feathers of the forehead; *wings* long and pointed, the fourth feather the longest; *tail* lengthened, the four middle and the lateral feather on each side shorter than the rest; *tarsi* long, stout; *toes* rather short, the inner toe longer than the outer one, hind-toe large and lengthened, the toe and nail nearly equalling in length the middle toe and nail.

The general structure of the only known species of this form resembles that of *Graucalus* and of *Campephaga*, but the bill is so small as to be quite out of proportion with the body; its lengthened wings and tarsi adapt it both for flight and for moving rapidly over the surface of the ground.

Inhabits the whole of the interior of Southern Australia from east to west; the extent of its range northward has not been ascertained. It has many habits in common with the *Graucali*; but while those birds are destined for the trees the present bird is adapted for the ground, where it procures and feeds upon insects of various genera, particularly locusts and grasshoppers. It frequents the open plains in small companies of from three to six or eight in number, and is very animated in its actions, but at the same time most cautious and shy.

Genus Campephaga, *Vieill.*

The members of this genus are spread over India and the Indian Islands, and the fauna of Australia comprises four species; they are allied to the *Graucali*, but are much smaller in size, and more active among the branches.

The sexes are generally very dissimilar in colour and markings, while in *Graucalus* they are alike. The nidification and the form of the nests of the two genera are very similar.

Genus Pachycephala, *Swains.*

The *Pachycephala gutturalis* may be regarded as the type of this group of birds, which is peculiarly Australian, and comprises many species, universally distributed over the country. Their habits differ from those of most other insectivorous birds, particularly in their quiet mode of hopping about and traversing the branches of the trees in search of insects and their larvæ: caterpillars constitute a great portion of their food; but coleoptera and other insects are not rejected. The more gaily-attired species, such as *P. gutturalis*, *P. glaucura*, *P. melanura* and *P. pectoralis*, resort to the flowering *Acaciæ*, *Eucalypti* and other stately trees, while the more dull-coloured ones

frequent the ground: they all build a neat, round, cup-shaped nest, and the eggs are generally four in number Their powers of flight are not great: some of the species enjoy a wide range of habitat, while others are extremely local. The song of some is loud and rather pleasing, while others merely emit a whistling note, slowly but frequently repeated.

109. Pachycephala gutturalis . . . . . Vol. II. Pl. 64.
110. Pachycephala glaucura, *Gould* . . . . . Vol. II. Pl. 65.
111. Pachycephala melanura, *Gould* . . . . . Vol. II. Pl. 66.
112. Pachycephala pectoralis . . . . . Vol. II. Pl. 67.
Sylvia rufiventris, Lath. Ind. Orn. Supp., p. liv.
Rufous-vented Warbler, Lath. Gen. Syn. Supp., vol. ii. p. 248.—Shaw, Gen. Zool., vol. x. p. 696.
Turdus prasinus, Lath. Gen. Hist. vol. v. p. 121?
113. Pachycephala falcata, *Gould* . . . . . Vol. II. Pl. 68.
114. Pachycephala Lanoïdes, *Gould* . . . . . Vol. II. Pl. 69.
115. Pachycephala rufogularis, *Gould* . . . . . Vol. II. Pl. 70.
116. Pachycephala Gilbertii, *Gould* . . . . . Vol. II. Pl. 71.
Pachycephala inornata, Gould in Proc. of Zool. Soc., Part VIII. p. 164. Young?
117. Pachycephala simplex, *Gould* . . . . . Vol. II. Pl. 72.
118. Pachycephala olivacea, *Vig. & Horsf.* . . . . . Vol. II. Pl. 73.

The two birds described by me in the Proceedings of the Zoological Society, Part V. p. 164, as *P. xanthoprocta* and *P. longirostris*, are both immature birds, and are, I believe, from Norfolk Island.

Genus Colluricincla, *Vig. & Horsf.*

Like the last group, the present is strictly confined to Australia, every one of the colonies of which country, from north to south and from east to west, is inhabited by a species peculiarly and restrictedly its own. They have many characters in common with the *Pachycephalæ*, which they also resemble in their actions, food, economy and nidification. They are neither Shrikes nor Thrushes, but are most nearly allied to the former; they are insect-feeders to a very great extent, but occasionally partake of mollusks and berries. Some of them defend themselves vigorously with both bill and claws when attacked. Their voice is a loud whistle, some parts of which are not devoid of melody, particularly the loud swelling notes.

The nest is rather slightly built, round and cup-shaped in form, and is mostly placed in the hollow spout of a tree: the eggs are four in number.

119. Colluricincla harmonica . . . . . Vol. II. Pl. 74.
Certhia canescens, Lath. Gen. Hist. vol. iv. p. 180?
Inhabits New South Wales.
120. Colluricincla rufiventris, *Gould* . . . . . Vol. II. Pl. 75.
Inhabits Western Australia.
121. Colluricincla brunnea, *Gould* . . . . . Vol. II. Pl. 76.
Inhabits Port Essington.
122. Colluricincla Selbii, *Jard.* . . . . . Vol. II. Pl. 77.
Inhabits Van Diemen's Land.
123. Colluricincla parvula, *Gould* . . . . . Vol. II. Pl. 78.
Inhabits the northern parts of the country.
124. Colluricincla rufogaster, *Gould.*
Colluricincla rufogaster, Gould in Proc. of Zool. Soc., Part XIII. p. 80.

I have assigned this name to a bird lately sent to me by Mr. Strange from the brushes of the Clarence in New South Wales; it may hereafter prove to be identical with the last-mentioned species, *C. parvula*, the form and

admeasurements being precisely the same; but the bird from New South Wales has a lighter coloured bill, and the whole of the under surface washed with deep rufous.

The locality of the bird described by me in the Proceedings of the Zoological Society, Part IV. p. 6, as *Colluricincla fusca*, being still unknown, that species has not been included.

Genus Falcunculus, *Vieill.*

The two species of this genus are not only strictly Australian, but are confined to the southern parts of the country; the *F. frontatus* inhabiting New South Wales and South Australia, and the *F. leucogaster* Western Australia. When attacked by their natural enemies or by man, both species defend themselves with their powerful bill and claws with the utmost fury; they also by the same means readily tear off pieces of rotten wood and the thin scaly bark of the *Eucalypti* in search of insects. The branches of trees are their usual place of resort, and in many of their actions and habits they closely resemble the Tits of Europe and India (genus *Parus*), while they also assimilate to the *Pachycephalæ*. They build a round, cup-shaped nest.

125. Falcunculus frontatus . . . . . Vol. II. Pl. 79.
126. Falcunculus leucogaster, *Gould* . . . . . Vol. II. Pl. 80.

Mr. Gilbert states that while staying in the Toodyay district of Western Australia in the month of October, he found the nest of this species among the topmost and weakest perpendicular branches of a Eucalyptus, at a height of at least fifty feet: it was of a deep cup-shaped form, composed of the stringy bark of the gum-tree, and lined with fine grasses, the whole matted together externally with cobwebs; the eggs, which are three or four in number, are of a glossy white with numerous minute speckles of dark olive most thickly disposed at the larger end; they are seven-eighths of an inch long by five-eighths of an inch in breadth. He adds, that under ordinary circumstances it is a somewhat shy bird, but when breeding becomes bold and familiar; as an evidence of which he adduces the fact that a flock of sheep were driven every night beneath the tree upon which the nest was being constructed without giving the least alarm to the birds.

Genus Oreoica, *Gould.*

Generic characters.

Bill shorter than the head, stout, compressed laterally, and notched at the tip; *culmen* bent gradually downwards from the base; lower mandible nearly as stout as the upper; *nostrils* basal, round, and nearly covered with very fine short hair-like feathers directed forwards, among which are intermingled a few long fine hairs; *wings* rather long, the first quill short, the third the longest; tertiaries very long, and nearly equalling the primaries; *tail* short and very slightly rounded; *tarsi* moderately long and stout, entire posteriorly, and defended anteriorly with hard scuta; feet adapted for the ground; *toes* very short, particularly the hind one, inner toe rather shorter than the outer; *claws* short, and nearly straight.

The only species known of this form is strictly Australian, and is a sprightly animated bird frequenting the sterile districts studded with large trees, scrubs, and open glades, where it hops about on the ground in search of insects. Notwithstanding the singularly lengthened form of its scapularies and its terrestrial habits, it appears to me to belong to the same type of form as the *Pachycephalæ*; its loud piping note and mode of nidification also favours this opinion. It lays three or four eggs, in a round, cup-shaped nest, placed either in a grass tree (*Xanthorrhœa*) or in a hole or stump of a decayed upright tree.

127. Oreoïca gutturalis . . . . . Vol. II. Pl. 81.

Genus Dicrurus, *Vieill.*

A genus of which many species inhabit India and Africa, but of which only one has yet been found in Australia.

128. Dicrurus bracteatus, *Gould* . . . . . Vol. II. Pl. 82.

Family MUSCICAPIDÆ, *Vig.*

Genus Rhipidura, *Vig. & Horsf.*

Many species of this genus occur in India, the Indian Islands, New Guinea, and Polynesia; and five or six are comprised in the fauna of Australia, over every part of which country, including Van Diemen's Land, one or other member of the group is found to exist.

129. Rhipidura albiscapa, *Gould* . . . . . Vol. II. Pl. 83.
130. Rhipidura rufifrons . . . . . Vol. II. Pl. 84.
131. Rhipidura Dryas, *Gould.*

Inhabits the north coast. I have not figured this species because it only differs from *R. rufifrons* in being of a smaller size, and in the red colouring at the base of the tail-feathers being more extensive.

132. Rhipidura isura, *Gould* . . . . . Vol. II. Pl. 85.
133. Rhipidura Motacilloïdes, *Vig. & Horsf.* . . . . . Vol. II. Pl. 86.
134. Rhipidura picata, *Gould.*

Not figured, being similar in colour but much smaller than *R. Motacilloïdes*; it inhabits Port Essington.

Genus Seisura, *Vig. & Horsf.*

The present genus and *Rhipidura* are mere modifications of each other; a difference of structure, however, exists of sufficient importance to justify their separation, and, as is always the case, a corresponding difference is found in the habits of the species.

The present form is restricted to Australia.

135. Seïsura inquieta . . . . . Vol. II. Pl. 87.
Turdus muscicola, Lath. Gen. Hist. vol. v. p. 123.
——— *dubius*, Lath.

Genus Piezorhynchus, *Gould.*

Generic characters.

Bill longer than the head; deeper than broad, almost cylindrical; compressed on the sides, notched at the tip; *nostrils* basal, small and round; *wings* short; first primary moderate, the fourth the longest; *tail* rather short and round; *tarsi* moderately long and somewhat feeble; the inner and middle toes connected as far as the first joint, the outer one the longest.

The only species of this genus yet discovered is a native of the northern parts of Australia, from Cape York to Port Essington, where it frequents the dense beds of Mangroves.

136. Piezorhynchus nitidus, *Gould* . . . . . Vol. II. Pl. 88.

Genus Myiagra, *Vig. & Horsf.*

A group of insectivorous birds, the greater number of which inhabit the Indian Islands and Polynesia, and of which four species are found in Australia.

137. Myiagra plumbea, *Vig. & Horsf.* . . . . . Vol. II. Pl. 89.
138. Myiagra concinna, *Gould* . . . . . Vol. II. Pl. 90.
139. Myiagra nitida, *Gould* . . . . . Vol. II. Pl. 91.
140. Myiagra latirostris, *Gould* . . . . . Vol. II. Pl. 92.

Genus Micrœca, *Gould.*

Generic characters.

Bill shorter than the head, depressed, broad at the base; *gonys* straight; curving downwards and slightly notched at the tip; *nostrils* round, placed at the base of the bill, which is beset with strong bristles; *wings* lengthened and powerful, first primary short, the third the longest; *tail* rather short and nearly square; *tarsi* moderate and feeble; *toes* feeble, the external toe much longer than the internal one.

Three species of this genus inhabit Australia, to which country they are confined.

141. Micrœca macroptera . . . . . Vol. II. Pl. 93.

Sylvia leucophœa, Lath. Gen. Hist. vol. vii. p. 139.

142. Micrœca assimilis, *Gould.*

Micrœca assimilis, Gould in Proc. of Zool. Soc., Part VIII. p. 172.

All the upper surface brown, primaries dark brown; tail brownish black; the tips and the terminal half of the external margins of the two outer feathers white; the three next on each side also tipped with white, the extent of the white becoming less upon each feather as they approach the centre of the tail; the four middle feathers without the white tip; throat, centre of the abdomen and under tail-coverts white, passing into pale brown on the sides of the chest and flanks; irides reddish brown; bill and feet blackish brown.

Total length, $4\frac{5}{8}$ inches; *bill*, $\frac{11}{16}$; *wings*, $3\frac{3}{8}$; *tail*, $2\frac{1}{8}$; *tarsi*, $\frac{9}{16}$.

Inhabits Western Australia; and is so nearly allied to the *Micrœca macroptera*, from which it only differs in being much less in size and in having the base of the outer tail-feather brown, that I have not considered it necessary to figure it.

143. Micrœca flavigaster . . . . . Vol. II. Pl. 94.

Genus Monarcha, *Vig. & Horsf.*

Several species of this genus occur in the Indian Islands and two in Australia. They are insectivorous birds, and procure their food by quietly hopping about among the branches of the trees.

144. Monarcha carinata . . . . . Vol. II. Pl. 95.

145. Monarcha trivirgata . . . . . Vol. II. Pl. 96.

Genus Gerygone, *Gould.*

Generic characters.

Bill shorter than the head, swollen, notched at the tip; commissure straight; *nostrils* basal, lateral, oval; *rictus* beset with two or three extremely fine and weak bristles; *wings* moderately long, first quill almost spurious, second long, third, fourth and fifth equal and longest; *tail* rather short and square; *tarsi* entire, slender, moderately long; *toes* extremely short and small, the lateral toes even, and united to the middle one nearly to the first joint; *claws* much curved.

The term *Psilopus* was originally proposed by me for this genus, but that name having been previously employed, *Gerygone* was substituted for it.

A group inhabiting every part of Australia, and probably New Guinea and Polynesia. Their chief food consists of insects of the most diminutive size, such as aphides, gnats and mosquitos. The more thickly-billed species may probably feed upon larger insects and their larvæ. They mostly frequent the thick umbrageous woods, where they dart about for insects under the canopy of the dense foliage, or sally forth into the open glade like true Flycatchers. Their nests are of a domed form, with the entrance near the top, some species protecting the opening by constructing a projection above it like the eaves of a house; the eggs are generally four in number, and spotted with red like those of the *Maluri* and *Pari*.

146. Gerygone albogularis, *Gould* . . . . . Vol. II. Pl. 97.
Psilopus olivaceus, Gould in Proc. of Zool. Soc., Part V. p. 147, Young.
147. Gerygone fusca, *Gould* . . . . . Vol. II. Pl. 98.
148. Gerygone culicivorus, *Gould* . . . . . Vol. II. Pl. 99.
149. Gerygone magnirostris, *Gould* . . . . . Vol. II. Pl. 100.
150. Gerygone lævigaster, *Gould* . . . . . Vol. II. Pl. 101.
151. Gerygone chloronotus, *Gould* . . . . . Vol. II. Pl. 102.

Genus Smicrornis, *Gould.*

Generic characters.

Bill very small and short, swollen at the sides; *nostrils* basal, oblong and protected by an operculum; at the base of the bill a few fine hairs; *wings* moderately long, first quill very short; the first, third, fourth and fifth equal and the longest; *tail* short and square; tarsi moderate; *toes* rather short, adapted for clinging; the hinder and the middle toes equal in length.

The members of this genus are the smallest birds of the Australian fauna. I have described two species, one inhabiting New South Wales and the other Port Essington; and had I characterized the bird of this form inhabiting Western Australia as distinct, I should most likely not have been in error, as it is probable that when the subject has been more fully investigated it will prove to be so.

152. Smicrornis brevirostris, *Gould* . . . . . Vol. II. Pl. 103.
153. Smicrornis flavescens, *Gould* . . . . . Vol. II. Pl. 104.

Family SYLVIADÆ, *Vig.*

Subfamily SAXICOLINÆ, *Bonap.*

Genus Erythrodryas, *Gould.*

Generic characters.

As in *Petroïca*, but with the *bill* shorter and more flattened at the base, where it is beset with a number of fine hairs which curve forward and overhang the nostrils; *wings* shorter and more rounded; first and second primaries much shorter than the rest; the fifth the longest; *tarsi* shorter; *toes* more lengthened; lateral toes nearly even; *claws* much sharper and more curved.

The members of the genus *Erythrodryas* are much more delicate in structure than the *Petroïcæ*, have their feeble bill strongly beset with bristles, and are more arboreal in their habits; their usual places of resort being the innermost recesses of the forest, where, in a state of quiet seclusion, they flit about in search of insects; the true *Petroïcæ*, on the other hand, frequent open plains, are more bold and vigorous, and possess a structure which adapts them for the ground over which they pass like the *Saxicolæ*.

The two species of this genus, all that are at present known, are confined to the south-eastern portions of Australia and Van Diemen's Land.

154. Erythrodryas rhodinogaster . . . . . Vol. III. Pl. 1.
155. Erythrodryas rosea, *Gould* . . . . . Vol. III. Pl. 2.

Genus Petroïca, *Swains.*

The birds I have retained in this genus might with propriety be divided by separating the pied Robins from the red-breasted species. The dusky Robin of Van Diemen's Land and the white eye-browed Robin of the north-east coast of Australia would also constitute another group of equal value with *Erythrodryas*, *Drymodes* and *Eopsaltria*.

The red-breasted *Petroïcæ* are confined to the south-eastern portions of Australia, Van Diemen's Land and Norfolk Island; but I believe that the range of the pied birds extends to New Guinea.

Each of the sections I have indicated present some difference in their nidification and in the colouring of their eggs, which tends to confirm the propriety of the view I have taken of the subject.

156. Petroïca multicolor . . . . . Vol. III. Pl. 3.
157. Petroïca erythrogastra . . . . . Vol. III. Pl. 4.
158. Petroïca Goodenovii . . . . . Vol. III. Pl. 5.
159. Petroïca phœnicea, *Gould* . . . . . Vol. III. Pl. 6.
Muscicapa erythrogaster, var. Lath. Gen. Hist. vol. vi. p. 217.
160. Petroïca bicolor, *Swains.* . . . . . Vol. III. Pl. 7.
161. Petroïca fusca, *Gould* . . . . . Vol. III. Pl. 8.
Muscicapa vittata, Quoy et Gaim. Voy. de l'Astrolabe, pl. 3, fig. 2?
162. Petroïca superciliosa, *Gould* . . . . . Vol. III. Pl. 9.

Genus Drymodes, *Gould*.

Generic characters.

Bill straight, rather compressed on the sides near the tip, nearly as long as the head; a slight notch at the tip; beset at the base with a few fine bristles; *wings* moderately long, rounded, the first quill very short, the fifth the longest; *tail* rather long, slightly rounded; *tarsi* long, slender, entire before; *toes* moderately long, the outer toe rather longer than the inner; the hind-toe and nail shorter than the middle toe and nail.

The only species of this genus yet discovered ranges over the whole of the country from Southern to Western Australia. Its form is adapted for the ground, but it occasionally resorts to low shrubby trees.

163. Drymodes brunneopygia, *Gould* . . . . . Vol. III. Pl. 10.

Genus Eopsaltria, *Swains.*

Three species of this genus are all that are yet known; two of these are natives of Western Australia, and the third of New South Wales.

164. Eopsaltria Australis . . . . . Vol. III. Pl. 11.
Sylvia flavigastra, Lath. Gen. Hist. vol. vii. p. 137?
165. Eopsaltria griseogularis, *Gould* . . . . . Vol. III. Pl. 12.
Muscicapa Georgiana, Quoy. et Gaim. Voy. de l'Astrolabe, pl. 3, fig. 4?
166. Eopsaltria leucogaster, *Gould* . . . . . Vol. III. Pl. 13.
Muscicapa gularis, Quoy et Gaim. Voy. de l'Astrolabe, pl. 4, fig. 1?

Subfamily MENURINÆ, *G. R. Gray.*

Genus Menura, *Dav.*

It might have been expected that the various explorations which have of late years been made into the previously unknown regions of Australia would have led to the discovery of some additional species of this genus, or of some new form more nearly allied to it than those with which it is associated, but nothing of the kind has occurred.

167. Menura superba, *Dav.* . . . . . Vol. III. Pl. 14.

This remarkable bird is not only confined to Australia, but exclusively to the south-eastern part of the country. I regret to say that I have not been able to gain any further information respecting its nidification, although I have urged many persons in Australia to pay particular attention to the subject.

Genus Psophodes, *Vig. & Horsf.*

Among the many novelties comprised in the present work is a second species of this form, of which only one was previously known.

168. Psophodes crepitans . . . . . Vol. III. Pl. 15.
Corvus auritus, Lath. Gen. Hist. vol. iii. p. 42.
Inhabits the south-eastern parts of Australia.

169. Psophodes nigrogularis, *Gould* . . . . . Vol. III. Pl. 16.
This new species is a native of the western coast.

Genus Sphenostoma, *Gould.*

Generic characters.

Bill very short, compressed laterally, wedge-shaped, upper mandible without a notch at the tip, two or three fine hairs at the base; *tomia* straight; *nostrils* basal, round, open; *wings* very short and round, the fourth, fifth and sixth primaries nearly equal and the longest; *tail* long and graduated; *tarsi* moderately long and strong, shielded before with several plates, entire behind; *toes* short, hind-toe strong, lateral toes unequal, the inner one the shortest.

The only known species of this genus frequents the sterile parts of the interior of Australia generally, particularly those portions of the country clothed with low shrubs and bushes.

170. Sphenostoma cristata, *Gould* . . . . . Vol. III. Pl. 17.

Genus Malurus, *Vieill.*

The members of this genus are among the most beautiful of the Australian birds; in no group, in fact, with the exception of the *Trochilidæ* or Humming-birds, is the splendour of their plumage excelled. Their gay attire is, however, only assumed during the pairing season, and is retained for a very short period, after which the sexes are alike in colouring.

The genus is strictly an Australian one, and with one or two exceptions, all the species are confined to the southern parts of the continent and Van Diemen's Land.

171. Malurus cyaneus . . . . . Vol. III. Pl. 18.
172. Malurus longicaudus, *Gould* . . . . . Vol. III. Pl. 19.
173. Malurus melanotus, *Gould* . . . . . Vol. III. Pl. 20.
174. Malurus splendens . . . . . Vol. III. Pl. 21.
175. Malurus elegans, *Gould* . . . . . Vol. III. Pl. 22.
176. Malurus pulcherrimus, *Gould* . . . . . Vol. III. Pl. 23.
177. Malurus Lamberti, *Vig. & Horsf.* . . . . . Vol. III. Pl. 24.
178. Malurus leucopterus, *Quoy & Gaim.* . . . . . Vol. III. Pl. 25.
179. Malurus melanocephalus, *Vig. & Horsf.* . . . . . Vol. III. Pl. 26.
180. Malurus Brownii, *Vig. & Horsf.* . . . . . Vol. III. Pl. 27.

Genus Amytis, *Less.*

A form nearly allied to *Malurus*, strictly Australian, and of which three species are known, inhabiting the southern half of the country and not occurring in Van Diemen's Land.

181. Amytis textilis . . . . . Vol. III. Pl. 28.
182. Amytis striatus . . . . . Vol. III. Pl. 29.
183. Amytis macrourus, *Gould* . . . . . Vol. III. Pl. 30.

Genus Stipiturus, *Less.*

A form confined to Australia. Although some slight variation occurs in the specimens from Van Diemen's Land, Southern and Western Australia, I believe that they are all referable to one and the same species, viz.—

184. Stipiturus malachurus . . . . . Vol. III. Pl 31.

Genus Dasyornis, *Vig. & Horsf.*

A group of birds adapted for situations covered with an almost impenetrable vegetation, reed-beds, &c. The two species figured are all that are at present known; of these one is from the eastern and the other from the western parts of Australia.

185. Dasyornis Australis, *Vig. & Horsf.*. . . . . Vol. III. Pl 32.
186. Dasyornis longirostris, *Gould*. . . . . Vol. III. Pl. 33.

Prior to my visit to Australia, I described a bird in the 'Proceedings of the Zoological Society,' Part V. p. 150, as *D.? brunneus*, but as I have not since met with the bird in any collection from Australia I presume it is not a native of that country.

Genus Atrichia, *Gould.*

Rictus totally devoid of bristles; *bill* as long as the head, compressed laterally; the upper mandible distinctly notched at the tip; *gonys* ascending from the rictus and then following the line of the bill; *culmen* ascending high in front; *nostrils* moderately large, covered with an operculum, and placed in a groove near the base of the bill; *wings* short, round, concave, the first three primaries graduated, the fourth, fifth, sixth and seventh equal; *tail* lengthened, rounded, the stems rigid, the webs loose and decomposed; *tarsi* and feet robust, the hind-toe armed with a strong nail; outer and inner toes equal in length.

The only species of this genus yet discovered is as singular in its structure as it is shy and retiring in its habits; the total absence of vibrissæ in a bird apparently closely allied to *Dasyornis*, in which they are so much developed, renders it one of the anomalies of the Australian fauna.

187. Atrichia clamosa, *Gould* . . . . . Vol. III. Pl. 34.

Subfamily —— ?

Genus Sphenœacus, *Strickl.*

A group of reed- and grass-frequenting birds, which are found not only in every part of Australia, but also in the Indian Islands and India.

188. Sphenœacus galactotes . . . . . Vol. III. Pl. 35.
189. Sphenœacus gramineus, *Gould* . . . . . Vol. III. Pl. 36.

Genus Acrocephalus, *Naum.*

Of this European and Indian form two species inhabit Australia, where they frequent the reed-beds and the dense herbage of marshy situations.

190. Acrocephalus Australis, *Gould* . . . . . Vol. III. Pl. 37.
191. Acrocephalus longirostris, *Gould* . . . . . Vol. III. Pl. 38.

Subfamily —— ?

Genus Hylacola, *Gould.*

Bill shorter than the head, compressed; equally broad and high at the base; *culmen* gradually declining from the base to the tip; slightly notched at the apex; *rictus* beset with a few fine hairs; *nostrils* basal, oblong, rather large and defended by an operculum; *wings* short, round and concave; first, second and third primaries graduated; the fourth, fifth and sixth equal, and the longest; *tail* rather long and round; *tarsi* moderate in size; *toes* rather lengthened, the lateral toes equal.

A genus comprising two species peculiar to the southern parts of the country, one of which enjoys an extensive range from South Australia to Moreton Bay; the other has, as yet, only been found in the Great Murray Scrub.

192. Hylacola pyrrhopygia . . . . . Vol. III. Pl. 39.
193. Hylacola cauta, *Gould* . . . . . Vol. III. Pl. 40.

When I characterized this species in the 'Proceedings of the Zoological Society of London,' I had only seen a single example; I have since received a second, proving the correctness of my view of its being quite distinct from the *H. pyrrhopygia*, a fact disputed by Mr. Strickland, who had stated it to be his opinion that my figures were referable to one and the same species, but who upon an examination of the specimens themselves acknowledged he was in error.

Subfamily —— ?

Genus Cysticola, *Less.*

However numerous birds of this form may be in Europe, Africa, Asia and the Indian Islands, Australia outvies them all in the number of species that frequent its grassy plains. With the exception of Van Diemen's Land, every colony is inhabited by one or more species performing there precisely similar offices to those executed by the remaining species in the other parts of the world.

194. Cysticola magna, *Gould* . . . . . Vol. III. Pl. 41.
195. Cysticola exilis . . . . . Vol. III. Pl. 42.
196. Cysticola lineocapilla, *Gould* . . . . . Vol. III. Pl. 43.
197. Cysticola isura, *Gould* . . . . . Vol. III. Pl. 44.
198. Cysticola ruficeps, *Gould* . . . . . Vol. III. Pl. 45.

Subfamily —— ?

Genus Sericornis, *Gould.*

Generic characters.

Bill strong, straight, nearly as long as the head, compressed laterally towards and notched at the tip; *nostrils* basal, lateral, oval, and covered by an operculum; *wings* moderate, rounded, the first quill very short, the fourth,

fifth and sixth nearly equal and the longest; *tail* moderate and square; *tarsi* long; hind-toe and claw strong, and nearly equal to the middle toe and claw in length; outer and inner toes equal; *plumage* soft and silky to the touch.

A group of small birds peculiar to Australia, and confined almost exclusively to the southern portion of the country. Their habits lead them to frequent the most retired parts of the forests, damp and secluded places and scrubby gullies where the herbage is thick and dense; but some species are found on the flat islands near the coast, covered with *Salsolæ* and other shrub-like trees; they usually frequent the ground, over which they pass with celerity, and when their haunts are intruded upon conceal themselves under the fallen or dried herbage. Their flight is peculiar and never protracted, and they all build domed nests like that of the common Wren (*Troglodytes Europæus*).

199. Sericornis citreogularis, *Gould* . . . . . Vol. III. Pl. 46.
Muscicapa barbata, Lath. Gen. Hist. vol. vi. p. 215?
200. Sericornis humilis, *Gould* . . . . . Vol. III. Pl. 47.
201. Sericornis osculans, *Gould* . . . . . Vol. III. Pl. 48.
202. Sericornis frontalis . . . . . Vol. III. Pl. 49.
203. Sericornis lævigaster, *Gould* . . . . . Vol. III. Pl. 50.
204. Sericornis maculatus, *Gould* . . . . . Vol. III. Pl. 51.
205. Sericornis magnirostris, *Gould* . . . . . Vol. III. Pl. 52.

Subfamily —— ?

Genus Acanthiza, *Vig. & Horsf.*

With the exception of the north coast, the *Acanthizæ* are dispersed over all the wooded districts of Australia and Van Diemen's Land; some species frequenting the brushes, while others tenant the shrubs and belts of trees on the plains; others again are only found in such districts as the belts of the Murray.

Like some other large groups at present included under one generic title, the *Acanthizæ* might be divided with propriety; thus the *A. pusilla*, *A. Diemenensis*, &c., which are feeble in structure and strictly arboreal, might form one section; while the *A. chrysorrhœa*, *A. Reguloïdes*, &c., which resort to the ground, might form another. The nests of all the species that I have seen are of a domed form like that of the European Wren.

The members of this genus and the *Maluri* are frequently the foster-parents of the shining Cuckoo (*Chrysococcyx lucidus*).

206. Acanthiza pusilla . . . . . Vol. III. Pl. 53.
207. Acanthiza Diemenensis, *Gould* . . . . . Vol. III. Pl. 54.
208. Acanthiza Ewingii, *Gould* . . . . . Vol. III. Pl. 55.
209. Acanthiza uropygialis, *Gould* . . . . . Vol. III. Pl. 56.
210. Acanthiza apicalis, *Gould* . . . . . Vol. III. Pl. 57.
211. Acanthiza pyrrhopygia, *Gould* . . . . . Vol. III. Pl. 58.
212. Acanthiza inornata, *Gould* . . . . . Vol. III. Pl. 59.
213. Acanthiza nana, *Vig. & Horsf.* . . . . . Vol. III. Pl. 60.
214. Acanthiza lineata, *Gould* . . . . . Vol. III. Pl. 61.
215. Acanthiza Reguloïdes, *Vig. & Horsf.* . . . . . Vol. III. Pl. 62.
216. Acanthiza chrysorrhœa . . . . . Vol. III. Pl. 63.

Genus Ephthianura, *Gould.*

Bill shorter than the head, nearly straight, compressed laterally, notched at the tip, gonys incurved; *nostrils* basal, linear, and covered by a membrane; *wings* long, first quill spurious, second very long, third and fourth equal

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short, round, the fourth quill the longest, the third, fifth, sixth and seventh equal; *tail* rather short and round; *tarsi* moderately long, defended anteriorly with indistinct scales; hind-toe rather long, with a long claw; lateral toes uneven, the outer one the shortest.

This group comprises two species, one inhabiting Van Diemen's Land, the other Southern and Western Australia; they are terrestrial in their habits, but occasionally perch on the smaller branches of the trees.

223. Calamanthus fuliginosus . . . . . Vol. III. Pl. 70.
224. Calamanthus campestris, *Gould* . . . . . Vol. III. Pl. 71.

Genus Chthonicola, *Gould*.

Generic characters.

Bill short, gradually descending from the base; the upper mandible slightly notched at the tip, compressed laterally; *tomia* curving inwards; *wings* concave; the first primary very short, the third, fourth, fifth and sixth nearly equal and the longest; *tail* slightly concave, and all the feathers of an equal length; *tarsi* moderately long; *toes* short, the hinder toe somewhat longer than the middle one; front claws more curved than in the genus *Anthus*.

The single species known of this genus combines in a remarkable manner the outward appearance, habits and manners of the *Acanthizæ* and *Anthi*, but is, I believe, more nearly allied to the former than to the latter.

225. Chthonicola minima . . . . . Vol. III. Pl. 72.

Sylvia sagittata, Lath. Gen. Hist. vol. vii. p. 136?

Rather widely dispersed over the grassy flats of New South Wales, and constructs a domed nest in a depression of the ground like the true *Sylviæ*.

Subfamily MOTACILLINÆ, *Bonap*.

Genus Anthus, *Bechst*.

Whether this Old World form is represented in Australia by more than a single species, is a point I have not satisfactorily determined; every part of its extra-tropical regions, including Van Diemen's Land, is inhabited by Pipits which differ somewhat in size in almost every colony; still their difference is so slight that I have hitherto regarded them as mere varieties or local races.

226. Anthus Australis, *Vig. & Horsf.* . . . . . Vol. III. Pl. 73.

Subfamily —— ?

Genus Cincloramphus, *Gould*.

Bill rather shorter than the head; *culmen* slightly arched; the tip distinctly notched; the commissure slightly angulated at the base, and somewhat incurved for the remainder of its length; *nostrils* lateral, oval; *wings* moderate, rigid, first quill very long and nearly equal to the second and third, which are the longest; tertials nearly as long as the primaries; *tail* rather small and cuneiform; *tarsi* very strong and scutellated anteriorly; *toes* long and powerful, particularly the hinder one and claw, which is articulated on the same plane with the inner toe; lateral toes nearly equal.

The members of this genus, which are three in number, are closely allied to the Indian genus *Megalurus*, and present even a greater disparity in the size of the sexes; they are all confined to Australia, where they frequent the grassy plains and open districts. The song of the males is more animated than that of any other bird inhabiting the country.

227. Cincloramphus cruralis . . . . . Vol. III. Pl. 74.
228. Cincloramphus cantillans, *Gould* . . . . . Vol. III. Pl. 75.
229. Cincloramphus rufescens, *Gould* . . . . . Vol. III. Pl. 76.

Subfamily ALAUDINÆ, *Bonap.*

Genus Mirafra, *Horsf.*

One, if not two, species of this well-defined genus inhabit Australia. At present one only has been characterized; but the bird of this form, frequenting the intertropical portions of the country, may prove to be a distinct species.

230. Mirafra Horsfieldii, *Gould* . . . . . Vol. III. Pl. 77.

Family FRINGILLIDÆ, *Vig.*

The Finches of Australia comprise twenty well-marked species, referable to several genera or subgenera, each of which exhibit a slight difference in structure, accompanied, as is always the case, by a difference in habit, and in the districts inhabited; thus the true *Estreldæ* frequent grassy patches in the glades of the forests, the open parts of gullies, &c.; the *Amadinæ*, the stony hills and flats; the *Poephilæ*, the grass beds of the open plains; and the *Donacolæ*, the grasses of the marshy districts and reed-beds: of the habits of *Emblema* nothing is known; its pointed bill indicates some peculiarity in its economy differing from those of the other genera.

All the species build, I believe, large grassy nests with a spout-like opening.

The whole of those figured are peculiar to Australia.

Genus Estrelda, *Swains.*

231. Estrelda bella . . . . . Vol. III. Pl. 78.
Loxia nitida, Lath. Gen. Hist. vol. v. p. 268?
232. Estrelda oculea . . . . . Vol. III. Pl. 79.
233. Estrelda Bichenovii . . . . . Vol. III. Pl. 80.
234. Estrelda annulosa, *Gould* . . . . . Vol. III. Pl. 81.
235. Estrelda temporalis . . . . . Vol. III. Pl. 82.
236. Estrelda Phaeton, *Gould* . . . . . Vol. III. Pl. 83.
237. Estrelda ruficauda, *Gould* . . . . . Vol. III. Pl. 84.
238. Estrelda modesta.
Amadina modesta, *Gould* . . . . . Vol. III. Pl. 85.

Genus Amadina, *Swains.*

239. Amadina Lathami . . . . . Vol. III. Pl. 86.
240. Amadina castanotis, *Gould* . . . . . Vol. III. Pl. 87.

Genus Poëphila, *Gould.*

Generic characters.

Bill considerably swollen at the base, rendering it nearly as deep and broad as it is long; *wings* moderately long, the first quill rudimentary, the four next equal in length; *feet* plantigrade, *toes* slender; the middle toe much longer than the lateral ones, which are equal in length; hind-toe much shorter than the middle one; *tail* strictly cuneiform, the two middle feathers much produced.

241. Poëphila Gouldiæ.
Amadina Gouldiæ, *Gould* . . . . . Vol. III. Pl. 88.
242. Poëphila mirabilis, *Homb. et Jacq.* . . . . . Vol. III. Pl. 89.

Genus Donacola, *Gould.*

Generic characters.

As in the genus *Amadina*, but with the *bill* much more developed and gibbose at the base, with the *culmen* elevated and the lower mandible retiring backward on the face; *wings* shorter and rounder; feet more adapted for clinging, and remarkable for the greater development of the hind-toe and nail; *tail*-feathers rigid.

Genus Emblema, *Gould.*

Generic characters.

Bill nearly as long as the head, conical, and much resembling that of the genus *Ploceus*; *wings* moderately long as compared with the body; first quill rudimentary, the four next equal in length; *tertiaries* much lengthened; *tail* moderately long and nearly square, or slightly rounded; *feet* plantigrade; *toes* extremely slender, the middle toe much longer than the lateral ones, which are equal in length.

The single example of this beautiful bird, which was procured and presented to me by B. Bynoe, Esq., is I believe all that has ever been seen; I regret to say it no longer graces my collection, having been stolen therefrom, together with some other valuable birds, in the year 1846.

Family MERULIDÆ, *Vig.*

Genus Pitta, *Vieill.*

The members of this genus extend from tropical India throughout the islands of the Indian Archipelago to Australia; one or two species also occur in Africa. Of the three inhabiting Australia the *Pitta Iris* is figured for the first time in the present work, and is one of the very finest species of this lovely group of birds.

Since my account of this species was printed I have received its eggs, accompanied by the following notes from Mr. Strange of Sydney :—

"I never saw any bird whose actions are more graceful than those of the *Pitta strepitans*, when seen in its native brushes, where its presence is indicated by its singular call, resembling the words '*want a watch*,' by imitating which you can call it close to the muzzle of your gun; no sooner, however, does it commence breeding than it becomes shy and retiring, keeping out of sight in the most artful manner, moving about from place to place, and occasionally uttering its cry until it has drawn you away from the nest. The nests I have seen were placed in the spur of a fig-tree near the ground, outwardly constructed of sticks and lined with moss, leaves and fine pieces of bark; the eggs are four in number," of a pale creamy-white marked all over with irregularly-shaped blotches of brown and deep vinous grey, the latter appearing as if beneath the surface of the shell; they are one inch and a quarter in length by seven-eighths of an inch in breadth.

252. Pitta Vigorsii, *Gould* . . . . . Vol. IV. Pl. 2.

I regret to say that up to the present time I have not been able to obtain any information respecting this species, the specimen of which, in the Linnean Society's Collection, is the only evidence we have of its occurring in Australia; I believe New Guinea to be its true habitat.

253. Pitta Iris, *Gould* . . . . . Vol. IV. Pl. 3.

Genus Cinclosoma, *Vig. & Horsf.*

Among the novelties comprised in the present work, there are none more important than the additional members of this genus; three well-defined species being described and figured, of which only one was previously known. The form is peculiar to Australia, and is, I believe, closely allied to my genus *Ianthocincla*, a group of birds confined to India.

254. Cinclosoma punctatum, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 4.
255. Cinclosoma castanotus, *Gould* . . . . . Vol. IV. Pl. 5.
256. Cinclosoma cinnamomeus, *Gould* . . . . . Vol. IV. Pl. 6.

When my drawing of this species was made, I had only seen the male; since then Captain Sturt has presented me with a female, which differs from the opposite sex in the absence of the black markings of the throat, breast and wings, which parts are brownish grey.

Genus Oreocincla, *Gould.*

Bill as long, or longer than the head, slightly incurved, compressed laterally; the tip of the upper mandible overhanging the under; notch considerably removed from the tip; *tomia* or cutting edges sharp; *nostrils* basal, oval; *rictus* beset with a few short hairs; *wings* moderately long and rigid, first quill very short, the fourth and fifth nearly equal, and the longest; *tail* rather short and square, the feathers rigid, and running to a point exteriorly; *tarsi* moderate, scales entire; *toes* slender, particularly the hinder one; outer toes nearly equal, but the inner one rather the shortest; *general plumage* silky to the touch; the *rump-feathers* spinous, as in *Ceblepyris* and *Graucalus*.

Species of this genus inhabit India, the Indian Islands and Australia, in which latter country, although much difference in size is observable in specimens from different localities, I believe only one exists. It is decidedly a brush bird, and has many habits in common with the typical Thrushes, but is more shy and retiring.

257. Oreocincla lunulata . . . . . Vol. IV. Pl. 7.

Family PARADISEIDÆ, *G. R. Gray.*

I certainly consider the accounts I have given of the extraordinary habits of the *Chlamyderæ* and *Ptilonorhynchi* as some of the most valuable and interesting portions of my work, and however incredible they may appear I am happy to say they have been fully confirmed by other observers.

Genus Chlamydera, *Gould.*

Generic characters.

Bill moderate, *culmen* elevated, and arched to the tip which is emarginated, compressed on the sides; *gonys* slightly advancing upwards; *nostrils* basal, lateral, exposed, rounded, and pierced in a membrane; *wings* long and pointed, first primary short, second primary shorter than the third and fourth, which are equal, and the longest; *tail* long and slightly rounded; *tarsi* robust, defended anteriorly with broad scuta; *toes* long and strong; outer toe longer than the inner, hind-toe long and robust; *claws* long, curved, and acute.

258. Chlamydera maculata, *Gould* . . . . . Vol. IV. Pl. 8.

Inhabits South Australia, New South Wales, and according to Mr. Gilbert's Journal of his overland journey to Port Essington, the intertropical regions of the east coast.

In one of Mr. Gilbert's many interesting letters received since the account above referred to was printed, he says, "the question as to the nidification of *Chlamydera* is now settled by Mr. C. Coxen having found a nest in December with three young birds; in form it was very similar to that of the common Thrush of Europe, being of a cup-shape, constructed of dried sticks with a slight lining of feathers, and fine grass, and was placed among the smaller branches of an Acacia overhanging a pool of water."

259. Chlamydera nuchalis . . . . . Vol. IV. Pl. 9.

"I found matter for conjecture," says Captain Stokes, "in noticing a number of twigs with their ends stuck in the ground, which was strewed over with shells, and their tops brought together so as to form a small bower; this was 2½ feet long, 1½ foot wide at either end. It was not until my next visit to Port Essington that I thought this anything but some Australian mother's toy to amuse her child; there I was asked, one day, to go and see the 'birds' playhouse,' when I immediately recognised the same kind of construction I had seen at the Victoria River; the bird (*Chlamydera nuchalis* of Mr. Gould's work) was amusing itself by flying backwards and forwards, taking a shell alternately from each side, and carrying it through the archway in its mouth."—*Discoveries in Australia*, vol. ii. p. 97.

Genus Ptilonorhynchus, *Kuhl.*

260. Ptilonorhynchus holosericeus, *Kuhl* . . . . . Vol. IV. Pl. 10.

That this bird continues its singular habits under the diadvantages of captivity, I learn from the following passage in a letter lately received from Mr. Strange of Sydney.

"My aviary is now tenanted by a pair of Satin Birds, which I had hoped would have bred, as for the last two months they have been constantly engaged in constructing bowers, which I find are built for the express purpose of courting the female in. Both sexes assist in their erection, but the male is the principal workman. At times the male will chase the female all over the aviary, then go to the bower, pick up a gay feather or a large leaf, utter a curious kind of noise, set all his feathers erect, and run round the bower, into which at length the female proceeds, when he becomes so excited that his eyes appear ready to start from his head, and he continues opening first one wing and then the other, uttering a low whistling note, and like the common Cock, seems to be picking up something from the ground, until at last the female goes gently towards him, when, after two turns round her, he suddenly makes a dash and the scene ends." This pair of birds was sent to England by Mr. Strange for the Earl of Derby, and had they not unfortunately died from cold when rounding Cape Horn, they would doubtless have continued their singular habits in his lordship's magnificent aviary at Knowsley.

The habitat of this species appears to be confined to the south-eastern part of New South Wales, for it has not as yet been found in any other portion of the country.

261. Ptilonorhynchus Smithii, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 11.

Genus Sericulus, *Swains.*

A single species only of this form has yet been discovered.

262. Sericulus chrysocephalus . . . . . Vol. IV. Pl. 12.

Sericulus magnirostris, Gould in Proc. of Zool. Soc., Part V. p. 145; and in Syn. Birds of Australia, Part IV. Young.

The brushes of the south-eastern part of Australia is the only locality in which this bird has yet been found.

Family ——— ?

Subfamily ORIOLINÆ, *G. R. Gray.*

Genus Oriolus, *Linn.*

Typical Orioles are widely distributed over Europe, Africa, Asia, the Indian Islands and Australia, but none have yet been discovered in Polynesia or America.

Three species inhabit Australia, two of which are figured; the third from the northern part of the country is so nearly allied to the *O viridis*, that a description alone will be sufficient.

263. Oriolus viridis, *Gould* . . . . . Vol. IV. Pl. 13.

264. Oriolus affinis, *Gould.*

Inhabits the neighbourhood of Port Essington, and only differs from the preceding species in having a shorter wing, a much larger bill, and the white spots at the tip of the lateral tail-feathers much smaller.

265. Oriolus flavovinctus . . . . . Vol. IV. Pl. 14.

Genus Sphecotheres, *Vieill.*

Australia presents us with a single species of this genus; others inhabit New Guinea and the neighbouring islands; but as yet we have no evidence of the form occurring on the continent of India.

266. Sphecotheres Australis, *Swains.* . . . . . Vol. IV. Pl. 15.

Turdus maxillaris, Lath. Gen. Hist. vol. v. p. 129?

Nothing whatever is known of the nidification of this bird; in all probability it will prove to be very similar to that of the Orioles.

Family ——— ?

Genus Corcorax, *Less.*

A genus containing only one species which possesses many singular habits; its actions among the branches, its mode of progression over the ground, and its nidification, being equally remarkable.

267. Corcorax leucopterus . . . . . Vol. IV. Pl. 16.

Family ——— ?

Genus Struthidea, *Gould.*

Generic characters.

Bill shorter than the head, robust, swollen, arched above, deeper than broad; *gonys* angular; *nostrils* basal, lateral, round and open; *wings* moderate, round, first primary short, the fourth and fifth the longest; secondaries long and broad; *tarsi* scutellated in front, plain behind; *toes* long and strong, the outer one longer than the inner one; *claws* strong, compressed and much curved.

The only known species of this form is confined to the interior of the southern and eastern parts of Australia, where it inhabits stony ridges, and is mostly observed on the *Callitris.*

268. Struthidea cinerea, *Gould* . . . . . Vol. IV. Pl. 17.

In my account of this species, I have stated that its actions are very similar to those of the *Corcorax leucopterus*, and the following extract from Mr. Gilbert's Journal of his overland journey to Port Essington shows that the two birds assimilate still more closely in their nidification:—

"Oct. 19.—Strolled about in search of novelties, and was amply repaid by finding the eggs of *Struthidea cinerea.* I disturbed the bird several times from a rosewood-tree growing in a small patch of scrub, and felt assured

it had a nest, but could only find one, which I considered to be that of a *Grallina*; determined, if possible, to solve the difficulty, I lay down at a short distance within full view of the tree, and was not a little surprised at seeing the bird take possession of, as I believed, the *Grallina's* nest; I immediately climbed the tree and found four eggs, the medium length of which was one inch and a quarter by seven-eighths of an inch in breadth; their colour was white, with blotches, principally at the larger end, of reddish brown, purplish grey and greenish grey; some of the blotches appearing as if they had been laid on with a soft brush. From the appearance of the nest I should say it was an old one of a *Grallina*, but it contained a much greater quantity of grass for a lining than I ever observed in the nest of that bird; if this be not the case, then the nests of the two birds are precisely similar, being like a great basin made of mud, and placed on a horizontal branch.

"Oct. 21.—In the evening I again met with the *Struthidea*, which I disturbed from a nest like the one above described, and from the new appearance of the structure I am inclined to believe it to be constructed by the bird itself, although it does so closely resemble that of *Grallina*, especially as in this case the nest was placed in a situation far from water, and there were no *Grallinæ* in the neighbourhood. This nest, like the last, had a very thick lining of fine grass, and appeared as if just finished for the reception of the eggs."

There is no doubt that the nests above described by Mr. Gilbert were those of *Struthidea*; those of *Corcorax* and *Grallina* are precisely similar; and it is somewhat singular that three birds differing so much in structure should build the same kind of mud nests.

Family CORVIDÆ, *Leach.*

Genus Corvus, *Linn.*

It is exceedingly interesting to trace the range of the members of this genus or the true Crows; not so much on account of their wide distribution, as from the circumstance of the form being non-existent in some countries which appear admirably adapted for their well-being; thus while the species are widely distributed over the whole of Europe, Asia, Africa, North America, the Indian Islands and Australia, none are to be found in South America, Polynesia or New Zealand.

269. Corvus Coronoïdes, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 18.

This is the only species that has yet been discovered in Australia.

Family —— ?

Genus Neomorpha, *Gould.*

This form is strictly Polynesian, and the species confined to New Zealand.

270. Neomorpha Gouldii, *G. R. Gray* . . . . . Vol. IV. Pl. 19.

Genus Pomatorhinus, *Horsf.*

The members of this genus range from India throughout all the islands to Australia, but are not found in Africa or Polynesia; three species are comprised in the fauna of Australia.

Much diversity of opinion exists among ornithologists as to the place this group should occupy in the general system; by most writers they have been placed with the *Meliphagidæ*, but having had ample opportunities of observing the Australian species in a state of nature, I am enabled to affirm that they do not assimilate in any degree with those birds either in their habits, actions, economy or nidification, in all which particulars they differ from every group of birds that has come under my notice.

271. Pomatorhinus temporalis . . . . . Vol. IV. Pl. 20.
Turdus frivolus, Lath. Gen. Hist. vol. v. p. 127 ?
272. Pomatorhinus rubeculus, *Gould* . . . . . Vol. IV. Pl. 21.
273. Pomatorhinus superciliosus, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 22.

Family MELIPHAGIDÆ, *Vig.*

By far the greater and most prominent portion of the botany of Australia consisting of only two or three genera of trees—the *Eucalypti*, *Banksiæ*, &c.—we should naturally expect its ornithology to comprise some great groups of birds destined to dwell thereon, and such we find to be the case, the true Honey-eaters and the Honey-feeding Parrakeets being remarkably numerous; the former tribe of birds comprise no less than fifty-eight species, which appear to be naturally divided into several groups, each characterized by some modification of structure: although the whole are truly insectivorous, the pollen and the honey in the flower-cups of the *Eucalypti* are largely partaken of, and for procuring which their lengthened tongue terminating in filaments assuming the form of a brush is most admirably adapted, combined with which is a remarkably narrow gape and an incapacious stomach.

Australia is the great nursery of this tribe of birds, but a few species are found in New Guinea and some of the Polynesian islands.

Genus Meliphaga, *Vig. & Horsf.*

No example of this genus has yet been discovered in the northern or intertropical regions of Australia, all the species known being confined to the southern parts of the continent, the islands in Bass's Straits and Van Diemen's Land. The members of this group feed principally upon the pollen and honey of the flower-cups, but occasionally upon insects; in disposition they are tame and familiar; and they frequent the *Banksiæ* in preference to other trees.

The sexes are alike in plumage, and the young assume the adult plumage at an early period of their existence.

274. Meliphaga Novæ-Hollandiæ . . . . . Vol. IV. Pl. 23.
275. Meliphaga longirostris, *Gould* . . . . . Vol. IV. Pl. 24.
276. Meliphaga sericea, *Gould* . . . . . Vol. IV. Pl. 25.
277. Meliphaga mystacalis, *Gould* . . . . . Vol. IV. Pl. 26.
278. Meliphaga Australasiana . . . . . Vol. IV. Pl. 27.
Certhia pyrrhoptera, Lath. Gen. Hist. vol. iv. p. 197 ?

Genus Glyciphila, *Swains.*

The members of this genus resort to higher trees than the *Meliphagæ*, are more shy in disposition, possess considerable powers of flight, and partake more exclusively of insect food. Of the four Australian species, two, *G. fulvifrons* and *G. albifrons*, inhabit the southern parts of the country, the *G. fasciata* the northern portion, and the little *G. ocularis* is universally distributed over the country, and if I mistake not, is also found in New Guinea and Timor.

The young of *G. fulvifrons* and *G. albifrons* differ considerably from the adult in their markings.

279. Glyciphila fulvifrons . . . . . Vol. IV. Pl. 28.
Certhia melanops, Lath. Gen. Hist. vol. iv. p. 173 ?
280. Glyciphila albifrons, *Gould* . . . . . Vol. IV. Pl. 29.
281. Glyciphila fasciata, *Gould* . . . . . Vol. IV. Pl. 30.
282. Glyciphila ocularis, *Gould* . . . . . Vol. IV. Pl. 31.

Genus Ptilotis, *Swains.*

The species of this group are not only more numerous than those of any other division of the *Meliphagidæ*, but they also comprise some of the most beautiful and gaily-coloured members of the family. Nearly all the species are either prettily marked about the face, or have the ear-coverts largely developed and characterized by a colouring different from that of the other parts of the plumage. The *Eucalypti* and *Acaciæ* are the trees upon which they are usually found; the species with olive-green backs, such as *P. flavigula* and *P. leucotis*, frequent the dwarf or thickly-leaved kinds, the foliage of which assimilates in colour to that of their plumage; the more gaily-attired species with bright yellow cheeks and ear-coverts, such as *P. ornatus* and *P. plumulus*, are most frequently found among the flowering *Acaciæ*; some species, particularly *P. penicillata*, descend from the trees and seek Coleoptera and other insects on the ground; the *Casuarinæ* are the favourite trees of *P. sonorus* and *P. versicolor*; while the *P. chrysotis*, *P. chrysops* and *P. fusca* are almost entirely confined to the brushes and seek their food among the *Eucalypti*, the hanging festoons of *Tecoma* and other beautiful brush creepers. The members of this group are principally Australian, but I believe that some species inhabit New Guinea; they mainly subsist upon insects, to which berries are sometimes added.

The sexes are alike in plumage, but the females are smaller than the males, and the young assume the adult livery from the nest.

283. Ptilotis chrysotis . . . . . Vol. IV. Pl 32.
Ptilotis Lewinii, Swains. Class. of Birds, vol. ii. p. 326?
284. Ptilotis sonorus, *Gould* . . . . . Vol. IV. Pl. 33.
285. Ptilotis versicolor, *Gould* . . . . . Vol. IV. Pl. 34.
286. Ptilotis flavigula, *Gould* . . . . . Vol. IV. Pl. 35.
287. Ptilotis leucotis . . . . . Vol. IV. Pl. 36.
288. Ptilotis auricomis . . . . . Vol. IV. Pl. 37.
289. Ptilotis cratitius, *Gould* . . . . . Vol. IV. Pl. 38
290. Ptilotis ornatus, *Gould* . . . . . Vol. IV. Pl. 39.
291. Ptilotis plumulus, *Gould* . . . . . Vol. IV. Pl. 40.
292. Ptilotis flavescens, *Gould* . . . . . Vol. IV. Pl. 41.
293. Ptilotis flava, *Gould* . . . . . Vol. IV. Pl. 42.
294. Ptilotis penicillatus, *Gould* . . . . . Vol. IV. Pl. 43.
295. Ptilotis fusca, *Gould* . . . . . Vol. IV. Pl. 44.
296. Ptilotis chrysops . . . . . Vol. IV. Pl. 45.
297. Ptilotis unicolor, *Gould* . . . . . Vol. IV. Pl. 46.

Genus Plectorhyncha, *Gould.*

Generic characters.

Bill shorter than the head, slightly arched, very pointed, almost conical and acute; *nostrils* basal and partly covered by an operculum; an obsolete notch near the tip of the upper mandible; *wings* moderate, the first feather short, the third and fourth the longest; *tail* moderate and square; *tarsi* strong; hind-toe and claw long, powerful and longer than the middle toe and claw; lateral toes unequal; the outer one the longest, and united to the middle one nearly to the first joint.

Of this singular form only one species has yet been discovered. It inhabits the plains of the eastern portion of Australia, where it dwells among the *Eucalypti* and *Acaciæ*; and is a very noisy garrulous bird.

The sexes are alike in plumage, and the young assume the adult plumage at a very early age.

298. Plectorhyncha lanceolata, *Gould* . . . . . Vol. IV. Pl. 47.

Genus Xanthomyza, *Swains.*

Of this genus only one species is known.

299. Xanthomyza Phrygia . . . . . Vol. IV. Pl. 48.

The habitat of this bird appears to be confined to the south-eastern portion of Australia. It generally frequents the highest branches of the lofty *Eucalypti*, both of the brushes and of the plains, but is most abundant in the districts near the coast. In its disposition it is bold and extremely pugnacious.

The sexes are alike in plumage, and but little difference is observable between nestling and adult birds.

The nests I saw were round and cup-shaped, and were mostly placed in the fork of a tree.

Genus Melicophila, *Gould.*

Generic characters.

Bill as long as the head, gradually curving downwards from the base, nearly cylindrical and very pointed; *nostrils* basal and covered with an operculum; *wings* rather lengthened, the first primary short, the third the longest; *tail* moderately long, and nearly square; *tarsi* long and stout.

A genus containing only a single species, which so far as we yet know is confined to Southern and Western Australia.

300. Melicophila picata, *Gould* . . . . . Vol. IV. Pl. 49.

Possesses many singular habits, and differs from most other species of the *Meliphagidæ* in the totally different colouring of the sexes; as well as in assembling in vast flocks, which continue soaring about during the greater portion of the day. I was not aware until after my drawing was made that this bird has a small fleshy appendage beneath the eye of an ashy-grey colour, which is invisible in a dried skin. The nest and eggs are said to be very similar to those of *Petroïca multicolor*, and to be placed in similar situations.

Genus Entomophila, *Gould.*

Generic characters.

Bill nearly as long as the head, somewhat broad at the base, becoming compressed and pointed at the apex; *tomia* of the upper mandible arched and slightly notched at the tip; *nostrils* basal, oval, pierced in a membrane and protected by an operculum; *wings* rather long, first quill spurious, the second nearly as long as the third, which is the longest; *tail* short and nearly square; *tarsi* short and rather feeble; hind-toe short and stout; lateral toes unequal, the inner one being rather the shortest.

301. Entomophila picta, *Gould* . . . . . Vol. IV. Pl. 50.

The pointed wings of the examples of this bird I had seen prior to my visit to Australia, led me to infer that its habits were more aërial than those of the other members of the family, and such proved to be the case; for while the greater number of the latter cling to and creep about the branches, the present bird flies about the trees, captures insects on the wing, and during flight displays the beautiful yellow of its wings and the white markings of its tail to the greatest advantage.

Its frail cup-shaped nest is sometimes suspended among the drooping leaves of the *Acacia pendula*.

302. Entomophila albogularis, *Gould* . . . . . Vol. IV. Pl. 51.
303. Entomophila rufogularis, *Gould* . . . . . Vol. IV. Pl. 52.

I fear I have committed an error in referring the birds from the north coast (*E. albogularis* and *E. rufogularis*) to the present genus, for upon further consideration I believe they will prove to be sufficiently different from every other form yet characterized to justify their being separated into a distinct genus.

Genus Acanthogenys, *Gould.*

Generic characters.

Bill as long as the head, compressed, slightly arched, acute at the tip; the edges of the upper mandible notched near the tip, and delicately serrated; *nostrils* sub-basal; from the base of the mandibles a naked stripe runs below

the eyes, and below this the cheeks are covered with stiff spines; *wings* moderate, the first quill-feather very short, third, fourth and fifth equal and the longest; *tail* moderate, nearly equal; *feet* robust, hind-toe strong and longer than the middle one, outer toe united at its base to the middle toe; *claws* hooked.

The genus *Acanthogenys*, of which only one species is known, is a form intermediate in size and in structure between the smaller Honey-eaters (*Meliphagæ*, *Ptiloti*, &c.) on the one hand, and the larger kinds (*Anthochæræ*) on the other.

304. Acanthogenys rufogularis, *Gould* . . . . . Vol. IV. Pl. 53.

This species is widely distributed over the interior of the southern portion of Australia, from east to west; the sexes are alike in plumage, and the young are very similar, but are destitute of the spines on the cheek, which are scarcely assumed during the first year. The *Banksiæ* are the trees mostly frequented by this bird, the presence of which is indicative of sterile sandy districts.

Genus Anthochæra, *Vig. & Horsf.*

A genus peculiarly Australian, three species of which are exclusively confined to the southern or extra-tropical parts of the country, and one to Van Diemen's Land.

305. Anthochæra inauris, *Gould* . . . . . Vol. IV. Pl. 54.
306. Anthochæra carunculata . . . . . Vol. IV. Pl. 55.
307. Anthochæra mellivora . . . . . Vol. IV. Pl. 56.
308. Anthochæra lunulata, *Gould* . . . . . Vol. IV. Pl. 57.

These four birds might with propriety be separated into two genera, those with auricular appendages, *A. inauris* and *A. carunculata*, having many characters differing from those of *A. mellivora* and *A. lunulata*.

Genus Tropidorhynchus, *Vig. & Horsf.*

The law of representation in Australia is chiefly confined to the species inhabiting the eastern and western coasts, but with the members of this genus it takes the opposite direction, or north and south, for more singular and perfect representatives of each other cannot be found than are the *T. corniculatus* and *T. citreogularis* of the south-eastern parts of the country, the *T. argenticeps* and *T. sordidus* of the north-western. Extra Australian species inhabit New Guinea and the neighbouring countries.

309. Tropidorhynchus corniculatus . . . . . Vol. IV. Pl. 58.
310. Tropidorhynchus argenticeps, *Gould* . . . . . Vol. IV. Pl. 59.
311. Tropidorhynchus citreogularis, *Gould* . . . . . Vol. IV. Pl. 60.
312. Tropidorhynchus sordidus.

Inhabits the Cobourg Peninsula, and is precisely similar to *T. citreogularis*, but is smaller in all its admeasurements except in the bill, which is more developed.

Genus Acanthorhynchus, *Gould.*

Bill elongated, slender and acute, compressed on the sides; *tomia* incurved; *culmen* acute and elevated; *nostrils* basal, elongated, and covered with an operculum; *wings* moderate in size and semi-rotund; first and fifth primaries equal; the third and fourth nearly equal in length, and the longest; *tail* moderate in size and slightly forked; *tarsi* lengthened and strong; middle toe long and robust, external toe exceeding the inner one in length.

This genus, like many others of the family, may be regarded as strictly Australian: it comprises two, if not three, well-marked species, each of which is confined to a particular part of the country; the *A. tenuirostris* dwelling in the eastern, and the *A. superciliosus* in the western districts: both inhabit countries precisely in the same degree of latitude, and form beautiful representatives of each other. Van Diemen's Land is the native habitat of

the species I have named *A. dubius*, which, as will be seen, I had made synonymous with *A. tenuirostris*, but which I am now inclined to consider distinct, an opinion in which Mr. Blyth coincides.

313. Acanthorhynchus tenuirostris . . . . . Vol. IV. Pl. 61.
314. Acanthorhynchus dubius, *Gould*.
315. Acanthorhynchus superciliosus, *Gould* . . . . . Vol. IV. Pl. 62.

Genus Myzomela, *Vig. & Horsf.*

Five well-marked species of this genus are distributed over Australia; numerous others are found in New Guinea and the neighbouring islands; the form also occurs in the Polynesian Islands, but is not found in Van Diemen's Land.

316. Myzomela sanguineolenta . . . . . Vol. IV. Pl. 63.
317. Myzomela erythrocephala, *Gould* . . . . . Vol. IV. Pl. 64.
318. Myzomela pectoralis, *Gould* . . . . . Vol. IV. Pl. 65.
319. Myzomela nigra, *Gould* . . . . . Vol. IV. Pl. 66.
320. Myzomela obscura, *Gould* . . . . . Vol. IV. Pl. 67.

Genus Entomyza, *Swains.*

Two species of this well-defined genus are comprised in the Australian fauna, one of which inhabits the south-eastern parts of the country, or New South Wales; the other, which so far as we yet know is strictly confined to the north-eastern coast, is very plentiful at Port Essington and in the neighbouring districts.

The form appears to be confined to Australia, for I have never seen it from any other country.

321. Entomyza cyanotis . . . . . Vol. IV. Pl. 68.

This bird has the habit—a somewhat remarkable one among the Honey-eaters—of selecting the nest of *Pomatorhinus temporalis* for the reception of its eggs.

322. Entomyza albipennis, *Gould* . . . . . Vol. IV. Pl. 69.

Genus Melithreptus, *Vieill.*

No one group of birds is more universally distributed over Australia than the *Melithrepti*, for their range extends from Van Diemen's Land on the south to the most northern part of the continent; and they are equally numerous from east to west, each part of country being inhabited by a species peculiarly its own. The *Eucalypti* are the trees upon which they are almost exclusively found. I believe the form is unknown out of Australia.

323. Melithreptus validirostris, *Gould* . . . . . Vol. IV. Pl 70.
324. Melithreptus gularis, *Gould* . . . . . Vol. IV. Pl. 71.
325. Melithreptus lunulatus . . . . . Vol. IV. Pl. 72.
326. Melithreptus chloropsis, *Gould* . . . . . Vol. IV. Pl. 73.
327. Melithreptus albogularis, *Gould* . . . . . Vol. IV. Pl. 74.
328. Melithreptus melanocephalus, *Gould* . . . . . Vol. IV. Pl. 75.

Certhia agilis, Lath. Gen. Hist. vol. iv. p. 204.

Genus Myzantha, *Vig. & Horsf.*

During the progress of this work three additional species of this genus have been discovered, one in the interior of New South Wales, the second at Swan River, and the third on the north-west coast; consequently it is a genus the members of which are widely distributed over nearly every part of Australia.

329. Myzantha garrula . . . . . Vol. IV. Pl. 76.
330. Myzantha obscura, *Gould* . . . . . Vol. IV. Pl. 77.
331. Myzantha lutea, *Gould* . . . . . Vol IV. Pl. 78.
332. Myzantha flavigula, *Gould* . . . . . Vol. IV. Pl. 79.
333. Myzantha melanophrys . . . . . Vol. IV. Pl. 80.

Family —— ?

Genus Zosterops, *Vig. & Horsf.*

Three well-defined species of this genus inhabit the continent of Australia and Van Diemen's Land; two are found on Norfolk Island, and numerous others inhabit the Indian Islands and the continent of India even to the Himalaya Mountains.

In placing this group next to the Honey-eaters, I have been influenced by their approximation to those birds in some of their habits: they also exhibit a further degree of affinity in the form and structure of their nest, but not in the colouring of their eggs, which are always blue in colour.

334. Zosterops dorsalis, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 81.
335. Zosterops chloronotus, *Gould* . . . . . Vol. IV. Pl. 82.
336. Zosterops luteus, *Gould* . . . . . Vol. IV. Pl. 83.

Family CUCULIDÆ, *Leach.*

The family *Cuculidæ* is very fairly represented in Australia, since we there find species belonging to the greater number of the Old World genera, and one, *Scythrops*, which has not hitherto, I believe, been found elsewhere. With the exception of *Centropus* and *Eudynamys*, they, like their prototypes, are parasitic in their nidification, and depend upon other birds for the hatching of their eggs and the feeding of their offspring.

Genus Cuculus, *Linn.*

337. Cuculus optatus, *Gould* . . . . . Vol. IV. Pl. 84.

Since my description of this species was printed I have seen specimens from India, with the name of *Cuculus micropterus* attached to them: should this name have been published prior to the one I have assigned to it, my name must sink into a synonym.

338. Cuculus inornatus, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 85.
Columba pallida, Lath. Gen. Hist. vol. viii. p. 30.
339. Cuculus cineraceus, *Vig. & Horsf.* . . . . . Vol. IV. Pl. 86.
340. Cuculus insperatus, *Gould* . . . . . Vol. IV. Pl. 87.
341. Cuculus dumetorum, *Gould.*

This species, which inhabits the north-western coast, differs from *C. insperatus* in being of a much smaller size and in the whole of the plumage being of a browner hue.

Genus Chrysococcyx, *Boie*.

The members of this genus are distributed over most parts of the Old World; two species occur in Australia.

342. Chrysococcyx osculans.
Chalcites osculans, *Gould* . . . . . Vol. IV. Pl. 88.
343. Chrysococcyx lucidus . . . . . Vol. IV. Pl. 89.
Sylvia versicolor, Lath. in Lambert's Drawings.

Genus Scythrops, *Lath*.

The only known species of this remarkable form inhabits the eastern parts of Australia, and according to information derived from the notes made by Mr. Gilbert during Dr. Leichardt's Expedition, extends its range northward from thence to within the tropics.

I have recently had a young specimen presented to me by Lady Dowling, one of two taken from a branch of a tree while being fed by birds not of its own species, an important fact as showing the parasitic habits of the bird.

344. Scythrops Novæ-Hollandiæ, *Lath*. . . . . Vol. IV. Pl. 90.

Genus Eudynamys, *Vig. & Horsf*.

One species only of this form inhabits Australia; others are found in the Indian Islands and on the continent of India.

345. Eudynamys Flindersii . . . . . Vol. IV. Pl. 91.

Genus Centropus, *Ill*.

On reference to my account of the *Centropus Phasianus*, it will be seen I have stated that some variation exists in the form of the bill in specimens from different localities, intimated a belief of there being more than one species, and remarked that should such prove to be the case, the term *macrourus* might be applied to the Port Essington birds, and *melanurus* to those from the north-west coast; and these names are provisionally given until future research has proved whether they be or be not distinct.

346. Centropus Phasianus . . . . . Vol. IV. Pl. 92.
347. Centropus macrourus, *Gould*.
348. Centropus melanurus, *Gould*.

Family CERTHIADÆ, *Vig*.

Genus Climacteris, *Temm*.

Several species of this well-defined and singular group of Australian birds have lately been discovered; two out of the six now known are all that had been described prior to the publication of the present work. With the exception of Van Diemen's Land and the Cobourg Peninsula, every colony is inhabited by one or other of the following species:—

349. Climacteris scandens, *Temm*. . . . . Vol. IV. Pl. 93.
350. Climacteris rufa, *Gould* . . . . . Vol. IV. Pl. 94.
351. Climacteris erythrops, *Gould* . . . . . Vol. IV. Pl. 95.
352. Climacteris melanotus, *Gould* . . . . . Vol. IV. Pl. 96.
353. Climacteris melanura, *Gould* . . . . . Vol. IV. Pl. 97.

354. Climacteris picumnus, *Temm.* . . . . . Vol. IV. Pl. 98.
Certhia leucophæa, Lath. Gen. Hist., vol. iv. p. 182.

Genus Orthonyx, *Temm.*

Much difference of opinion has arisen among ornithologists respecting the situation of this bird in the natural system, and as to what genus it is most nearly allied; I regret to say that not having seen much of it in its native wilds, I am unable to clear up these disputed points. The form is strictly Australian, and the single species known is confined to the south-eastern part of the country.

355. Orthonyx spinicaudus, *Temm.* . . . . . Vol. IV. Pl. 99.

M. Jules Verreaux, who has written a highly interesting account of this bird, states that it is strictly terrestrial, and scratches among the detritus and fallen leaves for its food, throwing back the earth like the *Gallinaceæ*. It never climbs, as was formerly supposed, but runs over fallen trunks of trees;—is rather solitary in its habits, seldom more than two being seen together. Its often-repeated cry of *cri-cri-cri-crite* betrays its presence, when its native haunts, the most retired parts of the forest, are visited. Its chief food consists of insects, their larvæ, and wood-bugs. It builds a large domed nest, of slender mosses; the entrance being by a lateral hole near the bottom. The eggs are white and disproportionately large. The situation of the nest is the side of a slanting rock or large stone, the entrance-hole being level with the surface.—*Revue Zoologique*, July 1847.

Genus Ptiloris, *Swains.*

In placing this beautiful bird near the *Climacteres*, I am influenced in the first place by the great similarity of its structure, and in the next by the account I have received of its actions in a state of nature; I allude more particularly to its mode of ascending the trees, which precisely resembles that of the *Certhiæ*. One species only of this form is found in Australia, but many allied genera, *Promerops*, &c., inhabit New Guinea and the neighbouring islands.

356. Ptiloris paradiseus, *Swains.* . . . . . Vol. IV. Pl. 100.

That the range of this species extends from the eastern parts of Australia to within the tropics, is proved by Mr. Gilbert's having once seen it near the Gulf of Carpentaria during his last Expedition.

Genus Sittella, *Swains.*

The *Sittella chrysoptera* was the only species of this Australian form known to previous writers; to this has been added one from Southern and Western Australia, another from Moreton Bay, and a third from the north coast.

The form does not exist in Van Diemen's Land.

357. Sittella chrysoptera . . . . . Vol. IV. Pl. 101.
358. Sittella leucocephala, *Gould* . . . . . Vol. IV. Pl. 102.
359. Sittella leucoptera, *Gould* . . . . . Vol. IV. Pl. 103.
360. Sittella pileata, *Gould* . . . . . Vol. IV. Pl. 104.

Family PSITTACIDÆ, *Leach.*

No one group of birds gives to Australia so tropical and foreign an air as the numerous species of this great family, by which it is tenanted, each and all of which are individually very abundant. Immense flocks of white Cockatoos may be seen perched among the green foliage of the *Eucalypti*; the brilliant scarlet breasts of the Rose-hills blaze forth from the yellow-flowering *Acaciæ*; the *Trichoglossi* or Honey-eating Parrakeets enliven the

flowering branches of the larger *Eucalypti* with their beauty and their lively actions; the little Grass Parrakeets frequent the plains of the interior and render these solitary spots a world of animation; nay, the very towns, particularly Hobart Town and Adelaide, are constantly visited by flights of this beautiful tribe of birds, which traverse the streets with arrow-like swiftness, and chase each other precisely after the manner the Swifts are seen to do in our own islands. In the public roads of Van Diemen's Land the beautiful *Platycerci* may be constantly seen in small companies, performing precisely the same offices as the Sparrow in England. I have also seen flocks of from fifty to a hundred, like tame pigeons, at the barn-doors in the farm-yards of the settlers, to which they descend for the refuse grain thrown out with the straw by the threshers. As might naturally be expected, the agriculturist is often sadly annoyed by the destruction certain species effect among his newly-sown and ripening corn, particularly where the land has been recently cleared and is adjacent to the brushes. Fifty-five well-defined species of this great family are described and figured in the present work. They appear to constitute four great groups, each comprising several genera, nearly the whole of which are strictly and peculiarly Australian; for instance, neither *Calyptorhynchus*, *Platycercus*, *Euphema*, *Psephotus*, *Melopsittacus*, or *Nymphicus* have been found in any other country; and whether we consider the elegance of their forms or the beauty of their plumage, they may vie with the members of this extensive family from any part of the world.

Genus Cacatua, *Briss.*

Australia, the Molucca and Philippine Islands and New Guinea are the great nurseries of the members of this genus. They incubate in holes of trees or in rocks, and lay two eggs.

361. Cacatua galerita . . . . . Vol. V. Pl. 1.

There are evidently several varieties or races of this species in Australia, each possessing a modification in the form of the bill doubtless given for some specific purpose; the Van Diemen's Land bird is the largest, and has the upper mandible attenuated, while the Port Essington bird is altogether smaller, and has a much more arched bill.

362. Cacatua Leadbeaterii . . . . . Vol. V. Pl. 2.

This species ranges over all the southern portions of Australia between the 20th and 30th degrees of S. latitude. I have never seen a specimen from the north, and I believe it does not inhabit that part of the country; its true habitat appears to be the interior, for it is never found near the coast.

363. Cacatua sanguinea, *Gould* . . . . . Vol. V. Pl. 3.

This species has been found on the north coast, and was observed by Captain Sturt at the Depôt in Central Australia; we may hence infer that its range extends over all the intermediate country.

364. Cacatua Eos . . . . . Vol. V. Pl. 4.

This fine bird, which is strictly Australian, is distributed over all parts of the interior of the country, and is as abundant in the north as it is in the south; it was also observed by Captain Sturt at the Depôt.

The specimens from the north are of a larger size and have the orbits more denuded than those from the south.

Genus Licmetis, *Wagl.*

The two species forming the genus *Licmetis* are not only confined to Australia, but, so far as we yet know, to the southern portions of that continent; one inhabits the western and the other the eastern part of the country. Their singularly formed bill being admirably adapted for procuring their food on the ground, they are more terrestrial in their habits than the other members of the family.

365. Licmetis nasicus . . . . . Vol. V. Pl. 5.

366. Licmetis pastinator, *Gould.*

Licmetis pastinator, Gould in Proc. of Zool. Soc., Part VIII. p. 175.

Lores scarlet; general plumage white; the base of the feathers of the head and front of the neck scarlet, showing through and giving those parts a stained appearance; the basal half of the inner webs of the primaries, the inner webs of all the other feathers of the wing, and the inner webs of the tail-feathers beautiful brimstone-yellow; naked space round the eye greenish blue; irides light brown; bill white; feet dull olive-grey.

Inhabits Western Australia.

Differs from *L. nasicus* in being of a much larger size; but the colouring being similar, I have not thought it necessary to figure it.

Genus Nestor, *Wagl.*

Of this genus two species are known, one of which was exclusively confined to Phillip Island, and the other inhabits New Zealand; they are evidently the remains of a race, all the other members of which are probably extinct.

367. Nestor productus, *Gould* . . . . . Vol. V. Pl. 6.

The few examples of this species that may exist in captivity are all that survive, none remaining on Phillip Island, their native habitat.

Genus Calyptorhynchus, *Vig. & Horsf.*

The *Calyptorhynchi* are strictly arboreal, and are evidently formed to live upon the seeds of the *Banksiæ*, *Eucalypti*, and other trees peculiar to the country they inhabit; they diversify their food by occasionally devouring large caterpillars; as they mostly move about in small companies of from four to six in number they can scarcely be considered gregarious. Their flight is rather powerful, but at the same time laboured and heavy; and their voice is a low crying call, totally different from the harsh screaming notes of the *Cacatuæ*. Each division of the country, from the north coast of the continent to Van Diemen's Land, is inhabited by its own peculiar species.

I have never seen a member of this genus from any other country than Australia, but I have heard that an extraordinary Parrot, said to be larger than any at present in our collections, inhabits New Guinea, and which, from the description given of it, will probably be of this form. The *Calyptorhynchi* lay from two to four eggs in the holes of trees.

368. Calyptorhynchus Banksii . . . . . Vol. V. Pl. 7.
369. Calyptorhynchus macrorhynchus, *Gould* . . . . . Vol. V. Pl. 8.

Inhabits the north coast, where it represents the *C. Banksii* of the eastern and the *C. naso* of the western coasts.

370. Calyptorhynchus naso, *Gould* . . . . . Vol. V. Pl. 9.

This species, which is confined to Western Australia, is rendered conspicuous by the small size of its crest, and by its bill being nearly as large as that of *C. macrorhynchus*, while its wings are much shorter than those of that species.

371. Calyptorhynchus Leachii . . . . . Vol. V. Pl. 10.
Banksianus Australis, Less. Traité d'Orn. p. 180, Atlas, pl. 18, fig. 2, fem.

Inhabits the south-eastern parts of the continent, and differs from all the others in its smaller size, the gibbose form of its bill, and in the paucity of its crest.

372. Calyptorhynchus funereus . . . . . Vol. V. Pl. 11.

Confined, I believe, to New South Wales, and South Australia?

373. Calyptorhynchus xanthonotus, *Gould* . . . . . Vol. V. Pl. 12.

The true habitat of this species is Van Diemen's Land, but I have lately received a specimen from Port Lincoln, which proves that its range extends to South Australia. It is distinguished from *C. funereus* by its much smaller size, and by the uniformity of the yellow colouring of the tail.

374. Calyptorhynchus Baudinii, *Vig.* . . . . . Vol. V. Pl. 13.

Inhabits Western Australia, and is distinguished by its small size and by the white marks on the tail.

Genus Callocephalon, *Less.*

Of this form only a single species is known.

375. Callocephalon galeatum . . . . . Vol. V. Pl. 14.

Inhabits the southern coast of Australia and Van Diemen's Land.

Genus Polytelis, *Wagl.*

This genus comprises two species, both of which are peculiar to the southern portions of Australia. They have many characters common to, and resemble in appearance, the *Palæorni* of India.

376. Polytelis Barrabandi . . . . . Vol. V. Pl. 15.
377. Polytelis melanura . . . . . Vol. V. Pl. 16.

Genus Aprosmictus, *Gould.*

Generic characters.

As in *Platycercus*, but the *bill* more feeble; *cere* and *nostrils* covered with fine hair-like feathers; *wings* longer and less concave; *tail* more square; *tarsi* shorter and *toes* longer than in that genus.

Two, if not three species of this form inhabit Australia, and others are found in New Guinea and the neighbouring islands. They are distinguished from the *Platycerci* by the possession of a well-developed *os furcatorium*, a bone which is entirely wanting in the members of that genus; in their habits they are mainly arboreal, and in their disposition are morose and sullen.

378. Aprosmictus scapulatus . . . . . Vol. V. Pl. 17.

This species appears to be confined to New South Wales.

379. Aprosmictus erythropterus . . . . . Vol. V. Pl. 18.

The red-winged Parrakeets from the north coast are nearly a fourth smaller than those inhabiting the Liverpool plains and similar districts of the south coast; are they varieties of each other or distinct species?

Genus Platycercus, *Vig.*

In my opinion the New Zealand birds that have been placed in this genus are not true *Platycerci*, all the known species of which are confined to Australia; they comprise fourteen species which appear to be naturally divisible into minor groups, to which generic appellations may hereafter be given; for instance the *P. semitorquatus*, *P. Baueri*, *P. Barnardi*, &c. form one; the *P. Adelaidiæ*, *P. Pennantii*, *P. flaveolus*, *P. flaviventris*, &c. form another; *P. eximius*, *P. splendidus*, *P. icterotis*, &c. form a third; and *P. pileatus* a fourth.

The members of this and the two next genera lay from seven to ten eggs in the holes of trees.

380. Platycercus semitorquatus . . . . . Vol. V. Pl. 19.
381. Platycercus Baueri . . . . . Vol. V. Pl. 20.
382. Platycercus Barnardii, *Vig. & Horsf.* . . . . . Vol. V. Pl. 21.
383. Platycercus Adelaidiæ, *Gould* . . . . . Vol. V. Pl. 22.
384. Platycercus Pennantii . . . . . Vol. V. Pl. 23.
385. Platycercus flaviventris . . . . . Vol. V. Pl. 24.

Genus Psephotus, *Gould.*

Generic characters.

As in *Euphema*, but the *cere*, in which the nostrils are placed, more swollen or developed; *wings* rather short and the *tail* much lengthened; the lateral feathers short and not so regularly graduated; *feet* more adapted for terrestrial progression.

All the members of this genus are confined to Australia, and hold an intermediate station between the *Platycerci* on the one hand and the *Euphemæ* on the other. They pass much of their time on the ground, where the principal part of their food is procured; inhabit the interior rather than the country near the coast, and are adapted for the open plains, where they often assemble in vast flocks.

I have figured four species, and I have seen a drawing in the possession of Mr. Brown, made by Ferdinand Bauer from a bird said to have been found near the Gulf of Carpentaria, which will probably form a fifth.

This species differs from all the other members of the genus, as well as from those of the allied genera, in the pointed form of the tips of its primaries.

If they be not local varieties of each other, there are two birds confounded under this name, one having yellow and the other scarlet under tail-coverts; it will be necessary, however, to see other examples before we can decide whether they are or are not distinct. Captain Sturt brought specimens with yellow under tail-coverts from the Depôt in the interior of South Australia.

Genus Euphema, *Wagl.*

The members of this genus are exclusively Australian and appear to be confined to the extra-tropical parts of the country, no species having yet been seen from the north coast. Our knowledge of this group has been extended from three to seven species, all of which are abundantly distributed over the southern portions of the continent, and two of them over Van Diemen's Land.

Captain Sturt procured a single male example of this beautiful bird during his journey into the interior of South Australia.

404. Euphema Bourkii . . . . . Vol. V. Pl. 43.

Captain Sturt found this species in abundance at the Depôt in Central Australia.

Genus Melopsittacus, *Gould.*

Generic characters.

Bill moderate; *culmen* arched; *tomia* descending at the base, then ascending and curving downwards to the tip; *nostrils* basal, lateral, open, and seated in a broad swollen cere; *wings* rather long, pointed, first primary very long, the second the longest; *tail* long and much graduated; *tarsi* moderate and covered with minute scales; *toes* slender, the outer toe much longer than the inner one.

The only known species of this form is strictly gregarious, assembles in vast flocks, and is admirably adapted for plains and downs covered with grasses, upon the seeds of which it entirely subsists.

405. Melopsittacus undulatus . . . . . Vol. V. Pl. 44.

In all probability this bird is universally dispersed over the whole of the interior of Australia, since independently of its previously known range from Swan River on the west to New South Wales on the east, Mr. Gilbert observed it in every part of the country between Moreton Bay and the Gulf of Carpentaria.

Genus Nymphicus, *Wagl.*

As of *Melopsittacus*, there is only one species known of this genus. It is strictly Australian, and will doubtless hereafter be found to be universally distributed over that vast country; it is equally adapted for the plains, and the two birds are frequently found associated.

406. Nymphicus Novæ-Hollandiæ . . . . . Vol. V. Pl. 45.

There are two distinct varieties of this species, one having a much darker colouring than the other.

Genus Pezoporus, *Ill.*

Of this terrestrial form but one species is known, which is very generally distributed over the temperate portions of Australia, the islands in Bass's Straits and Van Diemen's Land. The eggs are laid on the bare ground.

407. Pezoporus formosus . . . . . Vol. V. Pl. 46.

Genus Lathamus, *Less.*

Of this form only a single species is known to exist in Australia, and that species had been assigned to a different genus by almost every recent writer on ornithology, Messrs. Vigors and Horsfield placing it in their genus *Nanodes*, Wagler in his genus *Euphema*, &c.; subsequently M. Lesson made it the type of his genus *Lathamus*, giving it at the same time the specific appellation of *rubrifrons*, which must of course give place to that of *discolor*, long before applied to it by Latham.

Having had ample opportunities of observing this bird in a state of nature, I concur in the propriety of M. Lesson's views in separating it into a distinct genus, at the same time I must remark that in its habits, nidification, food and whole economy, it is most closely allied to the *Trichoglossi* or honey-eating Parrakeets, and in no degree related to the *Euphemæ*.

408. Lathamus discolor . . . . . Vol. V. Pl. 47.

Genus Trichoglossus, *Vig. & Horsf.*

The arboreal group of *Trichoglossi* or honey-eating Lorikeets, if not so numerous in species as the grass-feeding Parrakeets, are individually much more abundant and are more universally dispersed, being found in every part of the country yet visited; several species inhabit New South Wales: only one has yet been found in Western Australia. Other members of the genus are found in New Guinea and the Moluccas, but Australia is the great nursery for the birds of this form.

In their structure, habits and mode of nidification, and in their economy, no two groups of the same family can be more widely different than the *Trichoglossi* and the *Platycerci*; the pencilled tongue, diminutive stomach, thick skin, tough flesh, and fœtid odour of the former presenting a decided contrast to the simple tongue, capacious crop and stomach, thin skin, delicate flesh and freedom from odour of the latter; besides which the *Trichoglossi* possess a strong *os furcatorium*, which organ is wanting in the *Platycerci*; hence while the *Trichoglossi* are powerful, swift and arrow-like in their flight, the *Platycerci* are feeble, pass through the air in a succession of undulations near the ground, and never fly to any great distance. The mode in which the two groups approach and alight upon and quit the trees is also remarkably different; the *Trichoglossi* dashing among and alighting upon the branches simultaneously, and with the utmost rapidity, and quitting them in like manner, leaving the deafening sound of their thousand voices echoing through the woods; while the *Platycerci* rise to the branches after their undulating flight and leave them again in the like quiet manner, no sound being heard but their inward piping note.

The eggs of the *Trichoglossi* are from two to four in number.

409. Trichoglossus Swainsonii, *Jard. & Selb.* . . . . . Vol. V. Pl. 48.
410. Trichoglossus rubritorquis, *Vig. & Horsf.* . . . . . Vol. V. Pl. 49.
" Procured at Port Molle on the north-east coast, previously only found at Port Essington."—J. M'Gillivray.
411. Trichoglossus chlorolepidotus . . . . . Vol. V. Pl. 50.
412. Trichoglossus versicolor, *Vig.* . . . . . Vol. V. Pl. 51.
413. Trichoglossus concinnus . . . . . Vol. V. Pl. 52.
414. Trichoglossus porphyrocephalus, *Diet.* . . . . . Vol. V. Pl. 53.
415. Trichoglossus pusillus . . . . . Vol. V. Pl. 54.

Order RASORES, *Ill.*

Family COLUMBIDÆ, *Leach.*

The members of this important family are distributed over every portion of the globe, in no part of which are they more numerous than in Australia, since that country is inhabited by no less than twenty-one species, which, like its *Psittacidæ*, comprise several well-marked and distinct genera, and appear to be naturally divided into two great groups, the one arboreal, the other terrestrial; the *Ptilinopi*, *Carpophagæ* and *Lopholaimus*, with their expansive gullets and broad hand-like feet forming part of the former, and the *Phaps*, *Geophaps* and *Geopeliæ* the latter. The *Ptilinopi* and other allied forms are, in consequence of the peculiar character of the vegetation, confined, without a single exception, to the eastern and northern parts of the country.

The species of the genus *Phaps*, a form which I believe to be confined to Australia, are more widely dispersed than those of any other section of the family, being universally distributed over the entire country from north to south and from east to west; even the parched deserts of the interior are visited by them if a supply of water be within reach of their evening flight, which is performed with the most extraordinary rapidity and power.

Genus Ptilinopus, *Swains.*

The species of this genus, the most brilliant and highly-coloured of the *Columbidæ*, range over Australia, New Guinea, Malacca, Celebes, and Polynesia; two of the three Australian species are I believe confined to that country.

416. Ptilinopus Swainsonii, *Gould* . . . . . Vol. V. Pl. 55.
417. Ptilinopus Ewingii, *Gould* . . . . . Vol. V. Pl. 56.
418. Ptilinopus superbus . . . . . Vol. V. Pl. 57.

Ptilinopus superbus, Steph. cont. of Shaw's Gen. Zool., vol. xiv. p. 279.

Genus Carpophaga, *Selby.*

The species of this genus are widely dispersed over Australia, New Guinea, Malacca, Celebes and Polynesia. Strictly arboreal in their habits and feeding entirely upon fruits, berries and seeds, they frequent the towering fig-trees when their fruit is ripe, and the lofty palms for the sake of their large round seeds. I have frequently observed large flocks moving about from one part of the forest to another, consequently they may be considered a gregarious race; their short tarsi and dilated feet are ill-adapted for the ground, and I have never seen them descend from the trees, not even for water.

419. Carpophaga magnifica . . . . . Vol. V. Pl. 58.
420. Carpophaga leucomela . . . . . Vol. V. Pl. 59.
421. Carpophaga luctuosa . . . . . Vol. V. Pl. 60.

Genus Lopholaimus, *G. R. Gray.*

The single species of this genus is strictly a fruit-eating Pigeon, and is confined, so far as we yet know, to the brushes of New South Wales, where it moves about in large flocks and feeds upon the wild figs and other fruits and berries which the trees of the brushes afford.

422. Lopholaimus Antarcticus . . . . . Vol. V. Pl. 61.

A noble bird ornamented with a large occipital crest.

Genus Chalcophaps, *Gould.*

Generic characters.

"*Bill* slender, moderate and straight, the tip vaulted and rather arched; *nostrils* lateral, membranous and swollen, with the opening in the middle of the bill; *wings* long, second and third primaries nearly equal and the longest; *tail* moderate and much rounded; *tarsi* rather shorter than the middle toe, robust and covered with transverse scales; *toes* long, the lateral and the hind-toes nearly as long as the outer; *claws* moderate and curved." —Gray and Mitchell's Genera of Birds, Art. Gourinæ.

A genus of Brush Pigeons, the members of which seek their food on the ground and live on the fallen seeds and berries they find there. Two species inhabit Australia, one of which is confined to the eastern and the other to the northern coast; other species are found in Java, Sumatra, and on the continent of India, the whole forming a group well worthy of investigation by the scientific ornithologist.

423. Chalcophaps chrysochlora . . . . . Vol. V. Pl. 62.

The bird of this form inhabiting the country in the neighbourhood of Port Essington differs from those inhabiting New South Wales in the much greater length of the mandibles, and is altogether a much finer bird: consequently I am induced to believe that it is distinct from its southern prototype; I would therefore provisionally name it—

424. Chalcophaps longirostris.

I have not figured it, inasmuch as the colouring is similar, but more brilliant, and has the bands across the rump more distinct than in *C. chrysochlora*.

Genus Leucosarcia, *Gould.*

Generic characters.

Bill lengthened, almost cylindrical, fleshy for two-thirds of its length from the base: *nostrils* lateral and covered by an oval swollen operculum; *wings* very short and concave; *tail* short; *tarsi* lengthened and defended in front by large distinct scuta; *toes* rather short, hind-toe situated high upon the tarsus.

A genus proposed by me for the reception of the Wonga-Wonga Pigeon of the Australian Brushes, a bird having many peculiar habits, but which, being mainly terrestrial, lead it to frequent the ground in the midst of the dense forests, where it moves about in pairs, feeding upon seeds and berries. Its flesh being remarkably white and extremely delicate, it is one of the best birds for the table inhabiting Australia, or indeed any other country.

The colour of the flesh suggested the generic term I have assigned to it.

425. Leucosarcia picata . . . . . Vol. V. Pl. 63.

Genus Phaps, *Selby.*

The members of this genus, generally known by the name of Bronze-wings, form an excellent viand for the settlers, and one of the greatest boons bestowed upon the explorer, since they not only furnish him with a supply of nutritious food, but direct him by their straight and arrow-like evening flight to the situations where he may find water, that element without which man cannot exist.

426. Phaps chalcoptera.
Peristera chalcoptera . . . . . Vol. V. Pl. 64.

427. Phaps elegans.
Peristera elegans . . . . . Vol. V. Pl. 65.

428. Phaps histrionica.
Peristera histrionica, *Gould* . . . . . Vol. V. Pl. 66.

"This beautiful pigeon," says Captain Sturt, "is an inhabitant of the interior. It lays its eggs in February, depositing them under any low bush in the middle of the open plains. In the end of March and the beginning of April they collect in large flocks and live on the seed of the rice-grass, which the natives also collect for food. During the short period this harvest lasts the flavour of this pigeon is most delicious, but at other times it is indifferent. It flies to water at sunset, but like the Bronze-wing only wets the bill. It is astonishing indeed that so small a quantity as a bare mouthful should be sufficient to quench its thirst in the burning deserts it inhabits. It left us in the beginning of May, and I think migrated to the N.E., for the further we went to the westward the fewer did we see of it."

Mr. Gilbert observed this species in vast flocks on the plains in latitude 19° S.

Genus Geophaps, *Gould.*

Generic characters.

Bill very short and robust; *eyes* surrounded with a bare skin; *wings* very short and rounded; *tertiaries* long and broad at their ends; *tarsi* moderately long; *toes* shorter than the tarsus, the inner toe rather the longest.

The members of this genus are peculiar to Australia; are more terrestrial in their habits than any other form of pigeons inhabiting that country; incubate on the ground; squat like the partridges when their haunts are intruded upon; inhabit the plains and open downs; have white pectoral muscles; are excellent food for man; run with great rapidity; fly swiftly for short distances; and when disturbed either perch on the larger branches, on which they squat lengthwise, or descend to the ground and run off after the manner of the true *Gallinaceæ*.

429. Geophaps scripta . . . . . Vol. V. Pl. 67.

430. Geophaps Smithii . . . . . Vol. V. Pl. 68.

431. Geophaps plumifera, *Gould* . . . . . Vol. V. Pl. 69.

"Lat. 17° 30′, March 6. I was fortunate enough to kill for the first time *Geophaps plumifera*, a species hitherto only known from a single specimen sent home by Mr. Bynoe of H.M.S. Beagle. The irides are bright orange, the naked skin before and surrounding the eyes bright crimson; the bill dark greenish grey; the scales of the legs and toes greenish grey; skin between the scales light ashy grey. Its flight and actions on the ground are precisely similar to those of the other species of the genus. I only saw the specimen I killed, but afterwards learned that one of my companions had seen a flock rise precisely like *Geophaps scripta*."—*Gilbert's Journal.*

"It was on the return of my party from the eastern extremity of Cooper's Creek," says Captain Sturt, "that we first saw and procured specimens of this beautiful little bird. Its locality was entirely confined to about thirty miles along the banks of the creek in question; it was generally perched on some rock fully exposed to the sun's rays, and evidently taking a pleasure in basking in the tremendous heat. It was very wild and took wing on hearing the least noise, but its flight was short and rapid. In the afternoon this little pigeon was seen running in the grass on the creek side, and could hardly be distinguished from a quail. It never perched on the trees; when it dropped after rising from the ground, it could seldom be flushed again, but ran with such speed through the grass as to elude our search."

Genus Ocyphaps, *Gould.*

Generic characters.

Head furnished with a lengthened occipital crest; *wings* rather short, the third primary gradually narrowed to a point; *tail* rather long and much rounded; *tarsi* as long as the middle toe; the inner *toe* shorter than the outer.

A genus consisting of a single species whose natural habitat is the basin of the interior of Australia, over the vast expanse of which its long pointed wings enable it to pass at pleasure from one district to another whenever a scarcity of food prompts it so to do: although mainly terrestrial in its habits, it is more frequently seen on the trees than the members of the genus *Phaps*; its food consists of small seeds and berries.

432. Ocyphaps Lophotes . . . . . Vol. V. Pl. 70.

Genus Petrophassa, *Gould.*

Generic characters.

As in *Ocyphaps*, but with the wings shorter, more rounded and destitute of the bronzy lustre; and with a more rounded tail.

So little is known respecting the single species of this Australian genus that I am unable to say more than that it inhabits rocky situations near the sea-coast.

433. Petrophassa albipennis, *Gould* . . . . . Vol. V. Pl. 71.

Genus Geopelia, *Swains.*

A form of Ground Doves very generally distributed over the Indian Islands and Australia, and of which three or four species are peculiar to the latter country; grassy hills, flats and extensive plains are the situations these birds affect, consequently in Australia they are almost exclusively confined to the interior; they pass over the ground in a quiet and peaceful manner; and when disturbed fly to some neighbouring tree, descend again almost immediately and search about for the minute seeds of annuals and other plants, upon which they principally subsist.

434. Geopelia humeralis . . . . . Vol. V. Pl. 72.
435. Geopelia tranquilla, *Gould* . . . . . Vol. V. Pl. 73.
436. Geopelia placida, *Gould.*

Inhabits the neighbourhood of Port Essington, is much smaller than *G. tranquilla*, but in colour and marking is precisely similar to that species.

437. Geopelia cuneata . . . . . Vol. V. Pl. 74.

"All that we read or imagine of the softness and innocence of the dove," says Captain Sturt, "is realized in this beautiful and delicate bird; it is common on the Murray and the Darling, and was met with in various parts of the interior. Two remained with us at the Depôt in latitude 39° 40′, longitude 142°, during a great part of the winter, and on one occasion roosted on the tent-ropes near the fire. Its note is exceedingly plaintive, similar to, but softer than, that of the turtle-dove of Europe."

Genus Macropygia, *Swains.*

A genus the members of which are distributed over India, Java, New Guinea, Ceram, the Moluccas, Australia, &c. Only one species, *M. Phasianella*, has yet been found in the last-mentioned country, but others may be discovered when its eastern and northern parts have been more fully explored.

438. Macropygia Phasianella . . . . . Vol. V. Pl. 75.

The interior of the dense brushes are the favourite haunts of this bird, but it occasionally resorts to the crowns of the low hills and the open glades of the forest, where it searches for its food on the ground; on being disturbed it flies to the branches of the nearest tree, spreading out its broad tail at the moment of alighting.

Genus Didunculus, *Peale.*

Since I drew and described this most anomalous form, under the name assigned to it by Sir William Jardine, two important facts have been ascertained respecting it, viz. that it is identical with the bird described by Mr. Titian Peale of America under the name of *Didunculus*, and that the Samoan Islands and not Australia is its true habitat.

Didunculus strigirostris.

439. Gnathodon strigirostris, *Jard.* . . . . . Vol. V. Pl. 76.

Family MEGAPODIDÆ, *G. R. Gray.*

The genera *Talegalla*, *Leipoa* and *Megapodius* form part of a great family of birds inhabiting Australia, New Guinea, Celebes, and the Philippine Islands, whose habits and economy are most singular and differ from those of every other group of birds which now exists upon the surface of our globe. In their structure they are most nearly allied to the *Gallinaceæ*, while in some of their actions and in their mode of flight they much resemble the *Rallidæ*; the small size of their brain, coupled with the extraordinary means employed for the incubation of their eggs, indicates an extremely low degree of organization.

The three species of the family inhabiting Australia, although referable to three distinct genera, have many habits in common, particularly in their mode of nidification—each and all depositing their eggs in mounds of earth and leaves, which, becoming heated either by the fermentation of the vegetable matter, or by the sun's rays, form a kind of natural hatching-apparatus, from which the young at length emerge fully feathered, and capable of sustaining life by their own unaided efforts.

Genus Talegalla, *Less.*

440. Talegalla Lathami . . . . . Vol. V. Pl. 77.

Inhabits all the brushes and scrubby forests of the eastern parts of Australia. Mr. M'Gillivray informs me, in a letter lately received from him, dated on board H.M.S. "Rattlesnake," February 6th, 1848, "At Port Molle I shot in the brushes both *Megapodius* and *Talegalla*," which proves that the range of the latter bird is much greater than I have stated.

Genus Leipoa, *Gould.*

Generic characters.

Bill nearly as long as the head, slender, swollen at the base; *tomia* undulating, and curving downwards; *nostrils* large, oblong, defended by an operculum and placed in the centre of a groove; *head* sub-crested; *wings* large, round and concave; the first five primaries equal and longest; tertiaries nearly as long as the primaries; *tail* round and composed of fourteen feathers; *tarsi* moderately robust, scutellated in front, posteriorly defended with round scales; *toes* somewhat short; the lateral toes nearly equal in length.

441. Leipoa ocellata, *Gould* . . . . . Vol. V. Pl. 78.

Since I wrote my account of this bird, it has been found to be abundantly dispersed over all parts of the Murray Scrub in South Australia.

The following highly interesting account has been forwarded to me by His Excellency Captain Sir George Grey, being the result of his observations of the bird made while Governor of South Australia:—

"My dear Mr. Gould, "Government House, Adelaide, December 12th, 1842.

"I have lately returned from the Murray, where I have been studying the habits and manners of the *Leipoa ocellata*, which is very plentiful in the sandy districts of the Scrub. The eyes of the living bird are of a bright, light hazel; its legs and feet dark brown, but not so dark as shown in your Plate; whilst the bare parts on the head and face are of a very delicate and clear blue. The gizzard is very large and muscular; the inner coats peculiarly horny and hard. Its food consists chiefly of insects, such as *Phasmidæ* and a species of *Cimex*; it also feeds on the seeds of various shrubs. The entire lungs and intestines of the one which I dissected were full of *Tænioïdes*. I have never seen any other animal infested with them to anything like the same extent, and yet the bird was perfectly healthy. It possesses the power of running with extraordinary rapidity; it roosts at night on trees, and never flies if it can avoid so doing;—the male bird weighs about four pounds and a half.

"The mounds they construct are from 12 to 13 yards in circumference at the base, and from 2 to 3 feet in height; the general form being that of a dome. The sand and grass are sometimes scraped up for a distance of from 15 to 16 feet from its outer edge.

"The mound appears to be constructed as follows: a nearly circular hole of about 18 inches in diameter, is scratched in the ground to the depth of 7 or 8 inches, and filled with dead leaves, dead grass and similar materials; and a large mass of the same substances is placed all round it upon the ground. Over this first layer a large mound of sand, mixed with dried grass, &c., is thrown, and finally the whole assumes the form of a dome, as I have before stated.

"When an egg is to be deposited, the top is laid open, and a hole scraped in its centre to within 2 or 3 inches of the bottom of the layer of dead leaves. The egg is placed in the sand just at the edge of the hole, in a vertical position, with the smaller end downwards. The sand is then thrown in again, and the mound left in its original form. The egg which has been thus deposited is therefore completely surrounded and enveloped in soft sand, having from 4 to 6 inches of sand between the lower end of the egg and the layer of dead leaves. When a second egg is laid it is deposited in precisely the same plane as the first, but at the opposite side of the hole before alluded to. When a third egg is laid it is placed in the same plane as the others, but, as it were, at the third corner of a square. When the fourth egg is laid, it is still placed in the same plane; but in the fourth corner of the square, or rather of the lozenge, the figure being of this form, ∘°∘; the next four eggs in succession are placed in the

interstices, but always in the same plane, so that at last there is a circle of eight eggs all standing upright in the sand with several inches of sand intervening between each. The male bird assists the female in opening and covering up the mound; and provided the birds are not themselves disturbed, the female continues to lay in the same mound, even after it has been several times robbed. The natives say that the females lay an egg every day.

"Eight is the greatest number I have heard of from good authority as having been found in one nest; but I opened a mound which had been previously robbed of several eggs, and found that two had been laid opposite to each other in the same plane in the usual manner; and a third deposited in a plane parallel to that in which the other two were placed, but 4½ inches below them. This circumstance led me to imagine it was possible that there might be sometimes successive circles of eggs in different planes.

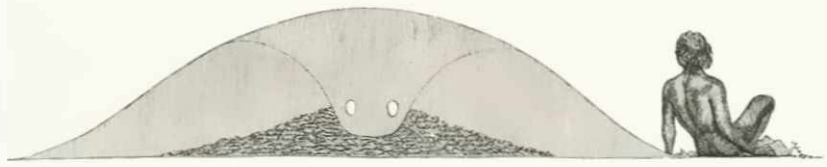
"I enclose three sketches which will convey to you a complete idea of the form of the mound, and of the manner in which the eggs are placed in it. These sketches were drawn by Mr. Knight, from a rude one of mine, and are very accurate.

No. 1.

This sketch represents a section through the mound after the sand has been cleared out in such a manner that the eggs could all be removed, and the bottom of the nest of leaves be laid bare. It shows the form of the opening the natives make in the mound when they rob it of its eggs; this opening has however been continued below where the eggs are placed, in order to show the form of the interior nest.

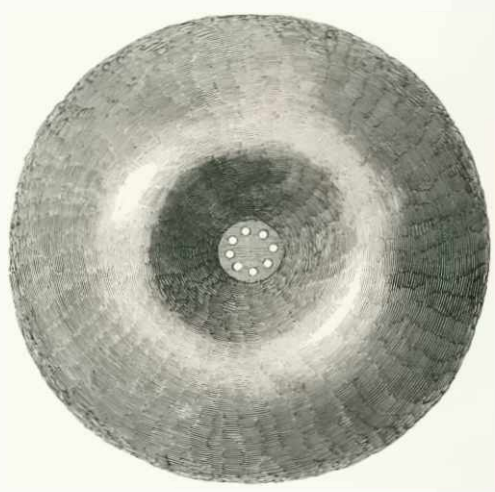
The pale tint represents that portion which is made of sand; the darker tint the part which is made of leaves, &c.

No. 2.



This sketch represents a section through the mound in its undisturbed state; the pale tint indicates the portion of sand, the darker tint the leaves, &c.

No. 3.



This sketch shows a bird's eye view of the mound as seen from above; the sand is supposed to have been so far thrown out as to leave the tops of the eggs exposed, and to show them standing upright in their relative positions.

"One of the mounds of these birds which had been robbed of its eggs on the 11th November, some of which were quite fresh, had two fresh eggs laid in it on the 27th of the same month, and the birds were seen at the nest on the morning of the 28th, apparently for the purpose of laying, when the male bird was shot.

"Sometimes several of these mounds are constructed close to one another. I found two within 200 or 300 yards, and have seen five within the distance of four or five miles. They were built in precisely the same situations that I have seen them in other parts of the continent, that is, in a sandy, scrubby country, the site of the mound being in some little open glade, in the very thickest part of the scrub.

"The eggs are of a light pink, the colour being brightest and most uniform when freshly laid. As the time of hatching approaches, they become discoloured and marked in places with dark spots.

The greatest length of these eggs is about	$3\frac{6}{10}$ inches.
,, breadth ,,	$2\frac{3}{10}$,,
Circumference in direction of length	10 ,,
,, ,, breadth	$7\frac{3}{10}$,,

"The temperature of the nests I have examined has always been warm; not so much so, however, as I should have thought necessary for the purpose of hatching eggs.

"There are two great peculiarities about these eggs; the first is, that both ends are of nearly the same size; which form is peculiarly adapted to the position in which they are always placed; the egg being compressed in every part as nearly as possible towards the axis, in which the centre of gravity lies, there is the least possible

tendency to its equilibrium being destroyed when it is placed in a vertical position. A second peculiarity is the extreme thinness of the shell, and its consequent fragility. This is so great, that unless the egg is handled with the greatest care, it is sure to be broken, and every effort which has been made to hatch these eggs under domestic fowls has failed, the egg having in every instance been broken by the bird under which it was placed.

"The native name for the bird on the Murray River is *Marrak-ko* or *Marra-ko*; in Western Australia the name of the bird is *Ngow-o* or *Ngow*. The name in Western Australia is given from the tuft on its head, *Ngoweer* meaning a tuft of feathers.

"I have found this bird in different parts of that portion of Australia included between the 26th and 36th parallels of south latitude, and the 113th and 141st parallels of east longitude, and I think that there is every probability that it inhabits a much wider range. It is found in all the scrubby districts of South Australia.

"Yours truly, G. Grey."

"December 14th.

"P.S.—I have, by cross examination of several natives, elicited the following account of this bird, and I am quite satisfied of its truth.

"There is only one male and one female to each nest: they repair an old nest, and do not build a new one; both assist in scratching the sand to the nest. The female commences laying about the beginning of September, or when the spear-grass begins to shoot. Both sexes approach the nest together when the female is about to lay, and they take an equal share in the labour of covering and uncovering the mound. After every sunrise the female lays an egg, and lays altogether from eight to ten. If the natives rob the nest, the female will lay again in the same nest, but she will only lay the full number of eggs twice in one summer. From the commencement of building, until the last eggs are hatched, four moons elapse (this would give a very long period of time before the eggs were hatched). The young one scratches its way out alone; the mother does not assist it. They usually come out one at a time; occasionally a pair appear together. The mother, who is feeding in the scrub in the vicinity, hears its call and runs to it. She then takes care of the young one as a European hen does of its chick. When the young are all hatched the mother is accompanied by eight or ten young ones, who remain with her until they are more than half-grown. The male bird does not accompany them. The two sexes have different calls: that of the female is constantly uttered while she walks about in the scrub with her young ones.

"The natives frequently find the eggs and nests, but they seldom see the old birds, which are very timid and quick-sighted. They run very fast, like the Emu, roost on trees, and live for a long time without water, but drink when it rains. The natives state that the *Entozoæ* which I found in the bird mentioned above were unusual, and that it must have been in ill health.

"It is a remarkably stout, compact bird, and appears, when alive, to have as large a body as the female turkey, but it is shorter on the legs."

To this valuable account I may add the following, furnished by Mr. Gilbert:—

"Wongan Hills, Western Australia, September 28, 1842.

"This morning I had the good fortune to penetrate into the dense thicket I had been so long anxious to visit in search of the Leipoa's eggs, and had not proceeded far before the native who was with me told me to keep a good look-out, as we were among the *Ngou-oo's* hillocks, and in half an hour after we found one, around which the brush was so thick that we were almost running over before seeing it; so anxious was I to see the hidden treasures within that in my haste I threw aside the black fellow and began scraping off the upper part of the mound; this did not at all please him, and he became very indignant, at the same time making me understand, 'that as I had never seen this nest before I had better trust to him to get out the eggs, or I should, in my haste and impatience, certainly break them.' I therefore let him have his own way, and he began scraping off the earth very carefully from the centre, throwing it over the side, so that the mound very soon presented the appearance of a huge basin; about two feet in depth of earth was in this way thrown off, when the large ends of two eggs met my anxious gaze; both these eggs were resting on their smaller apex, and the earth around them had to be very carefully removed to avoid breaking the shell, which is extremely fragile when first exposed to the atmosphere; this mound was about three feet in height and seven to nine feet in circumference; the form, as left by the bird, was in outline the segment of a circle. About a hundred yards from this first nest we came upon a second, rather larger, of the same external form and appearance; it contained three eggs. Although we saw seven or eight more

mounds, only these two contained eggs; we were too early; a week later and we should doubtless have found many more. To give you an idea of the place this bird chooses for its remarkable mode of rearing its young, I will describe it as nearly as I can:—The Wongan Hills are about thirteen hundred feet above the level of the sea, in a north-north-east direction from Drummond's house in the Toodyay; their sides are thickly clothed with a dense forest of *Eucalypti*; and at their base is a thicket, extending for several miles, of upright-growing and thick, bushy plants, so high in most parts that we could not see over their tops, and so dense, that if we separated only for a few yards, we were obliged to cooey, to prevent our straying from each other; this thicket is again shadowed by a very curious species of dwarf *Eucalyptus* bearing yellow blossoms and growing from fifteen to thirty feet in height, known to the natives as the spear-wood, and of which they make their spears, digging sticks, dowaks, &c.; the whole formation is a fine reddish ironstone gravel, and this the Leipoa scratches up from several yards around, and thus forms its mound, to be afterwards converted into a hot-bed for the reproduction of its offspring. The interior of the mounds is composed of the finer particles of the gravel mixed with vegetable matter, the fermentation of which produces a warmth sufficient for the purpose of hatching. Mr. Drummond, who had been for years accustomed to hot-beds in England, gave it as his opinion that the heat around the eggs was about 80°. In both the nests with eggs the White Ant was very numerous, making its little covered galleries of earth around and attached to the shell, thus showing a beautiful provision of Nature in preparing the necessary tender food for the young bird when emerging from the shell; one of the eggs I have preserved shows the White Ant's tracks most beautifully; the largest mound I saw, and which appeared as if in a state of preparation for eggs, measured forty-five feet in circumference, and if rounded in proportion on the top would have been full five feet in height. I remarked in all the nests not ready for the reception of eggs the inside or vegetable portion was always wet and cold, and I imagine, from the state of others, that the bird turns out the whole of the materials to dry before depositing its eggs and covering them up with the soil; in both cases where I found eggs the upper part of the mound was perfectly and smoothly rounded over, so that any one passing it without knowing the singular habit of the bird might very readily suppose it to be an ant-hill: mounds in this state always contain eggs within, while those without eggs are not only *not* rounded over, but have the centres so scooped out that they form a hollow. The eggs are deposited in a very different manner from those of the Megapodius; instead of each being placed in a separate excavation in different parts of the mound, they are laid directly in the centre, all at the same depth, separated only by about three inches of earth, and so placed as to form a circle. I regret we were so early; had we been a week later, the probability is I should have found the circle of eggs complete. Is it not singular that all the eggs were equally fresh, as if their development was arrested until the full number was deposited, so that the young might all appear about the same time? No one considering the immense size of the egg can for a moment suppose the bird capable of laying more than one without at least the intermission of a day, and perhaps even more. The average weight of the egg is eight ounces, and four of them on being blown yielded nearly a pint and a half. Like those of the Megapodius, they are covered with an epidermis-like coating, and are certainly as large, being three inches and three quarters in length, by two and a half in breadth; they vary in colour from a very light brown to a light salmon. During the whole day we did not succeed in obtaining sight of the bird, although we saw numerous tracks of its feet, and many places where it had been scratching; we also saw its tracks on the sand when crossing the dried beds of the swamps at least two miles from the breeding thicket, which proves that the bird, in procuring its food, does not confine itself to the brushes around its nest, but merely resorts to them for the purpose of incubating. The native informed us that the only chance of procuring the bird was by stationing ourselves in sight of the mound at a little distance, and remaining quiet and immoveable till it made its appearance at sun-down; this I attempted, and, with the native, encamped within twenty yards of the mound about an hour before sunset, taking the precaution to conceal ourselves well with bushes from the quick eye of the bird, but leaving just a sufficient opening to get a fair sight with my gun; in a half-sitting, half-crouching position I thus remained in breathless anxiety for the approach of the bird I had so long wished to see, not daring to move a muscle, for fear of moving a branch or making a noise by crushing a dead leaf, till I was so cramped I could scarcely bear the pain in my limbs; the bird did not however make its appearance, and the native, with the fear of wading through the thicket in darkness (for there was no moon), became so impatient, that he started up and began to talk so loud and make so much noise, that I was compelled to give up all hopes of seeing the bird that night; however, just as we were passing the mound we started the bird

from the opposite side, but from the denseness of the thicket and the darkness closing around us, I had no chance of getting a shot at it. Mr. Roe, the Surveyor-general, who examined several mounds during his expedition to the interior in the year 1836, found the eggs nearly ready to hatch in the month of November, and invariably seven or eight in number; while another authority has informed me of an instance of fourteen being taken from one mound."

In a subsequent letter Mr. Gilbert states that the flavour of the egg is very similar to that of the Tortoise or Turtle, and that when mixed with tea its similarity to the peculiar roughness and earthy flavour of that of the Hawk's-bill Turtle is very remarkable.

Genus Megapodius, *Quoy & Gaim.*

The members of this genus inhabit all the Indian and Philippine Islands and Australia. Mr. G. R. Gray informs me that "the females of some species associate together in bands during the night and deposit their eggs in a cavity which they dig to the depth of two or three feet; that the successive deposits of eggs amount to a hundred or more and are left to be hatched by the solar rays; that some cover them with sand and others with the remains of plants; and that the eggs are extremely large for the size of the birds, and are generally of a cinnamon colour."

442. Megapodius tumulus, *Gould* . . . . . Vol. V. Pl. 79.

The following interesting account of the breeding-places of this remarkable bird has been transmitted to me by Mr. John M'Gillivray as the result of his observations on Nogo or Megapodius Island in Endeavour Straits. It will be seen that its range is more extensive than I had assigned to it:—

"The most southern locality known to me for this singular bird is Haggerston Island (in lat. 12° 3′ south), where I observed several of its mounds of very large size, but did not see any of the birds. During the survey of Endeavour Straits in H.M.S. Bramble, I was more fortunate, having succeeded in procuring both male and female on the island marked 'Nogo' upon the chart, where I resided for several days for that sole purpose. On this small island, not more than half a mile in length, rising at one extremity into a low rounded hill densely covered with jungle (or what in New South Wales would be called 'brush'), three mounds, one of them apparently deserted before completion, were found. The two others were examined by Mr. Jukes and myself. The most recent, judging from the smoothness of its sides and the want of vegetable matter, was situated upon the crest of the hill, and measured 8 feet in height (or 13½ from the base of the slope to the summit) and 77 feet in circumference. In this mound, after several hours' hard digging into a well-packed mass of earth, stones, decaying branches and leaves and other vegetable matter, and the living roots of trees, we found numerous fragments of eggs, besides one broken egg containing a dead and putrid chick, and another whole one, which proved to be addled. All were imbedded at a depth of *six feet* from the nearest part of the surface, at which place the heat produced by the fermentation of the mass was considerable. The egg, 3¼ by 2⅛ inches, was dirty brown, covered with a kind of epidermis, which easily chipped off, exposing a pure white surface beneath. Another mound, situated at the foot of the hill close to the beach, measured no less than 150 feet in circumference, and to form this immense accumulation of materials the ground in the vicinity had been scraped quite bare by the birds, and numerous shallow excavations pointed out whence the materials had been derived. Its form was an irregular oval, the flattened summit not being central as in the first instance, but situated nearer the larger end, which was elevated 14 feet from the ground, the slope measuring in various directions 18, 21½, and 24 feet. At Port Lihou, in a small bay a few miles to the westward, at Cape York and at Port Essington, I found other mounds which were comparatively low, and appeared to have been dug into by the natives. The great size the tumuli (which are probably the work of several generations) have attained on Haggerston and Nogo Islands arises doubtless from those places being seldom visited by the Aborigines. I found several eggs of large size in the ovarium of a female shot in August, while the condition of the oviduct showed that an egg had very recently passed; hence it is probable that, in spite of their great comparative size, one bird lays several; but whether each mound is resorted to by more than one pair, I had not the means of ascertaining.

"Few birds are more wary and less easily procured than the *Megapodius*; it inhabits the belts of brush along the coast, and I never found the tumulus at a greater distance from the sea than a few hundred yards. When disturbed it seldom rises at once, unless on the margin of a thicket, but runs off to some distance and then takes to wing, flying heavily, but without any of the whirring noise of the true *Gallinaceæ*. It seldom takes a long flight, and usually perches on a tree, remaining there in a crouching attitude with outstretched neck, but flying off again upon observing any motion made by its pursuer; and it is only by cautiously creeping up under cover of the largest trees that it can be approached within gunshot. As an example of its shyness, I may mention that a party of three persons, scattered about in a small jungle on Nogo Island, for the purpose of shooting the *Megapodius*, did not see a single bird, although they put up several, one of which came towards me and perched, unconscious of my presence, within 20 yards. At Port Essington I have shot this bird among mangroves, the roots of which were washed by the sea at high water; and Capt. F. P. Blackwood killed one while running on the mud in a similar locality, in both instances close to a mound. I never witnessed the escape of the young from the mound; but one, as large as a quail, and covered with feathers, was brought to Lieut. Ince by a native, who affirmed that he had dug it out along with several eggs.

"Iris yellowish brown; stomach a complete gizzard, being thick and muscular, containing small quartz pebbles, small shells (*Helix* and *Bulimus*), and black seeds; intestine 34 inches in length, of the size of a goose-quill, and nearly uniform in thickness, much twisted and contracted at intervals; cæcum slender, dilated at the extremity, and 4$\frac{5}{8}$ inches in length."

Family TINAMIDÆ?, *G. R. Gray*.

Subfamily TURNICINÆ, *G. R. Gray*.

Genus Pedionomus, *Gould*.

Generic characters.

Bill nearly as long as the head, straight, compressed towards the tip; nostrils basal, placed in a groove, and protected by an operculum; *wings* short and concave, first, second and third primaries equal in length; tertiaries longer than the primaries; *tail* nearly obsolete; *tarsi* elongated and defended in front with transverse scales; toes four in number, the hinder one feeble and placed high on the tarsus.

Few of the discoveries I made in Australia interested me more than that of the species forming the subject of the present genus, and of which during my sojourn in the country I only obtained a male. Subsequently Mr. Strange sent me another example, which from its much larger size and the circumstance of its neck being adorned with a beautiful collar of mingled black and white feathers, I considered a distinct species and characterized it as such, under the name *P. torquatus*, and assigned that of *microurus* to the males or birds destitute of the collar, an error which the observations of Sir George Grey and Mr. Strange have enabled me to rectify, and which shows that this bird is another of the anomalies so often met with in Australia, since, contrary to the general rule, the female is a far finer and more conspicuously-coloured bird than her mate.

"You ask me," says Sir George Grey, "to tell you something about *Pedionomus*. There is but one species; you have described two, *P. torquatus* and *P. microurus*; the former is the female and the latter is the male. We have now three of these birds in confinement, all similar to your *P. torquatus*. We had four; the fourth, which died, was like your *P. microurus*; and was certainly a male; they were all caught in the same net, hence I infer that several females associate with one male.

"We have had several of these birds in confinement at different times; they eat pounded wheat, raw and boiled rice, bread and flies; the latter appear to be their favourite food. They soon become perfectly tame; the three now in our possession we have had for upwards of four months.

"These birds are migratory; they appear at Adelaide in June and disappear about January; where they go has not yet been ascertained. They never fly if they can avoid so doing, and are often caught by dogs; when disturbed, they crouch down and endeavour to hide themselves in a tuft of grass. When running about they are

in the habit of raising themselves in a nearly perpendicular position on the extremities of their toes, so that the hinder part of the foot does not touch the ground, and of taking a wide survey around them. The Emu sometimes stands in a similar position. I have not yet ascertained anything respecting their nests, eggs or time of breeding. The call of those we have in confinement precisely resembles that of the Emu, not the whistle, but the hollow-sounding noise like that produced by tapping on a cask, which the Emu utters, but is of course much fainter."

The Plate therefore represents two females, and the appellation of *microurus* given to the male bird should be the one adopted. As the male has not been figured, the following description of that sex is given :—

Crown of the head, back and upper surface mottled with black, brown and fawn-colour, the latter occupying the external edge of the feathers, and the black and brown forming alternate circular markings on each feather; throat, neck, chest and flanks dull fawn-colour, the feathers of the neck and chest blotched with brown; flanks marked with the same colour, assuming the form of bars; tail-feathers almost invisible; centre of the abdomen and under tail-coverts buffy-white, without spots or markings; irides straw-yellow passing into black at the point; feet greenish yellow.

Total length, 4½ inches; *bill*, ⅛; *wing*, 3¼; *tarsi*, ⅞.

Independently of the plains of South Australia formerly given as the restricted habitat of this species, I have lately received a letter from Mr. Strange of Sydney, in which he states a female had been procured in the neighbourhood of Botany Bay. I am also in possession of an egg of this bird, which in general character resembles that of *Turnix*; it is somewhat suddenly contracted at the smaller end, the ground-colour is stone-white, sprinkled with small blotches of umber-brown and vinous-grey, the latter colour appearing as if beneath the surface of the shell, the sprinkled markings predominating at the larger end; the length of the egg is 1 inch and one-eighth by seven-eighths in breadth.

443. Pedionomus torquatus, *Gould*, female . . . . . Vol. V. Pl. 80.
———— microurus, *Gould*, male.

Genus Turnix, *Bonn.*

However widely the members of this genus are dispersed, inhabiting as one or other of them do all quarters of the Old World, Australia is the great nursery of the race, since it is in that country that we find the species more numerous than elsewhere; they not only inhabit every part of the continent that has yet been explored, but they extend their range to the islands adjacent to the coast and even to Van Diemen's Land; some species enjoy a wide range across the continent from east to west, while others are very local; grassy plains and stony ridges thickly interspersed with scrubs and grasses are the situations they frequent; their eggs are invariably four in number, pointed in form, and very like those of the Sandpipers; their only nest is a few grasses placed in a hollow on the ground; in their habits and actions they differ considerably from the Quails and Partridges, and, strange as it may appear, approach more closely to the *Tringæ*, particularly to those species with the more attenuated form of bill; when rising from almost beneath your feet, they fly, especially the smaller species, straight and with arrow-like swiftness to the distance of one or two hundred yards, and then suddenly pitch to the ground. Their flesh, although eatable, is dry and deficient in flavour when compared with that of the Quails and Partridges.

444. Turnix melanogaster.
Hemipodius melanogaster, *Gould* . . . . . Vol. V. Pl. 81.
445. Turnix varius.
Hemipodius varius . . . . . Vol. V. Pl. 82.
446. Turnix scintillans.
447. Hemipodius scintillans, *Gould* . . . . . Vol. V. Pl. 83.
448. Turnix melanotus.
Hemipodius melanotus, *Gould* . . . . . Vol. V. Pl. 84.
449. Turnix castanotus.
Hemipodius castanotus, *Gould* . . . . . Vol. V. Pl. 85.

Family TETRAONIDÆ, *Leach.*

Genus Coturnix, *Mœhr.*

One true Quail is all that has yet been described as inhabiting Australia; as might be expected, it is a denizen of the plains, as well as of all the open districts of any extent where grass-lands occur; it also resorts to the arable districts in great abundance. A difference exists in specimens from the western and eastern coasts, the former having a deep fawn or light rufous tint pervading the under surface; and it is possible that this difference of colouring may be characteristic of a second and distinct species.

Genus Synoicus, *Gould.*

Generic characters.

As in *Perdix*, but with no spur on the tarsi, and the tail almost obsolete.

The great paucity of the *Gallinaceæ* in Australia is very remarkable, the members of the present genus being almost the only representatives of that group of birds inhabiting the country. The similarity of the habits and economy of these birds to those of the true Partridges, particularly to our own well-known species the *Perdix cinerea*, allies them more nearly to those birds than to the Quails

Grassy meads, the sides of rushy creeks, and districts clothed with dense herbage, are the favourite resorts of these birds, which move about in small coveys, and when flushed fly but a short distance before they again alight. As an article of food they are all that can be wished.

Every part of the country, from Port Essington on the north to Van Diemen's Land on the south, is inhabited by one or other species of the genus, which are, I doubt not, more numerous than I have represented, for I feel confident that the bird found at Port Essington is quite distinct from those of the south coast.

Order GRALLATORES, *Ill.*

Family STRUTHIONIDÆ, *Vig.*

Genus Dromaius, *Vieill.*

I formerly entertained an opinion that there were two species of Emu inhabiting Australia, but I have not had sufficient proofs that such is the case. The small specimens in the possession of the Linnean Society of London and in the Jardin des Plantes at Paris, may only be stunted birds which had been kept in captivity, but as some doubt still remains in my mind the subject should be kept in view.

Genus Apteryx, *Shaw*.

New Zealand is the only country wherein the members of this genus now exist; but they doubtless formerly ranged over that continent of which the greater part is submerged beneath the surface of the ocean, and of which a few isolated spots—New Zealand, Norfolk and Phillip Islands among others—alone remain.

458. Apteryx Australis, *Shaw* . . . . . Vol. VI. Pl. 2.
459. Apteryx Owenii, *Gould* . . . . . Vol. VI. Pl. 3.

Genus Otis, *Linn*.

A country better adapted than Australia for the members of this genus can scarcely be imagined, yet singularly enough only one species has yet been found there. Africa may be considered the cradle of the race, for it is on that continent that they are most numerous; Europe and India are also inhabited by various species. The *Otis nigriceps* of the plains of Upper India, and the *O. Australis* are beautiful representatives of each other in the respective countries they inhabit.

460. Otis Australis, *Gray*.

Otis Australis, Gray in Griff. An. King., vol. iii. p. 305.

Otis Australasianus, *Gould* . . . . . Vol. VI. Pl. 4.

The range of this bird over the country is probably universal; both Dr. Leichardt and Mr. Gilbert observed it within the tropical portion of Australia, and Captain Sturt found it in the desert interior.

Family CHARADRIADÆ, *Leach*.

Genus Œdicnemus, *Temm*.

The Œdicnemi occur in Europe, Africa, Asia and Australia, in which latter country one if not two species exist that are not found elsewhere.

461. Œdicnemus grallarius . . . . . Vol. VI. Pl. 5.

The birds of this form inhabiting the northern coast have longer legs and shorter wings, and I have no doubt are distinct; but I have not seen a sufficient number of specimens to enable me to affirm that such is actually the case.

Genus Esacus, *Less*.

The genera *Œdicnemus* and *Esacus* are merely modifications of the same form; the variation in that of the bill being expressly adapted for procuring the kinds of food upon which the species respectively subsist; the *Œdicnemus* frequenting the stony deserts of the interior of the country feeds upon insects of various kinds, and the tender shoots of herbage; while the *Esacus*, resorting to the salt-marshes and the shores of the sea, lives upon crabs, mollusks and other marine animals.

462. Esacus magnirostris . . . . . Vol. VI. Pl. 6.

So far as our knowledge extends, the present bird is confined to the shores of the northern and north-western parts of Australia. It is beautifully represented in India by the *E. recurvirostris*, and these two species are all that are known to ornithologists.

Genus Hæmatopus, *Linn.*

I believe that there is no country in the world of any extent the shores of which are not inhabited by one or other of the numerous species of this genus; but it would seem that all those which exist in the southern hemisphere are totally different from those of the northern.

Two species inhabit Australia, viz.

463. Hæmatopus longirostris, *Vieill.* . . . . . Vol. VI. Pl. 7.
464. Hæmatopus fuliginosus, *Gould* . . . . . Vol. VI. Pl. 8.

Genus Lobivanellus, *Strickl.*

Two species of this beautiful form inhabit Australia, one the northern and the other the southern parts of the country; I believe they are both confined to this portion of the globe. Other species are found in India and Africa.

465. Lobivanellus lobatus . . . . . Vol. VI. Pl. 9.
466. Lobivanellus personatus, *Gould* . . . . . Vol. VI. Pl. 10.

Genus Sarciophorus, *Strickl.*

A genus nearly allied to the last, and of which a single species inhabits Australia; like *Lobivanellus*, it is an Old World form.

467. Sarciophorus pectoralis . . . . . Vol. VI. Pl. 11.

Genus Squatarola, *Cuv.*

The single species of this genus inhabits Europe, Asia, North America and Australia.

468. Squatarola Helvetica . . . . . Vol. VI. Pl. 12.

Genus Charadrius, *Linn.*

The Australian fauna comprises two species of this form, of which one, the *Charadrius veredus*, might, perhaps, with propriety be separated into a distinct genus, or placed in that of *Eudromias*.

469. Charadrius xanthocheilus, *Wagl.* . . . . . Vol. VI. Pl. 13.
470. Charadrius veredus, *Gould* . . . . . Vol. VI. Pl. 14.

Genus Eudromias, *Boie.*

Of this genus of upland Plovers two species at least are known, viz. the *E. morinellus* of Europe and the *E. Australis* of Australia.

471. Eudromias Australis, *Gould* . . . . . Vol. VI. Pl. 15.

This bird inhabits the low hills and plains of the interior, a kind of habitat precisely similar to that of its European prototype.

Since my account of this species was written some additional information has been acquired respecting it.

"This singular bird," says Captain Sturt, in the Appendix to his Account of his recent expedition into the interior of South Australia, "made its appearance in 1841 suddenly on the plains of Adelaide, seeming to have come from the north. It occupied the sand-hills at the edge of the Mangrove swamps and fed round the puddles of water on the plains. This bird afforded my friend, Mr. Torrens, an abundant harvest, as it was numerous round his house; but although some few have visited South Australia every subsequent year, they have never appeared in such numbers as on the first occasion. It runs very fast along the ground. Mr. Browne and I met or rather crossed several flights of these birds in August of 1845, going south. They were on the large open plains and were very wild."

Genus Hiaticula, *G. R. Gray.*

Five species of this genus inhabit Australia, and others occur in New Zealand, the Indian Islands, India, Europe, Africa and America, consequently few genera have their members more widely dispersed. Almost all the species found in Australia are peculiar to the country, and are more numerous on the southern than they are on the northern parts of that continent; shingly beaches and low flat shores are their principal places of resort.

472. Hiaticula bicincta . . . . . Vol. VI. Pl. 16.
473. Hiaticula ruficapilla. . . . . Vol. VI. Pl. 17.
474. Hiaticula monacha . . . . . Vol. VI. Pl. 18.
475. Hiaticula inornata, *Gould* . . . . . Vol. VI. Pl. 19.
476. Hiaticula nigrifrons . . . . . Vol. VI. Pl. 20.

Genus Erythrogonys, *Gould.*

Generic characters.

Bill longer than the head, straight, rather depressed; *nostrils* basal, linear; *wings* long and powerful, the first feather the longest; tertiaries nearly as long as the primaries; *tail* short and nearly square; *legs* long; *toes* four in number, slender, the hind-toe extremely diminutive and free, the outer toe united to the middle one nearly to the first joint; thighs naked above the knee.

The single species of this genus appears to be strictly Australian, for I have never seen examples from any other country.

477. Erythrogonys cinctus, *Gould* . . . . . Vol. VI. Pl. 21.

In structure, actions and economy this elegantly formed bird is very nearly allied to the *Hiaticulæ* on the one hand, and the *Schœnicli* on the other.

Genus Glareola, *Briss.*

I have for many years questioned the propriety of placing the Pratincoles in the same group with the Plovers, or even in the same order, believing them as I do to be a terrestrial form of the Fissirostral birds. Linnæus placed them near the Swallows, and I think he was right in so doing; and Mr. Blyth, one of the most philosophical of ornithologists, entertains, I believe, the same opinion; but as nearly all other writers have placed them with the *Charadriadæ*, I have adopted their view of the subject, and have accordingly retained them in that group.

Species of this genus inhabit India, the Indian Islands, Europe and Africa.

478. Glareola grallaria, *Temm.* . . . . . Vol. VI. Pl. 22.
479. Glareola Orientalis, *Leach* . . . . . Vol. VI. Pl. 23.

Family SCOLOPACIDÆ, *Vig.*

Genus Himantopus. *Briss.*

Europe, India and Africa are inhabited by one, North America by a second, South America by a third and perhaps a fourth, New Zealand by a fifth, and Australia by a sixth species of this elegant but singular genus; the Australian bird, which is more abundant in the southern than in the northern parts of the country, is perhaps the finest and most ornamental of the whole.

480. Himantopus leucocephalus, *Gould* . . . . . Vol. VI. Pl. 24.
481. Himantopus Novæ-Zealandiæ . . . . . Vol. VI. Pl. 25.

Genus Chladorhynchus, *G. R. Gray.*

The only known species of this form is peculiar to Australia.

482. Chladorhynchus pectoralis . . . . . Vol. VI. Pl. 26.

Observed in great numbers by Captain Sturt, during his journey into the interior, in the Appendix to which he says,—"This singular bird, with legs so admirably adapted by their length for wading into the shallow lakes and sheets of water, near which it is found, was seen in large flocks. It was very abundant on Lepson's Lake to the northward of Cooper's Creek; and on Strzelecki's Creek it was sitting on the water with other wild fowl making a singular plaintive whistle."

Genus Recurvirostra, *Linn.*

This form, like that of *Himantopus*, is widely distributed over the globe, since species inhabit America, Africa, Europe, India and Australia, in which latter country, as in Europe, only one species is found, viz.

483. Recurvirostra rubricollis, *Temm.* . . . . . Vol. VI. Pl. 27.

Genus Limosa, *Briss.*

Two very distinct species of this genus inhabit Australia, one the southern and the other the northern divisions of the country; others occur in Java, Sumatra, India, Africa, Europe and North America.

484. Limosa Melanuroïdes, *Gould* . . . . . Vol. VI. Pl. 28.
485. Limosa uropygialis, *Gould* . . . . . Vol. VI. Pl. 29.

Genus Schœniclus, *Mœhr.*

I have figured four species of this genus as inhabiting Australia, not more than one, or at most two, of which, however, is or are peculiar to that country. The species of this genus range over many degrees of latitude, and occur in America as well as in most parts of the Old World.

486. Schœniclus Australis . . . . . Vol. VI. Pl. 30.
487. Schœniclus albescens . . . . . Vol. VI. Pl. 31.
488. Schœniclus subarquatus . . . . . Vol. VI. Pl. 32.
489. Schœniclus magnus, *Gould* . . . . . Vol. VI. Pl. 33.

This species, I believe, also inhabits India and Japan.

Genus Terekia, *Bonap.*

The only known species of this form inhabits Java, Sumatra, India and Europe, and as I killed a specimen in Australia that country must also be included within its range.

490. Terekia cinerea . . . . . Vol. VI. Pl. 34.

Genus Actitis, *Ill.*

One species of this genus inhabits Australia, where it represents the *Actitis hypoleucus* of Europe and *Actitis macularius* of America.

491. Actitis empusa, *Gould* . . . . . Vol. VI. Pl. 35.

Genus Glottis, *Nils.*

The only species of this genus found in Australia appears to me to be identical with the *Glottis Glottoides* of India.

492. Glottis Glottoides . . . . . Vol. VI. Pl. 36.

Genus Totanus, *Bechst.*

Of this genus two species are all that have yet been discovered in Australia; one of these I have regarded as identical with the *Totanus stagnatilis* of Europe, and if this view be correct, then the range of the species will extend from Asia to Australia; certain it is that I have seen specimens from all the intermediate countries which are strictly identical with the European bird. The second species is an inhabitant of the north coast, and is allied to the *T. calidris*.

493. Totanus stagnatilis . . . . . Vol. VI. Pl. 37.
494. Totanus griseopygius, *Gould* . . . . . Vol. VI. Pl. 38.

Genus Strepsilas, *Ill.*

If any bird may be regarded as a Cosmopolite it is the Turnstone, for it inhabits the sea-shores of every part of the globe.

495. Strepsilas Interpres . . . . . Vol. VI. Pl. 39.

Genus Scolopax, *Linn.*

If the slight difference which occurs in the Snipes from Port Essington on the north and from Van Diemen's Land on the south be regarded as mere local variations, then only one species of this form exists in Australia.

496. Scolopax Australis, *Lath.* . . . . . Vol. VI. Pl. 40.

Captain Sturt informs us that this Snipe is common in South Australia, but scarce in the interior of the country; that it breeds in great numbers in the valley of Mypunga, but is only to be found in those localities where the ground is constantly soft.

Genus Rhynchæa, *Cuv.*

The few species comprised in this genus are widely dispersed over the face of the globe; one inhabits the southernmost parts of America, another South Africa, a third India, and a fourth Australia. They affect different situations from those resorted to by the true Snipes, usually selecting drier ground and knolls under low bushes contiguous to marshy lands, where they can readily procure food and water.

497. Rhynchæa Australis, *Gould* . . . . . Vol. VI. Pl. 41.

"This beautiful bird," says Captain Sturt, "was very scarce in the interior, and indeed is not common anywhere. Some three or four couples visit my residence at Grange yearly, and remain in the high reeds at the bottom of the creek, among which they doubtless breed, but I never found one of their nests. They lie basking in the shade of a tree on the sand-hills during the day, and separate when alarmed."

Genus Numenius, *Linn.*

Three species of this form are found in Australia, to which part of the globe they are confined, and wherein they represent the species inhabiting the northern hemisphere, with which their habits, actions and economy are strictly in accordance.

498. Numenius Australis, *Gould* . . . . . Vol. VI. Pl. 42.
499. Numenius uropygialis, *Gould* . . . . . Vol. VI. Pl. 43.
500. Numenius minutus, *Gould* . . . . . Vol. VI. Pl. 44.

Family ARDEIDÆ, *Leach.*

Subfamily TANTALINÆ, *G. R. Gray.*

Genus Geronticus, *Wagl.*

The three species of *Ibises* inhabiting Australia have been separated by ornithologists into as many genera, and the difference which exists in their habits and economy tends to prove the propriety of their subdivision; for while the *Geronticus* congregates in flocks of thousands and mainly subsists upon caterpillars, grasshoppers and locusts, a kind of food which it readily obtains on the heated plains, the *Threskiornis* assembles in small companies of from four to six in number and resorts to the rushy banks of the lagoons and other humid situations, and feeds upon newts, frogs, lizards, snakes and fish, and the *Falcinellus* resorts to similar situations, but I have had no opportunity of observing its habits.

501. Geronticus spinicollis . . . . . Vol. VI. Pl. 45.

I have never seen examples of this species from any other country than Australia, which would therefore appear to be its restricted habitat.

Genus Threskiornis, *G. R. Gray.*

502. Threskiornis strictipennis . . . . . Vol. VI. Pl. 46.

Found in most parts of Eastern Australia during wet seasons.

503. Falcinellus igneus . . . . . Vol. VI. Pl. 47.

This species is numerous in the northern and eastern districts of Australia, whence its range extends throughout the whole of the islands to India and Europe.

Subfamily GRUINÆ, *G. R. Gray.*

Genus Grus, *Linn.*

Species of this genus inhabit Europe, Asia, Africa, North America and Australia.

504. Grus Australasianus, *Gould* . . . . . Vol. VI. Pl. 48.

The Australian Crane is a noble bird, and is deservedly admired both by the Aborigines and Europeans. The eastern and northern parts of the country are the only localities yet known to be inhabited by this fine bird; future research may however find that it possesses a wider range.

Subfamily PLATALEINÆ, *Bonap.*

Genus Platalea, *Linn.*

Two species of this genus inhabit Australia, both of which are, I believe, peculiar to that country, where they perform precisely the same offices as their prototypes in Europe, Asia, Africa and America.

505. Platalea flavipes, *Gould* . . . . . Vol. VI. Pl. 49.

506. Platalea regia, *Gould* . . . . . Vol. VI. Pl. 50.

Subfamily CICONINÆ, *G. R. Gray.*

Genus Mycteria, *Linn.*

The noble species of this genus inhabiting Australia is, I believe, identical with the bird of the same form inhabiting India, and if such be the case, then it enjoys a wide range of habitat. Africa and America are inhabited by species belonging to this or to a very nearly allied genus.

507. Mycteria Australis, *Lath.* . . . . . Vol. VI. Pl. 51.

Subfamily ARDEINÆ, *G. R. Gray.*

Genus Ardea, *Linn.*

The Herons range over every part of the globe. The sixteen species inhabiting Australia include examples of the genera *Ardea*, *Herodias*, *Nycticorax*, *Botaurus* and *Ardetta*, and I think they should be still further divided, the Reef Herons, *Herodias jugularis*, *H. Greyii*, *&c.* differing considerably both in structure and habits from the other members of the genus; the *Ardea pacifica* and *A. Novæ-Hollandiæ* also, are not typical *Ardeæ*, but fill a station intermediate between the true Herons and the Egrets.

508. Ardea pacifica, *Lath.* . . . . . Vol. VI. Pl. 52.

Numerous in the southern but rare within the tropical parts of Australia.

509. Ardea Novæ-Hollandiæ, *Lath.* . . . . . Vol. VI. Pl. 53.

Frequents the whole of the southern coasts of Australia and Van Diemen's Land.

510. Ardea rectirostris, *Gould* . . . . . Vol. VI. Pl. 54.

Found on the north coast of Australia, and I believe also in the Indian Islands.

511. Ardea leucophæa, *Gould* . . . . . Vol. VI. Pl. 55.

The range of this species, which is very rare in Australia, appears to extend to the southern parts of India.

Genus Herodias, *Boie*.

Nearly every part of the globe is tenanted by members of this genus. Those inhabiting Australia are very nearly allied to, but I believe are quite distinct from, the species found in India, Europe and America, and of which they are the Australian representatives.

512. Herodias syrmatophorus, *Gould* . . . . . Vol. VI. Pl. 56.
513. Herodias plumiferus, *Gould* . . . . . Vol. VI. Pl. 57.
514. Herodias immaculata, *Gould* . . . . . Vol. VI. Pl. 58.
515. Herodias pannosus, *Gould* . . . . . Vol. VI. Pl. 59.
516. Herodias jugularis . . . . . Vol. VI. Pl. 60.
517. Herodias Greyii . . . . . Vol. VI. Pl. 61.
518. Herodias picata, *Gould* . . . . . Vol. VI. Pl. 62.

Genus Nycticorax, *Steph.*

Europe, Africa and America are all inhabited by Night Herons; consequently it is one of the most widely-distributed sections of the family.

The single Australian species of this well-defined genus is rendered conspicuously different from all other known species by the cinnamon colour of its back.

519. Nycticorax Caledonicus . . . . . Vol. VI. Pl. 63.

"Shot at Cape York and Port Essington, in which latter place it is rather abundant. *Yangko* of the Cape York aborigines, *Alawool* of the Port Essington natives."—*J. M'Gillivray.*

Genus Botaurus, *Steph.*

520. Botaurus Australis, *Gould* . . . . . Vol. VI. Pl. 64.

The Australian Bittern is very similar to the European, *B. stellaris*.

Genus Ardetta, *G. R. Gray.*

The members of this genus of Mangrove Bitterns usually frequent the extensive belts of mangroves and low dells covered with reed-beds and dense herbage.

Africa and America are each inhabited by birds of this form, one species of which is also found in Europe, several in India and the adjacent islands, and three in Australia, viz.—

521. Ardetta flavicollis . . . . . Vol. VI. Pl. 65.

This species is said to inhabit Java and India, and although I have figured it under the name assigned to the Indian and Javanese bird, I am still inclined to believe that it is distinct.

522. Ardetta macrorhyncha, *Gould* . . . . . Vol. VI. Pl. 66.
523. Ardetta stagnatilis, *Gould* . . . . . Vol. VI. Pl. 67.
524. Ardetta pusilla . . . . . Vol. VI. Pl. 68.

This species, with the little Bittern of the British Islands and several others inhabiting Africa and America, would admit of being separated into a distinct genus.

Family RALLIDÆ, *Leach*.

Of this family no less than sixteen species inhabit Australia, and are comprised in the following genera, viz. *Porphyrio*, *Fulica*, *Gallinula*, *Rallus* and *Porzana*, all of which are European forms; and *Parra*, *Eulabeornis* and *Tribonyx*: of the latter, the first is common to India and the Indian Islands, and the other two are confined, so far as we know, to Australia.

Genus Porphyrio, *Briss.*

525. Porphyrio melanotus, *Temm.* . . . . . Vol. VI. Pl. 69.
526. Porphyrio bellus, *Gould* . . . . . Vol. VI. Pl. 70.

Genus Tribonyx, *DuBus.*

527. Tribonyx Mortieri, *DuBus* . . . . . Vol. VI. Pl. 71.
Inhabits the southern parts of Australia and Van Diemen's Land.

528. Tribonyx ventralis, *Gould* . . . . . Vol. VI. Pl. 72.
Inhabits the interior of Australia.

"This bird," says Captain Sturt, "appeared suddenly in South Australia in 1840. It came from the north, fresh flights coming up and pushing on those which had preceded them. It was moreover evident that they had been unaccustomed to the sight of man, for they dropped in great numbers in the streets and gardens of Adelaide and ran about like fowls. At last they increased so much in number as to swarm on all the waters and creeks, doing great damage to the crops in their neighbourhood. They took the entire possession of the creek near my house, and broke down and wholly destroyed about an acre and a quarter of wheat as if cattle had bedded on it. They made their first appearance in November, and left in the beginning of March, gradually retiring northwards as they had advanced."

Genus Gallinula, *Briss.*

The true *Gallinulæ* are very numerous, and are found in nearly every part of the world. Australia is inhabited by a species peculiarly its own, distributed over all the southern parts of the continent.

529. Gallinula tenebrosa, *Gould* . . . . . Vol. VI. Pl. 73.
Nearly allied to, and a representative of, the Water-Hen of Europe, *Gallinula chloropus*.

Genus Fulica, *Linn.*

Fulicæ are found in nearly every part of the great continents of Europe, Asia, Africa and America, and one species in Australia.

530. Fulica Australis, *Gould* . . . . . Vol. VI. Pl. 74.
This bird, which is strictly confined to Australia, is rather smaller than its European ally.

Genus Parra, *Linn.*

A tropical form, the structure of which is admirably adapted for progression over the aquatic plants and floating leaves of the lagoons and inland waters it frequents and over which it passes with facility; its expansive feet, spreading over a large surface of fallen grasses and leaves, readily sustaining it, which they would not do were they of the ordinary form.

Species of this form are found in India, Africa and America.

531. Parra gallinacea, *Temm.* . . . . . Vol. VI. Pl. 75.
Inhabits the northern parts of Australia and New Guinea.

Genus Rallus, *Linn.*

We have here again a genus of birds the range of the species of which is most extensive, for there is no country in which one or other of them is not to be found.

532. Rallus pectoralis, *Cuv.* . . . . . Vol. VI. Pl. 76.
533. Rallus Lewinii, *Swains.* . . . . . Vol. VI. Pl. 77.

Genus Eulabeornis, *Gould.*

Generic characters.

Bill longer than the head, nearly straight, but slightly curved downwards; compressed laterally; *nostril* long and open, situated in a large groove which runs along the upper mandible for nearly two-thirds of its length from the base; *wings* rather short and feeble, very much rounded; *tertiaries* long, nearly reaching to the end of the wing; *legs* rather long, more powerful than in the genus *Rallus*; *toes* not so much lengthened as in that genus; *tail* long cuneiform; the *webs* loose and of a decomposed character.

A genus established for the reception of a singular species of Rail inhabiting the north coast of Australia, and in which Mr. G. R. Gray has since placed four other species from different localities.

534. Eulabeornis castaneoventris, *Gould* . . . . . Vol. VI. Pl. 78.

Genus Porzana, *Vieill.*

The *Porzanæ* inhabit Europe, Africa, India and Australia; the four species inhabiting the latter country are generally distributed, even within the tropics.

535. Porzana fluminea, *Gould* . . . . . Vol. VI. Pl. 79.
536. Porzana palustris, *Gould* . . . . . Vol. VI. Pl. 80.
537. Porzana leucophrys, *Gould* . . . . . Vol. VI. Pl. 81.
538. Porzana immaculata . . . . . Vol. VI. Pl. 82.

Order NATATORES, *Ill.*

Upon taking a general view of the birds of this Order inhabiting Europe and Australia, our attention cannot fail to be arrested by some remarkable contrasts which present themselves to our notice. I allude to the great excess in the number of species of some of the principal groups, and the paucity of others; for instance, of the true *Anatidæ* or Ducks, exclusive of the Mergansers, the European fauna comprises at least forty species, while eighteen are all that are known in Australia; of the *Laridæ* or Gulls, exclusive of the Terns, twenty species inhabit Europe, while three are all that are known in Australia; on the other hand, sixteen species of Terns frequent the shores of Australia, while only twelve resort to those of Europe; of the family *Procellaridæ* or Petrels, nearly forty species enliven the Australian seas, while seven are all that are known to inhabit the seas of Europe; no Puffins or Guillemots are found in the seas south of the Equator; while the Penguins are unknown north of the line; and the Grebes and Cormorants are equally numerous in both hemispheres.

Family ANATIDÆ, *Leach.*

Genus Cereopsis, *Lath.*

But one species of this singular and strictly Australian form has yet been discovered.

539. Cereopsis Novæ-Hollandiæ, *Lath.* . . . . . Vol. VII. Pl. 1.

Genus Anseranas, *Less.*

Like *Cereopsis*, this genus contains but a single species, which is equally confined to Australia.

540. Anseranas melanoleuca . . . . . Vol. VII. Pl. 2.

Genus Bernicla, *Steph.*

The Australian bird hitherto referred to this genus should certainly receive a new generic appellation, since it does not agree either in form or habits with the true *Berniclæ*.

541. Bernicla jubata . . . . . Vol. VII. Pl. 3.

Genus Nettapus, *Brandt.*

Of this beautiful genus of Pygmy Geese there are at least four species known; one inhabiting Africa, one India, and two Australia.

542. Nettapus pulchellus, *Gould* . . . . . Vol. VII. Pl. 4.
543. Nettapus albipennis, *Gould.*
Nettapus Coromandelianus . . . . . Vol. VII. Pl. 5.

I feel confident that the Australian bird which I have figured under the name of *N. Coromandelianus*, is quite distinct from the Indian, and I have therefore assigned it a new name.

My figures are stated to be of the natural size, but this is an error: they are considerably smaller.

Genus Cygnus, *Linn.*

Only one species, the *C. atratus*, is, I believe, found south of the line; for the Black-necked Swan of Chili will doubtless prove to be generically distinct.

544. Cygnus atratus . . . . . Vol. VII. Pl. 6.

This "rara avis in terris" is not only strictly confined to Australia, but is so exclusively an inhabitant of the southern districts, that no notice has been recorded of its having been seen in Torres' Straits, or on any part of the north coast.

Genus Casarca, *Bonap.*

This ornamental section of the *Anatidæ* is not very numerous in species.

545. Casarca Tadornoïdes . . . . . Vol. VII. Pl. 7.

A beautiful representative of the *C. rutila* of Europe.

Genus Tadorna, *Leach.*

546. Tadorna Radjah . . . . . Vol. VII. Pl. 8.

An equally beautiful representative of the *T. Vulpanser*.

Genus Anas, *Linn.*

Of true Ducks three species are found in Australia.

547. Anas superciliosa, *Gmel.* . . . . . Vol. VII. Pl. 9.

This bird assimilates very closely in its structure and in its economy to the *Anas Boschas* of Europe, but in its plumage it is very different.

548. Anas nævosa, *Gould* . . . . . Vol. VII. Pl. 10.

A very singular Duck, perhaps more nearly allied to *Chaulelasmus* than to *Anas*. It is a very rare bird, and has only yet been seen on the western and southern coasts of Australia; its true habitat is probably the distant interior.

549. Anas punctata, *Cuv.* . . . . . Vol. VII. Pl. 11.

This species has much the appearance of the Teal (genus *Querquedula*), but in its structure is nearly allied to the true ducks (genus *Anas*), with which I have provisionally placed it.

Genus Spatula, *Boie*.

The great continents of America, Africa, Asia and Australia, are each inhabited by one or more species of this restricted genus.

550. Spatula Rhynchotis . . . . . Vol. VII. Pl. 12.

This bird is, I believe, restricted to Australia.

Genus Malacorhynchus, *Swains*.

A very delicate form, of which the single species, confined to Australia, is the only one known.

551. Malacorhynchus membranaceus . . . . . Vol. VII. Pl. 13.

Genus Dendrocygna, *Swains*.

This form is found in India, Africa, America and Australia: the bird I have separated into a distinct genus, under the appellation of *Leptotarsis*, should be included in this genus, the difference which it presents being too slight to warrant their separation.

552. Dendrocygna arcuata . . . . . Vol. VII. Pl. 14.

553. Dendrocygna Eytoni.

Leptotarsis Eytoni, *Gould* . . . . . Vol. VII. Pl. 15.

"Many of the reaches," says Captain Stokes, when speaking of the river Adelaide of the north-western part of Australia, "swarmed with wild fowl, consisting almost wholly of ducks, which, from a habit of perching on the trees, have received the name of Wood Ducks. Their singularly long legs, with the web very much arched near the toes, gives great pliability to the foot and a power of grasping, which enables them to perch on trees. When on the wing they make a peculiar pleasing, whistling sound, that can be heard at a great distance, and which changes as they alight into a sort of chatter. Their perching on trees is performed in a very clumsy manner, swinging and pitching to and fro. We subsequently often found them on the rivers of the north coast, but not within some miles of their mouths or near their upper waters, from which it would appear that they inhabit certain reaches of the rivers only; we never found them in swamps. The farthest south they were met with was on the Albert River, in the Gulf of Carpentaria, in lat. 18° S., which gives them a range of six and a half degrees of latitude over the northern part of the continent. These ducks are the *Leptotarsis Eytoni* of Mr. Gould."

Genus Nyroca, *Flem*.

Two species at least of this genus are known, one inhabiting Europe and India and the other Australia: both have the irides white.

554. Nyroca Australis, *Gould* . . . . . Vol. VII. Pl. 16.

Genus Erismatura, *Bonap.*

The members of this genus, although but few in number, are found in Europe, Asia, Africa, America and Australia.

555. Erismatura Australis . . . . . Vol. VII. Pl. 17.

This species, the only one of the genus inhabiting Australia, is, I believe, strictly confined to the western parts of the country, as hitherto it has not been seen elsewhere.

Genus Biziura, *Leach.*

A genus of which only a single species is known to exist, and which is singularly different from every other member of the family. It is strictly Australian, and may be regarded as one of the anomalies of its fauna.

556. Biziura lobata . . . . . Vol. VII. Pl. 18.

Family LARIDÆ, *Leach.*

Genus Larus, *Linn.*

The members of this genus are distributed over the sea-shores of every part of the globe. Only one species inhabits Australia, to which country it is confined, and where it represents the *Larus marinus* of Europe and America.

557. Larus Pacificus . . . . . Vol. VII. Pl. 19.

Genus Xema, *Leach.*

A genus of Gulls, the members of which are delicate in their structure, elegant in their appearance, and graceful in all their actions. Many species are found in Europe and America, and others inhabit Africa; one species only has been characterized as Australian, but I believe that another will be found in Torres' Straits very similar to, but much larger than, the *X. Jamesonii* of the southern parts of that continent.

558. Xema Jamesonii . . . . . Vol. VII. Pl. 20.

Subfamily —— ?

Genus Lestris, *Ill.*

The high latitudes of both the northern and southern hemispheres are frequented by parasitic Gulls.

One species of this form has been found in the Australian seas, and another has been discovered within the Antarctic circle.

559. Lestris Catarractes . . . . . Vol. VII. Pl. 21.

Although I have figured and described this Australian bird as identical with the Skua Gull of Europe, it is likely that hereafter reasons may be found for separating them.

In a letter just arrived from Mr. J. M'Gillivray, dated on board H.M.S. Rattlesnake, Feb. 6, 1848, that gentleman says, "The *Lestris Catarractes* was noticed on various occasions in different parts of the South Indian Ocean; while off the Cape of Good Hope a solitary individual and subsequently two in company were seen. I have observed it following and hovering over a bait towing astern, and once saw it chase a Cape Petrel and force it to alight on the water. This bird seldom remained with us for more than half an hour at a time, during which it made a few circular flights about the ship."

Subfamily STERNINÆ, *Bonap.*

The members of this family inhabiting Australia and Europe are nearly equal in number, and in each country examples of the same forms are found to exist; the Australian fauna has also a *Gygis* and an *Onychoprion*, neither of which inhabit the European seas, and four species of *Anoüs*, of which only one frequents the northern hemisphere.

Genus Sylochelidon, *Brehm.*

560. Sylochelidon strenuus . . . . . Vol. VII. Pl. 22.

A representative of the *S. Caspius* of Europe.

Genus Thalasseus, *Boie.*

The members of this genus, the type of which is the *T. Cantiacus* of the British Islands, are widely dispersed over most parts of the Old World, and three distinct species inhabit Australia.

561. Thalasseus Pelecanoïdes . . . . . Vol. VII. Pl. 23.
562. Thalasseus poliocercus, *Gould* . . . . . Vol. VII. Pl. 24.
563. Thalasseus Torresii, *Gould* . . . . . Vol. VII. Pl. 25.

Since my account of this species was printed I have seen adult specimens from Southern India, which country is in all probability its true habitat.

Genus Sterna, *Linn.*

The members of this genus, as now restricted, enjoy so wide a range over the globe, that they may be said to be univerally dispersed: three species are found in Australia.

564. Sterna melanorhyncha, *Gould* . . . . . Vol. VII. Pl. 26.
565. Sterna gracilis, *Gould* . . . . . Vol. VII. Pl. 27.
566. Sterna melanauchen, *Temm.* . . . . . Vol. VII. Pl. 28.

"This beautiful bird," says Mr. M'Gillivray, "is very local in its breeding-places, the only one known to me being one of the 'three sand-banks' near Sir Charles Hardy's Islands. The eggs are two in number, deposited in a slight hollow in the sand. I have seen this bird on another neighbouring sand-bank, also on Solitary Island, near Cape York, and in Endeavour Straits, but was unable to procure a specimen from any of the three last-mentioned localities, on account of its excessive shyness. It is one of the most noisy of the Terns, and I generally saw it in small parties of half-a-dozen, or thereabouts. The fully-fledged young of the year differs from the adult in having the black on the head dark brown mottled with white, and the whole of the upper surface and wings variegated with dark brownish grey."

Genus Sternula, *Boie.*

Europe and Australia are both tenanted by little Terns, the specific distinctness of which cannot be questioned, however much that of the large Terns (genus *Sylochelidon*) may be: ought we not then to infer that some peculiar law prevails, and that if one be distinct the other is also? However that may be, it is certain that birds regarded as identically the same, because no external difference is perceptible, breed at opposite seasons in the two hemispheres, and that if the birds of one hemisphere be brought and retained in the other, they continue to moult their feathers and to breed at the same period that they would have done had they remained in their native country.

567. Sternula Nereis, *Gould* . . . . . Vol. VII. Pl. 29.

Genus Gelochelidon, *Brehm*.

It would be strange if this form did not exist in Australia, when all the other European genera of Terns are found there; still I have no other evidence of such being the case, than that of a specimen in the collection of King's College, London, which is said to be from Van Diemen's Land, and to which in the year 1837 I gave the name of *Sterna macrotarsa*.

568. Gelochelidon macrotarsus, *Gould*.

Sterna macrotarsa, Gould in Proc. of Zool. Soc., Part V. p. 26; and in Syn. Birds of Australia, Part II.

Crown of the head and back of the neck black; all the upper surface and primaries light silvery-grey; remainder of the plumage white; bill and feet black.

As I did not meet with this bird myself either in Van Diemen's Land or in any other of the Australian regions, I have not figured it.

Genus Gygis, *Wagl.*

One species of this Polynesian genus of Terns is found in Australia.

569. Gygis candida . . . . . Vol. VII. Pl. 30.

Genus Hydrochelidon, *Boie*.

The value of minor genera or subgenera, as naturalists may choose to designate them, is much strengthened, when species, which have been assigned to either of them from countries so distant from each other as Australia and Europe, are found to possess similar habits, but differing from those of the other members of the family. Thus the members of the present little group inhabit the inland waters and marshes of both countries; make their nests among the rushes, and lay thickly-marked eggs, in both of which particulars they differ from the other Terns; the generality of which deposit their eggs on the shingles of the sea-shore, while others, the *Gygis candida* for instance, lay their single egg on the horizontal branch of a tree, so totally unprotected, that how it is retained in its position during windy weather is a perfect mystery; others again, such as the Noddies, bring together large masses of sea-weed, which they either pile upon the swinging branch of a Mangrove or on the jutting point of a rock. All these facts should be studied by ornithologists before they discard subgenera proposed by their fellow-labourers, and replace the species they may have so divided in the genera of the older writers, who must necessarily have known less of the subject; for wherever a difference occurs in the habits of the members of any great family a variation more or less marked will be found in their structure. So far as my own observations go, and they have not been few, if I have read the great book of nature aright, the genera, instead of being reduced, might with propriety be multiplied without the risk of our being burthened with a genus for every species, as some writers affect to fear would then be the case.

570. Hydrochelidon fluviatilis, *Gould* . . . . . Vol. VII. Pl. 31.

A fine marsh Tern differing from its European prototypes *H. nigra*, *H. leucoptera*, and *H. leucopareia*.

Genus Onychoprion, *Wagl.*

Of this form two species frequent the Australian seas.

571. Onychoprion fuliginosus . . . . . Vol. VII. Pl. 32.

Although I have figured one of the two Australian birds of this genus under the above appellation, rather than run the risk of unnecessarily adding to the number of species, I have no doubt it will prove to be distinct from the American bird.

"Found breeding in prodigious numbers on Raine's Islet and Bramble Key in May and June, associated with Noddies (*Anoüs stolidus*). The Sooty Tern deposits its solitary egg in a slight excavation in the sand without lining of any kind. The egg varies considerably in its markings. After the party employed in building the beacon on Raine's Islet had been on shore about ten days, and the Terns had had their nests robbed repeatedly, the birds collected into two or three large flocks and laid their eggs in company, shifting their quarters repeatedly on finding themselves continually molested; for new-laid eggs were much in request among people who had for some time been living upon ship's fare. By sitting down and keeping quiet I have seen the poor birds dropping their eggs within two yards of where I sat, apparently glad to get rid of their burthen at all hazards. During the month of June 1844 about 1500 dozen of eggs were procured by the party upon the Island. About the 20th of June nearly one half of the young birds (hatched twenty-five or thirty days previously) were able to fly, and many were quite strong upon the wing. Great numbers of young birds unable to fly were killed for the pot;—in one mess of twenty-two men the average number consumed daily in June was fifty, and supposing the convicts (twenty in number) to have consumed as many, 3000 young birds must have been killed in one month; yet I could observe no sensible diminution of the number of young, a circumstance which will give the reader some idea of the vast numbers of birds of this species congregated on a mere vegetated sand-bank like Raine's Islet."—*J. M'Gillivray.*

572. Onychoprion Panaya . . . . . Vol. VII. Pl. 33.

Genus Anous, *Leach.*

Unlike other Terns which frequent the sea-shores and rivers, the Noddies inhabit the wide ocean, far remote from land, and which, like the Petrels, they seldom quit, except at the breeding season, when they congregate in vast multitudes on small islands suited to the purpose. Great nurseries of this kind are to be found in every ocean; in the North Atlantic, one of the Tortugas, called Noddy Key, is a favourite resort, and the Bahama Islands are another; in the South Pacific and Indian Oceans, beside other situations, the Houtmann's Abrolhos, off the western coast of Australia, are resorted to in such immense numbers that Mr. Gilbert was perfectly astonished at the multitudes with which he found himself surrounded, upon landing on those remote and little-explored islands.

573. Anoüs stolidus . . . . . Vol. VII. Pl. 34.

"The large Noddy," says Mr. M'Gillivray, "is abundantly distributed over Torres' Straits, but I never met with it to the southward of Raine's Islet, on which, as at Bramble Key, it was found breeding in prodigious numbers. Unlike its constant associate, the Sooty Tern, it constructs a shallow nest of small twigs arranged in a slovenly manner, over which are strewed about a handful of fragments of coral from the beach, shells, and occasionally portions of tortoise-shell and bones of turtle. The nest is sometimes placed upon the ground, but more usually upon tufts of grass and other herbage, at about a foot from the ground."

574. Anoüs melanops, *Gould* . . . . . Vol. VII. Pl. 35.
575. Anoüs leucocapillus, *Gould* . . . . . Vol. VII. Pl. 36.
576. Anoüs cinereus, *Gould* . . . . . Vol. VII. Pl. 37.

Family PROCELLARIDÆ, *Bonap.*

There is perhaps no group of birds respecting which so much confusion exists and the extent of whose range over the ocean is so little known, as that forming the present family.

Having, as I have before stated, paid much attention to these birds during my voyages to and from Australia and in its neighbourhood, my researches were rewarded by my obtaining a knowledge of at least forty different species, nearly all of which are peculiar to the seas of the southern hemisphere. The powers of flight with which these birds are endowed are perfectly astonishing: they appear to be constantly performing migrations round the globe from west to east; and Australia lying in their tract, all the species may be found near its shores at one or other season of the year.

It is but natural to suppose that this great group of birds has been created for some especial purpose, and may we not infer that they have been placed in the Southern Ocean to prevent an undue increase of the myriads of mollusks and other low marine animals with which those seas abound, and upon which all the *Procellaridæ* mainly subsist?

Genus Diomedea, *Linn.*

Of this genus, which comprises among its members the largest of the Oceanic birds, three species range over the North Pacific Ocean; and six others the seas southward of the equator.

577. Diomedea exulans, *Linn.* . . . . . Vol. VII. Pl. 38.

The weight of this species varies from seventeen to twenty pounds, and the expanse of its extended wings averages the enormous breadth of 11 feet.

578. Diomedea brachyura, *Temm.* . . . . . Vol. VII. Pl. 39.
579. Diomedea cauta, *Gould* . . . . . Vol. VII. Pl. 40.
580. Diomedea culminata, *Gould* . . . . . Vol. VII. Pl. 41.
581. Diomedea chlororhynchos, *Lath.* . . . . . Vol. VII. Pl. 42.
582. Diomedea melanophrys, *Temm.* . . . . . Vol. VII. Pl. 43.
583. Diomedea fuliginosa . . . . . Vol. VII. Pl. 44.
584. Diomedea gibbosa, *Gould.*

Diomedea gibbosa, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 361.

Face, ear-coverts, chin, abdomen, upper and under tail-coverts white; the remainder of the plumage very dark brown, approaching on the occiput, back of the neck and wings to black; bill yellowish horn-colour, becoming darker at the tip and at the base; feet in the dried specimen dark brown, but doubtless of a bluish grey, inclining to flesh-colour in the living bird.

The above is the description of a specimen in the collection of the Zoological Society of London, to which it was presented by F. Debell Bennett, Esq., who had procured it in the North Pacific. It differs from every other that has come under my notice in the peculiar swollen and raised form of the base of the upper mandible, which moreover advances high upon the forehead.

585. Diomedea olivaceorhyncha, *Gould.*

Diomedea olivaceorhyncha, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 361.

I propose this name for a species, examples of which are wanting to our collections, and of which a bill only has as yet come under my notice. It is in the possession of Sir Wm. Jardine, Bart., is 3 inches and $\frac{3}{8}$ths long from the gape to the tip, of a uniform olive-green, and in form more slender and elegant than that of the other members of the genus. The locality in which it was procured is not known, but it is supposed to have been obtained in the China seas.

The last two species were not seen by me in the Australian seas, but are given in order to complete a monograph of the *Diomedeæ*.

Genus Procellaria, *Linn.*

Of the fifteen species I have placed in this genus as now restricted, figures of only eight have been given.

586. Procellaria gigantea . . . . . Vol. VII. Pl. 45.
587. Procellaria Æquinoctialis.
588. Procellaria conspicillata, *Gould* . . . . . Vol. VII. Pl. 46.
589. Procellaria hasitata, *Kuhl.* . . . . . Vol. VII. Pl. 47.
590. Procellaria Atlantica, *Gould.*

Procellaria Atlantica, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 362.

Male: the whole of the plumage deep chocolate-black; bill and feet jet-black.

This is one of the commonest species inhabiting the Atlantic, and no ship passes between our shores and the Cape of Good Hope without encountering it; it is a species respecting which very considerable confusion exists in the writings of nearly all the older authors. It is the *P. fuliginosa* of Forster's Drawings, No. 93 B, and the *P. fuliginosa* of Lichtenstein's edition of Forster's MSS. p. 23, which term cannot be retained, as it had already been applied by Latham to a very different bird from Otaheite; it is the *P. grisea* of Kuhl but not of Linnæus, who has given the term to another species, consequently *grisea* cannot be retained for it; and hence I have been induced to give it a new appellation, and thereby prevent misapprehension for the future.

591. Procellaria macroptera, *Smith*.

Procellaria macroptera, Smith, Zool. of South Africa, Aves, pl. 52.

I think that a bird I killed in the seas off Van Diemen's Land, where it was tolerably abundant, and which differs from the last in being of a larger size, in having much longer wings and a greyer face, may be identical with the *P. macroptera* of Smith, and I therefore retain it under that appellation, in preference to assigning it a new name.

592. Procellaria Solandri, *Gould*.

Procellaria Solandri, Gould in Proc. of Zool. Soc., Part XII. p. 57; and in Ann. and Mag. of Nat. Hist., vol. xiii. p. 363.

Head, back of the neck, shoulders, primaries and tail dark brown; back, wing-coverts and upper tail-coverts slate-grey, each feather margined with dark brown; face and all the under surface brown, washed with grey on the abdomen; bill, tarsi, toes and membranes black.

This is a remarkably robust and compact bird. I shot a single individual in Bass's Straits on the 13th of March 1839. M. Natterer thought that it might be identical with the bird figured in Banks's drawings, to which Dr. Solander has affixed the term *melanopus*, an opinion in which I cannot concur; I have therefore named it in honour of that celebrated botanist. The specimen above described may possibly not be fully adult, as the dark colouring of the under surface only occupies the extreme tips of the feathers, the basal portions of which are snow-white.

593. Procellaria Glacialoïdes, *Smith* . . . . . Vol. VII. Pl. 48.
594. Procellaria Lessonii, *Garn.* . . . . . Vol. VII. Pl. 49.
595. Procellaria mollis, *Gould* . . . . . Vol. VII. Pl. 50.
596. Procellaria Cookii, *G. R. Gray* . . . . . Vol. VII. Pl. 51.
597. Procellaria cœrulea, *Gmel.* . . . . . Vol. VII. Pl. 52.

598. Procellaria flavirostris, *Gould*.

Procellaria flavirostris, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 365.

Feathers of the head and all the upper surface brown with pearl edges, fading into white on the tips of the upper tail-coverts; wings and tail deep blackish brown; all the under surface pure white; the feathers of the under surface of the shoulder with a streak of brown down the centre; bill yellow, passing into dark horn-colour at the tip; tarsi and feet fleshy white.

This fine species was procured off the Cape of Good Hope, in lat. 36° 39′ S., long. 10° 3′ E., by His Excellency Governor Grey, on his passage to South Australia. It is distinguished from its congeners by its much larger size, and by the yellow colouring of the bill. The female is somewhat smaller than her mate.

This bird so nearly approaches in form the members of the genus *Puffinus*, that it is almost questionable whether it should not be included in that group.

599. Procellaria nivea, *Gmel.*
600. Procellaria Antarctica, *Gmel.*

Genus Daption, *Steph.*

A genus established for the reception of the *Procellaria Capensis* of Linnæus, a species abounding in all the temperate latitudes of the southern seas.

601. Daption Capensis . . . . . Vol. VII. Pl. 53.

Genus Prion, *Lacep.*

A genus of fairy-like Petrels confined to the southern hemisphere: much confusion exists respecting these birds, and they are so puzzling that I regret to say I have not been able to throw any light upon the subject.

Of the following species two only have been figured:—

602. Prion Turtur . . . . . Vol. VII. Pl. 54.
603. Prion vittatus . . . . . Vol. VII. Pl. 55.
604. Prion Banksii.

Pachyptila Banksii, Smith, Zool. of South Africa, Aves, pl. 55.

Prion Banksii, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 366.

Found in the temperate latitudes of the Atlantic and Pacific, and I believe in similar latitudes all round the globe.

605. Prion Ariel, *Gould*.

Prion Ariel, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 366.

I killed this species in Bass's Straits, where it was rather numerous.

Genus Puffinus, *Briss.*

The members of this genus inhabit the seas of both the northern and southern hemisphere, but are nowhere more abundant than round Australia, the fauna of which country comprises four species, which make one or other of the groups of islands lying off the coast their great nurseries or breeding-places.

606. Puffinus brevicaudus, *Brandt* . . . . . Vol. VII. Pl. 56.

It will be seen that I have alluded in forcible terms to the great abundance of this species in Bass's Straits, in confirmation of which I annex the following extract from Flinders' Voyage, vol. i. p. 170:—

"A large flock of Gannets was observed at daylight, and they were followed by such a number of the sooty petrels as we had never seen equalled. There was a stream of from fifty to eighty yards in depth, and of three hundred yards or more in breadth; the birds were not scattered, but were flying as compactly as a free movement of their wings seemed to allow; and during a full *hour and a half* this stream of Petrels continued to pass without interruption, at a rate little inferior to the swiftness of the Pigeon. On the lowest computation I think the number could not have been less than a hundred millions. Taking the stream to have been fifty yards deep by three hundred in width, and that it moved at the rate of thirty miles an hour, and allowing nine cubic yards of space to each bird, the number would amount to 151,500,000. The burrows required to lodge this quantity of birds would be 75,750,000; and allowing a square yard to each burrow, they would cover something more than 18½ geographic square miles of ground."

607. Puffinus carneipes, *Gould* . . . . . Vol. VII. Pl. 57.
608. Puffinus sphenurus, *Gould* . . . . . Vol. VII. Pl. 58.
609. Puffinus assimilis, *Gould* . . . . . Vol. VII. Pl. 59.

Genus Puffinuria, *Less.*

One species of this genus inhabits the Australian seas.

610. Puffinuria Urinatrix . . . . . Vol. VII. Pl. 60.

Genus Thalassidroma, *Vig.*

The little tenants of the ocean belonging to this genus are so universally dispersed, that they are found in all the seas except those of the very high latitudes of both hemispheres. The Australian fauna is particularly rich in birds of this form, inasmuch as no less than five distinct species frequent the seas which wash the shores of that country.

611. Thalassidroma marina, *Less.* . . . . . Vol. VII. Pl. 61.
612. Thalassidroma melanogaster, *Gould* . . . . . Vol. VII. Pl. 62.
613. Thalassidroma leucogaster, *Gould* . . . . . Vol. VII. Pl. 63.

Thalassidroma Tropica, *Gould.*

Thalassidroma Tropica, Gould in Ann. and Mag. of Nat. Hist., vol. xiii. p. 366.

Head, back, wings, tail and breast dark sooty black; chin, under coverts of the wings, abdomen, flanks, under tail-coverts, and a broad crescent-shaped band across the upper tail-coverts snow-white; bill, feet and legs black.

Total length, $7\frac{3}{4}$ inches; bill, $\frac{7}{8}$; wing, $6\frac{1}{2}$; tail, $3\frac{1}{2}$; tarsi, $1\frac{3}{4}$; middle toe and nail, $1\frac{1}{4}$.

I observed this species in the Atlantic, where it is confined to the equatorial regions, being most abundant in the vicinity of the line. It is the largest member of the genus with which I am acquainted, and is rendered very conspicuous by the white mark on its throat.

614. Thalassidroma Nereis, *Gould* . . . . . Vol. VII. Pl. 64.
615. Thalassidroma Wilsonii, *Bonap.* . . . . . Vol. VII. Pl. 65.

Family PELECANIDÆ, *Leach.*

Genus Phalacrocorax, *Briss.*

The great family of the Cormorants, whose range is universal, are well represented in Australia, since five species inhabit and are peculiar to that country, where they perform precisely the same offices as the other species of the genus do in Europe and America.

616. Phalacrocorax Carboides, *Gould* . . . . . Vol. VII. Pl. 66.
617. Phalacrocorax sulcirostris . . . . . Vol. VII. Pl. 67.
618. Phalacrocorax hypoleucus . . . . . Vol. VII. Pl. 68.
619. Phalacrocorax leucogaster, *Gould* . . . . . Vol. VII. Pl. 69.
620. Phalacrocorax melanoleucus, *Vieill.* . . . . . Vol. VII. Pl. 70.
621. Phalacrocorax punctatus . . . . . Vol. VII. Pl. 71.

Genus Attagen, *Mœhr.*

Although I have figured but one, there are evidently two if not three species of this genus which visit the Australian shores; but I have not had sufficient opportunities to investigate the subject satisfactorily.

622. Attagen Ariel, *Gould* . . . . . Vol. VII. Pl. 72.
623. Attagen Aquila?

Genus Phaeton, *Linn.*

The beautiful species of this form which graces the fauna of Australia, ranges over the greater part of the Pacific Ocean, and among other places retires to Norfolk Island and Raine's Islet for the purpose of breeding.

624. Phaeton phœnicurus . . . . . Vol. VII. Pl. 73.

Genus Pelecanus, *Linn.*

The members of this genus are very widely dispersed, since every great country has one or more species assigned to it. That inhabiting Australia is as fine and as beautifully marked as any other member of the group.

625. Pelecanus conspicillatus, *Temm.* . . . . . Vol. VII. Pl. 74.

Genus Plotus, *Linn.*

Asia, Africa, America and Australia are each tenanted by a species of this genus, the members of which, although few in number, are not well understood nor are their specific differences easily decyphered.

626. Plotus Novæ-Hollandiæ, *Gould* . . . . . Vol. VII. Pl. 75.

Genus Sula, *Briss.*

Four fine species of this genus appertain to the Australian fauna, since they not only frequent the seas adjacent to the shores of that country, but all of them resort to its rocks and islands for the purpose of breeding.

The genus comprises several other species which inhabit the sea coasts of nearly every part of the globe.

627. Sula Australis, *Gould* . . . . . Vol. VII. Pl. 76.

Inhabits the southern coast of Australia and Van Diemen's Land, and is a beautiful representative of the *Sula Bassana* and *S. melanura* of Europe.

628. Sula personata, *Gould* . . . . . Vol. VII. Pl. 77.

Common on the east coast.

629. Sula fusca, *Briss.* . . . . . Vol. VII. Pl. 78.

"This species of Booby," says Mr. M'Gillivray, "is generally distributed on the north-east and north coasts of New Holland; but I found it breeding only upon Bramble Key, although I once, on Raine's Islet, found a solitary egg. The nest is slovenly made of dried herbage, a foot in diameter, with scarcely any cavity, and contains two eggs, of which in every instance one was clean and the other very dirty. The eggs, which are white, vary considerably in size. The largest measured $2\frac{5}{16}$ inches by $1\frac{7}{16}$; the smallest $2\frac{1}{16}$ by $1\frac{3}{16}$, and one of average size, $2\frac{1}{4}$ by $1\frac{3}{4}$ inches. Both sexes incubate, and the birds while sitting on their eggs allowed of a very near approach, and before flying off disgorged the contents of their stomachs, chiefly a species of *Clupea* or herring. I need scarcely add that their bite is very severe. During our visits to Darnley Island I observed several tame Boobies among the native villages, generally perched on the canoes hauled up on the beach. These birds were allowed their full liberty, and after fishing in the weirs upon the reefs until they had procured a sufficiency of food, returned to the huts."

Inhabits the north coast.

630. Sula piscator, *Linn.* . . . . . Vol. VII. Pl. 79.

Inhabits the north coast.

Family COLYMBIDÆ, *Leach.*

Genus Podiceps, *Lath.*

There is no country of any extent wherein Grebes are not to be found; and as their wing-powers are very limited, they are mostly stationary.

I have elsewhere remarked how beautifully the European Grebes are represented by those inhabiting Australia, and the truth of this remark will be rendered at once apparent on reference to the Plates of the following species:—

631. Podiceps Australis, *Gould* . . . . . Vol. VII. Pl. 80.
632. Podiceps gularis, *Gould* . . . . . Vol. VII. Pl. 81.
Podiceps Dominicus, var. Lath., Gen. Hist. vol. x. p. 32.
633. Podiceps poliocephalus, *Jard. & Selb.* . . . . . Vol. VII. Pl. 82.

Family SPHENISCIDÆ, *Gould.*

Of this southern group of birds three or four species have been known to visit the shores of Van Diemen's Land and the islands in Bass's Straits, which, in fact, constitute one of the great breeding-places of some of the members of this family.

Genus Eudyptes, *Vieill.*

634. Eudyptes chrysocome . . . . . Vol. VII. Pl. 83.

Genus Spheniscus, *Briss.*

635. Spheniscus minor, *Temm.* . . . . . Vol. VII. Pl. 84.
636. Spheniscus Undina, *Gould* . . . . . Vol. VII. Pl. 85.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

Name of Species.	South-eastern portion of Australia or New South Wales.	South Australia.	Swan River or Western Australia.	Northern Australia.	Van Diemen's Land.	Extra Australian.	Number of Volume and Plate.
Aquila fucosa, *Cuv.*	*	*	*		*		Vol. I. Pl. 1.
—— Morphnoïdes, *Gould*	*						— 2.
Ichthyiaëtus leucogaster	*	*	*	*	*	India and Africa?	— 3.
Haliastur leucosternus, *Gould*	*			*			— 4.
—— sphenurus	*	*	*	*			— 5.
Pandion leucocephalus, *Gould*	*	*	*	*	*		— 6.
Falco hypoleucus, *Gould*		*	*				— 7.
—— melanogenys, *Gould*	*	*	*	*	*		— 8.
—— subniger, *Gray*		*					— 9.
—— frontatus, *Gould*	*	*	*	*	*		— 10.
Ieracidea Berigora	*	*			*		— 11.
—— occidentalis, *Gould*		*	*				— 12.
Tinnunculus Cenchroïdes	*	*	*	*			— 13.
Astur Novæ-Hollandiæ	*	*					— 14.
—— —— (albino)	*	*			*		— 15.
—— radiatus	*						— 16.
—— approximans, *Vig. & Horsf.*	*	*			*		— 17.
—— cruentus, *Gould*			*	*?			— 18.
Accipiter torquatus	*	*	*	*	*		— 19.
Buteo melanosternon, *Gould*	*	*	*				— 20.
Milvus affinis, *Gould*	*	*	*	*	*		— 21.
—— isurus, *Gould*	*	*					— 22.
Elanus axillaris	*	*	*	*			— 23.
—— scriptus, *Gould*		*					— 24.
Lepidogenys subcristatus, *Gould*	*			*			— 25.
Circus assimilis, *Jard. & Selb.*	*	*	*		*		— 26.
—— Jardinii, *Gould*	*	*					— 27.
Strix castanops, *Gould*					*		— 28.
—— personata, *Vig.*	*	*	*	*			— 29.
—— tenebricosus, *Gould*	*						— 30.
—— delicatulus, *Gould*	*	*	*	*			— 31.
Athene Boobook	*	*	*	*?	*		— 32.
—— maculata	*	*			*		— 33.
—— marmorata, *Gould*		*					Intro., p. xxv.
——? connivens	*		*				Vol. I. Pl. 34.
—— strenua, *Gould*	*						— 35.
—— rufa, *Gould*				*			— 36.
Ægotheles Novæ-Hollandiæ	*	*	*		*		Vol. II. Pl. 1.
—— leucogaster, *Gould*				*			— 2.
Podargus megacephalus	*						Intro., p. xxviii.
—— humeralis, *Vig. & Horsf.*	*						Vol. II. Pl. 3.
—— Cuvieri, *Vig. & Horsf.*		*			*		— 4.
—— brachypterus, *Gould*		*	*				Intro., p. xxvi.
—— Phalænoïdes, *Gould*				*			Vol. II. Pl. 5.
—— plumiferus, *Gould*	*						— 6.
Eurostopodus albogularis	*						— 7.
—— guttatus	*	*	*	*			— 8.
Caprimulgus macrurus, *Horsf.*				*		Java	— 9.
Acanthylis caudacuta	*				*		— 10.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Cypselus Australis, *Gould*	*						Vol. II. Pl. 11.
Atticora leucosternon, *Gould*	*	*	*				— 12.
Hirundo neoxena, *Gould*	*	*	*		*		— 13.
Chelidon arborea	*	*	*	*	*		— 14.
——— Ariel, *Gould*	*	*	*				— 15.
Merops ornatus, *Lath.*	*	*	*	*			— 16.
Eurystomus Australis, *Swains.*	*			*			— 17.
Dacelo gigantea	*	*					— 18.
——— Leachii, *Vig. & Horsf.*				*			— 19.
——— cervina, *Gould*				*			— 20.
Halcyon sanctus, *Vig. & Horsf.*	*	*	*	*			— 21.
——— pyrrhopygia, *Gould*	*	*	*				— 22.
——— sordidus, *Gould*				*			— 23.
——— MacLeayii, *Jard. & Selby*	*			*			— 24.
Alcyone azurea	*	*					— 25.
——— Diemenensis, *Gould*					*		Intro., p. xxxi.
——— pulchra, *Gould*				*			Intro., p. xxxii.
——— pusilla				*		New Guinea	Vol. II. Pl. 26.
Artamus sordidus	*	*	*		*		— 27.
——— minor, *Vieill.*	*						— 28.
——— cinereus, *Vieill.*			*	*		Timor	— 29.
——— albiventris, *Gould*				*			— 30.
——— personatus, *Gould*		*	*				— 31.
——— superciliosus, *Gould*	*	*					— 32.
——— leucopygialis, *Gould*	*	*		*			— 33.
Dicæum hirundinaceum	*	*	*				— 34.
Pardalotus punctatus	*	*	*		*		— 35.
——— rubricatus, *Gould*	*?						— 36.
——— quadragintus, *Gould*					*		— 37.
——— striatus	*	*	*				— 38.
——— affinis, *Gould*					*		— 39.
——— melanocephalus, *Gould*	*						— 40.
——— uropygialis, *Gould*				*			— 41.
Strepera graculina	*						— 42.
——— fuliginosa, *Gould*		*			*		— 43.
——— arguta, *Gould*		*			*		— 44.
——— Anaphonensis	*		*				— 45.
——— melanoptera, *Gould*		*					Intro., p. xxxiv.
Gymnorhina Tibicen	*		*?				Vol. II. Pl. 46.
——— leuconota, *Gould*	*	*					— 47.
——— organicum, *Gould*					*		— 48.
Cracticus nigrogularis, *Gould*	*	*					— 49.
——— picatus, *Gould*				*			— 50.
——— argenteus, *Gould*				*			— 51.
——— destructor	*	*					— 52.
——— cinereus, *Gould*					*		Intro., p. xxxv.
——— leucopterus, *Gould*		*	*				Intro., p. xxxv.
——— Quoyii				*		New Guinea	Vol. II. Pl. 53.
Grallina Australis	*	*	*	*			— 54.
Graucalus melanops	*	*	*	*			— 55.
——— parvirostris, *Gould*					*		Intro., p. xxxv.
——— mentalis, *Vig. & Horsf.*	*						Vol. II. Pl. 56.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Graucalus hypoleucus, *Gould*				*			Vol. II. Pl. 57.
——— Swainsonii, *Gould*	*			*			— 58.
Pteropodocys Phasianellus, *Gould*	*	*	*				— 59.
Campephaga Jardinii, *Gould*	*			*			— 60.
——— Karu				*		New Guinea	— 61.
——— leucomela, *Vig. & Horsf.*	*						— 62.
——— humeralis, *Gould*	*	*	*	*			— 63.
Pachycephala gutturalis	*	*	*				— 64.
——— glaucura, *Gould*					*		— 65.
——— melanura, *Gould*				*			— 66.
——— pectoralis	*	*	*				— 67.
——— falcata, *Gould*				*			— 68.
——— Lanoïdes, *Gould*				*			— 69.
——— rufogularis, *Gould*		*					— 70.
——— Gilbertii, *Gould*		*	*				— 71.
——— simplex, *Gould*				*			— 72.
——— olivacea, *Vig. & Horsf.*	*				*		— 73.
Colluricincla harmonica	*	*					— 74.
——— rufiventris, *Gould*		*	*				— 75
——— brunnea, *Gould*				*			— 76.
——— Selbii, *Jard.*					*		— 77.
——— parvula, *Gould*				*			— 78.
——— rufogaster, *Gould*	*						Intro., p. xxxvi.
Falcunculus frontatus	*	*					Vol. II. Pl. 79.
——— leucogaster, *Gould*			*				— 80.
Oreoïca gutturalis	*	*	*				— 81.
Dicrurus bracteatus, *Gould*	*			*			— 82.
Rhipidura albiscapa, *Gould*	*	*	*		*		— 83.
——— rufifrons	*						— 84.
——— Dryas, *Gould*				*			Intro., p. xxxix.
——— isura, *Gould*				*			Vol. II. Pl. 85.
——— Motacilloïdes, *Vig. & Horsf.*	*	*	*				— 86.
——— picata, *Gould*				*			Intro., p. xxxix.
Seïsura inquieta	*	*	*				Vol. II. Pl. 87.
Piezorhynchus nitidus, *Gould*				*			— 88.
Myiagra plumbea, *Vig. & Horsf.*	*						— 89.
——— concinna, *Gould*				*			— 90.
——— nitida, *Gould*	*				*		— 91.
——— latirostris, *Gould*				*			— 92.
Micrœca macroptera	*	*					— 93.
——— assimilis, *Gould*			*				Intro., p. xl.
——— flavigaster, *Gould*				*			Vol. II. Pl. 94.
Monarcha carinata	*						— 95.
——— trivirgata	*			*			— 96.
Gerygone albogularis, *Gould*	*		*				— 97.
——— fuscus, *Gould*	*						— 98.
——— culicivorus, *Gould*			*				— 99.
——— magnirostris, *Gould*				*			— 100.
——— lævigaster, *Gould*				*			— 101.
——— chloronotus, *Gould*				*			— 102.
Smicrornis brevirostris, *Gould*	*	*	*?				— 103.
——— flavescens, *Gould*				*			— 104.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Erythrodryas rhodinogaster		*			*		Vol. III. Pl. 1.
——— rosea, *Gould*	*						— 2.
Petroïca multicolor	*	*	*		*		— 3.
——— erythrogastra						Norfolk Island	— 4.
——— Goodenovii	*	*	*				— 5.
——— phœnicea, *Gould*	*	*			*		— 6.
——— bicolor, *Swains.*	*	*	*				— 7.
——— fusca, *Gould*					*		— 8.
——— superciliosa, *Gould*				*			— 9.
Drymodes brunneopygia, *Gould*		*	*				— 10.
Eöpsaltria Australis	*						— 11.
——— griseogularis, *Gould*			*				— 12.
——— leucogaster, *Gould*			*				— 13.
Menura superba, *Dav.*	*						— 14.
Psophodes crepitans	*						— 15.
——— nigrogularis, *Gould*			*				— 16.
Sphenostoma cristata, *Gould*	*	*					— 17.
Malurus cyaneus	*	*					— 18.
——— longicaudus, *Gould*					*		— 19.
——— melanotus, *Gould*		*					— 20.
——— splendens			*				— 21.
——— elegans, *Gould*			*				— 22.
——— pulcherrimus, *Gould*			*				— 23.
——— Lamberti, *Vig. & Horsf.*	*						— 24.
——— leucopterus, *Quoy & Gaim.*	*	*	*				— 25.
——— melanocephalus, *Vig. & Horsf.*	*						— 26.
——— Brownii, *Vig. & Horsf.*	*			*			— 27.
Amytis textilis	*						— 28.
——— striatus, *Gould*	*						— 29.
——— macrourus, *Gould*			*				— 30.
Stipiturus malachurus	*	*	*		*		— 31.
Dasyornis Australis, *Vig. & Horsf.*	*						— 32.
——— longirostris, *Gould*			*				— 33.
Atrichia clamosa, *Gould*			*				— 34.
Sphenœacus galactotes	*			*			— 35.
——— gramineus, *Gould*	*	*	*				— 36.
Acrocephalus Australis, *Gould*	*	*					— 37.
——— longirostris, *Gould*			*				— 38.
Hylacola pyrrhopygia	*	*					— 39.
——— cauta, *Gould*		*					— 40.
Cysticola magna, *Gould*	Unknown						— 41.
——— exilis	*	*					— 42.
——— lineocapilla, *Gould*				*			— 43.
——— isura, *Gould*	*						— 44.
——— ruficeps, *Gould*	*						— 45.
Sericornis citreogularis, *Gould*	*						— 46.
——— humilis, *Gould*					*		— 47.
——— osculans, *Gould*		*					— 48.
——— frontalis	*	*					— 49.
——— lævigaster, *Gould*				*			— 50.
——— maculatus, *Gould*	*	*	*	*			— 51.
——— magnirostris, *Gould*	*						— 52.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Acanthiza pusilla	•						Vol. III. Pl. 53.
——— Diemenensis, *Gould*					•		— 54.
——— Ewingii, *Gould*					•		— 55.
——— uropygialis, *Gould*	•						— 56.
——— apicalis, *Gould*			•				— 57.
——— pyrrhopygia, *Gould*		•					— 58.
——— inornata, *Gould*		•	•				— 59.
——— nana, *Vig. & Horsf.*	•	•					— 60.
——— lineata, *Gould*	•	•					— 61.
——— Reguloides, *Vig. & Horsf.*	•	•					— 62.
——— chrysorrhœa	•	•	•		•		— 63.
Ephthianura albifrons	•	•	•				— 64.
——— aurifrons, *Gould*	•	•					— 65.
——— tricolor, *Gould*	•						— 66.
Xerophila leucopsis, *Gould*		•					— 67.
Pyrrholæmus brunneus, *Gould*		•	•				— 68.
Origma rubricata	•						— 69.
Calamanthus fuliginosus					•		— 70.
——— campestris, *Gould*		•	•				— 71.
Chthonicola minima	•	•					— 72.
Anthus Australis, *Vig. & Horsf.*	•	•	•	•	•		— 73.
Cincloramphus cruralis	•						— 74.
——— cantillans, *Gould*	•	•	•	•			— 75.
——— rufescens	•	•	•	•			— 76.
Mirafra Horsfieldii, *Gould*	•			•?			— 77.
Estrelda bella	•				•		— 78.
——— oculea			•				— 79.
——— Bichenovii	•		•				— 80.
——— annulosa, *Gould*				•			— 81.
——— temporalis	•	•					— 82.
——— Phaëton				•			— 83.
——— ruficauda, *Gould*	•						— 84.
——— modesta, *Gould*	•						— 85.
Amadina Lathamii	•	•					— 86.
——— castanotis, *Gould*	•	•	•	•			— 87.
Poëphila Gouldiæ, *Gould*				•			— 88.
——— mirabilis, *Homb. & Jacq.*				•			— 89.
——— acuticauda, *Gould*				•			— 90.
——— personata, *Gould*				•			— 91.
——— leucotis, *Gould*				•			— 92.
——— cincta, *Gould*	•						— 93.
Donacola castaneothorax, *Gould*	•						— 94.
——— pectoralis, *Gould*				•			— 95.
——— flaviprymna, *Gould*				•			— 96.
Emblema picta, *Gould*				•			— 97.
Pitta strepitans, *Temm.*	•						Vol. IV. Pl. 1.
—— Vigorsii, *Gould*				•			— 2.
—— Iris, *Gould*				•			— 3.
Cinclosoma punctatum, *Vig. & Horsf.*	•	•			•		— 4.
——— castanotus, *Gould*		•	•				— 5.
——— cinnamomeus, *Gould*		•					— 6.
Oreocincla lunulata	•				•		— 7.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Chlamydera maculata, *Gould*	•	•					Vol. IV. Pl. 8.
——— nuchalis				•			— 9.
Ptilonorhynchus holosericeus, *Kuhl.*	•						— 10.
——— Smithii, *Vig. & Horsf.*	•						— 11.
Sericulus chrysocephalus	•						— 12.
Oriolus viridis	•						— 13.
——— affinis, *Gould*				•			Intro., p. liii.
——— flavocinctus				•			Vol. IV. Pl. 14.
Sphecotheres Australis, *Swains.*	•						— 15.
Corcorax leucopterus	•	•					— 16.
Struthidea cinerea, *Gould*	•	•					— 17.
Corvus Coronoïdes, *Vig. & Horsf.*	•	•	•	•	•		— 18.
Neomorpha Gouldii, *G. R. Gray*						New Zealand	— 19.
Pomatorhinus temporalis	•						— 20.
——— rubeculus, *Gould*				•			— 21.
——— superciliosus, *Vig. & Horsf.*	•	•	•				— 22.
Meliphaga Novæ-Hollandiæ	•	•			•		— 23.
——— longirostris, *Gould*			•				— 24.
——— sericea, *Gould*	•						— 25.
——— mystacalis, *Gould*			•				— 26.
——— Australasiana	•	•			•		— 27.
Glyciphila fulvifrons	•	•	•		•		— 28.
——— albifrons, *Gould*	•	•	•				— 29.
——— fasciata, *Gould*				•			— 30.
——— ocularis, *Gould*	•	•	•	•			— 31.
Ptilotis chrysotis	•						— 32.
——— sonorus, *Gould*	•	•	•				— 33.
——— versicolor, *Gould*				•			— 34.
——— flavigula, *Gould*					•		— 35.
——— leucotis	•		• ?				— 36.
——— auricomis	•						— 37.
——— cratitius, *Gould*		•					— 38.
——— ornatus, *Gould*			•				— 39.
——— plumulus, *Gould*			•				— 40.
——— flavescens, *Gould*				•			— 41.
——— flava, *Gould*				•			— 42.
——— penicillatus, *Gould*	•	•					— 43.
——— fusca, *Gould*	•						— 44.
——— chrysops	•	•					— 45.
——— unicolor, *Gould*				•			— 46.
Plectorhyncha lanceolata, *Gould*	•						— 47.
Xanthomyza Phrygia	•	•					— 48.
Melicophila picata, *Gould*		•	•				— 49.
Entomophila picta, *Gould*	•						— 50.
——— albogularis, *Gould*				•			— 51.
——— rufogularis, *Gould*				•			— 52.
Acanthogenys rufogularis, *Gould*	•	•	•				— 53.
Anthochæra inauris, *Gould*					•		— 54.
——— carunculata	•	•	•				— 55.
——— mellivora	•	•			•		— 56.
——— lunulata, *Gould*			•				— 57.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Tropidorhynchus corniculatus	*						Vol. IV. Pl. 58.
——— argenticeps, *Gould*				*			— 59.
——— citreogularis, *Gould*	*						— 60.
——— sordidus, *Gould*				*			Intro., p. lviii.
Acanthorhynchus tenuirostris	*						Vol. IV. Pl. 61.
——— dubius, *Gould*					*		Intro., p. lix.
——— superciliosus			*				Vol. IV. Pl. 62.
Myzomela sanguineolenta	*			*			— 63.
——— erythrocephala, *Gould*				*			— 64.
——— pectoralis, *Gould*				*			— 65.
——— nigra, *Gould*	*	*	*	*			— 66.
——— obscura, *Gould*				*			— 67.
Entomyza cyanotis	*						— 68.
——— albipennis, *Gould*				*			— 69.
Melithreptus validirostris, *Gould*					*		— 70.
——— gularis, *Gould*	*	*					— 71.
——— lunulatus	*	*					— 72.
——— chloropsis, *Gould*			*				— 73.
——— albogularis, *Gould*	*			*			— 74.
——— melanocephalus, *Gould*					*		— 75.
Myzantha garrula	*	*			*		— 76.
——— obscura, *Gould*			*				— 77.
——— lutea, *Gould*				*			— 78.
——— flavigula, *Gould*	*						— 79.
——— melanophrys	*						— 80.
Zosterops dorsalis, *Vig. & Horsf.*	*	*			*		— 81.
——— chloronotus, *Gould*			*				— 82.
——— luteus, *Gould*				*			— 83.
Cuculus optatus, *Gould*				*			— 84.
——— inornatus, *Vig. & Horsf.*	*	*	*		*		— 85.
——— cineraceus, *Vig. & Horsf.*	*	*	*		*		— 86.
——— insperatus, *Gould*	*						— 87.
——— dumetorum				*			Intro., p. lx.
Chrysococcyx osculans, *Gould*	*	*	*				Vol. IV. Pl. 88.
——— lucidus	*	*	*	*	*	New Zealand?	— 89.
Scythrops Novæ-Hollandiæ, *Lath.*	*			*			— 90.
Eudynamys Flindersii	*			*			— 91.
Centropus Phasianus	*						— 92.
——— macrourus				*			Intro., p. lxi.
——— melanurus				*			Intro., p. lxi.
Climacteris scandens, *Temm.*	*	*					Vol. IV. Pl. 93.
——— rufa, *Gould*			*				— 94.
——— erythrops, *Gould*	*						— 95.
——— melanotus, *Gould*				*			— 96.
——— melanura, *Gould*				*			— 97.
——— picumnus, *Temm.*	*	*					— 98.
Orthonyx spinicaudus, *Temm.*	*						— 99.
Ptiloris paradiseus, *Swains.*	*			*			— 100.
Sittella chrysoptera	*						— 101.
——— leucocephala, *Gould*	*			*			— 102.
——— leucoptera, *Gould*				*			— 103.
——— pileata, *Gould*		*	*				— 104.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

Name of Species.	South-eastern portion of Australia or New South Wales.	South Australia.	Swan River or Western Australia.	Northern Australia.	Van Diemen's Land.	Extra Australian.	Number of Volume and Plate.
Cacatua galerita	*	*	*	*	*		Vol. V. Pl. 1.
——— Leadbeaterii	*	*	*				— 2.
——— sanguinea, *Gould*		*		*			— 3.
——— Eos	*	*		*			— 4.
Licmetis nasicus	*	*					— 5.
——— pastinator			*				Intro., p. lxiii.
Nestor productus, *Gould*						Phillip Island	Vol. V. Pl. 6.
Calyptorhynchus Banksii	*						— 7.
——— macrorhynchus, *Gould*				*			— 8.
——— naso, *Gould*			*				— 9.
——— Leachii	*	*					— 10.
——— funereus	*						— 11.
——— xanthonotus, *Gould*		*?			*		— 12.
——— Baudinii, *Vig.*			*				— 13.
Callocephalon galeatum	*				*		— 14.
Polytelis Barrabandii	*						— 15.
——— melanura		*	*				— 16.
Aprosmictus scapulatus	*						— 17.
——— erythropterus	*			*			— 18.
Platycercus semitorquatus			*				— 19.
——— Bauerii		*					— 20.
——— Barnardii, *Vig. & Horsf.*	*	*					— 21.
——— Adelaidiæ, *Gould*		*					— 22.
——— Pennantii	*	*					— 23.
——— flaviventris					*		— 24.
——— flaveolus, *Gould*	*	*					— 25.
——— palliceps, *Vig.*	*						— 26.
——— eximius	*				*		— 27.
——— splendidus, *Gould*	*						— 28.
——— icterotis			*				— 29.
——— ignitus, *Lead.*	*?						— 30.
——— Brownii				*			— 31.
——— pileatus, *Vig.*			*				— 32.
Psephotus hæmatogaster, *Gould*	*	*					— 33.
——— pulcherrimus, *Gould*	*						— 34.
——— multicolor	*	*					— 35.
——— hæmatonotus, *Gould*	*	*					— 36.
Euphema chrysostoma	*?				*		— 37.
——— elegans, *Gould*	*	*	*				— 38.
——— aurantia, *Gould*		*			*		— 39.
——— petrophila, *Gould*		*	*				— 40.
——— pulchella	*						— 41.
——— splendida, *Gould*		*	*				— 42.
——— Bourkii	*	*					— 43.
Melopsittacus undulatus	*	*	*	*			— 44.
Nymphicus Novæ-Hollandiæ	*	*	*	*			— 45.
Pezoporus formosus	*	*	*		*		— 46.
Lathamus discolor	*				*		— 47.
Trichoglossus Swainsonii, *Jard. & Selby*	*	*			*		— 48.
——— rubritorquis, *Vig. & Horsf.*				*			— 49.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

Name of Species.	South-eastern portion of Australia or New South Wales.	South Australia.	Swan River or Western Australia.	Northern Australia.	Van Diemen's Land.	Extra Australian.	Number of Volume and Plate.
Trichoglossus chlorolepidotus	*						Vol. V. Pl. 50.
—— versicolor, *Vig.*				*			— 51.
—— concinnus	*	*			*		— 52.
—— porphyrocephalus, *Diet.*		*	*				— 53.
—— pusillus	*	*			*		— 54.
Ptilinopus Swainsonii, *Gould*	*						— 55.
—— Ewingii, *Gould*				*			— 56.
—— superbus				*			— 57.
Carpophaga magnifica	*						— 58.
—— leucomela	*						— 59.
—— luctuosa				*			— 60.
Lopholaimus Antarcticus	*						— 61.
Chalcophaps chrysochlora	*						— 62.
—— longirostris				*			Intro., p. lxix.
Leucosarcia picata	*						Vol. V. Pl. 63.
Phaps chalcoptera	*	*	*	*	*		— 64.
—— elegans	*	*	*		*		— 65.
—— histrionica, *Gould*	*	*		*			— 66.
Geophaps scripta	*						— 67.
—— Smithii				*			— 68.
—— plumifera, *Gould*		*		*			— 69
Ocyphaps Lophotes	*	*					— 70.
Petrophassa albipennis, *Gould*				*			— 71.
Geopelia humeralis	*			*			— 72.
—— tranquilla, *Gould*	*	*					— 73.
—— placida, *Gould*				*			Intro., p. lxxi.
—— cuneata	*	*	*	*			Vol. V. Pl. 74.
Macropygia Phasianella	*						— 75.
Didunculus strigirostris						Samoan Islands	— 76.
Talegalla Lathami	*						— 77.
Leipoa ocellata, *Gould*		*	*				— 78.
Megapodius Tumulus, *Gould*				*			— 79.
Pedionomus torquatus, *Gould*	*	*					— 80.
Turnix melanogaster, *Gould*	*						— 81.
—— varius	*	*	*		*		— 82.
—— scintillans, *Gould*			*				— 83.
—— melanotus, *Gould*				*			— 84.
—— castanotus, *Gould*				*			— 85.
—— pyrrhothorax, *Gould*	*	*					— 86.
—— velox, *Gould*	*	*					— 87.
Coturnix pectoralis, *Gould*	*	*	*	*	*		— 88.
Synoïcus Australis	*	*	*		*		— 89.
—— Diemenensis, *Gould*					*		— 90.
—— sordidus, *Gould*		*					— 91.
——? Chinensis	*	*		*		Ind. Isl. and China	— 92.
Dromaius Novæ-Hollandiæ	*	*	*	*	*		Vol. VI. Pl. 1.
Apteryx Australis, *Shaw*						New Zealand	— 2.
—— Owenii, *Gould*						New Zealand	— 3.
Otis Australis	*	*	*	*			— 4.
Œdicnemus grallarius	*	*	*	*?			— 5.
Esacus magnirostris				*			— 6.
Hæmatopus longirostris, *Vieill.*	*	*	*	*	*		— 7.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

Name of Species.	South-eastern portion of Australia or New South Wales.	South Australia.	Swan River or Western Australia.	Northern Australia.	Van Diemen's Land.	Extra Australian.	Number of Volume and Plate.
Hæmatopus fuliginosus, *Gould*	*	*	*	*	*		Vol. VI. Pl. 8.
Lobivanellus lobatus	*	*			*		— 9.
——— personatus, *Gould*				*			— 10.
Sarciophorus pectoralis	*	*			*		— 11.
Squatarola Helvetica	*	*	*	*	*		— 12.
Charadrius xanthocheilus, *Wagl.*	*	*	*	*	*		— 13.
——— veredus, *Gould*	*			*			— 14.
Eudromias Australis, *Gould*		*					— 15.
Hiaticula bicincta	*				*		— 16.
——— ruficapilla	*	*	*	*	*		— 17.
——— monacha	*	*	*		*		— 18.
——— inornata, *Gould*	*	*	*	*	*		— 19.
——— nigrifrons	*	*	*				— 20.
Erythrogonys cinctus, *Gould*	*	*					— 21.
Glareola grallaria, *Temm.*	*			*			— 22.
——— Orientalis, *Leach*				*			— 23.
Himantopus leucocephalus, *Gould*	*	*	*	*			— 24.
——— Novæ-Zelandiæ, *Gould*						New Zealand	— 25.
Chladorhynchus pectoralis		*	*				— 26.
Recurvirostra rubricollis, *Temm.*	*	*	*	*	*		— 27.
Limosa Melanuroides, *Gould*				*			— 28.
——— uropygialis, *Gould*	*	*	*	*	*		— 29.
Schœniclus Australis	*	*	*	*	*		— 30.
——— albescens	*	*	*	*	*		— 31.
——— subarquatus	*	*	*	*	*		— 32.
——— magnus, *Gould*			*			Japan	— 33.
Terekia cinerea	*					India and Europe	— 34.
Actitis empusa, *Gould*	*	*	*	*			— 35.
Glottis Glottoïdes	*	*	*	*	*		— 36.
Totanus stagnatilis	*					India and Europe	— 37.
——— griseopygius, *Gould*				*			— 38.
Strepsilas Interpres	*	*	*	*	*	The sea-coasts of all countries	— 39.
Scolopax Australis, *Lath.*	*	*	*	*	*		— 40.
Rhynchæa Australis, *Gould*	*	*	*	*			— 41.
Numenius Australis, *Gould*	*	*	*	*	*		— 42.
——— uropygialis, *Gould*	*	*	*	*	*		— 43.
——— minutus, *Gould*	*		*	*			— 44.
Geronticus spinicollis	*			*			— 45.
Threskiornis strictipennis	*			*			— 46.
Falcinellus igneus	*	*		*			— 47.
Grus Australasianus, *Gould*	*			*			— 48.
Platalea flavipes, *Gould*	*	*		*			— 49.
——— regia, *Gould*	*	*		*			— 50.
Mycteria Australis, *Lath.*	*			*			— 51.
Ardea pacifica, *Lath.*	*	*	*	*			— 52.
—— Novæ-Hollandiæ, *Lath.*	*	*	*		*		— 53.
—— rectirostris, *Gould*				*		Borneo?	— 54.
—— leucophæa, *Gould*		*				India?	— 55.
Herodias syrmatophorus, *Gould*	*	*	*	*			— 56.
——— plumiferus, *Gould*	*			*			— 57.
——— immaculatus, *Gould*			*	*			— 58.
——— pannosus, *Gould*	*						— 59.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

Name of Species.	South-eastern portion of Australia or New South Wales.	South Australia.	Swan River or Western Australia.	Northern Australia.	Van Diemen's Land.	Extra Australian.	Number of Volume and Plate.
Herodias? jugularis	*	*	*	*		New Zealand	Vol. VI. Pl. 60.
——— Greyi				*			— 61.
——— picata, *Gould*				*			— 62.
Nycticorax Caledonicus	*	*	*	*			— 63.
Botaurus Australis, *Gould*	*	*	*		*		— 64.
Ardetta flavicollis	*	*	*	*			— 65.
——— macrorhyncha, *Gould*	*						— 66.
——— stagnatilis, *Gould*				*			— 67.
——— pusilla	*						— 68.
Porphyrio melanotus, *Temm.*	*	*		*	*		— 69.
——— bellus, *Gould*			*				— 70.
Tribonyx Mortieri, *DuBus*					*		— 71.
——— ventralis, *Gould*	*	*	*				— 72.
Gallinula tenebrosa, *Gould*	*	*					— 73.
Fulica Australis, *Gould*	*	*	*				— 74.
Parra gallinacea, *Temm.*				*		New Guinea	— 75.
Rallus pectoralis, *Cuv.*	*	*	*	*	*		— 76.
——— Lewinii, *Swains.*		*	*		*		— 77.
Eulabeornis castaneoventris, *Gould*				*			— 78.
Porzana fluminea, *Gould*	*	*		*	*		— 79.
——— palustris, *Gould*	*	*		*	*		— 80.
——— leucophrys, *Gould*				*			— 81.
———? immaculata	*	*	*		*		— 82.
Cereopsis Novæ-Hollandiæ, *Lath.*	*	*			*		Vol. VII. Pl. 1.
Anseranas melanoleuca	*	*		*			— 2.
Bernicla jubata	*	*	*				— 3.
Nettapus pulchellus, *Gould*				*			— 4.
——— albipennis, *Gould*	*						— 5.
Cygnus atratus	*	*	*		*		— 6.
Casarca Tadornoïdes	*	*	*		*		— 7.
Tadorna Radjah				*			— 8.
Anas superciliosa, *Gmel.*	*	*	*		*		— 9.
—— nævosa, *Gould*		*	*				— 10.
—— punctata, *Cuv.*	*	*	*		*		— 11.
Spatula Rhynchotis	*	*	*		*		— 12.
Malacorhynchus membranaceus	*	*	*		*		— 13.
Dendrocygna arcuata	*			*			— 14.
——— Eytoni, *Gould*		*	*	*			— 15.
Nyroca Australis, *Gould*	*	*	*	*	*		— 16.
Erismatura Australis			*				— 17.
Biziura lobata	*	*	*		*		— 18.
Larus Pacificus	*	*	*		*		— 19.
Xema Jamesonii	*	*	*	*?	*		— 20.
Lestris Catarractes	*	*			*		— 21.
Sylochelidon strenuus	*	*	*		*		— 22.
Thalasseus Pelecanoïdes				*			— 23.
——— poliocercus, *Gould*	*	*	*		*		— 24.
——— Torresii, *Gould*				*		India	— 25.
Sterna melanorhyncha, *Gould*	*	*			*		— 26.
—— gracilis, *Gould*			*				— 27.
—— melanauchen, *Temm.*				*		Indian Islands	— 28.
Sternula Nereis, *Gould*	*	*	*		*		— 29.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Gelochelidon macrotarsus					*?		Intro., p. xcv.
Gygis candida				*			Vol. VII. Pl. 30.
Hydrochelidon fluviatilis, *Gould*	*	*	*				— 31.
Onychoprion fuliginosus?			*	*			— 32.
——— Panaya			*	*			— 33.
Anoüs stolidus	*		*	*			— 34.
—— melanops, *Gould*			*				— 35.
—— leucocapillus, *Gould*				*			— 36.
—— cinereus, *Gould*	*			*			— 37.
Diomedea exulans, *Linn.*	*	*	*		*	Southern Ocean	— 38.
——— brachyura, *Temm.*				*?		N. Pacific Ocean?	— 39.
——— cauta, *Gould*	*	*	*		*		— 40.
——— culminata, *Gould*	*	*	*		*	Southern Ocean	— 41.
——— chlororhynchos, *Lath.*	*	*	*		*	Southern Ocean	— 42.
——— melanophrys, *Temm.*	*	*	*		*	Southern Ocean	— 43.
——— fuliginosa	*	*	*		*	Southern Ocean	— 44.
——— olivaceorhyncha, *Gould*				*?		N. Pacific Ocean?	Intro., p. xcvii.
Procellaria gigantea	*	*	*		*		Vol. VII. Pl. 45.
——— Æquinoctialis					*?	S. Indian Ocean	Intro., p. xcvii.
——— conspicillata, *Gould*					*	S. Indian Ocean	Vol. VII. Pl. 46.
——— hasitata, *Kuhl.*	*	*	*		*	Southern Ocean	— 47.
——— Atlantica, *Gould*					*?	{S. Pacific and S. Atlantic Oceans}	Intro., p. xcvii.
——— macroptera, *Smith*					*?	South Pacific	Intro., p. xcviii.
——— Solandrii, *Gould*	*	*			*		Intro., p. xcviii.
——— Glacialoïdes, *Smith*	*				*	{New Zealand and S. Pacific}	Vol. VII. Pl. 48.
——— Lessonii, *Garn.*	*	*	*		*		— 49.
——— mollis, *Gould*					*?	{S. Indian and S. Atlantic Oceans}	— 50.
——— Cookii, *G. R. Gray*	*	*	*		*		— 51.
——— cœrulea, *Gmel.*	*	*	*		*	Southern Ocean	— 52.
——— flavirostris, *Gould*					*?	S. Indian Ocean	Intro., p. xcviii.
——— nivea, *Gmel.*					*?	Antarctic Seas	Intro., p. xcviii.
——— Antarctica, *Gmel.*					*?	Antarctic Seas	Intro., p. xcviii.
Daption Capensis	*	*	*		*	Southern Ocean	Vol. VII. Pl. 53.
Prion Turtur	*	*	*		*	Southern Ocean	— 54.
—— vittatus, *Cuv.*	*	*	*		*	Southern Ocean	— 55.
—— Banksii	*	*	*		*	Southern Ocean	Intro., p. xcix.
—— Ariel, *Gould*						Bass's Straits	Intro., p. xcix.
Puffinus brevicaudus, *Brandt*	*	*	*		*		Vol. VII. Pl. 56.
——— carneipes, *Gould*			*				— 57.
——— sphenurus, *Gould*			*				— 58.
——— assimilis, *Gould*	*						— 59.
Puffinuria Urinatrix	*	*			*		— 60.
Thalassidroma marina, *Less.*			*				— 61.
——— melanogaster, *Gould*	*	*	*		*	S. Indian Ocean	— 62.
——— leucogaster, *Gould*	*	*	*		*	S. Indian Ocean	— 63.
——— Tropica, *Gould*						{Tropic, in the Atlantic}	Intro., p. c.
——— Nereis, *Gould*	*	*	*		*		Vol. VII. Pl. 64.
——— Wilsonii, *Bonap.*	*	*	*		*	{S. Ocean and the temperate Lat. of the northern}	— 65.
Phalacrocorax Carboïdes, *Gould*	*	*	*		*		— 66.
——— sulcirostris	*	*	*				— 67.
——— hypoleucus	*	*	*			New Zealand?	— 68.

TABLE OF THE RANGE OR DISTRIBUTION OF THE SPECIES.

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Phalacrocorax leucogaster, *Gould*	*	*			*		Vol. VII. Pl. 69.
——— melanoleucus, *Vieill.*	*	*	*		*		— 70.
——— punctatus						New Zealand	— 71.
Attagen Ariel, *Gould*	*			*			— 72.
——— Aquila?				*			Intro., p. c.
Phaeton phœnicurus	*			*			Vol. VII. Pl. 73.
Pelecanus conspicillatus, *Temm.*	*	*	*	*	*		— 74.
Plotus Novæ-Hollandiæ, *Gould*	*	*		*			— 75.
Sula Australis, *Gould*	*	*	*		*		— 76.
—— personata, *Gould*	*			*			— 77.
—— fusca, *Briss.*				*			— 78.
—— piscator, *Linn.*				*			— 79.
Podiceps Australis, *Gould*	*	*	*		*		— 80.
——— gularis, *Gould*	*	*	*		*		— 81.
——— poliocephalus, *Jard. & Selb.*	*	*	*		*		— 82.
Eudyptes chrysocome					*	The I. of Tristan D'Acunha, St. Paul's and Amsterdam	— 83.
Spheniscus minor, *Temm*	*	*	*		*		— 84.
——— undina, *Gould*					*		— 85.

On a review of the above Table it will be seen that 385 species inhabit New South Wales, 289 South Australia, 243 Western Australia, 230 Northern Australia, and 181 Van Diemen's Land; and that of these, 88 are peculiar to New South Wales; 16 to South Australia; 36 to Western Australia; 105 to Northern Australia, and 32 to Van Diemen's Land.

The great excess in the number of species inhabiting New South Wales is doubtless attributable to the singular belt of luxuriant vegetation, termed brushes, which stretches along the southern and south-eastern coasts between the ranges and the sea, and which is tenanted by a fauna peculiarly its own.

Although this part of the continent is inhabited by a larger number of species than any other, it is a remarkable fact that the species peculiar to Northern Australia are much more numerous than those peculiar to New South Wales.

It is curious to observe also, that while Southern Australia is inhabited by a much larger number of species than Western Australia, those peculiar to the former are not half so numerous as those peculiar to the latter.

The more southern position, and consequently colder climate of Van Diemen's Land, will readily account for the paucity of species found in that island.

By the term peculiar, I do not mean to convey the idea that the birds are strictly confined to the respective countries, but that as yet they have not been found elsewhere.

LIST OF PLATES.

VOLUME I.

AQUILA FUCOSA: *Cuv.*

J. Gould and H.C. Richter del.t *C. Hullmandel imp.*

AQUILA FUCOSA, *Cuv.*

Wedge-tailed Eagle.

Mountain Eagle of New South Wales, Collins, New South Wales, vol. ii. pl. in p. 288.
Falco fucosus, Cuv. Règn. Anim., 1st Edit. pl. 3. f. 1.—Temm. Pl. Col. 32.
Aquila fucosa, Cuv. Règn. Anim., 2nd Edit. pl. 3. f. 1.—Vig. and Horsf. in Linn. Trans., vol. xv. p. 188.—Less. Traité d'Orn., p. 39.—Steph. Cont. Shaw's Gen. Zool., vol. xiv. p. 16.
Aquila albirostris, Vieill. 2nde Edit. du Nouv. Dict. d'Hist. Nat., tom. i. p. 229.—Ib. Ency. Méth. Orn., 3ieme part, p. 1191?
Wol-dja, Aborigines of the mountain and lowland districts of Western Australia.
Eagle Hawk, Colonists of New South Wales.

This noble bird is so universally spread over the southern portion of Australia, that it is quite unnecessary for me to enter more minutely into detail respecting the extent of its range, than to say that it is equally distributed over the whole of the country from Swan River on the west to Moreton Bay on the east; it is also as numerous in Van Diemen's Land, and on all the larger islands in Bass's Straits, being of course more plentiful in such districts as are suited to its habits, and where the character of the country is congenial to the animals upon which it subsists. I have not yet seen it in any collection, either from the northern portion of Australia or any other country. In all probability it will hereafter be found to extend its range as far towards the tropics in the southern hemisphere as the Golden Eagle (*Aquila chrysaëta*) does in the northern: the two birds are, in fact, beautiful analogues of each other in their respective habitats, and doubtless perform similar offices in the great scheme of creation.

All that has been said by previous writers respecting the courage, power and rapacity of the one applies with equal force to the other; in size they are also nearly alike, but the lengthened and wedge-shaped form of its tail gives to the Australian bird a far more pleasing and elegant contour.

I find by my notes that one of those I killed weighed nine pounds, and measured six feet eight inches from tip to tip of the opposite pinions; but far larger individuals than this have, I should say, come under my notice. The natural disposition of the Wedge-tailed Eagle leads it to frequent the interior portion of the country rather than the shores or the neighbourhood of the sea. It preys indiscriminately on all the smaller species of Kangaroo which tenant the plains and the open crowns of the hills; and whose retreats, from the wonderful acuteness of its vision, it descries while soaring and performing those graceful evolutions and circles in the air, so frequently seen by the residents of the countries it inhabits: neither is the noble Bustard, whose weight is twice that of its enemy, and who finds a more secure asylum on the extensive plains of the interior than most animals, safe from its attacks; its tremendous stoop and powerful grasp, in fact, carry inevitable destruction to its victim, be it ever so large and formidable. The breeders of sheep find in this bird an enemy which commits extensive ravages among their lambs, and consequently in its turn it is persecuted unrelentingly by the shepherds of the stock-owners, who employ every artifice in their power to effect its extirpation, and in Van Diemen's Land considerable rewards are offered for the accomplishment of the same end. The tracts of untrodden ground and the vastness of the impenetrable forests will, however, for a long series of years to come afford it an asylum, secure from the inroads of the destroying hand of man; still with every one waging war upon it, its numbers must necessarily be considerably diminished. For the sake of the refuse thrown away by the Kangaroo hunters it will often follow them for many miles, and even for days together. I clearly ascertained that although it mostly feeds upon living prey, it does not refuse to devour carrion or animals almost in a state of putridity. During one of my journeys into the interior to the northward of Liverpool Plains, I saw no less than thirty or forty assembled together around the carcase of a dead bullock, some gorged to the full, perched upon the neighbouring trees, the rest still in the enjoyment of the feast.

Those nests that I had opportunities of observing were placed on the most inaccessible trees, and were of a very large size, nearly flat, and built of sticks and boughs. The eggs, I regret to say, I could never procure, although I have shot the birds from their aerie, in which there were eggs, but which it was quite impossible to obtain; no one but the aborigines, of which none remain in Van Diemen's Land, being capable of ascending such trees, many of which rise to more than a hundred feet before giving off a branch.

The adults have the head, throat, and all the upper and under surface blackish brown, stained on the edges and extremities of many of the feathers, particularly the wing and upper tail-coverts with pale brown; back and sides of the neck rusty-red; irides hazel; cere and space round the eye yellowish white; bill yellowish horn-colour, passing into black at the tip; feet light yellow.

The young have the head and back of the neck deep fawn-colour, striated with lighter; all the feathers of the upper surface largely tipped and stained with fawn and rusty-red; tail indistinctly barred near the extremity; throat and breast blackish brown, each feather largely tipped with rufous; the abdomen blackish brown.

The figure is about one-third of the natural size.

AQUILA MORPHNOÏDES: *Gould*

J. Gould and H.C. Richter del.t

C. Hullmandel Imp.

AQUILA MORPHNOÏDES, *Gould.*

Little Australian Eagle.

Aquila Morphnoïdes, Gould in Proc. of Zool. Soc., Part VIII. p. 161.

I SHALL perhaps better convey an idea of the rarity of this small but true species of *Aquila*, by stating that the specimen from which the accompanying drawing was made, and which forms part of my own collection, is the only one I have ever seen either living or dead. It is the second species of the genus known to inhabit Australia, and it is singular that while the Wedge-tailed Eagle is so common, the present species should be so rare, or, perhaps, so restricted in its range of habitat. This Eagle is as clearly an analogue of the *Aquila pennata* of Europe, as the Wedge-tailed Eagle is of the Golden. Its specific distinctions from *Aq. pennata* are its large size, the total absence of the white mark on the shoulder, and the cere and feet being of a lead-colour instead of yellowish-olive.

The part of Australia where I shot the specimen above alluded to, was Yarrundi on the River Hunter, on a portion of Mr. Coxen's estate near Tooloogan. I was led to the discovery of the bird by finding its nest containing a single egg, upon which it had been sitting for some time. I regret to add, that although I several times visited the nest after killing the bird, all my attempts at procuring the other sex were entirely unsuccessful. The nest was of a large size and was placed close to the hole, about one-fourth of the height from the top of one of the highest gum-trees; the egg was bluish white with very faint traces of brown blotchings, two inches and two lines long by one inch and nine lines broad.

Face, crown of the head and throat blackish brown, tinged with rufous, giving it a striated appearance, bounded in front above the nostrils with whitish; feathers at the back of the head, which are lengthened into a short occipital crest, back of the head, back, and sides of the neck, all the under surface, thighs and under tail-coverts rufous, all but the thighs and under tail-coverts with a stripe of black down the centre of each feather; back, rump and wings brown, the centre of the wing lighter; primaries brownish black, becoming darker at the tip, and barred throughout with greyish buff, which is conspicuous on the under surface, but scarcely perceptible on the upper, except at the base of the inner webs; under surface of the wing mottled with reddish brown and black; tail mottled greyish brown, crossed by seven or eight distinct bars of blackish brown, the tips being lighter; cere and bill lead-colour, passing into black at the tip; eye reddish hazel, surrounded by a narrow blackish brown eyelash; feet and toes very light lead-colour.

The figure is about three-fourths of the natural size.

ICHTHYIAËTUS LEUCOGASTER.

J.&E. Gould del.t

C.Bullmandel Imp.

ICHTHYIAËTUS LEUCOGASTER.

White-bellied Sea-eagle.

Falco leucogaster, Lath. Ind. Orn., vol. i. p. 13.—Gmel. Linn., vol. i. p. 157.—Temm. Pl. Col. 49.
White-bellied Eagle, Lath. Gen. Syn., vol. i. p. 33.—Ib. Gen. Hist., vol. i. p. 242.
Haliætus leucogaster, Gould, Syn. Birds of Australia, Part III.
——— *sphenurus*, Gould in Proc. of Zool. Soc., Part V. 1837, p. 138.—Ib. Syn. Birds of Australia, Part III. young.

I HAVE little doubt that this noble species of Sea-eagle will be found to extend its range over all those portions of the Australian continent that present situations suitable to its peculiar habits. It has been observed along the whole southern coast, from Moreton Bay on the east to Swan River on the west, including Tasmania and all the small islands in Bass's Straits. It has neither the boldness nor the courage of the Wedge-tailed Eagle, *Aquila fucosa*, whose quarry is frequently the Kangaroo and the Bustard; and although, at first sight, its appearance would warrant the supposition that it pursues the same means for obtaining living prey as the true *Pandion*, by the act of submersion, yet I can affirm that this is not the case, and that it never plunges beneath the surface of the water, but depends almost entirely for its subsistence upon the dead Cetacea, fish, etc., that may be thrown up by the sea and left on the shore by the receding waves; to which, in all probability, are added living mollusks and other lower marine animals: its peculiar province is consequently the sea-shore, and it especially delights to take up its abode on the borders of small bays and inlets of the sea, and rivers as high as they are influenced by the tide; nevertheless, it is to be met with, though more rarely, on the borders of lakes and inland streams, but never in the forests or sterile plains of the interior. As it is almost invariably seen in pairs, it would appear to be permanently mated; each pair inhabiting a particular bay or inlet, to the exclusion of others of the same species. Unless disturbed or harassed, the White-bellied Sea-eagle does not shun the abode of man, but becomes fearless and familiar. Among the numerous places in which I observed it was the Cove of Sydney, where one or two were daily seen performing their aërial gyrations above the shipping and over the tops of the houses: if I mistake not, they were the same pair of birds that found a safe retreat in Elizabeth Bay, skirting the property of Alexander Macleay, Esq., and where they might be frequently seen perched on the bare limb of a tree by the water's edge, forming an interesting and ornamental addition to the scene. In Tasmania it is especially abundant in D'Entrecasteaux Channel, and along the banks of the Derwent and the Tamar; and there was scarcely one of the little islets in Bass's Straits but was inhabited by a pair of these birds, which, in these cases, subsisted in a great measure on the Petrels and Penguins, which resort there in great numbers to breed, and which are very easily captured.

With regard to the nidification of the White-bellied Sea-eagle, I could not fail to remark how readily the birds accommodate themselves to the different circumstances in which they are placed; for while on the main land they invariably construct their large flat nest on a fork of the most lofty trees, on the islands, where not a tree is to be found, it is placed on the flat surface of a large stone, the materials of which it is formed being twigs and branches of the Barilla, a low shrub which is there plentiful. While traversing the woods in Recherche Bay, I observed a nest of this species near the top of a noble stringy bark tree (*Eucalyptus*), the bole of which measured forty-one feet round, and was certainly upwards of 200 feet high; this had probably been the site of a nest for many years, being secure even from the attacks of the natives, expert as they are at climbing. On a small island, of about forty acres in extent, opposite the settlement of Flinders, I shot a fully-fledged young bird, which was perched upon the cone of a rock; and I then, for the first time, discovered my error in characterizing, in the "Proceedings of the Zoological Society of London," and in my "Synopsis," the bird in this state as a different species, under the name of *Haliætus sphenurus*, an error which I take this opportunity to correct. The eggs are almost invariably two

in number, of a dull white, faintly stained with reddish brown, two inches and nine lines long, by two inches and three lines broad.

This Sea-eagle may be frequently seen floating about in the air above its hunting ground, in circles, with the tips of its motionless wings turned upwards; the great breadth and roundness of the pinions, and the shortness of the neck and tail, giving it no inapt resemblance to a large butterfly.

The sexes are alike in plumage, but the female is considerably larger than her mate.

Adults have the head, neck, all the under surface, and the terminal third of the tail-feathers white; primaries and base of the tail blackish brown, the remainder of the plumage grey; irides dark brown; bill bluish horn-colour, with the tip black; cere, lores, and horny space over the eye bluish lead-colour slightly tinged with green; legs and feet yellowish white; nails black.

The young have the head, back of the neck and throat light buff; all the upper surface and wings light chocolate-brown, each feather tipped with buffy white; tail light buffy white at the base, passing into deep brown towards the tip, which is white; chest brown, each feather margined with buff; abdomen mingled buff and brown, the latter colour occupying the margins of the feathers; under tail-coverts, and the under surface of the tail-feathers white; bill brown; feet yellowish white.

The Plate represents an old and a young bird, the former about half the natural size.

HALIASTUR LEUCOSTERNUS.

J.Gould and H.C.Richter del et lith.

C.Hullmandel Imp.

HALIASTUR LEUCOSTERNUS, *Gould.*

White-breasted Sea-Eagle.

White-breasted Rufous Eagle, Lath. Gen. Hist., vol. i. p. 218.
Haliæëtus lecosternus, Gould in Proc. of Zool. Soc., Part V. p. 138; and in Syn. Birds of Australia, Part III.
Girrenera, Aborigines of New South Wales.
Me-ne-ü-roo, Aborigines of the Cobourg Peninsula.

In size and in the general markings of its plumage, this beautiful species is more closely allied to the *Falco Ponticerianus* of Latham, than to any other; but the total absence of the coloured stripe down the centre of the white feathers which clothe the head, neck and breast of the Australian bird, at once distinguishes it from its Indian ally.

The White-breasted Sea Eagle is very common on the northern and eastern portions of Australia, where it takes up its abode in the most secluded and retired parts of bays and inlets of the sea. Upon one occasion only did I meet with it within the colony of New South Wales, but I have several times received specimens from Moreton Bay; the individual alluded to above was observed soaring over the brushes of the Lower Hunter. The chief food of this species is fish, which it captures either by plunging down or by dexterously throwing out its foot while flying close to the surface of the water; such fish as swim near the surface being of course the only ones that become a prey to it: sometimes the captured fish is borne off to the bird's favourite perch, which is generally a branch overhanging the water, while at others, particularly if the bird be disturbed, it is borne aloft in circles over the head of the intruder and devoured while the bird is on the wing, with apparent ease. Its flight is slow and heavy near the ground, but at a considerable elevation it is easy and buoyant.

"This species," says Mr. Gilbert in his notes from Port Essington, "is pretty generally spread throughout the Peninsula and the neighbouring islands, and may be said to be tolerably abundant. It breeds from the beginning of July to the end of August. I succeeded in finding two nests, each of which contained two eggs, but I am told that three are sometimes found. The nest is formed of sticks with fine twigs or coarse grass as a lining; it is about two feet in diameter and built in a strong fork of the dead part of a tree: both of those I found were about thirty feet from the ground and about two hundred yards from the beach. The eggs, which are two inches and two lines in length by one inch and eight lines in breadth, are of a dirty white, having the surface spread over with numerous hair-like streaks and very minute dots of reddish brown, the former prevailing and assuming the form of hieroglyphics; these singular markings being most numerous at one end, sometimes at the larger at others at the smaller, the difference even occurring in the two eggs of the same nest."

The sexes are so much alike in colour that it is by the greater size of the female alone that they are to be distinguished; the young, on the other hand, differ considerably from the adult.

Head, neck, chest and upper part of the abdomen snow white; back, wings, lower part of the abdomen, thighs, upper and under tail-coverts rich chestnut red; first six primaries chestnut at the base and black at the tip; tail-feathers chestnut red on their upper surface, lighter beneath, the eight central feathers tipped with greyish white; irides light reddish yellow; cere pale yellowish white; orbits smoke-grey; upper mandible light ash-grey at the base, passing into sienna-yellow and terminating at the tip in light horn-colour; under mandible smoke-grey; tarsi cream-yellow, much brighter on all the large scales on the front of the tarsi and toes.

The figures are those of an adult and a young bird two-thirds of the natural size.

HALIASTUR? SPHENURUS.

J. Gould and H.C. Richter del et lith.

C. Hullmandel Imp.

HALIASTUR? SPHENURUS.

Whistling Eagle.

Milvus sphenurus, Vieill. 2nde Edit. du Nouv. Dict. d'Hist. Nat., tom. xx. p. 564.—Ibid. Gal. des Ois., tom. i. p. 41. pl. 15.—Ibid. Ency. Méth. Orn., Part III. p. 1204.
Haliæetus canorus, Vig. and Horsf. in Linn. Trans., vol. xv. p. 187.—Gould. in Syn. Birds of Australia, Part III.
Moru and *Wirwin*, Aborigines of New South Wales.
En-n̈a-jook, Aborigines of the Cobourg Peninsula.
J̈an-doo, Aborigines of the lowland districts of Western Australia.
Whistling Hawk, Colonists of New South Wales.
Little Swamp Eagle, Colonists of Western Australia.

This species of Eagle has been observed in every portion of Australia yet visited by Europeans, but is more abundant in New South Wales than in any other part of the continent; I have never yet seen an example from Van Diemen's Land, and I am consequently led to believe that it rarely if ever visits that island. As might be expected from its almost universal diffusion, the *Haliastur? sphenurus* is not a migratory bird; at least in New South Wales it is equally as numerous in summer as it is in winter; not that it is to be observed in the same locality at all times, the greater or lesser abundance of its favourite food inducing it to wander from one district to another, wherever the greatest supply is to be procured. Displaying none of the courage or intrepidity of the true Eagles, it never attacks animals of a large size; but preys upon carrion, small and feeble quadrupeds, birds, lizards, insects and fish, and while on the one hand it is the pest of the poultry yard, on the other no species of the *Falconidæ* effects more good during the fearful visitations of the caterpillar, a scourge of no infrequent occurrence in Australia. In 1839 it was my lot to witness the inroad of vast swarms of caterpillars in the region of the Upper Hunter River, and at the same time I observed many hundreds of the Whistling Eagle assembled on the Downs near Scone preying solely on them, thus tending in a great measure to check their progress, and certainly to lessen their numbers; so partial, in fact, is the Whistling Eagle to this kind of food that the appearance of one is the certain prelude to the appearance of the other. The *Haliastur? sphenurus* is little alarmed by the presence of man, and when sitting on the branches of low trees, will often admit of a near approach even to within a few feet: as an evidence of its indifference, I may mention that, having winged a very rare Tern on the surface of a lagoon, a Whistling Eagle immediately descended and carried it off; and although this circumstance took place at a very short distance from me, neither the shouts of the natives nor of myself deterred the Eagle from bearing off the bird in triumph, to my extreme vexation. It is generally to be seen in pairs, inhabiting alike the brushes near the coast and the forests of the interior of the country. It is incessantly hovering over the harbours, and sides of rivers and lagoons, for any floating animal substance that may present itself on the surface of the water or be cast on the banks; and it is nowhere more common or more generally to be seen than over the harbour of Port Jackson. Its flight, when high in the air, is buoyant and easy, and it frequently soars to a great altitude, uttering at the same time a shrill whistling cry, from which circumstance it has obtained from the colonists the name of the Whistling Hawk, and by which it is at once distinguished from all the other members of the family inhabiting Australia.

The nest, which is constructed of sticks and fibrous roots, is frequently built on the topmost branches of the lofty *Casuarinæ*, growing by the sides of creeks and rivers. The eggs, which are laid during the months of November and December, are usually two in number, but sometimes single; they are two inches and three lines long by one inch and nine lines broad, and are of a bluish white slightly tinged with green, the few brown markings with which they are varied being very obscure and appearing as if beneath the surface of the shell. I once found a nest of this species in the side of which had been constructed that of the beautiful little Finch called *Amadina Lathami*, and both birds sitting on their respective eggs close beside each other; and both would doubtless have reared their progenies had I not robbed the nests of their contents to enrich my collection.

The Whistling Eagle presents the usual difference in the size of the sexes, but in respect to colour no variation is observable; the plumage of the young, on the contrary, as shown by the front figure on the Plate, presents a striking contrast to that of the adult, rendering it by far the handsomer bird during the first autumn of its existence.

Head, neck and all the under surface light sandy brown, each feather margined with a darker colour; feathers of the back and wings brown, margined with greyish white; primaries blackish brown; tail greyish brown; cere and bill brownish white, gradually becoming darker towards the tip of the latter; legs pale bluish white; irides bright hazel.

The figures represent an old and a young bird about two-thirds of the natural size.

PANDION LEUCOCEPHALA: *Gould*

J. Gould and H.C. Richter del et lith.

C. Hullmandel Imp.

PANDION LEUCOCEPHALUS, *Gould.*

White-headed Osprey.

Pandion leucocephalus, Gould in Proc. of Zool. Soc., Part V. p. 138 ; and in Syn. Birds of Australia, Part III.
Yoon-door-doo, Aborigines of the lowland districts of Western Australia.
Joor-joot, Aborigines of Port Essington.
Little Fish Hawk, Colonists of New South Wales.
Fish Hawk, Colonists of Swan River.

The White-headed Osprey, though not an abundant species, is generally diffused over every portion of Australia suited to its habits ; I myself shot it in Récherche Bay, at the extreme south of Van Diemen's Land ; and Mr. Gilbert found it breeding both at Swan River on the western, and at Port Essington on the northern shores of Australia. Like its near allies of Europe and America, of which it is a beautiful representative in the southern hemisphere, it takes up its abode on the borders of rivers, lakes, inlets of the sea, and the small islands lying off the coast. Its food consists entirely of living fish, which it procures precisely after the manner of the other members of the genus, by plunging down upon its victim from a considerable height in the air with so true an aim as rarely to miss its object, although an immersion to a great depth is sometimes necessary to effect its accomplishment. Its prey when secured is borne off to its usual resting-place and devoured at leisure. Wilson's elegant description of the habits and manners of the American bird is in fact equally descriptive of those of the present species. Independently of its white head, this species differs from its near allies in the much lighter colouring of the tarsi, which are yellowish white slightly tinged with grey.

The nest being of great size is a very conspicuous object ; it is composed of sticks varying from the size of a finger to that of the wrist, and lined with the softer kinds of sea-weed. It is usually placed on the summit of a rock, but is sometimes constructed on the top of a large *Eucalyptus* ; always in the vicinity of water. A nest observed by Mr. Gilbert in Rottnest Island measured fifteen feet in circumference. The eggs are two in number, of a yellowish white, boldly spotted and blotched with deep rich reddish brown, which colour in some specimens is so dark as to be nearly black ; other specimens again are clouded with large blotches of purple, which appear as if beneath the surface of the shell. The medium length of the eggs is two inches and five lines, and the breadth one inch and nine lines.

When near the water its flight is heavy and flapping, but when soaring aloft at a great altitude its actions are the most easy and graceful imaginable, at one moment appearing motionless, and at another performing a series of beautiful curves and circles, apparently for mere enjoyment ; for from the great height at which they are executed it is hardly to be conceived that the bird can be watching the motions of its finny prey in the waters beneath.

Crown of the head, back of the neck, throat, abdomen, thighs and under tail-coverts white ; feathers of the chest mottled with brown, and with a dark brown mark down the centre ; ear-coverts and sides of the neck dark brown ; back, wings and tail clove brown, each feather of the back with a narrow circle of white at its extremity ; primaries black ; bill black ; cere and base of the bill bluish lead-colour ; feet pale bluish white ; irides primrose-yellow in some, bright orange in others ; claws black.

The figure is about two-thirds of the natural size.

FALCO HYPOLEUCOS: *Gould.*

J. Gould and H.C. Richter del et lith.

Hullmandel & Walton Imp.

FALCO HYPOLEUCUS, *Gould.*

Grey Falcon.

Falco hypoleucus, Gould in Proc. of Zool. Soc., Part VIII. p. 162.
Boorh-ga, Aborigines of Moore's River in Western Australia.

Of this rare and beautiful Falcon I have seen only four examples, three of which are in my own collection, and the fourth in that of the Earl of Derby. The specimen from which my description in the "Proceedings of the Zoological Society" was taken, was presented to Mr. Gilbert by Mr. L. Burgess, who stated that he had killed it over the mountains, about sixty miles from Swan River; subsequently it was obtained by Mr. Gilbert himself in the vicinity of Moore's River in Western Australia; and my friend Captain Sturt had the good fortune to secure a male and a female during his late adventurous journey into the interior of South Australia. "They were shot at the Depôt on a Sunday in May 1845, just after service; they had been soaring very high, but at length one descended to the trees on the creek, and coming within range was shot; when the other proceeding to look after its companion was also killed. It must be a scarce bird, for no others were seen."

The acquisition of the *Falco hypoleucus* is highly interesting, as adding another species to the true or typical Falcons, and as affording another proof of the beautiful analogies which exist between certain groups of the southern and northern hemispheres; this bird being as clearly a representative of the Jerfalcon of Europe, as the *Falco melanogenys* is of the Peregrine, and the *Falco frontatus* of the Hobby; but as I have more fully entered into this subject in my observations on the genus, it is unnecessary again to detail them here.

The adult has the whole of the upper and under surface and wings grey, with a narrow line of black down the centre of each feather; a narrow ring of black nearly surrounding the eyes; primaries brownish black, which colour assumes a pectinated form on a mottled grey ground on the inner webs of those feathers; tail-coverts grey, barred with brownish grey; tail dark brownish grey, crossed with bars of dark brown; irides dark brown; cere, orbits, gape, base of the bill, legs and feet brilliant orange-yellow; the yellow becoming paler from the base of the bill, until it meets the black tips of both mandibles; claws black.

The young birds have the upper surface mottled brown and grey, and the under surface nearly white, and more strongly marked with black than in the adult.

The Plate represents the two sexes of the natural size.

FALCO MELANOGENYS: *Gould.*

J. & E. Gould del. et lith. *C. Hullmandel Imp.*

FALCO MELANOGENYS, *Gould.*

Black-cheeked Falcon.

Falco Peregrinus, Vig. and Horsf. in Linn. Trans., vol. xv. p. 183.
Falco melanogenys, Gould in Proc. of Zool. Soc., Part V. p. 139; and in Syn. Birds of Australia, Part III.
Blue Hawk, Colonists of Western Australia.
Wolga, Aborigines of New South Wales.
Gwet-ul-bur, Aborigines of the mountain and lowland districts of Western Australia.

The present bird, like the *F. hypoleucus*, may be classed among the noble Falcons, being closely allied both to the Peregrine of Europe and the Duck-Hawk of North America, to both of which it assimilates also in its bold and rapacious habits, a character which renders it a favourite with the Aborigines, who admire it for its courage in attacking and conquering birds much larger than itself. Like its American congener it preys eagerly upon ducks, and Mr. Gilbert informs me that he has seen it attack and carry off the *Nyroca Australis*, a species at least half as heavy again as itself. Thus we find in this Falcon a bird well adapted for the sport of Falconry, which though fallen into disuse in Europe, may at some future time be revived in this new and rising country, since its lagoons and water-courses are well stocked with herons and cranes, and its vast plains are admirably suited to such pastime. The introduction of hounds for the purpose of chasing the native dog (Dingo) and the Kangaroo has already taken place in Australia, and perhaps it is not too much to look forward to the time when the noble science of Falconry shall be resorted to by the colonists. A finer mews of birds could not be formed in any country than in Australia, with such typical Falcons as the *F. hypoleucus*, *F. melanogenys* and *F. frontatus*.

The present bird is universally dispersed over the whole southern portion of Australia, including Van Diemen's Land, and probably future research will discover that its range extends over all parts of the continent. It gives preference to steep rocky cliffs, and the sides of precipitous gullies, rather than to fertile and woodland districts, but especially seeks such rocky localities as are washed by the sea, or are in the neighbourhood of inland lakes and rivers. In such situations it dwells in pairs throughout the year, much after the manner of the Peregrine. Its nest is placed in those parts of the rocks that are most precipitous and inaccessible. The eggs are two in number; their ground-colour is buff, but which is scarcely perceptible from the predominance of the blotching of deep reddish chestnut, with which it is marbled all over; they are two inches and one line long, by one inch and seven and a half lines broad.

The stomach is large and membranous; and the food consists of birds, principally of the Duck tribe.

The sexes present the usual difference in size, the male being considerably smaller than the female, as will be seen in the accompanying illustration.

The male has the head, cheeks, and back of the neck deep brownish black; the feathers of the upper surface, wings and tail alternately crossed with equal-sized bands of deep grey and blackish brown; outer edges of the primaries uniform blackish brown, their inner webs obscurely barred with light buff; throat and chest delicate fawn-colour, passing into reddish grey on the abdomen; tail-feathers ornamented with an oval-shaped spot of dark brown; abdomen, flanks, under surface of the wing, and under tail-coverts reddish grey, crossed by numerous irregular bars of blackish brown; bill light bluish lead-colour at the tip, becoming much lighter at the base; cere, legs and feet yellow; claws black.

The female differs from the male in being larger in all her proportions, and in having the throat and chest more richly tinted with fulvous, which colour also extends over the abdomen, the feathers of which are not so strongly barred with brown as in the male.

The figures are those of a male and a female of the natural size.

J. Gould and H.C. Richter del et lith.

FALCO SUBNIGER: *Gray.*

Hullmandel & Walton Imp.

FALCO SUBNIGER, *Gray.*

Black Falcon.

Falco subniger, Gray in Ann. Nat. Hist. 1843, p. 371.—Gray and Mitch. Gen. of Birds, pl. 8.—List of Birds in Brit. Mus. Coll., part i. 2nd edit. p. 50.
Falco (*Hierofalco*) *subniger*, Kaup, Isis, 1847, p. 76.

All that I am able to communicate respecting this rare species of Falcon is that I have seen four examples, which were killed in South Australia; no particulars of its habits have yet been recorded: it was observed by Captain Sturt during his expedition into the interior of that country, and he has favoured me with a note, in which he says, "This well-shaped and rapid bird was killed at the Depôt, where both male and female were procured, but it was by no means common, only two others having been seen."

It is a fine and powerful species, and is doubtless very destructive to birds and the smaller quadrupeds.

The entire plumage dark sooty brown, becoming paler on the edges of the feathers of the upper surface; chin whitish; irides dark brown; cere yellow; bill lead-colour; legs and feet leaden yellow; claws black.

The figure represents a female, which is one-third larger than the male, of the natural size.

J. & E. Gould del. et lith.

FALCO FRONTATUS, *Gould.*

C. Hullmandel Imp.

FALCO FRONTATUS, *Gould.*

White-fronted Falcon.

Falco frontatus, Gould in Proc. of Zool. Soc., Part V. p. 139.
Wow-oo, Aborigines of the Murray in Western Australia.
Little Falcon, Colonists of Western Australia.

This, one of the least of the true Falcons found in Australia, is universally spread over the southern portion of that country, including Van Diemen's Land and the islands in Bass's Straits. As its long pointed wings clearly indicate, it possesses great and rapid powers of flight; and I have frequently been amused by pairs of this bird following my course over the plains for days together, in order to pounce down on the Quails as they rose before me. If I had wished to witness Falconry in perfection I could not have had a better opportunity than on these occasions, when it was interesting to observe how instinctively the Falcons performed their gyrations just above the dogs, in preparation for the stoop; and on those vast plains where there was not a tree or any other object to obstruct either the flight of the bird or our view of the chase, nothing could be more beautiful in its way than the actions of this species when pursuing the swift-flying Quail, which, although quickly overtaken, often evades the stroke of its enemy by suddenly dropping to the ground among the grasses.

The White-fronted Falcon is not a migratory species in any of the colonies. I succeeded in finding several of its nests, both in Van Diemen's Land and on the continent: the situations of all those I observed were near the tops of the most lofty and generally inaccessible trees; they were rather large structures, being fully equal in size to that of a Crow, slightly concave in form, outwardly built of sticks, and lined with the inner bark of trees and other soft materials: the eggs are either two or three in number, of a light buff, blotched and marbled all over with dark buff, one inch and ten lines long by one inch and four lines broad.

The stomach is rather muscular and capacious, and its food consists of small birds and insects.

Forehead greyish white; crown of the head, cheeks, ear-coverts, and all the upper surface uniform dark bluish grey; internal webs of the primaries, except the tips, numerously barred with oval-shaped markings of buff; two centre tail-feathers grey, transversely barred with obscure markings of black; the remainder of the feathers on each side alternately barred with lines of dark grey and reddish chestnut; throat and chest white, tinged with buff, the feathers of the chest marked down the centre with a stripe of brown; the whole of the under surface and thighs dull reddish orange; irides blackish brown; bill bluish lead-colour, becoming black at the tip; cere, base of the upper mandible, legs and feet yellow; claws black.

The sexes exhibit the usual difference in size, the female being much the largest. The plumage of the young differs from that of the adult in being more rusty and the markings less defined, in the feathers of the wings and tail being margined with rufous, and in the whole of the under surface being washed more deeply with rufous than the adult.

The Plate represents an adult and young bird of the natural size.

HERACIDEA BERIGORA.

J. Gould and H.C. Richter del. et lith.

C. Hullmandel Imp.

IERACIDEA BERIGORA.

Brown Hawk.

Falco Berigora, Vig. and Horsf. in Linn. Trans., vol. xv. p. 184.
Ieracidea Berigora, Gould, Syn. Birds of Australia, Part III.
Berigora, Aborigines of New South Wales.
Orange-speckled Hawk of the Colonists.
Brown Hawk, Colonists of Van Diemen's Land.

This species is universally distributed over Van Diemen's Land and New South Wales. It is represented in western and north-western Australia by a nearly allied species, to which I have given the name of *occidentalis*. In its disposition it is neither so bold nor so daring as the typical Falcons, and while it partakes much of the habits and actions of the true Kestrils, particularly in the mode in which it hovers in the air, it also often soars and skulks about after the manner of the Harriers. Although it sometimes captures and preys upon birds and small quadrupeds, its principal food consists of carrion, reptiles and insects; the crops of several that I dissected were literally crammed with the latter kind of food. It is generally to be met with in pairs, but at those seasons when hordes of caterpillars infest the newly-sprung herbage it congregates in flocks of many hundreds; a fact I myself witnessed during the spring of 1840, when the downs near Yarrundi, on the Upper Hunter, were infested with this noxious insect, which spread destruction throughout the entire district. By the settlers this bird is considered one of the pests of the country, but it was clear to me that whatever injury it may inflict by now and then pilfering the newly-hatched chickens from the poultry-yard is amply compensated for by the havoc it commits among the countless myriads of the destructive caterpillar. After the morning meal it perches on the dead branches of the neighbouring *Eucalypti* until hunger again impels it to exert itself for a further supply. To give an idea of the numbers of this bird to be met with at one time, I may state that I have frequently seen from ten to forty on a single tree, so sluggish and indisposed to fly that any number of specimens might have been secured.

So much difference occurs in the plumage of this species, that unless the changes it undergoes are known to him, the ornithologist would be apt to consider that there were more than one species; a close attention to the subject has, however, convinced me that the contrary is the case, and that in the countries which I have stated to constitute the true habitat of this bird there is but one species. During the first autumn the dark markings are of a much deeper hue, and the lighter parts more tinged with yellow than in the adult state, when the upper surface becomes of a uniform brown, and the white of the under surface tinged with yellow.

The sexes are nearly alike in colour, but the female is the largest in size. I discovered the *Ieracidea Berigora* breeding in the months of October and November both in Van Diemen's Land and New South Wales, the nests in both countries being placed on the highest branches of the lofty *Eucalypti*.

The nest is similar in size to that of a Crow, it is composed outwardly of sticks, and lined with strips of stringy bark, leaves, &c.; the eggs, which are two, and sometimes three in number, vary so much in colour, that they are seldom found alike, even in the same nest; they are also longer or of a more oval shape than those of the generality of Falcons; the prevailing colour is,—the ground buffy white, covered nearly all over with reddish brown: in some specimens an entire wash of this colour extends over nearly half the egg, while in others it is blotched or freckled in small patches over the surface generally: their medium length is two inches and two lines, and breadth one inch and six lines.

Crown of the head ferruginous brown, with a fine black line down the centre of each feather; a streak of black from the base of the lower mandible down each side of the cheek; ear-coverts brown; throat, chest, centre of the abdomen, and under tail-coverts pale buff, with a fine line of brown down each side of the shaft of every feather; flanks ferruginous, each feather crossed with spots of buffy white; thighs dark brown, crossed like the flanks but with redder spots; centre of the back reddish brown; scapularies and wing-coverts brown, crossed with conspicuous bars and spots of ferruginous; tail brown, crossed with ferruginous bars, and tipped with light brown; primaries blackish brown, margined on their inner webs with large oval-shaped spots of buff; bill light lead colour, passing into black at the tip; cere and orbits pale bluish lead colour; irides very dark brown; feet very light lead-colour.

The figures represent the two sexes of the natural size.

IERACIDEA OCCIDENTALIS: *Gould.*

J. Gould and H.C. Richter del. et lith.

C. Hullmandel imp.

IERACIDEA OCCIDENTALIS, *Gould.*

Western Brown Hawk.

Ieracidea occidentalis, Gould in Proc. of Zool. Soc., June 25, 1844.
Kăr-gyne, Aborigines of the lowland and mountain districts of Western Australia.

Hitherto ornithologists, and among them myself, have regarded the Common Brown Hawks, which occur so numerously in collections from Australia, as referrible to one and the same species,—an opinion founded principally upon the circumstance of the members of this genus being subject to a greater number of changes of plumage from youth to maturity than any other; observation, however, aided by dissection, and that too of very many examples, and at all seasons of the year, has convinced me that there are two species, which appear to occupy opposite portions of the continent; the present bird, as its name implies, being confined to the western, and the *I. Berigora* to the eastern. Both species are occasionally found in South Australia, but the latter is the most abundant, and here it would seem that they inosculate.

The present bird is very generally spread over the Swan River Settlement, and in its habits and economy closely assimilates to its representative in New South Wales. It feeds upon birds, lizards, insects, caterpillars, and carrion. Its smaller size renders it a somewhat less formidable enemy to the farm-yard, still it requires considerable vigilance to check its depredations upon the broods of poultry, ducks, &c.

As its smaller legs, more compact body and lengthened pointed wings would indicate, it flies with ease, making long sweeps and beautiful curves, which are often performed near the ground. It loves to dwell among swampy places, which at all times afford it an abundant supply of lizards, frogs, newts, &c.

It breeds in September and October.

The nest is formed of dried sticks and is usually constructed in thickly foliaged trees, sometimes near the ground, but more frequently on the topmost branches of the highest gums; the eggs, which are generally two, but sometimes three in number, differ very much in their markings, the rich brown pervading the surface in some more than in others; those in my collection measure two inches long by one and a half broad.

Crown of the head, back and scapularies rusty brown, with a narrow stripe of black down the centre; rump deep rusty brown, crossed by broad bands of dark brown, the tip of each feather buffy white; wings very dark brown; the inner webs of the primaries with a series of large spots, assuming the form of bars of a deep rusty brown near the shaft, and fading into buffy white on the margin; wing-coverts tipped with rusty red; spurious wing with a row of rusty spots on either side of the shaft; tail dark brown, crossed by numerous broad irregular bars of rusty red, and tipped with pale buff; ear-coverts and a stripe running down from the angle of the lower mandible dark brown; chin, all the under surface, and a broad band which nearly encircles the neck pale buffy white, with a fine line of dark brown down the centre; thighs deep rust-red, each feather with a line of black down the centre and tipped with buffy white; irides reddish brown; eyelid straw-yellow; orbits bluish flesh-colour; bill bluish lead-colour, becoming black at the tip; cere pale yellow; legs and feet light ashy grey, excepting the scales in front of the tarsi, which are dull yellowish white.

The Plate represents an adult male and female rather less than the size of life.

TINNUNCULUS CENCROIDES.

J. Gould and H.C. Richter del. et lith.

C. Hullmandel Imp.

TINNUNCULUS CENCROÏDES.

Nankeen Kestril.

Falco Cencroïdes, Vig. and Horsf. in Linn. Trans., vol. xv. p. 183.
Nankeen Hawk, of the Colonists.

Ornithologists will not fail to observe how beautifully the present bird represents in Australia the well-known Kestril of the British Islands, to which it closely assimilates in many of its actions and in much of its economy.

So far as is yet known, this elegant Kestril is not only confined to Australia, but its habitat is even restricted to the south-eastern portion of that continent. I observed it to be tolerably abundant in every part of New South Wales, and also on the plains of the interior in the neighbourhood of the river Namoi. A large collection of birds from South Australia, kindly forwarded to me by T. C. Eyton, Esq., also contained examples.

Mr. Caley states that it is a migratory species, but I am inclined to differ from this opinion; his specimens were procured in New South Wales in May and June, while mine were obtained at the opposite season of December, when it was breeding in many of the large gum-trees on the rivers Mokai and Namoi; probably some districts are deserted for a short time, and such others resorted to as may furnish it with a more abundant supply of its natural food, and this circumstance may have led him to consider it to be migratory.

The flight of the Nankeen Kestril differs from that of its European ally in being more buoyant and easy, the bird frequently suspending itself in the air without the slightest motion of the wings: it also flies much higher, and having arrived at a great height flies round in a series of circles, these flights being often performed during the hottest part of the day; a circumstance which leads me to suppose that some kind of insect food was the object of the search, it being well known that in mid-day insects ascend to a much greater altitude than at any other time.

The sexes present the usual differences in their markings, the female having all the upper surface alternately barred with buff and brown, while the male is furnished with a more uniform tint. I once took four fully-fledged young from the hole of a tree by the side of a lagoon at Brezi, in the interior of New South Wales; I also observed nests which I believe were constructed by this bird, but which were placed on the branches in the ordinary way of the members of this group.

The male has the forehead white; head and back of the neck reddish grey, with the shaft of each feather black; back, scapularies and wing-coverts cinnamon-red, with a small oblong patch of black near the extremity of each feather; primaries, secondaries and greater coverts dark brown, slightly fringed with white; the base of the inner webs of these feathers white, into which the dark colouring proceeds in a series of points, resembling the teeth of a large saw; face white, with a slight moustache of dark brown from each angle of the mouth; chest and flanks buffy white, with the shaft of each feather dark brown; abdomen and under tail-coverts white; upper tail-coverts and tail-feathers for two-thirds of their length from the base grey; remaining portion of all but the two centre feathers white, crossed near the tip by a broad distinct band of deep black, the band being narrow, and only on the inner web of the external feather; bill horn-colour near the base, black towards the tip; base of the under mandible yellowish; cere and orbits yellowish orange; legs orange.

The female has all the upper surface, wings and tail cinnamon-red; each feather of the former with a dark patch of brown in the centre, assuming the shape of arrow-heads on the wing-coverts; the scapularies irregularly barred with the same, and the tail with an irregular band near the extremity; throat, vent and under tail-coverts white; remainder of the under surface reddish buff, with a stripe of brown down the centre of each feather.

The figures represent the two sexes of the natural size.

ASTUR NOVÆ-HOLLANDIÆ.

J. Gould and H.C. Richter del. et lith.

C. Hullmandel Imp.

ASTUR NOVÆ-HOLLANDIÆ.

New Holland Goshawk.

Astur Raii, Vig. and Horsf. in Linn. Trans., vol. xv. p. 180.
Falco clarus, Lath. Ind. Orn. Supp., p. 13 ?—Shaw, Gen. Zool., vol. vii. p. 184 ?
Fair Falcon, Lath. Gen. Syn. Supp., vol. ii. p. 54 ?—Lath. Gen. Hist., vol. i. p. 226 ?

The only part of Australia in which I have met with this species is New South Wales, where it would appear to evince a preference for the dense and luxuriant brushes near the coast; but so little has at present been ascertained respecting its economy, range and habits, that its history is nearly a blank—even whether it is migratory or not is unknown. That it breeds in the brushes of the district above mentioned is certain, for I recollect seeing a brood of young ones in the possession of Alexander Walker Scott, Esq., of Newcastle on the Hunter, a gentleman much attached to the study of the natural productions of Australia. These young birds differed but little in colour from the fully adult specimens in my collection, except that the transverse markings of the breast were much darker and of a more arrow-shaped form; which markings become fainter and more linear as the bird advances in age.

The sexes present the usual difference in size, but in colour and markings they closely assimilate.

All the upper surface grey; throat and all the under surface white, crossed with numerous irregular grey bars; cere yellowish orange; feet yellow; bill and claws black.

The irides of the young are brown.

The figures represent the two sexes of the natural size, the smaller bird being the male.

ASTUR NOVÆ-HOLLANDIÆ.
White Variety?

J. Gould and H.C. Richter del et lith.

C. Hullmandel Imp.

ASTUR NOVÆ-HOLLANDIÆ, *Vig. and Horsf., Albino.*

White Goshawk.

Lacteous Eagle, Lath. Gen. Hist., vol. i. p. 216.
Astur Novæ-Hollandiæ, Vig. and Horsf. in Linn. Trans., vol. xv. p. 179.—Gould in Syn. of Birds of Australia, Part III.
Astur albus, Jard. and Selb. Ill. Orn., vol. i. pl. 1.
Falco Novæ-Hollandiæ, Lath. Ind. Orn., vol. i. p. 16.—Gmel. Syst. Nat., vol. i. p. 264.—Daud., vol. ii. p. 56.
Falco albus, Shaw in White's Voy., pl. in p. 260.—Ib. Gen. Zool., vol. vii. p. 92.
New Holland White Eagle, Lath. Gen. Syn., vol. i. p. 40.—Ib. Supp., p. 12.—Ib. Gen. Hist., vol. i. p. 217.—White's Voy., pl. in p. 260.
Goo-loo-bee, Aborigines of New South Wales, *Latham.*
White Hawk, of the Colonists.

Although I feel convinced that the white bird to which the name of *Falco Novæ-Hollandiæ* has been constantly applied by the older writers is merely an albino of the species figured on the preceding plate, I have been induced to give a representation of it here, in order to show what synonyms have reference to that state of plumage, as well as to depict one of the most ornamental and beautiful of the *Falconidæ* inhabiting Australia. As I have before stated, the range of the grey bird would seem to be confined to New South Wales: on the other hand, the white bird is not only found in the same districts, but is also very generally, though sparingly, distributed over Van Diemen's Land, a fact which might induce many persons to consider it to be a distinct species; I am however inclined, with Cuvier, to believe it to be merely an albino variety, now become permanent,—an event of very rare occurrence among animals in a state of nature. The diversity in the colouring of the irides of the many individuals that have come under my notice would materially tend to confirm this opinion, some having the irides bright yellow, and others brown; a splendid female I shot under Mount Wellington in Van Diemen's Land had the irides bright crimson, like those of the albinos of many other animals; while another equally fine female, in the possession of the Hon. Henry Elliot, at Government House, had the irides bright yellow.

In the size and admeasurements of the various parts of either sex of the white and grey birds no difference whatever can be detected, another reason for believing them to be the same; for 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.

A knowledge of the nidification of this and the preceding bird, and of the state of their plumage from youth to maturity, would greatly tend to settle the question of their identity.

The disposition of Mr. Elliot's bird was fierce and wild in the extreme, exhibiting none of the docility of the true Falcons, but displaying all the ferocity so characteristic of the group to which it belongs.

The sexes differ very considerably in size, the male being scarcely more than half the size of the female.

The whole of the plumage pure white; cere and legs yellow; bill and claws black.

The figures represent the two sexes of the natural size.

ASTUR RADIATUS.

J. Gould and H.C. Richter del et lith.

C. Hullmandel Imp.

ASTUR RADIATUS.

Radiated Goshawk.

Falco radiatus, Lath. Ind. Orn. Supp., p. xii.—Shaw, Gen. Zool., vol. vii. p. 177.
Radiated Falcon, Lath. Gen. Syn. Supp., vol. ii. p. 53. pl. cxxi.—Ib. Gen. Hist., vol. i. p. 222. pl. xi.
Haliaëtus Calei, Vig. and Horsf. in Linn. Trans., vol. xv. p. 186.

The bird here represented I conceive to be the true *Falco radiatus* of Latham; it is but little known to ornithologists, from the circumstance that few specimens only have been sent to Europe. It inhabits the dense brushes bordering the rivers Manning and Clarence on the eastern coast of New South Wales, and doubtless enjoys a much greater range than we are at present acquainted with. It is the largest of the Goshawks inhabiting Australia, far exceeding in size the *Astur palumbarius* of Europe. In some parts of its structure it differs considerably from the typical Asturs, particularly in the lengthened form of the middle toe, in which respect it resembles the true Accipiters; in its plumage it somewhat differs from both those forms, the markings of most of the feathers taking a longitudinal instead of a transverse direction; these differences may hereafter be considered of sufficient importance to warrant its separation into a distinct genus, but for the present I have retained it with the other Goshawks in that of *Astur*. Of its habits and economy nothing whatever is known.

The male has the whole of the upper surface blackish brown, each feather broadly margined with rust-red; wings brown, crossed by narrow bands of darker brown; tail greyish brown, crossed by irregular bands of dark brown; shafts of the quills and tail buffy-brown; throat buff, deepening into the rich rust-red of the under surface of the shoulder and the whole of the under surface; all the feathers of the under surface with a narrow stripe of black down the centre; thighs and under tail-coverts rust-red without stripes.

The female resembles her mate in colour and in the disposition of the markings, but has the striæ of the under surface broader and more conspicuous.

The figures are those of a male and a female about two-thirds of the natural size.

17

ASTUR APPROXIMANS *Vig & Horsf.*

J. Gould and H.C. Richter del. *C. Hullmandel Imp.*

ASTUR APPROXIMANS, *Vig. and Horsf.*

Australian Goshawk.

Falco radiatus, Temm. Pl. Col. 123, young.
Astur radiatus, Vig. and Horsf. in Linn. Trans., vol. xv. p. 181, young male.
Astur fasciatus, Ib., adult male and female.
Astur approximans, Ib., young female.—Gould in Syn. Birds of Australia, Part III.
Bilbil, Aborigines of New South Wales.

Among the whole perhaps of the Australian birds, certainly among the Australian *Falconidæ*, we are presented with no species the scientific appellation of which is involved in so much confusion as is that of the present bird. This confusion has arisen from two causes: first, authors have erroneously considered it to be identical with the *Falco radiatus* of Latham, from which it is entirely distinct; and secondly, the difference which exists between the plumage of the adult and young is so great as to have led to a false multiplication of species, and consequently of specific names. Seven specimens of this Hawk form part of the collection of the Linnean Society, and are those from which Messrs. Vigors and Horsfield took their descriptions of *Astur radiatus*, *A. fasciatus* and *A. approximans*: on a careful examination of these specimens, I am satisfied that they are all referable to the present bird; *A. radiatus*, of which there are two specimens, being the young male; *A. fasciatus*, of which there are three specimens, the adult; one an adult male, the other two adult females; and *A. approximans*, of which there are two specimens, the young female. I have retained the term *approximans* in preference to either of the others, because *radiatus* actually belongs to another species, and the employment of *fasciatus* might hereafter lead to its being confounded with the "Fasciated Falcon," an Indian species described under that name by Dr. Latham.

From the number of synonoms quoted above, it might readily be supposed that this bird is very common, and such is in reality the case, for it is one of the most abundant and generally dispersed of the Hawks inhabiting New South Wales and Van Diemen's Land. It is a species which ranges pretty far north, but on the western coast its place appears to be supplied by the *Astur cruentus*. The country between South Australia and Moreton Bay may be considered its true habitat; and there it is a stationary resident.

The Australian Goshawk is a bold, powerful, and most sanguinary species, feeding upon birds, reptiles, and small quadrupeds. It may often be seen lurking about the poultry-yard of the settler, and dealing destruction among the young stock of every kind; daring when at large, and morose and sullen when captured, it never becomes tame and familiar like the true Falcons, but retains its ferocity to the last.

Its nest is usually built on a large swamp-oak (*Casuarina*), growing on the side of a brook, but I have occasionally met with it on the gum-trees (*Eucalypti*) in the forest at a considerable distance from water; it is of a large size, and is composed of sticks and lined with gum-leaves. The eggs are generally three in number, of a bluish white, smeared over with blotches of brownish buff; they are one inch and ten lines long by one inch and five lines broad.

The male, which is considerably less than the female in size, has the crown of the head and nape of the neck leaden grey; on the back of the neck an obscure collar of rufous brown; the remainder of the upper surface, wings and tail deep greyish brown; the latter numerously barred with brown of a deeper tint; inner webs of the primaries and secondaries greyish white, barred with dark brown; throat greyish brown; breast and all the under surface rufous brown, crossed with numerous white fasciæ, which are bounded on each side with an obscure line of dark brown; thighs rufous, crossed by numerous irregular white lines; irides bright yellowish orange, surrounded by a yellowish lash; inside of the mouth blue, except the centre of the roof, which is black; gape and base of the bill olive-green, interspersed with hair-like feathers; tip of the cere greenish yellow; base of the mandibles pale blue; culmen and tips black; legs and feet yellow; claws black.

The young differ considerably from the adult, having the feathers of the head and back of the neck dark brown, margined with rufous brown; the remainder of the upper surface deep brown, each feather with a crescent-shaped mark of rufous at the extremity; tail brown, crossed with obscure bars of a darker tint, and tipped with whitish brown; inner webs of the primaries fawn-colour, barred with dark brown; throat buffy white, with a stripe of dark brown down the centre of each feather; breast buffy white, each feather crossed by two bands of dark brown, the last of which assumes a triangular form; abdomen and flanks buffy white, crossed by irregular bands of dark brown, which are blotched with rufous brown in the centre; thighs and under tail-coverts pale rufous, crossed by similar bands; irides beautiful yellow; cere, base of the bill and gape bluish lead-colour; point of the bill blackish brown; legs gamboge-yellow.

The Plate represents an adult male and female of the natural size.

ASTUR CRUENTUS: *Gould.*

J. Gould and H.C. Richter del et lith.

Hullmandel & Walton Imp.

ASTUR CRUENTUS, *Gould.*

West-Australian Gos-Hawk.

Astur cruentus, Gould in Proc. of Zool. Soc., 1842.
Kil̈-lin-gil̈-lee and *Mat-wel̈-itch*, Aborigines of the mountain districts of Western Australia.
Good̈-jee-lum, Aborigines around Perth, Western Australia.

This Hawk is intermediate in size between the *Astur approximans* and *Accipiter torquatus*; it is of a more grey or blue colour on the back, and has the transverse lines on the breast narrower and of a more rufous tint. It precisely resembles the first-mentioned bird in the rounded form of the tail, in the short powerful tarsus, and in the more abbreviated middle toe, which is much longer in the *Accipiter torquatus*.

The *Astur cruentus* is a very common species in Western Australia, particularly in the York district and at the Murray. Like its congener, it is a remarkably bold and sanguinary species, often visiting the farm-yard and carrying off fowls and pigeons with much apparent ease.

It breeds in October and the two following months, making a nest of dried sticks on the horizontal fork of a gum or mahogany tree.

The sexes and young present precisely the same differences, both in size and plumage, that are observable in their near ally.

The male has the crown of the head and occiput dark slate-colour; sides of the face grey; at the back of the neck a collar of chestnut-red; back, wings and tail slaty brown, the brown hue predominating on the back, and the slate-colour upon the other parts; inner webs of the primaries fading into white at the base, and crossed by bars of slate-colour, the interspaces freckled with buff; the inner webs of the tail-feathers are marked in a precisely similar manner; chin buffy white; the whole of the under surface rust-red, crossed by numerous narrow semicircular bands of white; irides bright yellow; cere dull yellow; bill black at the tip, blue at the base; legs and feet pale yellow; claws black.

The female differs in having all the upper surface brown; the chestnut band at the back of the neck wider, but not so rich in colour; in all other respects she resembles her mate.

The Plate represents the two sexes of the natural size.

ACCIPITER TORQUATUS. *Vig & Horsf.*

Drawn on St. by W. Fischer del.

C. Hullmandel Imp.

ACCIPITER TORQUATUS, *Vig. and Horsf.*

Collared Sparrow Hawk.

Falco torquatus, Cuv.—Temm. Pl. Col., 43 adult, 93 young.
Accipiter torquatus, Vig. and Horsf. in Linn. Trans., vol. xv. p. 182.—Shaw, Gen. Zool., vol. xiii. p. 30, pl. 33.—Gould, Syn. Birds of Australia, Part III. fig. 2.
Falco nisus, Lath. Ind. Orn. Supp., p. xi.?
New Holland Sparrow Hawk, Lath. Gen. Syn. Supp., vol. ii. p. 51?; and Gen. Hist., vol. i. p. 223?
Nisus australis, Less. Traité d'Orn., p. 61.
Bilbil, Aborigines of New South Wales.
Jil-lee-jil-lee, Aborigines of the lowland and
Min-min of the Aborigines of the mountain districts of Western Australia.
Little Hawk, Colonists of Swan River.

This species is especially abundant in Van Diemen's Land and New South Wales, and would appear to enjoy a wide extent of range, since I have either seen or received specimens of it from every part of Australia with the single exception of the north coast.

In its habits and disposition it has all the characteristics of its European ally, the *Accipiter Fringillarius*, whose boldness and daring spirit while in pursuit of its quarry have been so often described that they are familiar to every one; the sexes also exhibit the same disparity of size, the female being nearly as large and powerful again as her mate; hence the Swift-flying Quail and the numerous species of Honey-eaters upon which they feed, find in her a most powerful enemy. For rapidity of flight and unerring aim, however, she is even surpassed by her more feeble mate, who may frequently be observed at one moment skimming quietly over the surface of the ground, and the next impetuously dashing through the branches of the trees in fearless pursuit of his prey, which from the quickness of his abrupt turns rarely eludes the attack. Mr. Caley mentions as an instance of its boldness, that he once witnessed it in the act of darting at a Blue Mountain Parrot, which was suspended in a cage from the bough of a mulberry-tree, within a couple of yards of his door.

The nest is rather a large structure, composed of sticks, and lined with fibrous roots and a few leaves of the gum-tree; it is usually placed in the fork of a swamp oak (*Casuarina*) or other trees growing on the banks of creeks and rivers, but is occasionally to be met with in the depths of the forests. The eggs are generally three in number, of a bluish white, in some instances stained and smeared over with blotches of buff; in others I have observed square-formed spots, and a few hair-like streaks of deep brown: their medium length is one inch and six lines by one inch and two lines in breadth.

Head, all the upper surface, wings and tail deep brownish grey, the tail indistinctly barred with deep brown; on the back of the neck an obscure collar of reddish brown; throat, the under surface and thighs rufous, crossed by numerous narrow bars of white, the red predominating on the thighs; under surface of the wings and tail grey, distinctly barred with dark brown, which is deepest on the former; irides and eyelash yellow; cere and gape yellowish green; base of the bill lead-colour, tip black; legs yellow slightly tinged with green.

The young male has the cere and gape olive-yellow; irides and eyelash primrose-yellow.
The figures are those of a male and a female of the natural size.

BUTEO MELANOSTERNON: *Gould.*

J. Gould and H.C. Richter, del.

C. Hullmandel, Imp.

BUTEO MELANOSTERNON, *Gould.*

Black-breasted Buzzard.

Buteo melanosternon, Gould in Proc. of Zool. Soc., Part VIII. p. 162.
Gŏo-dap, Aborigines of the mountain districts of Western Australia.

If we examine the Australian members of the family of *Falconidæ*, we cannot fail to observe that it comprises representatives of most of the forms inhabiting similar latitudes in the northern hemisphere; no example of the genus *Buteo* had, however, been recorded as an inhabitant of Australia until I discovered the present species, which is more nearly allied to the *Buteo Jackall* of the Cape of Good Hope and the Red-tailed Buzzard (*Buteo Borealis*) of America than to any other. It is a fine and noble species, and although it does not appear to be common in any part of the colonies, it ranges over all the southern portion of the country. I have received it from Swan River, and procured it myself during my journey into the interior of New South Wales, about two hundred miles northwards of Sydney; I have also a specimen which was killed on the Liverpool Plains by one of the natives in my party.

The Black-breasted Buzzard generally flies high in the air, through which it soars in large circles, much after the manner of the Wedge-tailed Eagle; its black breast and the large white mark at the base of the primaries being very conspicuous when seen from beneath.

The sexes are alike in colouring but present the usual difference in size, the male being the smallest.

Crown of the head, face, chin, chest and centre of the abdomen deep black, passing into chestnut-red on the flanks, thighs and under tail-coverts; back of the head chestnut-red, becoming black in the centre of each feather; shoulders whitish buff; all the upper surface deep brownish black, margined with chestnut-red; primaries white at the base, deep black for the remainder of their length; cere and base of the bill purplish flesh-colour, passing into black at the tip; irides wood-brown; feet white tinged with lilac.

The Plate represents a male about two-thirds of the natural size.

MILVUS AFFINIS: *Gould.*

J. Gould and H.C. Richter del.t *C. Hullmandel Imp.*

MILVUS AFFINIS, *Gould.*

Allied Kite.

Milvus affinis, Gould in Proc. of Zool. Soc., Part V. p. 140; and in Syn. Birds of Australia, Part III.
E-le-nid-jul, Aborigines of Port Essington.

With the single exception of Van Diemen's Land, this Kite is universally dispersed over all the Australian Colonies, and is equally as common at Port Essington, on the north coast, as it is on the southern portions of the country.

Its confident and intrepid disposition renders it familiar to every one, and not unfrequently costs it its life, as it fearlessly enters the farm-yard of the settler, and if unopposed, impudently deals out destruction to the young poultry, pigeons, &c. tenanting it. It is also a constant attendant at the camps of the Aborigines and the hunting parties of the settlers, perching on the small trees immediately surrounding them, and patiently waiting for the refuse or offal. The temerity of one individual was such, that it even disputed my right to a Bronze-winged Pigeon that had fallen before my gun, for which act, I am now almost ashamed to say, it paid the penalty of its life; on reflection I asked myself why should advantage have been taken of the confident disposition implanted in the bird by its Maker, particularly too when it was in a part of the country where no white man had taken up his abode and assumed a sovereign right over all that surrounds him.

The flight of this bird, which is closely allied in character to that of the *Milvus ater* of Europe, is much less protracted and soaring than that of the typical Kites; the bird is also much more arboreal in its habits, skulking about the forest after the manner of the true Buzzards. Great numbers have been observed hovering over the smoke of the extensive fires so common in Australia, closely watching for Lizards and any of the smaller mammalia that may have fallen victims to the flames, or have been driven by the heat from their lurking places.

In the southern parts of Australia this bird is a stationary species; I did not, however, succeed in procuring its eggs, or any account of its nidification.

The sexes are so nearly alike that the single figure in the accompanying Plate will serve for a representation of both.

Feathers of the head, and the back and sides of the neck reddish fawn colour, with a central stripe of dark blackish brown; all the upper surface glossy brown inclining to chocolate, and passing into reddish brown on the wing-coverts, the shaft of each feather being black, and the extreme tip pale brown; primaries black; secondaries blackish brown; tail, which is slightly forked, brown, crossed by several indistinct bars of a darker tint, and each feather tipped with greyish white; throat brownish fawn colour, with the stem of each feather black; the remainder of the under surface rufous brown, with a central line of dark brown on each feather, which is broadest and most conspicuous on the chest; cere, gape and base of the lower mandible yellow; upper mandible and point of the lower black; tarsi and toes yellow; claws black; irides very dark brown.

The figure is about two-thirds of the natural size.

MILVUS ISURUS: *Gould.*

J. & E. Gould del.et

C. Hullmandel Imp.

MILVUS ISURUS, *Gould.*

Square-tailed Kite.

Milvus isurus, Gould in Proc. of Zool. Soc., Part V. 1837, p. 140.—Ib. Syn. Birds of Australia, Part III.
Ge-durn-mul-uk and *Mar-arl*, Aborigines of the mountain districts of Western Australia.
Kite, of the Colonists.

This new species, although possessing the short feet, long wings, and other characters of the true Kites, may at once be distinguished from all the other members of that group by the square form of its tail. I met with it in various parts of New South Wales, and on the plains of the interior, still it is by no means abundant, and persons who had been long resident in the colony knew but little about it. I had, however, the good fortune not only to kill the bird myself, but, in one instance, to find its nest, from which I shot the female. I have also received two specimens from Swan River, which shows that, although the species may be thinly scattered over the country, it nevertheless enjoys an extensive range of habitat. It is a true Kite in all its manners, at one time soaring high above the trees of the forest, and at others hunting over the open wastes in search of food.

The nest which I found near Scone, in the month of November, was of a large size, built exteriorly of sticks, and lined with leaves and the inner bark of the gum-trees: it contained two eggs, the ground colour of which was buffy white; one was faintly freckled with rufous, becoming much deeper at the smaller end, while the other was very largely blotched with reddish brown; they were somewhat round in form, one inch and eleven lines long by one inch and seven lines broad.

In his notes from Western Australia, Mr. John Gilbert remarks, that it is there "always found in thickly-wooded places. Its flight at times is rapid, and it soars high for a great length of time. I found a nest on the 10th of November, 1839; it contained two young ones scarcely feathered, and was formed of sticks on a lofty horizontal branch of a white gum-tree, in a dense forest about four miles to the eastward of the Avon. I have not observed it in the lowlands, but it appears to be tolerably abundant in the interior. The stomach is membranous and very capacious: the food mostly birds."

Forehead and space over the eye buffy white, each feather tipped and marked down the shaft with black; crown of the head, back and sides of the neck, throat, shoulders, both above and beneath, and the under surface generally reddish orange; the feathers on the crown and the back of the head, like those of the forehead, marked longitudinally and tipped with black, but in no part are these markings so widely spread as on the chest, whence they suddenly diminish, and are altogether lost on the abdomen, the uniformity of which, particularly on the flanks, is broken by obscure transverse bands of a lighter colour; upper part of the back and scapularies deep blackish brown; tips of the primaries on the upper surface dark brown, obscurely banded with black; internal web of the basal portion of the primaries, together with the stem and under surface generally, greyish white; secondaries dark brown banded with black, the remainder of the wing light brown, the edges of the feathers being still lighter; rump and upper tail-coverts white, with transverse bands of brown and buff; tail brownish grey, and nearly square in form, all the feathers, except the two outer on each side, marked with about four obscure narrow bands of black, the whole tipped with black; irides very pale yellow, freckled with light rufous; cere, base of the bill and feet greyish white; culmen and tip of the bill and claws black.

The female has the same character of markings as the male, but is readily distinguished by her great superiority in size.

The figure is that of a male two-thirds of the natural size.

ELANUS AXILLARIS.

J. Gould and H.C. Richter del. *C. Hullmandel Imp.*

ELANUS AXILLARIS.

Black-shouldered Kite.

Falco axillaris, Lath. Ind. Orn., Supp., vol. ii. p. 42. — Shaw Gen. Zool., vol. vii. p. 173. — Vieill. 2nde Edit. du Nouv. Dict. d'Hist. Nat., tom. iv. p. 453.
Circus axillaris, Vieill. Ency. Méth., Part. III. p. 1212.
Elanus notatus, Gould in Proc. of Zool. Soc., Part V. p. 141 ; and in Syn. Birds of Australia, Part IV.

A MORE careful comparison of the birds from various parts of the world, which have hitherto been classed under the old specific name of *Falco* (*Elanus*) *melanopterus*, has shown that, instead of their being all identical, each quarter of the globe is inhabited by its own peculiar species ; and that although they all bear a general resemblance to each other, they each possess well-defined characters, by which they may be readily distinguished : in their habits, as might be supposed, they are as closely allied as in general appearance.

The species here represented is a summer visitant to the southern portions of the Australian continent, over which it is very widely but thinly dispersed, being found at Swan River on the west coast, at Moreton Bay on the east, and over all the intervening country ; I have never seen it in collections from Java, although Sir William Jardine states that it is an inhabitant of that island, neither have I yet seen it from Van Diemen's Land.

In its disposition it is much less courageous than the other members of the Australian *Falconidæ*, and, as its feeble bill and legs would indicate, lives more on insects and reptiles than on birds or quadrupeds.

I very often observed it flying above the tops of the highest trees, and where it appeared to be hawking about for insects ; it was also sometimes to be seen perched upon the dead and leafless branches of the gums, particularly such as were isolated from the other trees of the forest, whence it could survey all around.

While under the Liverpool range I shot a young bird of this species that had not long left the nest ; which proves that it had been bred within the colony of New South Wales, but I could never obtain any information respecting the nest and eggs.

The sexes closely assimilate to each other in colouring. The young differ in having the feathers of the upper surface tipped with buffy-brown.

The adults have the eye encircled by a narrow ring of black ; forehead, sides of the face and under surface of the body pure white ; back of the neck, back, scapularies, and upper tail-coverts delicate grey ; a jet-black mark commences at the shoulders, and extends over the greater portion of the wing ; under surface of the shoulders pure white, below which an oval spot of jet black ; primaries dark grey above, brownish black beneath ; tail greyish white ; bill black ; cere and legs pale yellow ; irides reddish orange.

The figures are those of a male and a female of the natural size.

ELANUS INSCRIPTUS: *Gould.*

J. Gould and H. C. Richter del. *C. Hullmandel Imp.*

ELANUS SCRIPTUS, *Gould.*

Letter-winged Kite.

Elanus scriptus, Gould in Proc. of Zool. Soc., June 28, 1842.

I HAVE nothing more to communicate respecting this new species of *Elanus*, than that I found a single specimen of it among a collection of skins that had been sent from South Australia. In size it considerably exceeds the Black-shouldered Kite, from which it also differs in the colouring of the upper surface, which is much darker and washed with reddish brown, the same part in the other species being delicate grey; the principal character, however, by which it may be distinguished, not only from its Australian relative, but from every other member of the genus yet discovered, is the great extent of the black mark on the under surface of the wing, which following the line of the bones from the body to the pinion, assumes when the wing is spread the form of the letter V, or if both wings are seen at the same time that of a W, divided in the centre by the body; which circumstance has suggested the specific name I have applied to it.

It will be admitted by every one that this new species is an interesting addition to the Australian *Falconidæ*, a group, of which the Fauna of that country is more meagre in species than any similar extent of country known.

Forehead and line over the eye white; head and all the upper surface dark grey, washed with reddish brown; wing-coverts deep glossy black; primaries greyish brown, becoming nearly white on their webs, all but the first two or three margined with white at the tip; secondaries brownish grey on the outer web, white on the inner and at the extremity; tertiaries brownish grey; two centre tail-feathers grey; the remaining tail-feathers pale brown on their outer webs, and white on the inner; lores black; all the under surface and edge of the shoulder white; on the under surface of the wing, following the line of the bones, a broad mark of black, assuming the form of the letter V; bill black; cere and legs yellow; claws black; irides orange.

The figure is of the natural size.

LEPIDOGENYS SUBCRISTATUS: *Gould.*

J Gould and H C Richter del et lith. *C Hullmandel Imp.*

LEPIDOGENYS SUBCRISTATUS, *Gould.*

Crested Hawk.

Lepiaogenys subcristatus, Gould in Proc. of Zool. Soc., Part V. p. 140; and in Syn. Birds of Australia, Part III.

I REGRET to say that I am not sufficiently acquainted with this singular species to give any account of its habits and economy, but, judging from the feebleness of its bill and talons and the shortness of its tarsi, I conceive that it principally preys upon insects and their larvæ; and it is not improbable that honey and the larvæ of bees and ants, which abound in Australia, may form a portion of its food. Any information on this head that may have been ascertained by residents in Australia would, if made known, be of the highest interest to ornithologists, as an addition to the history of this singular form among the *Falconidæ*. Its extreme rarity, however, will, I fear, tend much to prevent the acquirement of this desirable information.

I saw it soaring high in the air over the plains in the neighbourhood of the Namoi, but never sufficiently near to admit of a successful shot. All the specimens I have seen were collected either at Moreton Bay or on the banks of the Clarence.

As little or no difference exists in the plumage of the specimens I have examined, I presume that the sexes are very similar.

Crown of the head, sides of the face, ear-coverts, and upper part of the back brownish grey; occiput and lengthened occipital plumes blackish brown; back and scapulars brown; wings uniform dark brownish grey above, beneath silvery grey; primaries and secondaries crossed by several bands, and largely terminated with black; rump and upper tail-coverts chocolate-brown; tail brownish grey above, lighter beneath, crossed by three narrow bands of black near the base, and deeply terminated with the same colour; throat, chest, part of the shoulder, and under tail-coverts greyish white tinged with rufous; abdomen, flanks and thighs buffy white, crossed with conspicuous narrow bands of reddish chestnut; bill bluish horn-colour; tarsi yellowish.

The Plate pourtrays the bird of the natural size.

CIRCUS ASSIMILIS: *Jard: & Selb:*

J. Gould and H.C. Richter del. et lith. *C. Hullmandel Imp.*

CIRCUS ASSIMILIS, *Jard. and Selb.*

Allied Harrier.

Circus assimilis, Jard. and Selb. Ill. Orn., vol. ii. pl. 51.
Swamp Hawk, of the Colonists.

The *Circus assimilis* may be regarded as the commonest of the Harriers inhabiting New South Wales and South Australia; it also occurs, but in smaller numbers, in Van Diemen's Land. Another Harrier is rather abundantly dispersed over all the localities suitable to its existence in Western Australia, and it is just possible that they may prove to be mere varieties of each other; if such should be the case, the whole of the southern portion of the coast of Australia, from east to west, must be included within the range of its habitat; still, without further evidence in favour of this supposition, I should consider them to be distinct species; and if this opinion is well-founded, the two species will be found to inosculate in the latitude of Spencer's and St. Vincent's Gulfs, as, in the collections lately forwarded to me by Mr. Harvey of Port Lincoln, I found two or three individuals precisely identical with those from Swan River. In size the *Circus assimilis* is but little inferior to the Marsh Harrier (*Circus æruginosus*) of Europe, to which it offers a great resemblance in its habits and economy; being generally seen flying slowly and somewhat heavily near the surface of the ground, evincing a partiality to lagoons and marshy places, situations which offer it a greater variety and abundance of food than any other; the principal part of its food consists of reptiles, small mammalia and birds. I several times observed this species in the lagoons near Clarence Plains in Van Diemen's Land, as well as in all similar situations in almost every part of New South Wales I visited.

I was not so fortunate as to find the nest of this Harrier,—a knowledge of its form and of the colour of its eggs is therefore yet to be ascertained. That it breeds in the localities in which I observed it I have little doubt, from the circumstance of the adults paying regular and hourly visits to the marshes in search of food, which was doubtless borne away to their young. When in a state of quiescence, this species, like the other Harriers, perches on some elevation in the open plain rather than among the trees of the forest; the trunk of a fallen tree, a large stone, or small hillock, being among its favourite resting-places.

The sexes offer the usual differences in the larger size of the female; the markings of that sex are also rather less well-defined, and have not so much of the grey colouring as the male.

Head and all the upper surface rich dark brown; the feathers at the back of the neck margined with reddish buff; face light reddish brown; facial disc buffy white, with a dark stripe down the centre of each feather; all the under surface buffy white, which is deepest on the lower part of the abdomen and thighs, each feather with a streak of brown down the centre; upper tail-coverts and base of the tail-feathers white; remaining length of the tail-feathers brownish grey; irides reddish orange; eyelash and cere pale yellow; bill dark brown, becoming light blue at the base; tarsi greenish white; feet bright orange; claws dark brown.

The female differs in being of a larger size and of a darker brown, particularly on the under surface, and in having the tail of a deeper tint and obscurely barred.

The figures are about two-thirds of the natural size.

CIRCUS JARDINII: *Gould.*

J. Gould and H.C. Richter del. et lith. *C. Hullmandel imp.*

CIRCUS JARDINII, *Gould.*

Jardine's Harrier.

Circus Jardinii, Gould in Proc. of Zool. Soc., Part V. p. 141 ; and in Syn. Birds of Australia, Part III.

This very beautiful Harrier, which is distinguished from every other species of the genus at present known by the spotted character of its plumage, is plentifully dispersed over every portion of New South Wales, wherever localities favourable to the existence of the Harrier tribe occurs, such as extensive plains, wastes, and luxuriant grassy flats between the hills in mountainous districts. The extent of its range over the Australian continent has not yet been ascertained, and I have never observed it from any other portion of the country than that mentioned above, nor do specimens occur in collections formed in other parts.

In the third part of my "Synopsis of the Birds of Australia," I expressed an opinion that the *Circus assimilis* of Messrs. Jardine and Selby's "Illustrations of Ornithology" was merely the young of the present species: this opinion, however, my visit to Australia proved to be erroneous; the *Circus assimilis*, as will be seen on reference to the preceding plate, proving to be entirely distinct. The present noble bird has been named in honour of Sir William Jardine, Bart., one of the authors of the work above mentioned; and which, as well as his other valuable publications connected with the science of ornithology, are well known to every zoologist.

To describe the economy of the Jardine's Harrier would be merely to repeat what has been said respecting that of the former species. Like the other members of the genus, it flies lazily over the surface of the plains, intently seeking for lizards, snakes, small quadrupeds and birds; and when not pressed by hunger, reposes on some dried stick, elevated knoll, or stone, from which it can survey all around. Although I observed this species in all parts of the Hunter in summer, when others of the *Falconidæ* were breeding, I did not succeed in procuring its eggs, or obtain any satisfactory information respecting its nidification; in all probability its nest is constructed on or near the ground, on the scrubby crowns of the low, open, sterile hills that border the plains.

The sexes present considerable difference in size, but are very similar in their markings; both are spotted, but the female is by far the finest bird in every respect.

Crown of the head, cheeks and ear-coverts dark chestnut, each feather having a mark of brown down the centre; facial disc, back of the neck, upper part of the back, and chest uniform dark grey; lower part of the back and scapulars dark grey, most of the feathers being blotched and marked at the tips with two faint spots of white, one on each side of the stem; shoulders, under surface of the wing, abdomen, thighs and under tail-coverts rich chestnut, the whole of the feathers beautifully spotted with white, the spots regularly disposed down each web, and being largest and most distinct on the abdomen; greater and lesser wing-coverts brownish grey, irregularly barred and tipped with a lighter colour; secondaries dark grey, crossed with three narrow lines of dark brown, and tipped with a broad band of the same colour, the extreme tips being paler; primaries black for two-thirds of their length, their bases brownish buff; upper tail-coverts brown, barred and tipped with greyish white; tail alternately barred with conspicuous bands of dark brown and grey, the brown band nearest the extremity being the broadest, the extreme tips greyish white; irides bright orange-yellow; cere olive-yellow; bill blue at the base, black at the culmen and tips; legs yellow.

The young has the whole of the upper surface nearly uniform dark brown, the tail more numerously barred, and the feathers of the chest and upper part of the abdomen striated, instead of spotted with white: in other respects it resembles the adults.

The front figure represents the female and the other the male, about two-thirds of the natural size.

STRIX CASTANOPS: *Gould.*

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton Imp.

STRIX CASTANOPS, *Gould.*

Chestnut-faced Owl.

Strix castanops, Gould in Proc. of Zool. Soc., Part IV. p. 140 ; and in Syn. Birds of Australia, Part III.

Van Diemen's Land is the native country of this Owl, a species distinguished from all the other members of the genus *Strix*, as now restricted, by its great size and powerful form ; few of the Raptorial birds, in fact, with the exception of the Eagles, are more formidable or more sanguinary in disposition than the bird here represented.

Forests of large but thinly scattered trees, skirting plains and open districts, constitute its natural habitat. Strictly nocturnal in its habits, as night approaches it sallies forth from the hollows of the large gum-trees, and flaps slowly and noiselessly over the plains and swamps in search of its prey, which, as is the case with the other members of the genus, consists of rats and small quadrupeds generally, numerous species of which abound in the country wherein it is destined by nature to dwell.

I regret that the brevity of my stay in Van Diemen's Land did not admit of sufficient opportunities for observing this bird in its native haunts, and of making myself acquainted with the various changes which take place in the colouring of its plumage. Much variety in this respect exists among the specimens in my collection ; occasioned not so much by a difference in the form of the markings, as by a difference in the hue of the wash of colour which pervades the face, neck, under surface and thighs. In some specimens the face, all the under surface and the thighs are deep rusty yellow ; in others the same parts are slightly washed with buff, while others again have the face of a dark reddish buff approaching to chestnut, and the under surface much lighter ; I have also seen others with the facial feathers lighter than those of the body, and, lastly, some with the face and all the under surface pure white, with the exception of the black spots which are to be found in all. Whether the white or the tawny plumage is the characteristic of the adult, or whether these changes are influenced by season, are points that might be easily cleared up by persons resident in Van Diemen's Land, and I would invite those who may be favourably situated for observation to fully investigate the subject and make known the results.

I found the white variety far less numerous than the others ; and so much smaller in size, as almost to induce a belief that they were distinct.

The sexes differ very considerably in size, the female being by far the largest, and in every way more powerful than the male : the stroke of her foot and the grasp of her talons must be immediate death to any animal, from the size of the little Opossum Mouse to the largest of the Kangaroo-rats, upon which latter animals it is probable that future research will prove it sometimes subsists.

Fascial disc deep chestnut, becoming deeper at the margin and encircled with black ; upper surface, wings and tail fine rufous brown, each feather irregularly and broadly barred with dark brown, with a few minute white spots on the head and shoulders ; under surface uniform deep sandy brown ; sides of the neck and flanks sparingly marked with round blackish spots ; thighs and legs the same, but destitute of spots ; bill yellowish brown ; feet light yellow.

The Plate represents the two sexes of the natural size.

STRIX PERSONATA: *Vig:*

J.Gould and H.C.Richter del et lith. *Hullmandel & Walton Imp.*

STRIX PERSONATA, *Vig.*

Masked Barn Owl.

Strix personata, Vig. in Proc. of Com. of Sci., and Corr. of Zool. Soc., Part I. p. 60.—Gould in Syn. Birds of Australia, Part III.

Strix Cyclops, Gould in Proc. of Zool. Soc., Part IV. p. 140 ; and in Syn. Birds of Australia, Part III. ?

It will be recollected that the habitat of the *Strix castanops* is Van Diemen's Land, to which island it is probably restricted ; on the other hand, the bird here figured, although nearly allied to the preceding, not only differs in so many essential characters as to leave little doubt in my mind of its being specifically distinct, but is confined to the continent of Australia, over which it enjoys a wide range. With the exception of the north coast, I have received specimens from every part of the country. During my visit to the interior of South Australia, numerous individuals fell to my gun, which upon comparison presented no material variation in their colour or markings from others killed in New South Wales and Swan River.

If I were puzzled with respect to the changes to which the *Strix castanops* is apparently subject, I am not less so with those of the present bird ; for although I find the tawny and buff colouring of the face and under surface is generally lighter, I also find a diversity in the colouring of the different parts of the under surface ; I have specimens in my cabinet with the face, all the under surface and the ground-colour of the upper pure white, and prior to my visit to Australia I characterized specimens thus coloured as a distinct species under the name of *Strix Cyclops*, but I have now some reason to believe them to be fully adult males of the bird here figured. I may remark, that out of the numerous examples I killed in South Australia in the month of June, I did not meet with one in the white plumage.

The *Strix personata* is almost a third smaller than the *S. castanops*, and as the sexes of both species bear a relative proportion in size, the male of the one is about equal to the female of the other. The white spottings of the upper surface of the former are larger than those of the latter, and the surrounding patches of dark brown and buff are not so deep, giving the whole of that part of the bird a more marbled or speckled appearance.

Pale buff; the upper part of the head, the back and the wings variegated with dark brown, and sparingly dotted with white ; under surface paler with a few brown spots ; tail buff, undulated with brown fascia ; facial disc purplish buff, margined with deep brown spots ; bill pale horn-colour ; toes yellow.

The figures represent the two sexes of the natural size.

STRIX TENEBRICOSUS: *Gould.*

J. Gould and H^c Richter del et lith. *Hullmandel & Walton Imp.*

STRIX TENEBRICOSUS, *Gould.*

Sooty Owl.

Strix tenebricosus, Gould in Proc. of Zool. Soc., Part XIII. p. 80.

A FINE specimen of this species is comprised in the collection of the British Museum, and a second example graces my own; its habitat is undoubtedly the dense brushes of the east coast of Australia, where, like other Owls, it remains secluded during the day, and sallies forth at night in search of its natural prey. It is a fine and powerful species, and the rarest of the Australian members of the genus to which it belongs, from all of which it is conspicuously distinguished by the dark sooty hue of its plumage, and by the primaries being of one colour, or destitute of the bars common to all the other species.

Facial disc sooty grey, becoming much deeper round the eyes; upper surface brownish black, with purplish reflexions, and with a spot of white near the tip of each feather; wings and tail of the same hue but paler, the feathers of the wing of a uniform tint, without bars, those of the tail faintly freckled with narrow bars of white; under surface brownish black, washed with buff, and with the white marks much less decided; legs mottled brown and white; irides dark brown; bill horn-colour; feet yellowish.

The figure is of the natural size.

STRIX DELICATULIS: *Gould.*

J. Gould and H.C. Richter del. et lith.

Hallmandel & Walton Imp.

STRIX DELICATULUS, *Gould.*

Delicate Owl.

Strix delicatulus, Gould in Proc. of Zool. Soc., Part IV., 1836, p. 140 ; and in Syn. Birds of Australia, Part III.
Yŏn-ja, Aborigines of the lowlands of Western Australia.

This is the least of the Australian Owls belonging to that section of the group to which the generic term of *Strix* has been restricted ; it is also the one most generally distributed. I observed it in almost every part of New South Wales that I visited ; it is a common bird in South Australia, and I have also seen specimens of it from Port Essington. It has not yet been found in the colony of Swan River, nor can it be included in the fauna of Van Diemen's Land. Although good specific differences are found to exist, it is very nearly allied to the Barn Owl (*Strix flammea*) of our own island, and, as might be naturally expected, the habits, actions and general economy of the two species are as similar as is their outward appearance : mice and other small mammals, which are very numerous, are preyed upon as its natural food. To attempt a description of its noiseless flight, its mode of capturing its prey, or of its general habits, would be merely to repeat what has been so often and so ably written relative to the Barn Owl of Europe.

Although the plumage of youth and that of maturity do not differ so widely in this species as in the other Australian members of the genus, the fully adult bird may always be distinguished by the spotless and snowy whiteness of the breast, and by the lighter colouring of the upper surface.

Facial disc white, margined with buff; upper surface light greyish brown tinged with yellow, very thickly and delicately pencilled with spots of brownish black and white ; wings pale buff lightly barred with pale brown, marked along the outer edge and extremities with zigzag pencillings of the same, each primary having a terminal spot of white ; tail resembles the primaries, except that the terminal white spot is indistinct, and the outer feathers are almost white ; under surface white, sparingly marked about the chest and flanks with small brownish dots ; legs and thighs white ; bill horn-colour ; feet yellowish.

The figure is of the natural size.

ATHENE BOOBOOK.

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton Imp.

ATHENE BOOBOOK.

Boobook Owl.

Strix Boobook, Lath. Ind. Orn. Suppl., p. xv. no. 9.—Shaw, Gen. Zool., vol. vii. p. 262.
Boobook Owl, Lath. Gen. Hist., vol. i. p. 362. no. 66.—Id. Gen. Syn. Suppl., vol. ii. p. 64.
Noctua Boobook, Vig. and Horsf. in Linn. Trans., vol. xv. p. 188.
Athene Boobook, Gould in Syn. Birds of Australia, Part I.
Buck-buck, Aborigines of New South Wales.
Goor̈-goor̈-da, Aborigines of Western Australia.
Mel̈-in-de-ye, Aborigines of Port Essington.
Koor-koo, Aborigines of South Australia.
Brown or *Cuckoo-Owl* of the Colonists.

I HAVE seen individuals of this Owl from every one of the Australian colonies, all presenting similar characters, with the exception of those from Port Essington, which differ from the others in being a trifle smaller in size and paler in colour.

In Van Diemen's Land this species is seldom seen, while it is very common throughout the whole length of the southern coast of the continent. It appears to inhabit alike the brushes and the plains, that is, those plains which are studded with belts of trees. It is no unusual occurrence to observe it on the wing in the day-time in search of insects and small birds, upon which it mainly subsists. It may be readily distinguished from *Athene maculata* by its larger size, and by the spotted markings of its plumage; features which will be at once perceived by a reference to the figures of the two species.

The flight of this bird is tolerably rapid, and as it passed through the shrubby trees that cover the vast area of the belts of the Murray, it strongly reminded me of a woodcock. In such places as those I have last mentioned, travellers frequently flush it from off the ground, to which, after a flight of one or two hundred yards, it either descends again or takes shelter in any thickly-foliaged trees that may be at hand, when it can neither be easily seen nor forced from its retreat.

It breeds in the holes of the large gum-trees, during the months of November and December, and lays three eggs on the rotten surface of the wood, without any kind of nest. Three eggs procured on the 8th of November, by my useful companion Natty, were in a forward state of incubation; their contour was unusually round, the medium length of the three being one inch and seven lines, and the breadth one inch and four lines. They were perfectly white, as is ever the case with the eggs of owls.

"The native name of this bird," says Mr. Caley, "is *Buck-buck*, and it may be heard nearly every night during winter uttering a cry corresponding with the sound of that word. Although this cry is known to every one, yet the bird itself is known but to few; and it cost me considerable time and trouble before I could satisfy myself of its identity. The note of the bird is somewhat similar to that of the European *Cuckoo*, and the colonists have hence given it that name. The lower order of settlers in New South Wales are led away by the idea that everything is the reverse in that country to what it is in England; and the *Cuckoo*, as they call this bird, singing by night is one of the instances they point out." I believe that its note is never uttered during the day-time.

The sexes offer but little difference in the colouring of their plumage, but the female is the largest in size. A great diversity is found to exist in the colouring of the irides; some being yellowish white, others greenish yellow, and others brown.

Its food is very much varied, but consists principally of small birds and insects of various orders, particularly locusts and other Neuroptera.

Fore part of the facial disc greyish white, each feather tipped with black; hinder part dark brown; head, all the upper surface, wings and tail reddish brown; the wing-coverts, scapularies, and inner webs of the secondaries spotted with white; primaries and tail-feathers irregularly barred with light reddish brown, the spaces between the bars becoming buffy white on the under surface; breast and all the under surface rufous, irregularly blotched with white, which predominates on the abdomen; thighs deep tawny buff; irides light brown in some, greenish brown inclining to yellow in others; cere bluish grey; feet lead-colour.

The figures are male and female of the natural size.

ATHENE MACULATA.

J.Gould and H.C.Richter del et lith

Hullmandel & Walton Imp.

ATHENE MACULATA.

Spotted Owl.

Noctua maculata, Vig. and Horsf. in Linn. Trans., vol. xv. p. 189.
Athene maculata, Gould in Syn. Birds of Australia, Part III.

This species is very generally distributed over Van Diemen's Land; it also inhabits South Australia and New South Wales, but in far less numbers. It generally takes up its abode in the thickly-foliaged trees of the woods and gulleys, and usually selects those that are most shielded from the heat and light of the sun.

Little or no difference is observable in the habits and economy of this species and those of the diurnal Owls of Europe. The whole day is spent in a state of drowsiness bordering on sleep, from which, however, it can be easily aroused. Its visual powers are sufficiently strong to enable it to face the light, and even to hunt for its food in the day-time. Like other members of the genus it preys chiefly upon small birds and insects, which, from the more than ordinary rapidity of its movements, are captured with great facility.

The sexes are precisely alike in colour, and differ but little in size; the female is however the largest.

The drawing in the accompanying Plate was made from a pair of living examples which I kept for some time during my stay at Hobart Town, and which bore confinement so contentedly, that had an opportunity presented itself I might easily have sent them alive to England.

Facial disc white, each of the feathers immediately above the bill with the shafts and tips black; head and all the upper surface brown, the scapularies and secondaries numerously spotted with white; tail brown, crossed by irregular bands of a lighter tint, which become nearly white on the outer feathers; chest and all the under surface brown, blotched and spotted with tawny and white; primaries brown, crossed with bands of a lighter tint; thighs tawny buff; bill dark horn-colour; irides yellow; feet yellowish.

The figures are of the natural size.

ATHENE CONNIVENS.

J. Gould and H.C. Richter del. et lith.

C. Hullmandel Imp.

ATHENE? CONNIVENS.

Winking Owl.

Falco connivens, Lath. Ind. Orn. Supp., p. xii.—Shaw, Gen. Zool., vol. vii. p. 186.
Winking Falcon, Lath. Gen. Syn. Supp., vol. ii. p. 53.—Ib. Gen. Hist., vol. i. p. 221.
Athene ? fortis, Gould in Proc. of Zool. Soc., Part V. p. 141 ; and in Syn. Birds of Australia, Part III.
Goora-a-gang, Aborigines of New South Wales.
Wool-boŏ-gle, Aborigines of the mountain district of Western Australia.

The range of this fine Owl appears to extend over the whole of the southern coast of Australia. I have received it from Swan River and from nearly every part of New South Wales ; specimens from these distant localities differ a little in their plumage ; those obtained in Western Australia being rather lighter in colour, and having the markings less clear and defined than those from New South Wales. There is no difference in the plumage of the sexes, but the female is somewhat the largest in size.

Brushes, wooded gulleys, and the sides of creeks are its favourite places of resort ; it is consequently not so restricted in the localities it chooses as the *Athene strenua*, which I have never known to leave the brushes. It sallies forth early in the evening, and even flies with perfect use of vision during the mid-day sun, when roused and driven from the trees upon which it has been sleeping. I have frequently observed it in the day-time among the thick branches of the *Casuarinæ* which border the creeks.

It will be seen, on reference to the synonyms, that I described this bird in the "Proceedings of the Zoological Society," and figured it in my "Synopsis" under the specific name of *fortis* ; but I have since ascertained, through the kindness of the Earl of Derby in affording me the use and inspection of the three volumes of drawings of Australian Birds, formerly in the possession of the late A. B. Lambert, Esq., that it is identical with the Winking Falcon of Latham ; any seeming inattention on my part in describing an apparently new Owl without consulting that author will I hope be readily excused, as few ornithologists would think of looking for the description of this bird under the genus *Falco*.

Face and throat greyish white ; crown of the head and all the upper surface dark brown, tinged with purple ; scapularies, secondaries and greater wing-coverts spotted with white ; primaries alternately barred with dark and greyish brown, the light marks on the outer edges approaching to white ; tail dark brown, transversely barred with six or seven lines of greyish white, the extreme tips of all the feathers terminating with the same ; the whole of the under surface mottled brown and white, the latter occupying the outer edges of the feathers ; tarsi clothed to the toes, and mottled brown and fawn-colour ; irides bright yellow ; cere yellowish olive ; bill light yellowish horn-colour ; toes long, yellow, and covered with fine hairs.

The figure is about four-fifths of the natural size.

ATHENE? STRENUA: *Gould.*

J. Gould and H.C. Richter del. et lith.

C. Hullmandel Imp.

ATHENE STRENUA, *Gould.*

Powerful Owl.

Athene strenua, Gould in Proc. of Zool. Soc., Part V. p. 142; and in Syn. Birds of Australia, Part III.

With the exception of the Eagles, *Aquila fucosa* and *Ichthyiaëtus leucogaster*, this is the most powerful of the Raptorial birds yet discovered in Australia. Its strength is prodigious, and woe to him who ventures to approach its clutch when wounded. So far as I have been able to ascertain, the habitat of the *Athene strenua* is confined to New South Wales; at all events no examples occur in collections made in any other part of Australia. It is strictly an inhabitant of the brushes, particularly of those which stretch along the coast from Port Philip to Moreton Bay. I have also obtained it in the interior on the precipitous sides of the Liverpool range, which are known to the colonists by the name of the cedar brushes, where the silence of night is frequently broken by its hoarse loud mournful note, which more resembles the bleating of an ox than any other sound I can compare it to. During the day it reposes under the canopy of the thickest trees, from which however it is readily roused, when it glides down the gulleys with remarkable swiftness; the manner in which so large a bird threads the trees while flying with such velocity is indeed truly astonishing.

Its food consists of birds and quadrupeds, of which the brushes furnish a plentiful supply. In the stomach of one I dissected in the Liverpool range were the remains of a bird and numerous green seed-like berries, resembling small peas; but whether they had formed the contents of the stomach of a bird or quadruped the Owl had devoured, or whether the large Owls of Australia, which certainly offer some difference in their structure from every other group of the family, live partly on berries and fruits, it would be interesting to know; a fact which can only be ascertained by residents in the country.

The bill of this species stands out from the face very prominently; it has also a smaller head and more diminutive eyes than the *Athene connivens*, although it is a much larger bird.

The sexes differ but little in the colouring of the plumage or in size.

Crown of the head, all the upper surface, wings and tail dark clove-brown, crossed by numerous bars of broccoli-brown, which become much larger, lighter, and more conspicuous on the lower part of the back, the inner edges of the secondaries and of the tail; face, throat, and upper part of the chest buff, with a large patch of dark brown down the centre of each feather; the remainder of the under surface white, slightly tinged with buff, and crossed with irregular bars of brown; bill light blue at the base, passing into black at the tip; feet pale gamboge-yellow; toes covered with whitish hairs; irides yellow; cere greenish olive.

The Plate represents the bird about two-thirds of the natural size, with a young Koala (*Phascolarctos fuscus*, Desm.) in its claws, an animal very common in the brushes.

ATHENE RUFA; *Gould*

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton Imp.

ATHENE RUFA, *Gould.*

Rufous Owl.

Athene rufa, Gould in Proc. of Zool. Soc., February 24, 1846.
Ngŏr-gork, Aborigines of Port Essington.

A SINGLE specimen of this fine Owl was obtained at Port Essington by Mr. Gilbert, who shot it in a thicket amidst the swamps in the neighbourhood of the settlement. It is a most powerful species, fully equalling in size the *Athene strenua*, from which however it is at once distinguished by the more rufous tint of its plumage and by the more numerous and narrower barring of the breast. No other specimen was procured during Mr. Gilbert's residence in the colony, neither have the collections transmitted from that locality since his departure furnished us with additional examples.

Facial disc dark brown; all the upper surface dark brown, crossed by numerous narrow bars of reddish brown; the tints becoming paler and the barrings larger and more distinct on the lower part of the body, wings and tail; all the under surface sandy red, crossed by numerous bars of reddish brown; the feathers of the throat with a line of brown down the centre; vent, legs and thighs of a paler tint, with the bars more numerous but not so decided; bill horn-colour; cere, eyelash and feet yellow, the latter slightly clothed with feathers; irides light yellow.

The figure is of the natural size.