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THE

MAMMALS OF AUSTRALIA.

BY

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J.Gould and H.C.Richter, del. et lith.

MACROPUS MAJOR, *Shaw*

Hullmandel & Walton Imp.



MACROPUS MAJOR, *Shaw.*

Great Grey Kangaroo.

HEAD OF A MALE, LIFE-SIZE.

As reduced figures furnish but an inadequate idea of the size and facial expression of the larger species of Kangaroos, I have been constrained in many instances to publish double plates of these important Marsupials. The accompanying illustration will convey a just conception of the appearance of the animal at the moment of surprise, when it stands bolt upright on its hind legs, its huge tail completing the tripod which sustains its body. Twitching of the nose and the upcurling of the lips shown in the drawing are indications of anger often exhibited by these animals when their haunts are intruded upon. The hairy muffle, common to all the members of the restricted genus *Macropus,* is far better shown in the opposite Plate than it possibly could be in the reduced figures; and this forms an additional reason for giving the life-sized illustration.

A detailed account of the species will be found on the succeeding page.

Hullmandel & Walton, Imp.



MACROPUS MAJOR, *Shaw.*

Great Grey Kangaroo.

Yerbua gigantea, Zimm. Zool. Geog. Quadr., p. 526.
Didelphis gigantea, Schreb. Saug., tom. iii. p. 552. tab. 154.—Gmel. Edit. Linn. Syst. Nat., tom. i. p. 109.
Macropus giganteus, Shaw, Nat. Misc., pl. 33.—Waterh. Nat. Hist. of Mamm., vol. i. p. 62.
Kanguroo, Cook's Voy., vol. iii. p. 577. pl. 20.—Phill. Voy., pl. in p. 106.—White's Voy., pl. in p. 272.
Macropus major, Shaw, Gen. Zool., vol. i. p. 305. pl. 115.—Cook's First Voy., vol. iv. p. 45. pl. 2.—Desm. Nouv. Dict. d'Hist. Nat., tom. xvii. p. 33.—Gould, Mon. of Macropodidæ, pl.
Kangurus labiatus, Geoff. Encycl., pl. 21. fig. 4.—Desm. Ency. Méth. Mamm., p. 273.
Halmaturus griseo-fuscus, Goldf. in Oken's Isis, 1819, p. 266 (Waterhouse).
Macropus ocydromus, Gould in Ann. and Mag. Nat. Hist., vol. x. p. 1? (Waterhouse).
——— *melanops*, Gould in Proc. of Zool. Soc., part x. p. 10?
——— *fuliginosus* and its synonyms?
Boomer, *Forester*, *Old Man Kangaroo* of the Colonists, *Bundaary* of the Aborigines of the Liverpool range.

There can be little doubt of the present species being that noticed by our celebrated navigator Cook, in his voyage round the world in 1770; and as I conceive all information connected with this early-known species will be interesting, I shall commence my account of its history with a quotation from the above-mentioned work.

"On Friday, June the twenty-second, while stationed for a short time on the south-east coast of Australia," says Captain Cook, "a party, who were engaged in shooting pigeons for the use of the sick of the ship, saw an animal, which they described to be 'as large as a greyhound, of a slender make, of a mouse-colour, and extremely swift.' The following day the same kind of animal was again seen by a great many other people. On the twenty-fourth it was seen by Captain Cook himself, who, walking at a little distance from the shore, observed a quadruped, which he thought bore some resemblance to a greyhound, and was of a light mouse-colour, with a long tail, and which he should have taken for a kind of wild dog, had not its extraordinary manner of leaping, instead of running, convinced him of the contrary. Mr. Banks also obtained a transient view of it, and immediately concluded it to be an animal perfectly new and undescribed.

"The sight of a creature so extraordinary could not fail to excite, in the mind of a philosophic observer, the most ardent wishes for a complete examination. These were at length gratified; Mr. Gore, one of the associates in the expedition of Captain Cook, having been so fortunate as to shoot one in the course of a few days."

Such is the earliest notice to be found relative to this fine species, of which living examples were a few years afterwards brought to Europe, and have from time to time formed an interesting addition to our menageries. It is however remarkable, that though it has now been introduced for so long a period, all attempts at naturalizing it have hitherto proved futile; still, from my own observations of the animal in a state of nature, I am led to believe that a small degree of perseverance is alone requisite to effect so desirable an object. Should I be so fortunate as to interest any who have the means, as well as the inclination, in the furtherance of this object, we may yet hope to see our large parks and forests graced with the presence of this highly ornamental and singular animal. That it would bear the severities of our winters is almost beyond a doubt, since in Van Diemen's Land, among other places, it resorts to the bleak, wet, and frequently snow-capped summit of Mount Wellington. The kind of country which appears most suitable to its nature, consists of low grassy hills and plains, skirted by thin open forests of brushwood, to the latter of which, especially on the continent of Australia, it resorts for shelter from the oppressive heat of the mid-day sun. Although the numbers of this large species are becoming greatly reduced in consequence of the intrusion of civilized man, and though it has disappeared from those localities where he has taken up his abode, accompanied by his vast flocks and herds, still the immense tracts of sterile unwatered country which characterize Australia, and present physical obstacles to cultivation, will, in my opinion, for a long period afford a sufficient asylum for the preservation of the race.

The Great Grey Kangaroo enjoys a wide range of habitat, being spread over the colony of New South Wales, South Australia, and the intervening countries; and if the animal from Western Australia, to which I have given the name of *Macropus ocydromus*, should ultimately prove to be merely a local variety, then its range may be said to extend throughout the whole of the southern portion of the continent from east to west.

I should not consider it, strictly speaking, a gregarious animal, as I have never seen more than six or eight together, and have more frequently met with it singly or in pairs; and this view of its habits is confirmed by R. C. Gunn, Esq., who states, that "although, from the circumstance of its food being abundant on certain spots, as on recently burnt land, it may be seen in flocks, it is not gregarious; their food brings them to one spot; but on no occasion have I ever known them in flocks, owning a leader and proceeding *en masse* as all other wild animals do." Yet Mr. Gilbert, speaking of the animal observed by him in Western Australia (*M. ocydromus*, if distinct), says—"Mr. Gunn's remarks will not at all apply to the Kangaroos of this part of the country, for I have seen hundreds of instances in which the whole herd has

followed the leading one *en masse*, unless divided by the dogs: it is true there is no regular leader, but when one is disturbed, the whole herd immediately take alarm, and one bounding off is the signal for the whole to follow: when running in this way, the does soon take the lead, while the males from their greater weight are unable to keep up with them, and often bring up the rear a long distance behind, but they all follow in the same track as the leading does, and when the latter stop the entire herd stop also: this habit I have noticed so frequently, that I have always considered the Kangaroo as a gregarious animal. Occasionally an old and very large male will take possession of a valley, and there remain for years without moving a mile from the spot, leading in fact a perfectly misanthropic life; such instances, however, are not very common; still, two or three spots are known to me which have been thus tenanted for years, many of the settlers and aborigines, now young men, remembering these particular animals from their childhood. Some of the most experienced Kangaroo-hunters have endeavoured to capture them, but have invariably failed, at the cost of much injury to their dogs: with the exception of cases like these, it is rare to meet with a single Kangaroo."

Mr. Gunn states that in Van Diemen's Land the Kangaroos "lodge during the heat of the day amongst high ferns, such as *Pteris esculenta*, high-grass, and in underwood, commonly called *scrub*, that is, dense patches of *Melaleuca*, *Leptospermum*, &c. on the margins of streams; and although almost all the forest trees (*Eucalypti*) are hollow at the butt, and innumerable dead and hollow trees cover the ground, I have never known them used as sleeping-places: the space under a dead tree is much more likely to be resorted to for this purpose than the hollow of a living one."

The senses of smelling and hearing are so exquisite in this animal that it is extremely difficult of approach without detection, and to effect this it is always necessary to advance against the wind. It browses upon various kinds of grasses, herbs and low shrubs, a kind of food which renders its flesh well-tasted and nutritive. The early dawn and evening are the periods at which it feeds, and at which it is most certain to be met with.

Although hunted and frequently killed by the Dingo, or native dog, its most formidable antagonist has hitherto been the Aborigine, who employs several modes of obtaining it; sometimes stealing upon it with the utmost caution under covert of the trees and bushes, until it is within the range of his spear, which is generally thrown with unerring aim; at other times, having discovered their retreat, the natives unite in a party, and, forming a large circle, gradually close in upon them with shouts and yells, by which the animals are so terrified and confused, that they easily become victims to the bommerengs, clubs and spears which are directed against them from all sides.

Still, however formidable an enemy the Aborigine may have been, the Great Grey Kangaroo finds, at the present time, a far greater one in the white man, whose superior knowledge enables him to employ, for its destruction, much more efficient weapons and assailants than those of the more simple son of nature. Independently of the gun, he brings to his aid dogs of superior breed, and of so savage a nature, that the timid Kangaroo has but little chance when opposed to them. These dogs, which run entirely by sight, partake of the nature of the greyhound and deerhound, and from their great strength and fleetness are so well adapted for the duties to which they are trained, that its escape, when this occurs, is owing to peculiar and favourable circumstances, as, for example, the oppressive heat of the day, or the nature of the ground; the former incapacitating the dogs for a severe chase, and the hard ridges which the Kangaroo invariably endeavours to gain giving him a great advantage over his pursuers. On such grounds the females in particular will frequently outstrip the fleetest greyhound, while, on the contrary, heavy old males, on soft ground, are easily overtaken. Many of these fine Kangaroo-dogs are kept at the stock-stations of the interior for the sole purpose of running the Kangaroo and the Emu, the latter being killed solely for the supply of oil which it yields, and the former for mere sport, or for food for the dogs. Although I have killed the largest males with a single dog, it is not generally advisable to attempt this, as they possess great power, and frequently rip up the dogs, and sometimes even cut them to the heart with a single stroke of the hind leg. Three or four dogs are more generally laid on, one of superior fleetness to "pull" the Kangaroo, while the others rush in upon and kill it. It sometimes adopts a singular mode of defending itself by clasping its short powerful fore-limbs around its antagonist, leaping away with it to the nearest water-hole, and there keeping it beneath the surface until drowned: with dogs the old males will do this whenever they have an opportunity, and it is said that they will also attempt to do the same with man. In Van Diemen's Land the *Macropus major* forms an object of chase, and like the Deer and Fox in England, is hunted with hounds; and twice a week, during the season, the Nimrods of this distant land may be seen, mounted on their fleet steeds, crossing the ferry of the Derwent, at Hobart Town, on their way to the hunting-ground, where they seldom meet without "finding." The following particulars of the "hunt" have been obligingly forwarded to me by the Honourable Henry Elliot, late aide-de-camp to His Excellency Sir John Franklin, and one of its chief patrons.

"I have much pleasure in telling you all I know of the Kangaroo-hunting in Van Diemen's Land. The hounds are kept by Mr. Gregson, and have been bred by him from foxhounds imported from England; and though not so fast as most hounds here now are, they are quite as fast as it is possible to ride to in that country.

"The 'Boomer' is the only Kangaroo which shows good sport, for the strongest 'Brush Kangaroo' cannot live above twenty minutes before the hounds; but as the two kinds are always found in perfectly different situations, we never were at a loss to find a Boomer, and I must say that they seldom failed to show us good sport. We generally 'found' in a high cover of young wattles; but sometimes we 'found'

in the open forest, and then it was really pretty to see the style in which a good Kangaroo would go away. I recollect one day in particular, when a very fine Boomer jumped up in the very middle of the hounds, in the 'open'; he at first took a few high jumps with his head up, looking about him to see on which side the coast was clearest, and then, without a moment's hesitation, he stooped forward and shot away from the hounds, apparently without an effort, and gave us the longest run I ever saw after a Kangaroo. He ran fourteen miles by the map from point to point, and if he had had fair play, I have very little doubt but that he would then have beat us; but he had taken along a tongue of land which ran into the sea, so that, on being pressed, he was forced to try to swim across the arm of the sea, which, at the place where he took the water, cannot have been less than two miles broad; in spite of a fresh breeze and a head sea against him, he got fully half-way over, but he could not make head against the waves any further, and was obliged to turn back, when, being quite exhausted, he was soon killed.

"The distance he ran, taking in the different bends in the line, cannot have been less than eighteen miles, and he certainly swam more than two. I can give no idea of the length of time it took him to run this distance, but it took us something more than two hours; and it was evident, from the way in which the hounds were running, that he was a long way before us; and it was also plain that he was still fresh, as, quite at the end of the run, he went over the top of a very high hill, which a tired Kangaroo never will attempt to do, as dogs gain so much on them in going up-hill. His hind quarters weighed within a pound or two of seventy pounds, which is large for the Van Diemen's Land Kangaroo, though I have seen larger.

"We did not measure the length of the hop of this Kangaroo; but on another occasion, when the Boomer had taken along the beach, and left his prints in the sand, the length of each jump was found to be just fifteen feet, and as regular as if they had been stepped by a serjeant. When a Boomer is pressed, he is very apt to take to the water, and then it requires several good dogs to kill him; for he stands waiting for them, and as soon as they swim up to the attack, he takes hold of them with his fore-feet, and holds them under water. The buck is altogether very bold, and will generally make a stout resistance; for if he cannot get to the water, he will place his back against a tree, so that he cannot be attacked from behind, and then the best dog will find in him a formidable antagonist.

"The doe, on the contrary, is a very timid creature; and I have even seen one die of fear. It was in a place where we wished to preserve them, and as soon as we found that we were running a doe, we stopped the hounds just at the moment they were running into her. She had not received the slightest injury, but she lay down and died in about ten minutes. When a doe is beat she generally makes several sharp doubles, and then gets among the branches, or close to the trunk of a fallen tree, and remains so perfectly still, that she will allow you almost to ride over her without moving, and in this way she often escapes. A tolerably good Kangaroo will generally give a run of from six to ten miles; but in general they do not run that distance in a straight line, but make one large ring back to the place where they were found, though the larger ones often go straight away."

An extraordinary difference is observable in the size of the sexes of this species, the female being not more than half the size of the male: she brings forth one young at a time, which, as soon as it is clothed with hair, assumes the colouring of the adult.

A slight variation is found to exist in specimens from different localities, some being much darker than those represented in the Plate, and others of a foxy-red. Albinoes are occasionally, but very rarely, to be met with. As might reasonably be expected also, the fur is much thicker and more woolly in winter than in summer.

All the fur on the upper surface uniform greyish-brown above, passing into grisly-grey on the arm and under surface; a faint line of greyish-white above the upper lip and along the sides of the face; hands, feet, and tip of the tail black.

	Male.		Female.	
	feet.	inches.	feet.	inches.
Length from the nose to the extremity of the tail	7	10	5	11½
„ of tail	3	2	2	4½
„ „ tarsus and toes, including the nail	1	3	1	½
„ „ arm and hand, including the nails	1	6		10½
„ „ face from the tip of the nose to the base of the ear		9		8
„ „ ear		5½		5

The accompanying Plates represent a head of the male animal of the natural size, and reduced figures of adult examples of both sexes.

Since the publication of my Monograph of the Kangaroos, in which my account of this species first appeared, my friend Mr. G. R. Waterhouse has paid particular attention to the Marsupialia, and has recorded his opinion in the work above referred to, that the Kangaroos described by me as distinct, under the names of *Macropus ocydromus* and *M. melanops*, are merely local varieties of the present animal; whether my own or Mr. Waterhouse's view of the subject be the correct one, time and future research can alone determine; in the meanwhile it will be as well to append my descriptions, and the information I have received in reference to the animals to which I have assigned the two names above mentioned. Mr. Waterhouse is also of opinion that the animals in the Paris Museum, described under the name of *Kangurus* and *Macropus fuliginosus*, will probably prove to be merely a variety of *M. major*, in which I believe he is

correct, for I have never seen any other examples than those mentioned, and consequently have no direct evidence of their being distinct.

The animal from Western Australia, which I have called *Macropus ocydromus*, is a fine large species closely resembling the *M. major*, but differs in being of a more slender form, and in having the fur of a more woolly texture and of a darker colour on the upper surface, particularly at the base of the ears and back of the neck; the cheeks are destitute also of the usual white stripe.

"This animal," says Mr. Gilbert, "the male of which is called *Yoon-gur*, and the female *Work*, by the aborigines of Western Australia, is tolerably abundant over the whole colony from King George's Sound south, to forty miles north of Moore's River, the farthest point in that direction I have yet explored. It does not appear to be confined to any particular description of country, being as often seen in gum-forests among the mountains as on the open plains and clear grassy hills; but it is certainly most numerous in the more open parts of the country, where it is not liable to surprise. In travelling along the road from Guilford to York, from two to four or five may occasionally be met with; but farther in the interior, particularly on the Guvangun Plains, herds of thirty or forty in number may often be seen; and still farther north, beyond Kojenup, it is still more numerous; indeed, I have never seen, in any part of Australia, so large a herd as I met with on the Gordon Plains in 1840; it could not, at the most moderate computation, have comprised less than five hundred individuals; and several of my party in their astonishment considered there were even a much greater number than I have stated. The full-grown male, termed a buck or Boomer, attains a large size, and is a most formidable opponent to many of the best dogs in the country; indeed, there are few dogs that will even attempt to run him; this may in some measure account for the few recorded instances of very large ones being killed by the hunters; it is not that their speed enables them to escape, for, on the contrary, their great weight incapacitates them for running fast or to any distance, and almost any dog may overtake them; instead, therefore, of running away, the Boomer invariably turns round and faces his pursuers, erects himself to his full height, and, if possible, supports his back against a tree, and thus awaits the approach and rush of the dogs, endeavouring to strike them with his powerful hind-toe or to catch them in his fore-arms, and, while holding them, to inflict dreadful and often fatal wounds with the same weapon of offence. Old dogs, well broken in, and accustomed to keep a Boomer at bay, never attempt to run in, but by barking keep the Kangaroo at bay until the hunter comes up, when a blow or two on the head with a short heavy stick soon brings him down. The hunter himself, however, often runs great hazard, for the Boomer will frequently on his approach leave the dogs and attack him most fiercely; and it is no easy matter for him to avoid being severely cut while attempting to kill the animal. When closely pressed, it takes to the water, and as the dogs approach, catches them in its arms and holds them beneath the surface till drowned; but if the water be too shallow for drowning them, it has been known to catch one dog and place him beneath its foot while courageously awaiting the approach of a second.

"The female of the first year, before having young, and during the second year, with her first young, is termed the 'flying doe,' her speed being so great, if she obtains anything like a fair start, that she gives the fleetest dogs a very long and severe run, and frequently succeeds in outstripping them; upon finding herself too closely pursued, she usually attempts to evade the dogs by making a sudden leap almost at right angles, when the dogs, being at full speed, bound past her to such a distance, that before they can recover the track, the Kangaroo has gained so much ground that it is enabled to escape; this stratagem, however, often accelerates its death, for, in turning off so suddenly, its whole weight is thrown upon one limb, which being broken by the pressure, the animal falls to the ground and becomes an easy prey. Even the large bucks are often taken in this way, and, in their fright and anxiety to escape from the dogs, they not unfrequently run against a tree or stump with such violence as to be killed on the spot. It would scarcely be supposed by any one who has only seen this animal in confinement, where it appears so quiet and harmless, that it can be excited to rage and ferocity, yet such is the case in a state of nature; for upon finding itself without a chance of escape, it summons up all its dormant energies for a last struggle, and would doubtless often come off victor if it had dogs alone to contend with; but the moment it observes the approach of man, it seems intuitively to know that its most formidable opponent is before it; its lips are then twisted and contracted, its eyes become brilliant, and almost start from their sockets with rage, its ears are in constant motion, and it emits a peculiar, low, smothered grunt, half hiss or hard breathing-like sound; in fact, when man approaches, it seems altogether to forget the dogs, and regardless of the consequences of withdrawing its attention from them to him, soon loses its former advantage, and the dogs being enabled to obtain a secure hold, soon bring it down.

"The individuals inhabiting the forests are invariably much darker, and have a somewhat thicker coat, than those frequenting the plains. The young at first are of a very light fawn colour, which deepens in tint until they are two years old; after that age it gradually fades until, in the old males, it becomes of a very light grey. In summer their coat assumes a light and hairy character, while in winter it approaches more nearly to the texture of wool. It is very common to find them with white marks, or spots of white about the head, more particularly a white spot between the eyes or on the forehead. On one occasion I met with a very curiously marked individual, having the whole of the throat, cheeks, and the upper part of the head spotted with yellowish-white; and perfect albinoes have been observed by the hunters. The largest and heaviest Kangaroo I have been able to obtain any authentic account of, was killed at the Murray; it weighed 160 lbs."



J.Gould and H.C.Richter del. et lith.

MACROPUS OCYDROMUS, *Gould*

Hullmandel & Walton, Imp.



MACROPUS OCYDROMUS, *Gould.*

West-Australian Great Kangaroo.

HEADS OF A MALE AND A FEMALE, LIFE-SIZE.

If the letterpress annexed to the succeeding Plate, containing reduced figures of this species, be referred to, sufficient reasons will be found for figuring life-sized heads of the two sexes of the West-Australian Kangaroo. On comparing *Macropus major* and *M. Ocydromus*, it will be seen that a very considerable difference exists between the two animals—the deep vinous colouring of the entire body, deep brown hue of the nose, and the black mark at the base of the ears, which are peculiar to the latter, being very striking, and rendering it conspicuously distinct from its near ally; the opinion that they are really different species is moreover strengthened by the circumstance of the one being an inhabitant of the western, and the other of the eastern parts of the great continent of Australia; and from what we have seen in so many other instances of representative species, we might naturally expect this would be the case.

For a more detailed account of the *Macropus Ocydromus*, the reader is referred to the pages given with the entire figures of the animal.





MACROPUS OCYDROMUS, *Gould.*

West-Australian Great Kangaroo.

Macropus ocydromus, Gould in Ann. and Mag. of Nat. Hist., vol. x. p. 1.—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 86.

Yoo͝n-gur, the male: *Work*, the female: of the Aborigines of Western Australia.

Since my account of the Great Grey Kangaroo (*Macropus major*) was printed, some additional examples of the West-Australian animal, to which I had assigned the specific term *ocydromus*, have reached this country; a careful and accurate comparison of which induces the belief that my original opinion of its being a distinct species is really correct, and that I was quite right in conferring upon it a distinctive appellation.

A very young individual which I now possess has not only a thicker and more woolly fur than the young of *Macropus major*, but has a much more vinaceous colour pervading the whole of the body; and I find that this peculiar woolly texture as well as the colour are retained to the extreme adult age, and that the cheeks are of a nearly uniform vinous brown, while the cheeks of *M. major* are brown with a stripe of white. The bases of the ears in *ocydromus* are of a rich hair-brown for the extent of about an inch, when that colour abruptly terminates, and the remainder of the outside of the ear is white; the interior is also white, and has the basal portion thickly clothed with long white hairs,—a style of colouring, so far as regards the outer part of the ears, which is never found in specimens of the true *Macropus major*; there is also a lesser amount of white about the under surface of the body of *ocydromus* than in that of *major*, the vinous tint pervading the lower part of the chest and a great part of the abdomen.

That a great similarity exists in the anatomy of the two animals there can be no doubt; but the same may be said with regard to many other quadrupeds and birds which are considered distinct species. It must be recollected that the Western and Eastern Australian species, both of quadrupeds and birds, differ in almost every instance, and that but few cases occur of a species ranging across the entire continent—an extent of three thousand miles, more or less. Time, and a greater acquaintance with the mammals of Australia, will be necessary before we can say with certainty over what portion of the country this species may range.

Upon looking over my MSS. of West-Australian animals, I find a note from the pen of the late Mr. Gilbert, from which I learn that not only had he observed the difference in the colouring of the animals there found, but he had noticed that a still darker one inhabits the brushes, and that this darker-coloured animal has a more woolly coat. This may be the same as the animal I have called *Macropus melanops*, and is probably distinct from both the others, although I have placed that name as a synonym of *M. major*.

The following is Mr. Gilbert's note above referred to:—

"*Macropus ocydromus.*—You will receive herewith a very large male and two mature females, from different localities; the two latter showing the extremes of the dark and light variations of colouring. The largest Kangaroo yet killed in the colony (the weight of which is well authenticated) was shot on the Canning by Mr. Phillips, the Resident at King George's Sound; it was ascertained to weigh 180 lbs., its unusual size having induced that gentleman to weigh it before any part was removed."

The male has the face and forehead dull cinnamon-brown, becoming darker over the nose and forehead; cheeks without a white stripe; upper lip and chin beset with a number of long and short fine black hairs, those on the edge of the upper lip being rigid; base of the ears and occiput dark vinous brown, the remainder of the ears clothed externally with short grizzled hairs, the tips of which are white, and the base brown, offering a strong contrast to the dark colouring of the lower part of the ear; internally the ears are clothed with long white hairs; the vinous brown colouring of the occiput is continued down the back of the neck and over the middle of the back, becoming lighter towards the tail; throat, fore part of the neck, and chest brownish white; sides of the body, flanks, and under surface dull cinnamon-brown; arms and hands grizzled brown, externally becoming lighter on the inner surface and darker towards the extremities; thighs, legs, and feet similar; a deep vinous brown mark extends along the ridge of the tail, gradually passing into black at the tip, the remainder of the tail cinnamon-brown.

The female is similar in colour, but lighter in every part.

The accompanying Plates represent the heads of an adult male and female of the size of life, and reduced figures of the entire animals.





MACROPUS FULIGINOSUS.

Sooty Kangaroo.

Kangurus fuliginosus, Desm. Nouv. Dict. d'Hist. Nat., tom. xvii. p. 35. pl. E. 22 (*K. géant*).—Ib. Ency. Méth. Mamm., part i. p. 263.

Kangurou géant, F. Cuv. et Geoff. Hist. Nat. des Mamm., fasc. 2.—F. Cuv. Dict. Sci. Nat., tom. xxiv. p. 347.

Macropus fuliginosus, Less. Man. de Mamm., p. 225.—Gould, Mon. of Macrop., pl. .—Waterh. in Jard. Nat. Lib. *Marsupialia*, p. 200.—Gray, List of Mamm. in Coll. Brit. Mus., p. 88.—Waterh. Nat. Hist. of Mamm.,vol. i. p. 73.

Although I have mentioned, in my account of *Macropus major*, the probability that the animal to which the name of *M. fuliginosus* has been assigned is merely a variety of that species, I have thought it advisable to give reduced figures from the original specimens in the Paris and Leyden Museums, because these specimens differ considerably in the colouring of their fur from the ordinary examples of *M. major*, and because I believe the animal is no longer to be found on Kangaroo Island, where, according to Desmarest, the specimens above referred to were procured. The peculiar dull red colouring they exhibit may or may not be due to some unusual mode of preparing the skin before mounting; but one thing is certain: whatever may have been the original colouring of their fur, the term *fuliginosus* is now by no means descriptive of it; in all probability the change is due to the long exposure to light and dust to which they have been subjected,—an agency which has not only had a deleterious effect upon the specimens in question, but upon all those I brought from Australia. To become acquainted with the natural colouring of the various species of Kangaroo, it is positively necessary to observe them in their native country, where the newly-killed animals present colours which no art on the part of the Taxidermist or care on the part of Museum curators has the power of preserving, and to give a faithful portraiture of which, coloured drawings should then and there be made. I see the necessity of this more and more, whenever I look at specimens in our museums, from all of which the colours have more or less faded, until a general sameness of tint pervades the whole.

Fur of the body rather long and inclining to a woolly texture; general colour rusty yellowish brown, darker and inclining to sooty on the shoulders and centre of the back; hairs of the throat, back and abdomen grisly; sides of the face and muzzle uniform, and of the same colour as the body; inner surface of the ear furnished with long white hairs; external surface blackish brown; toes and apical half of the tail blackish brown.

	Male.		Female.	
	feet.	inches.	feet.	inches.
Length from the nose to the extremity of the tail	7	3 . .	4	$9\frac{1}{2}$
,, of the tail	2	6 . .	1	9
,, ,, tarsus and toes, without the nail	1	0 . .		$9\frac{1}{2}$
,, ,, ear		$4\frac{1}{3}$ . .		$3\frac{1}{4}$
,, ,, head		$9\frac{3}{4}$ . .		7

The Plate represents both sexes, necessarily greatly reduced.



J. Gould and H.C. Richter, del et lith.

OSPHRANTER RUFUS.

Hullmandel & Walton Imp.

OSPHRANTER RUFUS.

Great Red Kangaroo.

HEAD OF A MALE, LIFE-SIZE.

I REGRET very much to say that the time may not be far distant when an opportunity of giving a full-sized drawing of the head of this noble animal, taken from life, will not be possible. The larger and more conspicuous productions of an island are often, as a natural consequence, the first that become extirpated; and this result takes place more speedily where no protection is afforded to them. Short-sighted indeed are the Anglo-Australians, or they would long ere this have made laws for the preservation of their highly singular, and in many instances noble, indigenous animals; and doubly short-sighted are they for wishing to introduce into Australia the productions of other climes, whose forms and nature are not adapted to that country. Let me then urge them to bestir themselves, ere it be too late, to establish laws for the preservation of the large Kangaroos, the Emeu, and other conspicuous indigenous animals: without some such protection, the remnant that is left will soon disappear, to be followed by unavailing regret for the apathy with which they had been previously regarded. I make no apology, therefore, for publishing a life-sized head of the Great Red Kangaroo of the plains, a detailed history of which will be found accompanying the reduced figures.

J. & Walton, Imp.



OSPHRANTER RUFUS.

OSPHRANTER RUFUS.

Great Red Kangaroo.

Kangurus rufus, Desm. Mamm. Supp., p. 541.—Gray, in Griff. Anim. Kingd., vol. v. p. 202.
——— *laniger*, Gaim. Bull. des Sci. par la Soc. Philom., année 1822, p. 138.—Quoy et Gaim. Voy. de l'Uranie, p. 65. pl. 9.
Macropus lanigerus, Gray, in Griff. Anim. Kingd., vol. iii. p. 49. pl. opposite p. 48.
——— *laniger*, G. Benn. Cat. of Australian Museum, Sydney, p. 6. no. 28.—Gould, Mon. of Macropodidæ.—Gray, List of Mamm. in Coll. Brit. Mus., p. 88.
——— (*Halmaturus*) *rufus*, Waterh. Nat. Hist. Mamm., vol. i. p. 104.

Not only is this species the most beautiful member of the family to which it belongs, but it may also be regarded as the finest of the indigenous Mammals of Australia yet discovered; its large size, great elegance of form, and rich and conspicuous colouring all tending to warrant such an opinion. A splendid male, which in health and colour fully equals any examples I have personally observed in their native wilds, is now (1853) living in the Gardens of the Zoological Society in the Regent's Park, and, although it has not yet attained the stature of a fully adult animal, forms an object of great attraction to the visitors, and particularly to those naturalists who take an interest in the singular Mammals of Australia. This fine example is the first that I have seen alive in Europe; and it will be much to be regretted if a female cannot be procured, for in all probability the success which has attended the introduction of the Common Kangaroo and other members of the family would also wait upon the domestication of this noble animal, and ultimately lead to the perpetuation of its race in Europe; an object of the highest importance, since from the limited extent of its native habitat, daily encroached upon by civilized man, and the wanton manner in which it is unrelentingly killed, it is constantly becoming more and more scarce in the open plains and low grassy hills of its native land. The kind of country it frequents being of the utmost value to the pastoral portion of the Australian community, it is diligently sought for and occupied as soon as found, for depasturing their immense flocks and herds, in the stockmen and keepers of which, aided by their fleet, powerful, and well-trained dogs, the Red Kangaroo finds an enemy which at once drives it from all newly occupied districts, and which will ultimately lead to its entire extirpation, unless some law be enacted for its preservation; and to this point I would direct the attention of the present enlightened Governor and Assembly of New South Wales, who surely will not hesitate to make some provision for the protection of this noble animal, as well as for some other fine species of the family still inhabiting that Colony; in fact, if this be not done, a few years will see them expunged from the Fauna of Australia.

The range of the Great Red Kangaroo, so far as it is yet known, extends over the plains of the interior of the Colonies of New South Wales, Port Philip, and South Australia; I have never seen a specimen from the country to the westward of the latter colony, or from the northward of the latitude of Moreton Bay; the plains bordering the rivers Gwydyr, Namoi, Morumbidgee, Darling and Murray, and the grassy hills of South Australia, particularly those to the northward of Adelaide, are the districts over which it formerly ranged in abundance, and in which, notwithstanding the persecution to which it has been subjected, it may still be found, though in much smaller numbers. It does not so strictly affect the rich grassy plains as the Common Kangaroo (*Macropus major*), but evinces a greater partiality for the sides of the low stony hills and patches of hard ground clothed with box, intersecting those alluvial flats. In this part of its economy, as well as in the structure of its hinder feet, the greater length of its arms, the comparative nakedness of its muzzle, and in the much smaller size of the female compared with the females of the true *Macropi*, and in the difference in the colouring of the sexes, it is most intimately allied to the Great Rock Walleroos, to which I have given the generic name of *Osphranter*, and hence I have been induced to associate it with the members of that genus, and to call it *Osphranter rufus*, which latter or specific name has the priority over that of *laniger* assigned to it by M. Gaimard, and under which it appears in my "Monograph of the Macropodidæ." It is to be regretted that the colouring of the fur of this fine animal cannot by any means be preserved after death if exposed to light; nothing can be more different than its colour on the living animal and that of the mounted specimens in the National Museum, which were procured by myself while in Australia; so great in fact is the difference, that they might readily be mistaken for two different animals. The beautiful pink hue of the throat and chest appears to be due to some peculiar exudation from the skin rather than to the colouring of the hair itself; for if those parts be rubbed with a white handkerchief, a pinky pollen-like substance will be found adhering to it: this tint is deeper at some seasons than at others, and is probably developed under some particular condition of the animal.

The female is still more gracefully and elegantly formed than the male, and has a very different style of

colouring, delicate blue being the prevailing tint in those parts which in the male are red, whence the colonial names for the two sexes of Red Buck and Blue Doe; the female has also been called the Flying Doe, from her extraordinary fleetness, which is in fact so great, that I have no hesitation in saying that on hard ground and under favourable circumstances she would outstrip the fastest dogs. Occasionally both sexes are run successfully, either from the chase being over soft muddy soil, or from the female being encumbered with a large and heavy young one, which she has not been able to eject from the pouch, as she always will do if possible when hardly pressed; the female specimen in the British Museum above alluded to was procured under these circumstances. Observing a pair sheltering from the heat of the sun under a small group of Myalls (*Acacia pendula*) on the plains near the Namoi, I succeeded in leading a fine dog to within seventy yards without being perceived; the dog was so quickly at the heels of the female, which was carrying a large young one, that her escape was impossible: the male in the British Museum was also secured by a single dog, which, after a short chase, "pulled" and kept him at bay until I came up and despatched him, after a fearful resistance. It weighed above two hundred pounds, and was killed while I was making a forced march between the River Murray and the City of Adelaide, at a time when our provisions were exhausted, and I can therefore speak with a lasting recollection of its flesh, which supported me and my party for four days.

The male has the head, all the upper surface and flanks rich orange-red; a wash of grey on the outer side of the thigh; sides of the muzzle as far as the angle of the mouth and the chin white; intermingled with the white of the muzzle some interrupted rows of black hairs; ears white at the base, the remainder greyish brown, fringed with white; throat and chest delicate pink, deeper at some seasons than at others; arms and legs tawny white; hands and toes blackish brown; under surface of the body and tail white, tinged with tawny.

The female is blue-grey where the male is red, but has a wash of red on the sides of the body and the haunches tinged with vinous; has a broad white mark extending from the angle of the mouth under the eye, and the under surface of the body and the limbs pure white.

In the young animal the upper surface is nearly of a uniform blue-grey.

As a reduced figure can give but a faint idea of the size of this fine animal, I give the measurements of the male killed near the Namoi.

Total length from the nose to the end of the tail eight feet two inches; of the tail three feet; of the arm, hand and nails eighteen inches and a half; of the tarsi, toes and nail fourteen inches; of the face from the tip of the nose to the base of the ear eight inches; of the ear five inches and a half.

The drawing of the head, taken by Mr. Richter from the animal in the Gardens of the Zoological Society, is about two-thirds of the fully adult size.



OSPHRANTER ANTILOPINUS, *Gould*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walter, Imp.

OSPHRANTER ANTILOPINUS, *Gould.*

Red Wallaroo.

Head of a Male, life-size, and of a Female, reduced.

The Red Wallaroo, of the Cobourg Peninsula, a noble species, second only in colour and structure to the *Osphranter rufus*, must for ever form a conspicuous object among the indigenous quadrupeds of Australia. Its bare muffle at once indicates it to be a less browzing animal than the *Macropus major*; while the structure of its feet and toes equally indicate that stony and rocky districts are the situations in which it is destined to dwell. Much disparity occurs in the size of the sexes, the female being very much smaller than the male; the accompanying illustration, however, does not portray the head of the female so large as it really is; on the other hand, the head of the adult male is the size of life. Fierce, bold, and even dangerous is this powerful animal. Its native rocks afford it partial protection; but it is one of the species which will soon be extirpated when Northern Australia becomes peopled by miners or stockholders.

The following Plate gives reduced figures of this fine species, and the accompanying letter-press a detailed account of its history and economy.





OSPHRANTER ANTILOPINUS, *Gould.*

Red Wallaroo.

Osphranter Antilopinus, Gould in Proc. of Zool. Soc., Part ix. p. 80.—Ib. Mon. of Macrop., pl. .—Gray, List of Mamm. in Coll. Brit. Mus., p. 91.
Macropus (Halmaturus) Antilopinus, Waterh. Nat. Hist. of Mamm., vol. i. p. 95.
Mar-ra-a-woke of the Aborigines of Port Essington.

From the period at which Australia was first visited by our enterprising navigators to the present time, our knowledge of its natural productions has been almost entirely confined to those of the narrow and limited tract of land bordering its eastern and southern shores; and it may fairly be said, that the whole of the zoology of the vast range of country washed by the seas of Torres' Straits is as much or more unknown than that of any similar extent of country in the world. In exemplification of what I have here asserted of our ignorance of the productions of that region, I may mention that the noble Kangaroo here figured is only one of many new and interesting animals I have lately received from these parts. It is very abundant on the Cobourg Peninsula, and I have no doubt that, when the country towards the interior is explored, it will there be found in great numbers.

Two very fine specimens, from which my figures and dimensions are taken, were collected by Mr. Gilbert while at Port Essington, and these in all probability are the only perfect specimens in Europe: the weight of the male was about one hundred and twenty pounds. Captain Chambers, however, late of H.M.S. Pelorus, has placed at my disposal, for the purpose of comparison, &c., several imperfect skins of this species, which clearly indicate that the animal frequently attains a much larger size; and that gentleman also assured me that he has himself seen examples weighing one hundred and seventy pounds; few species therefore exceed it in size, and certainly, with the exception of *Macropus laniger*, none in the richness of its colour and markings. Captain Chambers further informed me, that when hard pressed in the chase it becomes exceedingly fierce and bold, and while among the rocks a most dangerous animal to encounter, one of his finest dogs being tumbled over a precipice and killed by an old male: in this fierceness of disposition it exhibits a striking resemblance to the Black Wallaroo; they also closely assimilate in the diminutive size of their females.

Although fifteen years have elapsed since the above remarks were published in my monograph of the Kangaroos, no additional information or examples have been transmitted to this country. As I have given life-sized drawings of the heads of the other large Kangaroos, I have thought it necessary, for the sake of uniformity, to give a similar illustration of this noble species, of which specimens are to be seen in the National Collection.

The male has the fur of the body rigid and adpressed; general colour rusty red, becoming paler on the face and shoulders, and white or yellowish white on the throat, chest, abdomen and inside of the limbs; hands and feet dark reddish brown, passing into black on the toes; tip of the tail reddish brown.

The female has the fur less rigid and more loose than the male; general colour reddish sandy brown, passing into vinous grey on the shoulders, back of the neck and face; base of the ear externally dark brownish grey, passing into yellowish white towards the tips; immediately in front of the ear a conspicuous patch of yellowish buff; a light buff mark also extends from beneath the eye along the upper lip; throat, chest, abdomen and inside of the limbs pale yellowish white; hands and feet dark brown, becoming black towards the nails.

	Male. feet.	inches.	Female. feet.	inches.
Length from the nose to the extremity of the tail	7	3	5	6
,, of tail	2	9	2	3
,, ,, tarsus and toes, including the nail	1	1		11
,, ,, arm and hand, including the nails	1	2		11
,, ,, face from the tip of the nose to the base of the ear		$7\frac{1}{2}$		6
,, ,, ear		$4\frac{1}{2}$		$3\frac{1}{2}$

The first Plate represents the head of the male of the natural size; the second contains reduced figures of both sexes.



OSPHRANTER ROBUSTUS, *Gould*.

J. Gould and H. C. Richter, del. et lith.

Hullmandel & Walton, Imp.



OSPHRANTER ROBUSTUS, *Gould.*

Black Wallaroo.

HEAD OF A MALE AND OF A FEMALE, LIFE-SIZE.

If there be any one of the Great Kangaroos the discovery of which afforded me more pleasure than another during my sojourn in Australia, it is the Great Black Wallaroo of the mountain-districts of New South Wales. Surprising, indeed, it was that so large and conspicuous an animal had not been previously made known; and still more surprising is the fact that, from the period of my visit in 1838–39 to the present time, 1863, few if any skins of the animal have been sent to Europe. Still I can assure my readers that the existence of the Black Wallaroo is not a myth; for specimens of both sexes grace the collections at the British Museum and at Leyden. Like the *O. antilopinus*, the *O. robustus* becomes dangerous both to man and dogs when the rocky and sterile mountain elevations it frequents are traversed; for, like the *Ibex* of the mountain-ranges of the northern hemisphere, the old males will make a determined stand when assaulted and escape is impossible.

As is the case with the sexes of all the other members of this section of the *Macropodidæ*, the male and female of *O. robustus* differ considerably in size, the latter being much smaller and weaker than the former.

As the districts inhabited by this fine species are fully described in the succeeding pages, it is unnecessary to mention them here.

A glance at the accompanying illustration, which represents a head of each sex of the size of life, will furnish a just conception of the features of these animals.

J. & Walton, Imp.





OSPHRANTER ROBUSTUS, *Gould.*

Black Wallaroo.

Macropus (Petrogale) robustus, Gould in Proc. of Zool. Soc., part viii. p. 92.
Osphranter robustus, Gould, Mon. of Macrop., pl. .—Gray, List of Mamm. in Coll. Brit. Mus., p. 91.
Macropus robustus, Waterh. in Jard. Nat. Lib. *Marsupialia*, p. 241.
Macropus (Halmaturus) robustus, Waterh. Nat. Hist. of Mamm., vol. i. p. 100.
Black Wallaroo of the Colonists.

Since my return from Australia in 1840, I have in vain requested my numerous friends and correspondents to procure and transmit examples of this large and truly fine animal. I believe I was the first scientific man who visited the locality in which it dwells, as well as the first who made it known to science; and I may ask, is it not surprising that during the interval of fifteen years which has elapsed since the account of this species was published in my "Monograph of the Kangaroos," no examples besides those I myself brought home should have been procured, and that no attempts to secure living examples of so conspicuous an animal should have been attempted? Indeed, were it not for my visit to its native haunts, it might have remained unknown to us even to the present time. This is the more to be wondered at, since the animal is found within the colony of New South Wales. Surely the exterminating hand of civilized man, so fatal to the animal productions of a new country, cannot have dealt out destruction so unsparingly as to have destroyed the entire race.

The following account of this species appeared in my Monograph of the group, and I regret that I have nothing to add to it.

The Black Wallaroo inhabits the summits of sterile and rocky mountains, seldom descending to the coverts of their sides, and never to their base; few, therefore, have had an opportunity of observing it in a state of nature; indeed there are thousands of persons in Australia who are not even aware of its existence. Although the south-eastern portion of the continent is, I believe, the only part of the country in which it has yet been observed, in all probability it has an extensive range northwards. It is tolerably abundant on the Liverpool Range, and I ascertained that it inhabited many of those hills that branch off on either side of this great mountain-chain, towards the interior as well as towards the coast. Its retreats are so well chosen among the crags and overhanging ledges of rocks, that it is nearly useless to attempt its capture with dogs. It is a formidable and even dangerous animal to approach, for if so closely pressed that it has no other chance of escape, it will rush at and force the invader over the edge of the rocks, as the Ibex is said to do under similar circumstances. Independently of its great muscular power, this animal is rendered still more formidable by the manner in which it makes use of its teeth, biting its antagonist with great severity.

The Black Wallaroo may be regarded as a gregarious animal, four, six, and even more being frequently seen in company. On one of the mountains near Turi, to the eastward of the Liverpool Plains, it was very numerous; and from the nature of this and the other localities in which I observed it, it must possess the power of existing for long periods without water, that element being rarely to be met with in such situations.

The summits of the hills to which this species resorts soon become intersected by numerous roads and well-trodden tracks, caused by its repeatedly traversing from one part to the other; its food consists of grasses and the shoots and leaves of the low scrubby trees which clothe the hills it frequents.

Although much shorter in stature, and consequently less elegant in form, the fully adult male of this species equals in weight the largest specimens of *Macropus major*; and so remarkable is the difference in the colour and size of the sexes, that, had I not seen them together in a state of nature, I should have considered them to be different species, the black and powerful male offering so great a contrast to the small and delicate female.

The male has the fur harsh and somewhat shaggy; general colour slate-grey, obscurely washed with brownish, and tinted with vinous on the outer sides of the thighs; feet dark brown, gradually passing into black on the fore part; upper part of the arm brownish; hands and wrists black; inner surface of the ear white, the exterior brown; muzzle and a patch on the chin blackish; a line round the angle of the mouth

and the lower lip white; throat and fore part of the neck white, the hairs being grey at the base; under surface like the upper, but paler; tail blackish brown above, paler beneath.

The female has the general colour silvery grey, obscurely tinted with purplish or vinous on the back; under surface nearly white; cheeks hoary, with a blackish patch on the chin; tail dirty white, slightly tinged with brown on the upper side; legs paler than the body; hands brown, becoming nearly black on the fingers; toes brownish black above.

	Male. feet.	inches.	Female. feet.	inches.
Length from the nose to the extremity of the tail	7	0	5	10
„ of the tail	2	$10\frac{1}{2}$	2	6
„ „ tarsus and toes, including the nail	1	0	1	$10\frac{1}{2}$
„ „ arm and hand, including the nails		$13\frac{1}{2}$		$9\frac{1}{2}$
„ „ face from the tip of the nose to the base of the ear		8		7
„ „ ear		$3\frac{1}{2}$		3

The accompanying Plates represent the head of the male of the natural size, and whole but greatly reduced figures of both sexes.



OSPHRANTER? PARRY

J. Gould and H.C. Richter, del et lith.
Hullmandel & Walton, Imp.



HRANTER? PARR

J. Gould and H.C. Richter, del et lith.
Hullmandel & Walton, Imp.

OSPHRANTER? PARRYI.

Parry's Wallaroo.

LIFE-SIZED HEAD AND FORE-ARMS OF BOTH SEXES.

IF this be the least of the Wallaroos, it is one of the most elegant and chastely coloured species yet discovered. The rocky districts of the eastern portion of New South Wales are its true, and probably its restricted habitat; there it dwells among the precipitous rocks and sterile crowns of the mountains, feeding upon the vegetation peculiar to such situations. In most instances the Osphranters differ considerably in the colouring of the male and female, but in the *O. Parryi* this feature is less conspicuous than in its congeners. The more diminutive size of this species enables me to figure not only the head, but also a considerable portion of the fore quarters, of the size of life. On reference to the Plate, it will be seen that, as with the other members of the genus, there is much difference in the size of the sexes. Its muzzle, like that of *O. rufus*, is more hairy than that of *O. robustus* or *O. antilopinus*.

Like some of the larger Kangaroos, this fine animal requires protection, otherwise it will be speedily extirpated; its extreme agility among the rocks, and the sterile nature of the districts it frequents, will, however, tend somewhat to its preservation.

For a history of the species the reader is referred to the succeeding page.





OSPHRANTER? PARRYI.

Parry's Wallaroo.

Macropus Parryi, Bennett in Proc. of Zool. Soc., Part II. p. 151.—Ib. Trans. Zool. Soc., vol. i. p. 295. pl. 37.
Macropus (Halmaturus) Parryi, Waterh. Nat. Lib. Marsupialia, p. 206. pl. 18.—Ib. Nat. Hist. of Mamm , vol. i. p. 113.
Halmaturus Parryii, Gould, Mon. of Macropodidæ, Part II.—Gray, List of Mamm. in Brit. Mus., p. 89.
Macropus elegans, Lambert, Trans. of Linn. Soc., vol. viii. p. 318. pl. 16 ?

The known range of this fine species extends along the east coast from Port Stephens to Wide Bay, a newly opened district to the northward of Moreton Bay. Mr. Strange informs me that it inhabits the rocky ranges of the Clarence, occasionally descending into the more open broken country, where it frequents the ledges of rocks at an elevation of 2000 feet; it is also met with between the open grassy hills trending upward to the main range. So fleet is this animal, that it is only with the assistance of the finest dogs that there is any chance of procuring examples; it surpasses in fact every other animal in speed, and when fairly on the swing no dog can catch it. Their general contour, short and stout hind limbs and short blunt nails are all in accordance with their habit of frequenting rocks. Like most other members of its race, it is easily tamed, readily becoming familiar and docile.

A living specimen, presented to the Zoological Society of London by Captain Sir Edward W. Parry, R.N., after whom the animal has been named, " was obtained at Stroud, near Port Stephens, in the latitude of about 30° south. It was caught by the natives, having been thrown out of its mother's pouch when the latter was hunted. At that time it was somewhat less than a rabbit, but was full-grown on its arrival in England. It was never kept in confinement until it was embarked for England, but lived in the kitchen, and ran about the house and grounds like a dog, going out every night after dark in the bush or forest to feed, and usually returning to its friend the man-cook, in whose bed it slept, about two o'clock in the morning. Besides what it might obtain in these excursions, it ate meat, bread, vegetables, in short everything given to it by the cook, with whom it was extremely tame, but would allow nobody else to take liberties with it. It expressed its anger when very closely approached by others, by a sort of half-grunting, half-hissing, very discordant sound, which appeared to come from the throat, without altering the expression of the countenance. In the daytime it would occasionally, but not often, venture out to a considerable distance from home, in which it would sometimes be chased back by strange dogs, especially those belonging to the natives. From these, however, it had no difficulty in escaping, through its extreme swiftness; and it was curious to see it bounding up a hill and over the garden fence, until it had placed itself under the protection of the dogs belonging to the house, especially two of the Newfoundland breed to which it was attached, and which never failed to afford it their assistance, by sallying forth in pursuit of its adversaries."

But little doubt exists in my mind that Lambert's characters of his *Macropus elegans* were taken from an animal of this species, although neither his figure nor his description is sufficiently correct to determine this point with certainty.

Fur moderately long and soft; general colour silvery grey, the lower part of the back tinged with purplish brown; muzzle deep brown inclining to black, gradually becoming paler on the forehead until it passes into the grey of the upper surface; a broad pure white mark extends from near the tip of the muzzle along the cheeks, and terminates a little beyond the posterior angle of the eye; below this a faint grey line; ears nearly naked within, but having a few small white hairs on the apical portion; externally they are clothed with blackish brown fur at the base, with adpressed white hairs in the middle, and with black hairs at the tip; chin, throat, inner side of the limbs, under surface of the body and under side of the basal half of the tail white; the tips of the hairs on the chest faintly tinged with grey; arms hoary grey; hands black; tarsi and two inner toes white; the other toes black at the extremity, and with a mixture of black and white hairs at the base; tail nearly white, with the exception of the tip, which, with a fringe of long hairs on the under surface of the extremity, are black.

Male.

	feet.	inches.
Length from the nose to the extremity of the tail	5	5
,, of tail	2	7
,, ,, tarsus and toes, including the nail		10
,, ,, arm and hand, including the nails		8
,, ,, face from the tip of the nose to the base of the ear		$5\frac{1}{2}$
,, ,, ear		$3\frac{1}{2}$

The head and fore-arm represented in the accompanying Plate are of the natural size, while the entire figures in the other are much reduced.



HALMATURUS RUFICOLLIS.

J. Gould and H.C. Richter del et lith.

Hullmandel & Walton Imp.



HALMATURUS RUFICOLLIS.

Rufous-necked Wallaby.

Head and Arms of both Sexes, of the size of life.

An opinion exists among zoologists that the *Halmaturus Bennetti*, which is exclusively confined to Tasmania, and the *H. ruficollis* of the opposite portion of the Australian continent, are one and the same species, and that the difference in the colouring of the two animals is merely the effect of climate; the full-sized heads, then, which are given as accessories to the reduced figures on the succeeding Plate will be of value as illustrative of the difference in question. Certain it is, that all the specimens from the continent (the *H. ruficollis* of this work and of previous authors) are much redder in colour, and have the white of the cheeks extending further on the breast, than the *H. Bennetti* procured in Tasmania. As these differences are carefully detailed on the succeeding page, it will not be necessary to enter into them here.

The accompanying Illustration represents the head and forearms of both sexes, as near the size of life as possible.

Edmandel & Walton Imp



HALMATURUS RUFICOLLIS.

Rufous-necked Wallaby.

Kangurus ruficollis, Desm. Dict. d'Hist. Nat., tom. xvii. p. 37.—Ib. Ency. Méth. Mammalogie, p. 274.
Kangaroo à cou roux, F. Cuv. Dict. des Sci. Nat., tom. xxiv. p. 348.
Macropus ruficollis, Less. Man. de Mamm. p. 228.—Gould, Mon. of Macropodidæ, pl. .—Waterh. in Jard. Nat. Lib., Marsupialia, p. 216.
Kangurus ruficollis, Peron.
Macropus rufo-griseus, Waterh. in Jard. Nat. Lib., Marsupialia, p. 217.
Kangurus rufo-griseus, Desm. Nouv. Dict. d'Hist. Nat., tom. xvii. p. 36.
Halmaturus griseo-rufus, Goldf. in Oken's Isis, 1819, p. 267
Macropus (*Halmaturus*) *ruficollis*, Waterh. Nat. Hist. of Mamm., vol. i. p. 125.
Warroon, of the Aborigines of the Illawarra district.

The low table-lands of New South Wales, particularly those on which the *Daveysia* scrub abounds, are the favourite localities of this species of *Halmaturus*. I found it especially abundant on the fine estate of Charles Throsby, Esq., at Bongbong, immediately behind Illawarra, and ascertained that it ranges westward from thence nearly to Port Philip and eastward to Moreton Bay; it is also said to inhabit the larger islands in Bass's Straits. Since writing the account of this species given in my Monograph of the Kangaroos, referred to above, numerous New South Wales specimens have been sent to me by my collectors, and many living examples have been forwarded to this country, one of which is now (1854) living in the Menagerie of the Zoological Society in the Regent's Park. A careful examination of all these examples tends to strengthen the supposition that the present animal and the *Halmaturus Bennetti* of Van Diemen's Land are quite distinct; at the same time I cannot but admit that I am still in doubt as to whether this is the case, or if the differences they exhibit are due to local causes; under these circumstances, I have thought it best to figure both animals under the names by which they are respectively known, and leave the determination of these points to future research.

The specimens contained in the great collections of the Continent, particularly those of Paris and Leyden, are from the mainland, and not from Van Diemen's Land, and have the names of *ruficollis* and *rufo-griseus* attached to them,—appellations which are not applicable to the Tasmanian specimens. I have observed that the mainland animals not only differ in colour, but are larger than those from the islands.

As is the case with most of the other species of the family, the male of the present animal much exceeds the female both in the size of the body and in the strength of the fore-arm.

Fur moderate as to length and softness of texture; general colour rusty brown pencilled with white, brownish grey at the base succeeded by rusty, broadly annulated with white near the extremity and black at the point; neck, shoulders and arms bright rust-red, pencilled with white; muzzle brownish black; on the upper lip a tolerably distinct white mark, running backward and terminating beneath the eye; apical half of the external surface of the ear blackish, internal surface of the ear white, narrowly margined at the tip with black; on the chin a patch of brownish black; throat whitish; under surface greyish white, the hairs being grey at the base and white at the extremity; hand black; tarsi clothed with hairs, which are brownish black at the base and white at the tip; toes covered with black hairs; tail hoary grey, with a pencil of black hairs at the tip.

The accompanying Plates represent the head of each sex of the natural size, and reduced figures of the entire animals.



HALMATURUS BENNETTI.

J. Gould and H.C. Richter, del. et lith.

Hildebrandt & Walton, Imp.



HALMATURUS BENNETTI.

Bennett's Wallaby.

HEAD AND FOREARM, OF THE SIZE OF LIFE.

THREE species of the larger Kangaroos are indigenous to the Island of Tasmania, or Van Diemen's Land, viz. *Macropus major*, *Halmaturus Bennetti*, and *H. Billardieri*. Of these the *H. Bennetti* is intermediate in size, and is the most important, since its flesh is a staple commodity as an article of food, and its skin affords no inconsiderable profit to the settlers, vast numbers of skins being annually sold.

The life-sized portrait of the upper portion of this animal will convey a just conception of its physiognomy, while the reduced figures, which are drawn to scale, will show how disproportionate in size are its hind quarters: it is these latter parts of the animal which are eaten by all classes, from the Governor of the colony to the stockmen. The relative weights and admeasurements of the two sexes are given on the succeeding page, to which I must therefore refer my readers for further particulars respecting the species.



HALMATURUS BENNETTI.



HALMATURUS BENNETTI.

Bennett's Wallaby.

Macropus Bennettii, Waterh. in Proc. of Zool. Soc., part v. p. 103.—Ib. in Jard. Nat. Lib. Marsupialia, p. 211. pl. 19.

——— (*Halmaturus*) *fruticus*, Ogilby, Ann. of Nat. Hist. 1838, vol. i. p. 219.

Halmaturus Ualabatus, Gray, Mag. of Nat. Hist. new ser. 1837, vol. i. p. 583.

——— *Bennettii*, Gould, Mon. of Macropodidæ, pl. .—Wagn. in Schreb. Saug. Suppl. 111, 112. Heft, p. 115.—Gray, List of Mamm. in Coll. Brit. Mus., p. 89.

Macropus ruficollis, var. *Bennettii*, Waterh. Nat. Hist. of Mamm., vol. i. p. 130.—Gunn in Proc. Roy. Soc. of Van Diem. Land, vol. ii. p. 88.

Halmaturus leptonyx, Wagn.

Brush Kangaroo, Colonists of Van Diemen's Land.

The native habitat of the animal here represented is Van Diemen's Land and the larger islands in Bass's Straits. It would be useless to attempt an enumeration of the localities in which it may be found, since its dispersion may be said to be general over the islands named, from the snowy summits of Mount Wellington and the hills of lesser elevation to the forests in the lowest valleys; it evinces, however, a decided preference to situations of a humid character, being seldom, if ever, seen on the hot and sandy plains: the localities it affects afford it a retreat, so secure as to preclude all chance of its extermination, although many thousands are killed annually for the sake of its flesh, which is very generally eaten and highly esteemed, being delicate, juicy and well-flavoured; its skin also forms a considerable article of commerce, being largely exported from Van Diemen's Land into England for the manufacture of the upper parts of boots and shoes, for which it is admirably adapted, besides being extensively used for the same purpose in the colony. I have read advertisements in the Hobart Town newspapers, stating that three thousand skins were immediately wanted, and which were quickly supplied by the settlers, servants and shepherds at the out-stations: the skins are generally taken off on the spot where the animal is killed, and afterwards stretched on the ground to dry; they are then sold for about fourpence or sixpence each to persons who visit the stock stations of the interior for the purpose of collecting them, and who retail them again in Hobart Town or Launceston to the advertiser or others for colonial consumption or for exportation.

The Bennett's Wallaby is gregarious in its habits, and although truly a brush animal, does not confine itself so strictly to localities of that description as the smaller members of the genus, but frequently resorts to the thinly-timbered forests and the crowns of the low grassy hills, always, however, seeking security in the thick brush when pursued, or such steep rocky acclivities as present almost insurmountable obstacles to the pursuit with dogs. It is one of the most hardy members of its family, and would doubtless readily become acclimatized in this country, since the temperature of Van Diemen's Land more nearly resembles that of the British Islands than does any other part of Australia, in proof of which I may mention that numbers have been bred in the Menagerie of the Zoological Society, in that of the late Earl of Derby, and others.

"In a large piece of enclosed ground in his Lordship's park," says Mr. Waterhouse, "I had the pleasure of seeing many individuals of the Brush Kangaroo in a state of comparative freedom, and where they appeared to thrive well. When I entered the paddock in which they were kept, being all concealed beneath some heath, I was not aware of their presence until, on approaching their place of shelter, they suddenly elevated the fore part of their bodies and then darted off to a distant spot with great swiftness. When at rest they frequently assume a singular position; the fore feet are applied to the ground, and they at the same time sit upon their haunches, having the hind legs stretched forwards, and perfectly straight, as well as the tail, which lies between them. The young animal does not finally quit the pouch of the mother until some time after it has attained the size of a full-grown rabbit; at which time it does not differ in colouring from the parent."

The full-grown male varies in weight from forty to sixty pounds: the haunch and loins are the only parts

that are eaten, and these are constantly exposed for sale in Hobart Town, Launceston, and other parts of the country. The female closely resembles the male in colour, but is about one-third less in size.

Mr. Waterhouse, who gave the specific appellation of *Bennettii* to this animal, in honour of a late talented Secretary of the Zoological Society, is now inclined to consider it to be merely a local variety of the *Halmaturus ruficollis* of New South Wales, an animal which does not accord with it in colour, and which is of a somewhat larger size; it will be seen that I have treated them as distinct: in either case it becomes necessary, in order duly to illustrate the subject, to figure both.

Fur rather long and moderately soft; general tint a very deep grey, inclining to black on the back; somewhat paler on the sides of the body, with a rust-like tint on the back of the neck, base of ears, the haunches, shoulders, and in the region of the eye; under surface of the body and the inner side and fore part of the hinder legs greyish-white; muzzle black; crown of the head brownish-black; an obscure whitish line extends backwards from the corners of the mouth, and becomes obliterated on the cheeks; lips dirty-white; chin blackish; ears white internally, black externally; hands, toes, and outer side of the heel black; hairs of the tail (excepting at the base, where they are of the same colours and character as those of the body) black, broadly annulated with white near the apex; tip of the tail black, under side of the tail white; the hairs on the upper part of the body are of a deep slate-colour at the base, the remaining portion of each hair is black, annulated with white, or more generally with pale rust-colour; on the under parts of the body the hairs are of a deep slate-colour, with the apical portion white.

The figure of the head is of the natural size; that of the entire animal is much reduced.



J. Gould and H.C. Richter, del. et. lith.

HALMATURUS GREYI, *Gray.*

Hullmandel & Walton, Imp.



HALMATURUS GREYI, *Gray.*

Grey's Wallaby.

Upper Half of a Male and Head of a Female, of life-size.

The name of Sir George Grey must always be conspicuous in the annals of Australian history, whether we regard this enlightened and valuable public servant as an explorer or a ruler; and, for my own part, I am much gratified that so fine a species as the present should have been named in honour of the present Governor of New Zealand.

The *Halmaturus Greyi*, if not so beautiful as the *H. manicatus*, is very little inferior in this respect to that species. It will be seen that, while the forearm is as short as in that animal, the black colouring of the fore feet is not so sharply defined, and that on the tips of the ears this colour is wholly or nearly absent. South Australia is the native habitat of this fine animal; it therefore inhabits that part of the country lying between the eastern and western parts of the continent. Those who are not well versed in the Mammals of Australia may perhaps consider the variation in the shades of colour above mentioned insufficient to constitute a species; but I can assure them that such is not the case. The *H. Greyi* is further distinguished from both the *H. ruficollis* and *H. manicatus* by having a more-lengthened-hairy or shaggy coat, by its nearly white tail, and generally lighter colouring.



HALMATURUS GREYI, *Gray*.

Grey's Wallaby.

Halmaturus Greyii, Gray, List of Mamm. in Brit. Mus., p. 90.
Macropus (*Halmaturus*) *Greyi*, Waterh. Nat. Hist. of Mamm., vol. i. p. 122.

This fine Wallaby was first sent to this country from South Australia by His Excellency Sir George Grey, after whom it was named. It is a species quite distinct from every other, but is perhaps most nearly allied to the *Halmaturus manicatus*, an animal inhabiting the country farther to the westward. Its powerful and finely proportioned hinder extremities, contrasted as they are with its slender and diminutive fore-arms, are indicative of a structure adapted for rapid movements, and, in strict accordance with this view, we find that it is one of the most fleet and agile members of its race. Its favourite places of resort are flats near the sea-shore, particularly low sand-hills and open grounds, where the surface is bare and unbroken, to which is doubtless to be attributed the circumstance of its claws being more attenuated and spine-like than those of any other species. In size the *H. Greyi* rather exceeds the *H. manicatus*, but it is less than *H. ruficollis* and *H. Bennetti*.

Mr. Strange informs me that he met with this animal "between Lake Albert and the Glenelg. The kind of country in which it is found consists of large open plains intersected by extensive salt lagoons and bordered by pine ridges. On fine sunny days it is to be found in the salt-water scrub around the lagoons and amid the long grass of the plains. I never saw anything so swift of foot as is this species: it does not appear to hurry itself until the dogs have got pretty close, when it bounds away like an antelope, with first a short jump and then a long one, leaving the dogs far behind it. In wet weather it confines itself to the sand-hills. I have had twenty runs in a day with four swift dogs and not succeeded in getting one."

The description of this animal by Mr. Waterhouse from Sir George Grey's specimens so closely accords with my own, that I cannot do better than give it in his own words:—

"General colour pale ashy brown, slightly tinted with yellowish; the pale tint of the upper parts of the body is produced by the mixture of white with pale rust-colour and black, the visible portion of each hair exhibiting these colours; on the under parts of the body the hairs are of a pale buff-yellow colour externally, and pale grey at the root; the head is grey above, obscurely tinted with rufous, and this latter tint is also observable on the back of the ears, as well as on the neck; immediately behind the naked tip, the muzzle is dusky black above, but the black hue is almost immediately blended into the general grey tint; on the sides of the muzzle are three longitudinal bands, of which the middle one, representing the ordinary pale cheek-mark, is pale yellow; the upper one almost black, but slightly pencilled with whitish, and the lower one is somewhat suffused with brownish; ears well clothed internally with rich yellow hairs, but they are rather narrowly margined with black at the apex; externally, the black extends downwards from the point for about half an inch; behind the eye is a yellowish spot; the chin and throat are tinted with fulvous, and there is a greyish spot on the former; the chest is greyish; below the chest the fur has a pale rusty grey hue; the arms are grey-white at the base, and of a very pale fulvous colour, or fulvous white beyond, and the hands are of the same colour, but the fingers are black, and the black extends slightly beyond the base of the fingers; the hind legs and feet are coloured in the same manner; the thighs are somewhat greyish externally at the base, and the toes are black, with the exception of the long hairs which cover the nails, which are brownish; tail well clothed with hairs of a very pale grey colour, washed as it were with yellow on the upper parts and brown-white beneath; a considerable space at the apex covered with long dirty yellowish hairs."

	feet.	inches.
Length from the nose to the root of the tail	2	8
,, of tail	2	5
,, ,, tarsus and toes, including the nail		$9\frac{1}{2}$
,, ,, arm and hand, including the nails		$6\frac{1}{2}$
,, ,, face from the tip of the nose to the base of the ear		$5\frac{1}{2}$
,, ,, ear		3

The head and fore-arm represented in the accompanying Plate are of the natural size, while the entire figures in the other are much reduced.



HALMATURUS MANICATUS, *Gould.*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.



HALMATURUS MANICATUS, *Gould.*

Black-gloved Wallaby.

HEAD, NECK, AND FOREARM OF BOTH SEXES, OF THE SIZE OF LIFE.

EVERY naturalist who has diligently worked out a monograph of any group of animals must have observed that while some conspicuous feature, either of colouring or marking, pervades all the species, it is much more strongly developed in some of them than in others; in one, perhaps, it is only faintly indicated, while in another it is bold and decided. Now, there is a tendency in all the Wallabys to a blackish brown or black colouring on the hands or the tips of the ears: in some this colouring occurs on both; in others it is confined to the hands alone. The present animal, which is a native of Western Australia, may be cited as the species in which this character is carried to its maximum; for if its fore feet and the tips of its ears had been carefully dipped in ink, they could not be of a blacker hue, nor could this colouring terminate more abruptly. That there is no special end or purpose for the fantastic markings of the Kangaroos and many other animals, beyond mere ornament, I think there cannot be a doubt. Nature revels in variety, as may be seen in the stripings of the various species of Zebra, the fantastic markings of the Antelopes, the banding of the Perameles, and a thousand other creatures. I make no apology for giving full-sized heads of this very pretty species, the peculiarity of whose markings is not so apparent in the reduced figures.

Hullmandel & Walton



HALMATURUS MANICATUS, *Gould.*

Black-gloved Wallaby.

Macropus (*Halmaturus*) *manicatus*, Gould in Proc. of Zool. Soc., Part VIII. p. 127.
Halmaturus manicatus, Ib. Mon. of Macropodidæ.
Macropus (*Halmaturus*) *Irma*, Waterh. Nat. Hist. of Mamm., vol. i. p. 117 *.
Goŏrh-a, Aborigines of Perth, and
Quăr-ra, Aborigines of the interior of Western Australia.
Brush and Blue Kangaroo of the Colonists of Western Australia.

It must, I think, be admitted, that generally a degree of elegance and beauty reigns among the indigenous animals of Australia, and the present species may be cited as an instance in point; the size, form and colouring of this Kangaroo presenting a combination of elegance and beauty; while its jet-black hands and feet render it so conspicuous, that there is no other species with which it can be confounded, except its near ally the *Halmaturus Greyi*, from which, however, it may at a glance be distinguished by its darker-coloured face and nape. To what extent this pretty animal ranges over Western Australia has not been ascertained, but we know that it is very generally diffused over every part of the colony of Swan River, wherever sterile and scrubby districts interspersed with belts of dwarf *Eucalypti* exist; from these retreats it occasionally advances to more open grounds, to feed upon the grasses which there occur in greater abundance than in the glades of the forest.

Mr. Gilbert informs us that it may be ranked among the fleetest of its race; that it requires dogs of the highest breed to capture it, and that a full-grown male weighs nearly twenty pounds. The flesh forms an excellent viand for the table, and the skins manufactured into rugs are extensively used by those whose avocations and mode of life lead them to spend much of their time in the bush.

The sexes are alike in colour and similarly marked about the hands and feet, but the female is always much smaller than the male.

General colour of the upper surface of the body deep grey, produced by the admixture of black and white, the hairs being black at the tip, and annulated with white near the tip; sides and under surface of the body paler grey, tinted with buff-yellow; this yellow tint is almost pure on the abdomen between the hind legs, on the feet and inner side of the ears: the upper surface of the head and muzzle are of a soot-like colour, and the occiput and back of the ears, as well as the apical portion in front, are pure black; a yellowish white line is observable on each side of the muzzle, commencing at the tip, and running backwards beneath the eye; the fore half of the hands and feet are pure black, appearing as if they had been dipped in ink or some other black liquid, the black not blending, as usual, with the pale colour of the hind part of the feet, but terminating in an abrupt line; the greater portion of the tail (which is well clothed with harsh hairs) is of the same black colour; at the base, however, it is coloured as the body; and on the upper surface, for a considerable distance from the base, the black hairs are more or less annulated with whitish, producing a grizzled appearance: on the chin is a small black patch.

	Female.	
	feet.	inches.
Length from the nose to the extremity of the tail	5	0
,, of tail	2	3
,, ,, tarsus and toes, including the nail		$8\frac{3}{4}$
,, ,, arm and hand, including the nails		5
,, ,, face from the tip of the nose to the base of the ear		$5\frac{1}{2}$
,, ,, ear		$3\frac{1}{2}$

In one of the accompanying Plates the head and fore-arm are represented of the natural size; while the reduced figures represent the entire animal.

* Mr. Waterhouse considers that the *Macropus Irma* of M. Jourdan may be synonymous with this species, but this is by no means certain; for upon purposely visiting Lyons to clear up this point, I did not find the animal in the collection of that city, and M. Jourdan informed me that his description was taken from a specimen in the Museum at Paris, where also I could not find it.



HALMATURUS UALABATUS.

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

HALMATURUS UALABATUS.

Black Wallaby.

HEAD AND FORE QUARTERS, OF THE NATURAL SIZE.

THIS huge Wallaby is an inhabitant of morasses, mangrove-swamps, and humid woods; and, so far as I am aware, New South Wales is the only part of Australia it frequents. Its characteristics are its black and rich rusty-red colouring, its shaggy thick coat, short ears, and long swinging tail. It stands quite alone among the great family of Kangaroos, there being no other species with which it can be confounded. The weight of an old male is about sixty pounds, while that of the female is considerably less. Its flesh is eaten both by the natives and settlers, but, so far as I recollect, is not so palatable as that of *H. ruficollis* or *H. Bennetti*.

Very correct reduced figures will be found on the next Plate, and a full description on the opposite page.



HALMATURUS UALABATUS.

HALMATURUS UALABATUS.

Black Wallaby.

Kangurus Ualabatus, Less. et Garn. Zool. de la Coquille, tom. i. p. 161. pl. 7.
Macropus Ualabatus, Less. Man. de Mamm., p. 227.—Waterh. in Jard. Nat. Lib. Marsupialia, p. 219.
Kangurus Brunii, Desm. Ency. Méth. Mamm., p. 275.
Halmaturus Lessonii, Gray, Mag. Nat. Hist., vol. i. new ser. p. 583.
——— *nemoralis*, Wagn. in Schreb. Saug. Suppl., part 111–112. p. 114 (Waterhouse).
Macropus (*Halmaturus*) *Ualabatus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 136.

This well-marked species inhabits, with but few exceptions, all the thick brushes of New South Wales, especially such as are wet or humid. I hunted it successfully at Illawarra, on the small islands at the mouth of the Hunter, and on the Liverpool ranges. In the former localities it was frequently found in the wettest places, either among the high grass and other dense vegetation, or among the thick mangroves, whose roots are washed by each succeeding tide. The islands at the mouth of the Hunter, particularly Mosquito and Ash Islands, are not unfrequently flooded to a great extent, yet it leaps through the shallow parts with apparent enjoyment, and even crosses the river from one island to the other. On the Liverpool range it as strictly keeps to such parts as are most humid—often near the crowns of mountains, which are frequently enveloped in fogs and dews. Over what extent of country this species will be found to range, it is impossible to say; as yet, I have only observed it in the localities above mentioned; the dense brushes of the Clarence, Manning, and, in fact, all the brushes from Western Port to Moreton Bay, are probably inhabited by it.

Independently of its dark colouring, lengthened tail, and stiff wiry hair, it may be readily distinguished from every other species by the jet-black spot immediately beneath the insertion of the arm. When full-grown, this animal is about the size of *H. Bennettii* and *H. ruficollis*.

Fur long, harsh to the touch; general colour blackish-brown, pencilled with a lighter hue; under surface yellowish in some specimens, in others deep sandy- or rusty-red; ears clothed with dirty-white hairs internally; a rusty patch surrounds their base, and is extended on the neck; cheeks pale brown, mingled with dirty-white; upper part of the muzzle and round the eye blackish; lips and chin whitish; wrists and hand black; immediately beneath the insertion of the fore-arm a jet-black patch; tarsi black; basal third of the tail like the body, the remainder black.

	Male.	
	feet.	inches.
Length from the tip of the nose to the extremity of the tail . . .	4	4
„ of tail	1	4
„ „ tarsus and toes, including the nail		$8\frac{1}{2}$
„ „ arm and hand, including the nails		$6\frac{3}{4}$
„ „ face from the tip of the nose to the base of the ear . . .		$4\frac{1}{2}$
„ „ ear		$2\frac{1}{2}$

The first Plate represents the head of the animal the size of life; the second, entire figures necessarily much reduced.



HALMATURUS AGILIS, *Gould.*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

HALMATURUS AGILIS, *Gould.*

Agile Wallaby.

HEAD AND FORE PART OF THE BODY, OF THE NATURAL SIZE.

It will be seen that Mr. Richter has indulged in a little variation as regards the opposite illustration; the animal, however, is faithfully portrayed, both as regards its form and colouring and the texture of the short adpressed hair which covers its body. All these points are seen to much greater advantage than in the Jerboa-like reduced figures on the next Plate: it is, indeed, impossible to do justice to the appearance of these animals in such small representations of them.

It will be seen that the full-sized head and fore quarters are more darkly coloured than the reduced figures; but as such differences really exist in the various specimens, no apology is necessary for the seeming discrepancy. The time, we may suppose, is not far distant when the northern part of the great southern continent will be peopled by our enterprising settlers. That country contains the bones of my worthy assistant Gilbert, who fell a sacrifice to the treachery of the natives, while arduously prosecuting his researches for the advancement of science and the furtherance of the present work. It is well known that he was in company with the celebrated explorer Dr. Leichardt, who, in like manner, found a resting-place in that *terra incognita*; but it is still unknown in what precise locality his fate was sealed. This country of the Kangaroos is second to none in the sacrifice of valuable lives in the various attempts which have been made to unfold the hidden recesses of its treasures.



HALMATURUS AGILIS, *Gould.*

Agile Wallaby.

Halmaturus agilis, Gould in Proc. of Zool. Soc., part ix. p. 81.—Ib. Monograph of the Macropodidæ, pl. —
Hamb. et Jacq. Voy. au Pole Sud, pl. 19.—Gould, Mon. of Macropodidæ, pl.
——— *Binoë*, Gould in Proc. of Zool. Soc., part x. p. 58.
Macropus (*Halmaturus*) *agilis*, Waterh. Nat. Hist. of Mamm., vol. i. p. 108.

This species of Wallaby may be readily distinguished from every other by its short, wiry, adpressed hair, and the almost uniform sandy-brown colour of the body; the male is also remarkable for having very powerful incisors, and for having the outer toe much developed, whence results a deep cleft between it and the middle one; the head is also longer and more pointed than in any other species which I have seen.

The Agile Wallaby appears to be abundant on all the low swampy lands of the northern coast of Australia. I have seen many specimens from the Cobourg Peninsula; and it is common both near the settlement of Port Essington and at Raffles' Bay. I have also had others placed at my disposal for the purpose of describing by Mr. Bynoe of H.M.S. the Beagle, which were collected on the shores of Torres Straits. It is stated to be a most agile species, readily eluding the dogs employed in hunting it by its extreme activity in leaping among the high grass; when chased it frequently seeks shelter in the thick beds of mangroves, passing over the muddy flats in such a manner as almost to baffle pursuit.

In size, when full-grown, the male is nearly equal to *H. Ualabatus*.

In some notes by Mr. John M'Gillivray on the animals observed by him at Port Essington, it is stated that a young one, very large in proportion to the size of the mother, was taken from the pouch of a female shot by him at Barrow's Bay, and that it did not differ in its colouring in any respect. He adds that the species is very common at Port Essington, where it frequents the tall grass of the low grounds, especially where the Pandanus-tree abounds, under the shelter of which it generally forms its lair. It is extremely active in its movements, and when pursued by dogs makes for the nearest jungle or mangrove thicket.

I now believe the *Halmaturus Binoë*, described by me as a distinct species in the 10th Part of the "Proceedings of the Zoological Society of London," to be merely the young of this animal, and I have consequently placed that name among its synonyms.

Fur rather short, adpressed, and harsh to the touch; general colour sandy-yellow; the upper surface of the head and body freely pencilled with blackish, the hairs being of this colour at the point; chin, throat and chest dull white; abdomen yellow, the hairs terminated with white; limbs pale sandy-yellow externally and white on their inner side, the arms externally pencilled with blackish; tarsi nearly white, passing into rusty on the toes; lips whitish, and a whitish mark from the lip to beneath the eye, parallel with which is another of a dusky hue; ears white within, externally sandy-yellow at the base and broadly margined with black at the apex, and with a narrow black line along the inner edge; on each side of the rump an oblique whitish line; tail sparingly clothed with nearly white hairs, except at the base, which is like the body; the tip of the tail black.

	Male.	
	feet.	inches.
Length from the nose to the base of the tail	5	3
„ of tail	2	6
„ „ tarsus and toes, including the nail		10
„ „ arms and hand, including the nails		9
„ „ face from the tip of the nose to the base of the ear		6
„ „ ear		3

The first of the accompanying Plates represents the head of a dead animal of the natural size; the second, reduced figures of both sexes.



HALMATURUS DORSALIS, *Gray*.

J.Gould and H.C.Richter, del. et lith.

Hullmandel & Walton Imp.

HALMATURUS DORSALIS, *Gray.*

Black-striped Wallaby.

HEAD AND FORE PARTS, OF THE SIZE OF LIFE.

THIS is one of the largest species of that section of the *Halmaturi* which comprises the *H. Thetidis*, *H. Parma*, and their immediate allies,—the old males frequently measuring from four to five feet from the nose to the end of the tail. As far as I am aware, it is confined to the interior of New South Wales; certain it is that I have not seen examples from the sea side of the ranges. Its distinguishing features are the red colouring of its fore quarters, its large ears, long tail, and a distinct stripe of black down the nape and back. Like many other kinds of Kangaroo, the male of this species appears to increase in bulk for several years; and hence, in a scrub frequented by this animal, males of various sizes may be found. The accompanying illustration of the head and forearm was taken from the largest male I have seen. The reduced figures will give an accurate idea of the body-colours, and the annexed letter-press all that is known respecting the species.



HALMATURUS DORSALIS: *Gray*

H.C. Richter del.

C. Hullmandel. Imp.

HALMATURUS DORSALIS, *Gray*.

Black-striped Wallaby.

Halmaturus dorsalis, Gray in Mag. of Nat. Hist., vol. i. new series, p. 583.—Gould, Mon. of Macropodidæ, pl. .
Macropus (*Halmaturus*) *dorsalis*, Waterh. in Jard. Nat. Lib. Marsupialia, p. 230.—Ib. Nat. Hist. of Mamm., vol. i. p. 152.

This fine Wallaby, which is distinguished from all other species by the greater length of its tail, and by the black mark which commences at the occiput and runs down the centre of the back, is an inhabitant of the interior, and is particularly abundant in all the scrubs clothing the sides of the hills that run parallel to the rivers Mokai and Namoi; and, although I cannot positively assert that such is the case, I have reason to believe that it inhabits all similar situations between the above-mentioned localities and the great Murray scrub in South Australia. I have never heard of its having been seen between the ranges and the coast, a circumstance that may be attributed to the brush being of a totally different character, and the vegetation more dense and humid than on the dry stony hills of the interior. Like the other members of the genus, it is strictly gregarious, and is so numerous, that I found no difficulty in procuring as many specimens as I pleased; it was, however, more often shot as an article of food than for any other purpose. Its flesh is excellent, and when the vast continent of Australia becomes more thickly inhabited, it will doubtless be justly esteemed. The natives often resort to the haunts of this species, and commit great havoc among them, both for the sake of their flesh as food, and for their skins as articles of clothing. They have various modes of capturing them, sometimes making use of large nets; at other times they are driven by dogs from side to side of the brush, which affords the hunters abundant opportunities of spearing or killing them with the waddy as they pass the open spots.

It is especially abundant at Brezi, to the northward of the Liverpool Plains, and I also found it extremely numerous in the Brigaloe brush on the Lower Namoi.

The female is distinguished by her smaller size, but in the markings of the two sexes no difference exists.

The full-grown males of this species weigh from twenty to twenty-five pounds.

Fur rather harsh to the touch; general colour brown, with a rusty tinge, produced by each hair being of a rusty-brown in the middle; upper surface and sides of the body freely pencilled with black and white; on the back of the neck, shoulders and outer side of the arms a bright rusty-red hue prevails, and the same hue is observable on the hinder part of the back, outer side of the hind legs (especially near the knee) and sides of the body, but is much paler; chin, throat, and all the under parts of the body white; tail clothed with very short, adpressed, grisly hairs, becoming longer and of a dirty-white on the under side of the apical half; upper surface of the muzzle dusky, with a white line on each side; ears black on the outside, and white internally; a black mark commences near the occiput and proceeds backwards; towards the tail it is broadest, most distinct on the middle of the back, and becomes obliterated as it approaches the tail; on the haunch a transverse white mark; hands and feet black.

	Male.		Female.	
	feet.	inches.	feet.	inches.
Length from the nose to the extremity of the tail	4	7	3	10
„ of tail	2	1	1	9
„ „ tarsus and toes, including the nail		8		$7\frac{1}{4}$
„ „ arm and hand, including the nails		$8\frac{1}{2}$		$6\frac{1}{4}$
„ „ face from the tip of the nose to the base of the ear		5		$4\frac{1}{4}$
„ „ ear		3		$2\frac{3}{4}$

The figures in one of the Plates represent the entire animals, necessarily much reduced, and a head the size of life.



HALMATURUS PARMA, *Gould*

J Gould and H C Richter, del et lith.

Hullmandel & Walton, Imp.

HALMATURUS PARMA, *Gould.*

Parma Wallaby.

Halmaturus Parma, Gould in Gray's List of Mamm. in Brit. Mus., p. 91.
Macropus (*Halmaturus*) *Parma*, Waterh. Nat. Hist. of Mamm., vol. i. p. 149.

The *Halmaturus Parma* is so very distinct from all the other small *Halmaturi* inhabiting New South Wales, that the aborigines who hunt these animals recognize it immediately by the native term I have selected as a specific appellation; this remark applies more particularly to the natives of Illawarra, in which district I myself saw it in a state of nature. In these extensive brushes it doubtless still exists, as since my return other specimens have been sent to me from thence by the late Mr. Strange. How far its range may extend westwardly towards Port Philip, or eastwardly in the direction of Moreton Bay, I am unable to state.

The following note, by Mr. Waterhouse, may be quoted as confirmatory of my view of the specific value of this animal, the original description of which I intended to publish in the "Proceedings of the Zoological Society of London," but by some inadvertence omitted so to do:—

"The Parma Wallaby, I think, merits the distinction of a species. It is intermediate between the *H. dorsalis* and the *H. Derbianus*, and may be distinguished from either by its deep reddish-brown colour, and the distinct large white patch on the throat and chest; the hairs forming this patch are white to the root, in *H. Derbianus* they are distinctly grey next the skin, and in *H. dorsalis* they are very slightly tinted with grey at the root in the same parts; and this circumstance, combined with the general form and superior size of *H. Parma*, caused me at first sight to think it might be a variety of the latter animal; I soon perceived, however, that it differed much from *H. dorsalis* in the form and size of its incisor teeth, and in the proportion of the tarsus, which is much shorter than in that species."

The following is Mr. Waterhouse's description of my original specimen, which now forms part of the Collection at the British Museum:—

"Fur moderate, both as to length and texture; general colour deep reddish-brown, pencilled with white, and much pencilled with black on the back; on the sides of the body the white is less distinct, and as the black is wanting, or nearly so, the hue is paler; the fur on these parts is of a very deep grey next the skin; on the under parts of the body each hair of the fur has the basal half grey, and the external half whitish, but tinted with rust-colour; on the throat and fore part of the chest, however, the hairs are uniform white; back of the shoulders and fore-legs brownish rust-colour; in some specimens a narrowish longitudinal black mark extends from near the occiput along the back of the neck; in others this mark is not apparent; head ashy-grey, tinted with rufous, and finely tinted with whitish; the pale cheek-mark is indistinct; chin brownish; back of the ears clothed with hairs like those of the head, the few hairs of the inner side are whitish; feet brown, finely pencilled behind with very pale brown; tail sparingly clothed, and excepting at the base the scales very distinct; the small, stiff, scattered hairs of the upper surface are black; quite at the root the tail is clothed with hairs like those of the body; on the under side the hairs are more numerous, and of a dirty white hue."

The accompanying Plate represents the head of the animal of the size of life.

HALMATURUS DERBIANUS, *Gray*



HALMATURUS DERBIANUS, *Gray*.

Derby's Wallaby.

FACE AND FORE PART OF A MALE AND OF A FEMALE, OF THE NATURAL SIZE.

My figures of this animal were taken from specimens procured on Kangaroo Island, at the entrance of Spencer's Gulf. I mention this particularly, because I have given the name of *Halmaturus Houtmanni* to an animal inhabiting the Abrolhos of Western Australia, which Mr. Waterhouse considers may be only a variety of the present species; but this is a point which time alone can determine. These insular animals are extremely puzzling, and considerable judgment is required in ascertaining their specific value.

The *Halmaturus Derbianus* is somewhat allied to the *H. Parma*; still they are unquestionably distinct. They form, with *H. dorsalis*, a little section of the group quite different from that constituted by *H. Thetidis*, *H. stigmaticus*, *H. Billardieri*, and *H. brachyurus*.

The *H. Derbianus* is very numerous in all the thick brushes of the islands on which it has been found. It is bustling and quick in all its actions; and it is only by the aid of dogs that it can be forced from its retreat, or to leave the numerous runs formed by it beneath the underwood in all directions.

For the pleasing life-like representation of this species, much credit is due to Mr. Richter; for nothing could be more faithful.

The reader is referred to the description accompanying the reduced figures given on the next Plate for a full account of this animal.



HALMATURUS DERBIANUS: *Gray*

H. C. Richter del.t

C. Hullmandel Imp.

HALMATURUS DERBIANUS, *Gray.*

Derby's Wallaby.

Halmaturus Derbianus, Gray in Mag. Nat. Hist., vol. i. new ser. p. 583.—Gould, Mon. of Macropodidæ, pl. .
—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 91.
Macropus (*Halmaturus*) *Derbianus*, Waterh. in Jard. Nat. Lib. *Marsupialia*, p. 234, pl. 21.—Ib. Nat. Hist. of Mamm., vol. i. p. 154.
Halmaturus Houtmanni, Gould in Proc. of Zool. Soc., pt. xii. p. 31 ?.—Waterh. Nat. Hist. of Mamm., vol. i. p. 156 ?.
———— *Eugenii*, Less. Man. de Mamm., p. 227 ?.
———— *Emiliæ*, Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 90 ?.
Bangap, Aborigines of Perth in Western Australia.

Although the name of *Derbianus* is retained for this small species of *Halmaturus*, I am by no means certain that it has any claims to priority; in all probability the older name of *Eugenii* had reference to this animal; Mr. Waterhouse also is of opinion that an animal which I have called *Houtmanni* is merely a variety of the same species. Before me at this moment, while writing the present article, is my type specimen of *Houtmanni* from Wallaby Island, Houtmann's Abrolhos, and two specimens of *Derbianus* from Garden Island lying about five miles off the mouth of Swan River; now the former certainly differs from the latter in being of a darker colour, in having less rufous on the shoulders and rump, and in having stouter legs and feet; notwithstanding I bow to Mr. Waterhouse's opinion, and regard them as local varieties of one and the same species; and I incline to do so the more readily from feeling convinced, after having for a series of years paid considerable attention to these and other nearly allied species, that there is an animal of this family peculiar to the scrubby islands lying off the southern and western coasts of Australia, and one only, and that that one is the species under consideration, whatever its specific name may be. Up to the present time I have never seen examples from the mainland, the brushes of which lying between the mountain ranges and the coast are all tenanted by their own peculiar species, such as *Thetidis*, *Dama*, &c., whilst the Brigaloe brush of the interior has also an animal of this section peculiar to it—the *H. dorsalis*. The *H. Derbianus*, then, inhabits all the islands lying off the west coast, and extends round to those of the south-west as far as Kangaroo Island in Spencer's Gulf, where it is abundant.

Like many others of the small Wallabies, the present species loves to dwell among the densest underwood: hence the almost impenetrable scrub of dwarf *Eucalypti*, which covers nearly the whole of Kangaroo Island, will always afford it a secure asylum, from which in all probability it will never be extirpated,—the vegetation being too green and humid to be burnt, and the land too poor to render it worth the expense of clearing. It is very abundant in the ravines and gullies, through which it makes innumerable runs; and such is the dense nature of the vegetation, that nothing larger than a dog can follow it; still it is taken by men residing on the island in the greatest abundance, both for the sake of its skin and its flesh: they procure it principally by snares, a simple noose placed on the outskirts of the brush; but they also shoot it when it appears on the open glades at night.

Considerable difference exists in this, as well as in the other allied species, in the colour of the hair, which varies very much, not only in the intensity of its hue, but also in being much redder in some specimens than in others.

Fur long and moderately soft; face grizzled grey, reddish and dark brown; on the upper lip a buffy-white mark which extends backwards under the eye, and blends with the general colour of the face; back of the neck, shoulders and arms rufous; a blackish mark commences at the occiput, and continues downwards until it becomes lost in the colouring of the back, which is grizzled black and dull white, caused by the middle portion of each hair being dull white, and the tips black, the base of all the fur being deep-blue grey; rump, base of the tail, hind legs and tarsi grizzled with rufous and black, the former colour predominating; throat, chest and all the under surface buffy white; arms the same as the tarsi, but rather darker; under side of the tail buff.

	Male. feet.	inches.
Length from the nose to the extremity of the tail	3	1
,, of tail	1	$1\frac{1}{2}$
,, ,, tarsus and toes, including the nail		6
,, ,, arm and hand, including the nail		$4\frac{1}{2}$
,, ,, face from the tip of the nose to the base of the ear		$4\frac{1}{2}$
,, ,, ear		$2\frac{1}{4}$

One of the accompanying Plates represents the head and fore quarters of the natural size, the other the entire animal much reduced.



HALMATURUS THETIDIS, *F. Cuv. et Geoff.*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

HALMATURUS THETIDIS, *F. Cuv. et Geoff.*

Pademelon Wallaby.

HEAD AND FORE PARTS, OF THE SIZE OF NATURE.

THE accompanying life-sized head represents the common Pademelon of the colonists, a shy and timid creature, which bounds away on the least disturbance. It runs in the same brushes with the *H. Ualabatus* and *H. Parma*; and every extensive district of this kind, from Illawarra to the Clarence, was tenanted by great numbers of it at the period of my visit to New South Wales. Its flesh is good, and is frequently eaten by the settlers and the aborigines. Considerable difference occurs in the colouring of this animal,—specimens obtained in one locality having the red hue of the neck predominating over the brown, while in those from another the contrary is the case.

The front figure represents a moderate-sized adult male, of the size of life, while the distant figure of the female is a trifle less. A more lengthened description, and reduced figures of the entire animal, will be found on the next Plate and page.



HALMATURUS THETIDIS. *Geoff. & F. Cuv.*

HALMATURUS THETIDIS, *F. Cuv. & Geoff.*

Pademelon Wallaby.

Halmaturus Thetidis, F. Cuv. et Geoff. Mamm., tab. 56.—F. Cuv. Less. Zool. de M. Bougainville's Journ. de la Navig. autour du Monde de la Frigate Thetis, &c., tom. ii. p. 305. pl. 37.—Gould, Mon. of Macropodidæ, pl. .

——— *nuchalis*, Wagn. in Schreb. Saug. Suppl., part 111–112. p. 128 (Waterhouse).

Macropus (*Halmaturus*) *Thetidis*, Waterh. Nat. Hist. of Mamm., vol. i. p. 144.

Pademelon of the colonists of New South Wales.

Of the smaller species of Wallaby inhabiting New South Wales, the present is perhaps the one best known to the colonists, inasmuch as it is more abundant than any other. It is strictly a brush animal, and consequently only to be found in such localities. All the brushes I have visited from Illawarra to the Hunter, as well as those of the great range which stretches along parallel with the coast, are equally favoured with its presence; I have also received specimens from Moreton Bay. It is not unfrequently found running in the same locality, and even in company, with the *H. Ualabatus*, although the very humid parts of the forest appear to be less suited to it than to that species.

As an article of food, few animals are so valuable, its flesh being tender and well-flavoured, and more like that of the common Hare than that of any other European animal I can compare it with.

The sexes are precisely alike in colour, but the female is smaller than the male.

The species appears to have been first brought to Europe by the French navigators, who applied to it the inappropriate term of *Thetidis* (after their vessel), which, however, it would not be right to alter. Having seen the original specimen in Paris, which is said to have been brought from Port Jackson, I am satisfied of its identity with my own specimens. I mention this circumstance, particularly as the name of *Thetidis* has been placed as a synonym of *Eugenii*, an animal brought home by Peron, and which I now believe to be identical with *H. Derbyanus*.

The *H. Thetidis* must be classed among the smaller *Halmaturi*, being scarcely so large as *H. Derbyanus* or *H. Billardierii*.

Fur rather soft; general colour deep brown; shoulders, sides and back of the neck rusty-red; ears furnished internally with moderately long dirty-white hairs; upper lip dirty-white; chin and throat white; remainder of the under surface dirty-white; arms greyish; hands brown; tarsi and feet uniform dark brown; tail brownish-grey above and dirty-white beneath; on the sides of the tail the hairs are scanty, and the scales covering the tail are very apparent.

	Male.	
	feet.	inches.
Length from the tip of the nose to the extremity of the tail . . .	3	0
,, of tail	1	0
,, ,, tarsus and toes, including the nail		$5\frac{3}{4}$
,, ,, arm and hand, including the nails		5
,, ,, face from the tip of the nose to the base of the ear . .		$4\frac{1}{4}$
,, ,, ear		2

The accompanying Plates represent the head and shoulders of the size of life, and reduced figures of the entire animal.



HALMATURUS STIGMATICUS, *Gould*

J.Gould and H.C.Richter del. et lith.

Hullmandel & Walton Imp.

HALMATURUS STIGMATICUS, *Gould.*

Branded Wallaby.

HEAD AND FORE QUARTERS, OF THE SIZE OF NATURE.

It will be seen that this new species has the facial aspect of the *Halmaturus Thetidis* and *H. Billardieri*; and it does, in fact, belong to the same section as those Brush Kangaroos, but, as a species, it is doubtless quite distinct. In size it exceeds both the above-mentioned animals, and differs, in its rich red colouring, from all the other members of the genus. At present only a single specimen has reached this country: its capture was effected under somewhat singular circumstances, and tends to prove the probability that other species of this great group of Marsupials will yet be discovered when the naturalist has an opportunity of exploring the extensive forests of the north-eastern coast of Australia, which at present is impossible, or not to be done without great risk of encountering the treacherous aborigines.

Full details respecting this species will be found in the letter-press accompanying the following Illustration, on a reduced scale, of the entire animal.

HALMATURUS STIGMATICUS, Gould



HALMATURUS STIGMATICUS, *Gould.*

Branded Wallaby.

Halmaturus stigmaticus, Gould in Proc. of Zool. Soc., Nov. 13, 1860.

A single and very fine specimen of this new *Halmaturus* was obtained by Mr. John Macgillivray at Point Cooper, on the north-east coast of Australia, in the month of June 1848; this specimen is now deposited in the British Museum collection. I cannot refer this animal to any described species, but I observe that it is very nearly allied to the *Halmaturus Thetidis*. Now it is well known that this latter animal is strictly an inhabitant of the humid brushes of the south-eastern coast, and that it never leaves them for either the drier hills or the adjacent plains; and the present species may be regarded as its representative on the north-eastern coast, which is, I believe, clothed with brushes of a similar character.

The *Halmaturus Thetidis* and the *H. stigmaticus* are very similar in the smallness of their heads, the comparative shortness of their ears, and their adpressed, short stiff fur; but the latter differs from the former in being of a somewhat larger size and in the more rufous colouring of its fur (particularly of that clothing the legs), and in having a broad brand-like mark of buff on each haunch; similar marks, it is true, exist in some other species of Kangaroo, but in none of them is it so conspicuous as in the animal under consideration; hence the specific name I have assigned to it.

In the 'Voyage of H.M.S. Rattlesnake,' vol. i. p. 92, Mr. Macgillivray says:—"Near this place, while tacking in-shore, a native dog was seen by Lieut. Simpson in chase of a small Kangaroo, which, on being close pressed, plunged into the water and swam out to sea, when it was picked up by the boat, leaving its pursuer standing on a rock, gazing wistfully at its intended prey, until a musket-ball, which went very near its mark, sent it off at a trot. The Kangaroo lived on board for a few days, and proved to constitute quite a new kind, closely allied to *Halmaturus Thetidis*."

Face, sides of the body, outer side of the fore limbs, and the flanks rufous, more or less interspersed with whitish, the tips of the hairs being of that hue, and their middle portion rufous; outer side of the hinder limbs rich rusty red; occiput dark brown, interspersed with silvery-tipped hairs; ears clothed with long black hairs externally, and narrowly fringed with white on the front edge; all the upper surface of the body blackish brown, interspersed with numerous whitish-tipped hairs, gradually blending with the rufous hue of the sides and flanks; down the back of the neck an indistinct line of a darker or blackish hue; across each haunch a broad and conspicuous mark of buff; upper lip, chin, all the under surface of the body, and the inner side of the limbs dirty white; hands and feet dark brown; upper surface of the tail dark brown; on the sides the hairs are less numerous, and the scaly character of the skin becomes conspicuous.

	feet.	inches.
Length from the tip of the nose to the extremity of the tail	3	4
,, of the tail	1	4
,, of tarsus and toes, including the nail		$5\frac{3}{4}$
,, of arm and hand, including the nails		$6\frac{1}{4}$
,, of face from the tip of the nose to the base of the ear		$4\frac{3}{4}$
,, of ear		$1\frac{7}{8}$

The accompanying Plates represent the head of the natural size, and a reduced figure of the entire animal.



HALMATURUS BILLARDIERI.

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

HALMATURUS BILLARDIERI.

Tasmanian Wallaby.

HEAD AND FORE PARTS, OF THE SIZE OF LIFE.

As the Rabbit is to us one of the commonest and most numerous of our native quadrupeds, so is the Tasmanian Wallaby to the colonists of Van Diemen's Land. Exceeding a Hare in size, this useful animal is most numerous in all the scrubby and humid situations of the island. Its physiognomy, which is striking and singular, is well portrayed in the accompanying illustration, while the reduced figures will give a just idea of the entire animal. It will be seen that this species is much darker in colour than most of its allies, and that its coat is longer and more shaggy—a character of fur which is well adapted to its more southern, wetter, and colder climate, while its hue is in unison with that of the herbage amidst which it dwells. The interior of the forest, amid stranded trees and rank vegetation, are the situations in which this animal forms its runs, and from which it is not easily driven; but for these and for all other details respecting the species the reader is referred to the page accompanying the reduced figures.



HALMATURUS BILLARDIERII.

HALMATURUS BILLARDIERI.

Tasmanian Wallaby.

Kangurus Billardierii, Desm. Mamm., Suppl. p. 542.

Macropus (*Halmaturus*) *rufiventer*, Ogilby in Proc. of Zool. Soc., part vi. (Feb. 1838) p. 23; and in Ann. of Nat. Hist. for May 1838, vol. i. p. 220.

Halmaturus (*Thylogale*) *Tasmanei*, Gray in Ann. of Nat. Hist. for April 1838, vol. i. p. 108.

Macropus (*Halmaturus*) *Billardieri*, Waterh. in Jard. Nat. Lib., *Marsupialia*, p. 227.

Halmaturus Billardieri, Gould, Mon. of Macropodidæ, pl. .—Waterh. Nat. Hist. of Mamm., vol. i. p. 159.—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 90.

——— *brachytarsus*, Wagn. Schreb. Saug., Nos. 111, 112. p. 121, November 30, 1842.

Wallaby, Colonists of Van Diemen's Land.

I HAVE but little doubt that the habitat of this Wallaby is limited to Van Diemen's Land and the larger islands in Bass's Straits, in all which localities it is so numerous that the thousands annually destroyed make no apparent diminution of its numbers. In consequence of the more southerly and therefore colder latitude of Van Diemen's Land, the vegetation is there much more dense and humid than on the continent of Australia; indeed the sun never penetrates into many parts of its forests, and accordingly we find this species clothed with a warmer and more sombre-coloured coat. It is consequently of a more hardy nature than any of its congeners, and with care and a slight degree of perseverance it might be easily naturalized in England; indeed I feel confident that if a sufficient number were introduced in a suitable locality, as in some of our forests and large estates of the nobility and gentry, the experiment would be attended with complete success. Independently of the novelty of a species of this singular tribe ranging at liberty in our woods, its flesh could not fail to be highly esteemed for the table. Being one of the best-flavoured of the small Kangaroos, it is very generally eaten in Van Diemen's Land.

The Tasmanian Wallaby may be regarded as strictly gregarious, hundreds generally inhabiting the same localities; the situations which it frequents are gullies, and the more dense and humid parts of the forest, particularly those that are covered with rank high grass, through and under which it forms numerous well-beaten tracks. From these coverts it seldom emerges, and never even approaches the outskirts of the forest except at night: hence it is seldom seen by ordinary observers. It is very easily taken with snares, formed of a noose placed in its run; and thousands are captured in this way, solely for their skins: the sportsman also may readily procure it by stationing himself in some open glade of limited extent, accompanied by two or three small yelping dogs, before which it keeps hopping round and round, and thus affords him an opportunity of shooting it as it passes; for, like the common rabbit, it never quits the locality in which it is bred.

Much diversity of colour is observable in different specimens, some having the throat and under surface deep reddish buff, while others have the same parts much lighter. Its usual weight is from fifteen to twenty pounds, although many are smaller.

This species is readily distinguished from the other small members of the group by its short ears, long, dark-coloured fur, and the rufous or yellow tint of the under surface of the body.

Fur very thick, the hairs blue-grey at the base, buffy brown in the middle, the tips, which are much produced, ending in black; face and all the upper surface very dark brown, approaching to black, particularly on the shoulders and back, where the hairs become much lengthened; arms and tarsi greyish brown; lips, throat, chest and under surface reddish buff; in some specimens these parts are grey tinged with buff; ears dark brown tinged with buff; upper side of the tail dark brown, under side dirty white.

	feet.	inches.
Length from the nose to the extremity of the tail	3	6
,, of tail.	1	1
,, of tarsus and toes, including the nail		6
,, of arm and hand, including the nails		$5\frac{1}{2}$
,, of face from the tip of the nose to the base of the ear . .		$4\frac{1}{2}$
,, of ear		$2\frac{1}{2}$

The accompanying Plates represent the head of the natural size, and reduced figures of the entire animals.



HALMATURUS BRACHYURUS.

J.Gould and H.C.Richter, del. et lith.

Hullmandel & Walton, Imp.

HALMATURUS BRACHYURUS.

Short-tailed Wallaby.

HEAD, ARMS, HIND FOOT, AND TAIL, OF THE SIZE OF NATURE.

THE most remarkable feature in the zoology of Australia is, undoubtedly, the great number of the Kangaroos, and the diversity of their characters, some being conspicuous for their great size, others for their banded or crescentic markings, and others again for their sombre hues and their diminutive sizes. Of that section of the family to which the generic appellation of *Halmaturus* has been assigned, the Short-tailed Wallaby is the smallest. Its nearest ally is the *H. Billardieri*, to which it assimilates not only in the shortness of its ears and the shaggy character of its fur, but in its still more sombre hues, which latter feature indicates that it dwells among grassy and dense herbage, in swampy and humid situations.

The *H. brachyurus* is a native of Western Australia, the *H. Thetidis* of New South Wales, and the *H. Billardieri* of islands of Tasmania and Bass's Straits; and thus we find these little Wallabys distributed along the whole of the south coast, from east to west. The exact localities frequented by these animals will be found in the pages accompanying the entire representations of each of them.

HALMATURUS BRACHYURUS.



HALMATURUS BRACHYURUS.

Short-tailed Wallaby.

Kangurus brachyurus, Quoy et Gaim. Voy. de l'Astrolabe, Zoologie, tom. i. p. 114. pl. 19.
Halmaturus (*Thylogale*) *brevicaudatus*, Gray, List of Mamm. in Coll. Brit. Mus. p. 90.
Macropus (*Halmaturus*) *brachyurus*, Waterh. Nat. Hist. of Mamm. vol. i. p. 162.
Ban̋-gup, Aborigines around Perth in Western Australia.
Quăk-a, Aborigines of King George's Sound.

Before my visit to Australia, this animal was extremely rare in the collections of Europe; indeed the example in the Paris Museum was the only one then known. The specimen alluded to was said to have been picked up dead at King George's Sound, and there also my specimens were procured. Even now it is still a rare animal, those examples introduced by myself being, so far as I am aware, all that have been transmitted to Europe.

In his notes respecting this species, Mr. Gilbert states that besides meeting with it at King George's Sound, he found it abundant in all the swampy tracts which skirt nearly the whole of Western Australia at a short distance from the sea, and that at Augusta, where its native name, Quăk-a, is the same as at King George's Sound, it inhabits the thickets and is destroyed in great numbers at the close of the season by the natives, who, after firing the bush, place themselves in a clear space and spear them as they attempt to escape from the fire: it is also caught by the settlers with springes placed in their little covered runs beneath the scrub. Mr. Gilbert adds, that he had not heard of its being killed to the eastward of the Darling range.

Mr. Waterhouse has given the relative admeasurements of the Paris specimen, and of an example in the British Museum which had been procured by Mr. Gilbert; the latter is considerably smaller than the former; but I have since received a specimen from the same locality which considerably exceeds both in size, its admeasurements being as follows:—

Length from the nose to the root of the tail . .	1 foot	10 inches.
,, of the tail	10	,,
,, ,, tarsus, toes, and nails	$4\frac{1}{2}$	,,
,, ,, ear	$1\frac{1}{2}$	,,

This animal differs from all the other *Halmaturi* in its short bluff head, diminutive ears, and extremely short tail; it is also clothed, especially about the face, with thick, stiff, and wiry hairs; which, combined with the general character of the fur, would lead to the inference that it resorts to more humid and secluded situations than those frequented by the other members of the genus.

The short and rounded ears, which are much hidden by the long fur of the head, are well clothed with hairs, those on the inner side being yellow, while externally they are of the reddish-brown tint which pervades the head and back of the neck, but which is somewhat brighter in the region of the ears; the hairs of the back are grey next the skin, broadly annulated with yellow towards the point, and black at the extremity; the back is also beset with numerous long, interspersed, almost entirely black hairs, which, being most plentiful in the middle of the back, give that part a deeper hue; the hairs of the sides of the body are similar, but the yellow portion is paler and the tips are brownish; on the under surface the hairs are grey next the skin, with a pale yellow external tint; feet deep brown; tail sparingly clothed with small stiff hairs, between which rings of small blackish scales are very perceptible.

Of this rare species I have given two illustrations; one representing the entire animal, much reduced, and the other, the head, tail, and foot, of the natural size.



PETROGALE PENICILLATA, *Gray.*

J Gerrard and H C Richter del et lith

Hullmandel & Walton Imp

PETROGALE PENICILLATA, *Gray.*

Brush-tailed Rock-Wallaby.

Upper Half of the Animal, of the size of life.

It is not a little interesting to observe how varied are the forms of the various species of Kangaroos, and how well each is suited to the physical conditions of that great southern land of our antipodes, Australia,—the plains, the forests, the rocks, and the trees, each being tenanted by members of this extensive family. Of these the Rock-Wallabys constitute a well-defined section, the species of which are active in the extreme among the haunts they affect.

The *P. penicillata*, the Brush-tailed Rock-Wallaby of the colonists, is an inhabitant of New South Wales. A more detailed account of the situations it frequents will be found in the page accompanying the Plate with the reduced figures.



PETROGALE PENICILLATA, Gray

PETROGALE PENICILLATA, *Gray*.

Brush-tailed Rock Wallaby.

Kangurus pencillatus, Gray, in Griff. Anim. Kingd., vol. iii. pl. opp. p. 49.
Macropus penicillatus, Benn. in Proc. Zool. Soc., part iii. p. 1.—Waterh. in Jard. Nat. Lib. Mamm., vol. xi. (Marsupialia) p. 243. pl. 22.—Benn. Cat. of Australian Museum, Sydney, p. 6. no. 27.
Kangurus Pencillatus, Gray, in Griff. Anim. Kingd., vol. v. p. 204.
Petrogale penicillatus, Gray, in Mag. Nat. Hist., vol. i. new ser. p. 583.
Heteropus albogularis, Jourd. Compte rendu de l'Acad. des Sci. Oct. 9, 1837, p. 552?, et Ann. des Sci. Nat. 1837, tom. viii. p. 368?
Petrogale penicillata, Gould, Mon. of Macropodidæ.—Gray, List of Mamm. in Coll. Brit. Mus., p. 92.
Macropus (*Heteropus*) *penicillatus*, Waterh. Nat. Hist. Mamm., vol. i. p. 167. pl. 1.

The Colony of New South Wales, or the south-eastern portion of Australia, is the native habitat of the *Petrogale penicillata*; it must not, however, be understood that it is universally dispersed over this part of the continent, for the situations it affects and for which its structure is especially adapted are very peculiar, and do not occur in all parts of the colony; those portions of the mountain ranges stretching along the eastern coast from Port Philip to Moreton Bay, the character of which is rocky and precipitous, are among the localities in which it is to be found; hills of a lower elevation than those of the great ranges, and the precipitous stony gullies between the mountains and the sea, are also situations it inhabits; my own specimens were collected in various parts of the Upper Hunter district, both on the Liverpool Range and on the low hills which spur out in a southerly direction. Agile and monkey-like in its actions, few animals are more active among their native rocks; it readily evades the pursuit of the Dingo or native dog (*Canis Dingo*) by leaping from one rocky ledge to another, until, arriving at the edge of the cliff, it is secure from its attacks; it also ascends trees with facility, particularly those the half-prostrate position of which offer it a ready means of ascent; but it more particularly loves to dwell among rocks abounding with deep and cavernous recesses, into which it plunges on the slightest apprehension of danger, when both the natives and its natural enemy the Dingo are generally foiled; at the mouths of these caverns, and for a considerable distance down the hill-sides, regular, hard, well-beaten tracks are formed, which, on the one hand, serve to facilitate the retreat of the animal to its secure asylum, while, on the other, they indicate its proximity. I have used the words "monkey-like" when speaking of its actions; and to show that they appeared as such to others as well as to myself, I may mention that in a note by Capt. Sir Edward W. Parry, R.N., published in the part of the Proceedings of the Zoological Society above referred to, it is stated that "the first intimation received of these animals was that monkeys were to be seen in a particular situation; and the manner in which they jumped about when a number of them were approached left that impression on the mind. They were so wild that it was impossible on the first attempt to obtain a specimen, and one which was wounded escaped into its hole." Sir Edward adds, "As several were seen together on more than one occasion, they appear to be gregarious." It must be regarded rather as a local animal than otherwise, as it is never to be found but in districts similar to those described. Although strictly nocturnal in its habits, individuals may frequently be seen during the day sunning themselves on the face of a rock or on half-prostrate trees. At such times they may be easily crept upon and shot; it was in this way that I procured numerous specimens for my own collection.

Several examples of this species have from time to time lived in the Gardens of the Zoological Society in the Regent's Park, and when placed in a proper inclosure displayed all the actions and attitudes they assume in their native wilds. A fine male now (October 1853) living in the Society's Menagerie formed the model from which Mr. Richter took the correct delineation given on the accompanying Plate; it was an excellent sitter, for it remained perched on the stem of a large tree for hours together. Great diversity of colouring occurs in different individuals, some being much darker than others; again, some have the breast and under surface rich rust-red, while in others the same parts are of a much paler hue, or inclining to buff.

The *Petrogale penicillata* may be regarded as the largest species of the well-defined genus to which it

belongs, its entire length from the nose to the end of the tail being three feet ten inches, the tail measuring twenty-three inches; the arm, hand and nails six inches; the tarsus, toes and nail six inches and a half; the face from the tip of the nose to the ear four and a half inches, and the ear two inches. Of its flesh as an article of food I can speak most highly, having frequently partaken of it in the bush and always found it excellent.

The fur is long and rather harsh to the touch; its general colour is a dusky brown tinged with purple, passing into deep rusty red on the rump, the base of the tail, the hinder part of the thighs and the abdomen; face dark grey; along the face from the lip to the ear a dusky white mark; a narrow dark line runs from the middle of the forehead nearly half way down the back; shoulders and flanks vinous grey, separated from the general tint of the upper surface by an indistinct line of a lighter tint, scarcely to be distinguished in some specimens; a narrow white line passes from the throat down the centre of the chest; ears black, passing into grey at the base, and having in some specimens a band of rufous along the outer edge; arms and hands, tarsi and feet rusty red, deepening into black on their extremities.

The two sexes when adult are nearly alike in size and similar in colour.



PETROGALE LATERALIS, *Gould.*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

PETROGALE LATERALIS, *Gould.*

Stripe-sided Rock-Wallaby.

UPPER HALF OF THE ANIMAL, OF THE SIZE OF LIFE, AND A REDUCED FIGURE IN THE DISTANCE.

THIS is the West Australian representative of the *P. penicillata* of New South Wales; in size it is somewhat smaller than that animal, but its markings are more strongly defined. In the colony of Swan River, rocky districts alone are the places of its resort. In their dispositions and general economy the *P. lateralis* and *P. penicillata* are very similar. I always observed that the furry coat of the former is thicker or more dense than that of the latter; this difference, however, cannot be depicted, but is readily seen when skins of the two animals are seen side by side.

The reader is referred to the page accompanying the succeeding Plate for a more detailed account of this species.



PETROGALE LATERALIS: *Gould.*

PETROGALE LATERALIS, *Gould.*

Striped-sided Rock Wallaby.

Petrogale lateralis, Gould, Mon. of Macropodidæ, pl.
Macropus (*Heteropus*) *lateralis*, Waterh. Nat. Hist. of Mamm., vol. i. p. 172.
Moö-roo-rong, Aborigines of the Perth and Toodyay districts of Western Australia.

This conspicuously marked species is very abundant in all the rocky districts of Swan River, particularly the Toodyay, and I have little doubt that the whole of the line of coast of Western Australia will hereafter be found to be inhabited by it, wherever the character of the country is suitable. Independently of the difference in its markings and the more woolly texture of its fur, it is a much more diminutive animal than the *P. penicillata*; the crania of the two animals also exhibit sufficient differences to satisfy the most sceptical mind of their being specifically distinct; in their disposition and economy, however, but little variation is found to exist.

Mr. Gilbert states that "the *Petrogale lateralis* is only to be met with in the rocky parts of the interior intersected with caverns. It is a remarkably shy and wary animal, feeding only at night in little open patches of grass, and never, from all that I have been able to observe, going more than two or three hundred yards from its rocky retreats. When alarmed, it leaps most extraordinary distances from rock to rock and point to point with the utmost rapidity. When running along a level surface, its tail is very much curved upwards like that of a greyhound, and the best way to procure specimens is to walk over the rocks without shoes, and station yourself within gunshot distance of the principal entrance to their caverns, when, on making their appearance in the middle of the day for the purpose of sunning themselves, they are easily shot."

Fur shorter and much softer than that of *P. penicillata*; general colour reddish-brown, passing into silvery-grey on the neck and shoulders; basal half of the tail brownish-grey, the remainder black, with a brush at the end; face greyish-brown; a distinct white mark from the tip to the base of the ear; a black mark between the ears, extending in a distinct narrow line half-way down the back; ears dark brown, becoming of a light sandy colour at the base; a deep rich brown mark extends from behind the shoulders, down the back of the arm, along the flanks and down the inside of the thigh; this mark is separated from the general colour of the back by a very distinct stripe of white; chin, throat, chest and abdomen sandy-red; under sides of the neck grey; arms light sandy-red, passing into black on the hands; tarsi reddish brown, passing into blackish-brown on the toes.

	Male.	
	feet.	inches.
Length from the tip of the nose to the extremity of the tail . . .	3	5
,, of the tail	1	5
,, ,, tarsus and toes, including the nail		$5\frac{1}{4}$
,, ,, arms and hands, including the nails		$4\frac{3}{4}$
,, ,, face from the tip of the nose to the base of the ear . .		4
,, ,, ear		$1\frac{7}{8}$

The first Plate represents the head of the size of life; the second, reduced figures of the entire animal.



PETROGALE XANTHOPUS, *Gray*

PETROGALE XANTHOPUS, *Gould.*

Yellow-footed Rock-Wallaby.

A single Figure of the entire Animal, of the size of life.

Two reasons have induced me to give double figures of this animal—one to show its peculiar brushy tail and richly coloured ears, of the size of life, while, in the scenery accompanying the reduced figures, I have endeavoured to portray the kind of country inhabited by this new and very fine species. It was one of the last discoveries made by one who sacrificed his life in the pursuit of natural history on the east coast of Australia; and it would have been well if the name of Frederick Strange had been associated with the species. Dr. Gray has, however, seized upon a good specific character in the name of *xanthopus*, which will for ever serve to distinguish this fine species of the genus *Petrogale*.

PETROGALE XANTHOPUS, Gray.



PETROGALE XANTHOPUS, *Gray.*

Yellow-footed Rock Wallaby.

Petrogale xanthopus, Gray in Proc. of Zool. Soc., Nov. 14, 1854.

All that is known respecting this fine animal is, that two examples, a male and a female, were collected on Flinders' Range in South Australia, and sent to this country by Mr. Strange, and that they were subsequently purchased by Dr. Gray for the British Museum collection, wherein they are now deposited.

The *Petrogale xanthopus* is a typical example of the genus to which it belongs, and may be regarded as one of the finest species of the form yet discovered. Its large size and rich colouring render it very conspicuous, while the buffy hue of the ears and legs at once distinguishes it from the whole of its congeners.

The habits, actions and economy of the *Petrogale xanthopus* are doubtless as similar to those of the other members of the genus as it is like them in form, but on these points nothing is at present known.

Fur long, soft, and yielding to the touch; face, head, and all the upper surface vinous brown-grey, becoming greyest on the rump; a narrow line of dark rich brown extends from the crown of the head down the centre of the back; on each cheek a distinct mark of white; eyelashes full, prominent, and brownish-black; behind each arm a large patch of reddish-brown, separated from the general tint of the upper surface by a streak of buffy-white; ears ochre-yellow, becoming lighter at the base, fringed internally with white, and tipped externally with brown; front of the arms bright buff; hands rich dark brown; outer side of the legs light ochreous-brown, fading into white on the inner side, and passing into the rich dark brown of the toes; throat and under surface white; tail ochreous-brown, irregularly barred with a darker tint, and ending in a conspicuous tuft which is rich brown above and ochreous below.

Of so fine a species I have considered it desirable to give two illustrations,—the entire animal, necessarily much reduced, and a foreshortened figure of the size of life. Nor must I omit to call attention to the interest which would attach to the introduction of living examples to our menageries, and to the acquisition of additional examples for our museums.



PETROGALE INORNATA, *Gould.*

J.Gould and H.C.Richter del et lith.

Hullmandel & Walton. Imp.

PETROGALE INORNATA, *Gould.*

Unadorned Rock-Wallaby.

Upper Half of the Animal, of the size of life.

The northern as well as the southern portions of the Australian continent are evidently tenanted by members of that section of the Kangaroos to which the present species belongs; for although a single example only has yet reached me from the north coast, it is sufficient to show that such is the case.

The *P. inornata* is a true *Petrogale*, and, like the *P. concinna*, merely differs from its congeners in the total absence of stripes or markings on its sides.

This plain-coloured but rare species is one I would recommend to the notice of the naturalists and explorers who may visit the north coast of Australia, where it was discovered by Mr. Bynoe.

A very reduced figure of the entire animal will be found on the next Plate.



H. Richter del. et lith.

PETROGALE INORNATA: *Gould.*

C. Hullmandel Imp.

PETROGALE INORNATA, *Gould.*

Unadorned Rock Wallaby.

Petrogale inornata, Gould in Proc. of Zool. Soc., part x. p. 5.—Ib. Mon. of Macropodidæ, pl. .—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 92.
Macropus (Heteropus) inornatus, Waterh. Nat. Hist. of Mamm., vol. i. p. 175.

This new species, for which I am indebted to the kindness of B. Bynoe, Esq., of H.M.S. Beagle, differs from all the other members of the genus in the unusual uniformity of its colouring. Mr. Bynoe collected it on the north coast of Australia. In size it is about equal to the *P. lateralis* of the western coast, to which, as also to *P. penicillata*, it is very nearly allied, but differs from them both in being destitute of any markings on the sides, in the absence of any dark colouring behind the ears, and in the light colouring of the arms and tarsi.

During the interval of nearly twenty years which has elapsed since I first characterized this animal, no additional examples of this, or any other mammal of the rarely visited part of Australia it inhabits, have reached this country; but when the north coast of Australia shall have been thrown open to the settler, it will doubtless be found that the *Petrogale inornata* is as abundant in the rocky districts of that part of the country as the *P. penicillata* is in the brushes of New South Wales.

General colour of the upper parts sandy grey, grizzled over the shoulders, and becoming much lighter on the flanks; an indistinct line of a lighter hue along the face under the eye; a dusky red patch behind the elbow; under surface sandy white, inclining to rufous on the lower part of the abdomen; arms and tarsi sandy grey, passing into dark brown at the extreme tips of the toes; basal half of the tail sandy brown, the remainder black, the former colour extending along the sides of the tail for some distance towards the tip; ears sandy grey, bordered by a very narrow line of dark brown on their inner edge; a dark patch at the occiput, passing into a dark line down the forehead.

	Female.	
	feet.	inches.
Length from the tip of the nose to the extremity of the tail	3	2
„ of tail	1	$3\frac{1}{4}$
„ of tarsus and toes, including the nail		$5\frac{1}{4}$
„ of arm and hand, including the nails		5
„ of face, from the tip of the nose to the base of the ear		$4\frac{1}{2}$
„ of ears		$1\frac{7}{8}$

The accompanying Plates represent the head of the natural size, and a reduced figure of the entire animal.



PETROGALE BRACHYOTIS, *Gould*

Hanhart imp. *Hullmandel & Walton, Imp*

PETROGALE BRACHYOTIS, *Gould.*

Short-eared Rock-Wallaby.

Macropus (*Petrogale*) *brachyotis*, Gould in Proc. of Zool. Soc., part viii. p. 127.—Ib. Mon. of Macropodidæ, pl. .
——— *brachiotis*, Waterh. in Jard. Nat. Lib. *Marsupialia*, p. 247.
——— (*Heteropus*) *brachiotis*, Waterh. Nat. Hist. of Mamm., vol. i. p. 176.
Petrogale brachyotis, Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 92.

The discovery of this species of Rock Kangaroo is due to the researches of His Excellency Sir George Grey, the present (1859) Governor of the Cape of Good Hope, who procured it on the North-west coast of Australia, near Hanover Bay, on the 29th of December, 1837. The two specimens, a male and a female, then obtained, which appear to be fully adult, are in the British Museum, and are at present unique. Sir George Grey states that the animal "is excessively wild and shy in its habits, frequenting in the day-time the highest and most inaccessible rocks, and only coming down to the valleys to feed early in the morning and late in the evening. When disturbed in the day-time it bounds among the roughest and most precipitous rocks, apparently with the greatest facility, and is so watchful and wary that it is by no means easy to get a shot at it. How it can support the excessive heat of the sand rocks amongst which it always lies is to me truly astonishing, the temperature there during the hottest part of the day being frequently 136°. I have never seen this animal on the low land or the plains, and I consequently believe it to be entirely an inhabitant of the mountains."

No other species of Rock Kangaroo has yet been discovered with such short and scanty hair as the *Petrogale brachyotis*, which scantiness of covering may be due to the great heat of the latitudes it inhabits, and the peculiar localities to which it resorts—hard craggy rocks exposed to the burning sun. In confirmation of this being a genuine species, Mr. Waterhouse remarks :—

"The Short-eared Rock Kangaroo is readily distinguished from the *penicillatus* and *lateralis* by the absence of the black band on the sides of the body, the only remains of this dark hue being confined to a patch immediately behind the base of the fore leg; its general colour is paler, and the fur is much shorter; the tail is less bushy; its bulk is moreover inferior, and the proportionately small size of the ears is an important distinguishing character; in its smaller size and in the reddish hue of the upper parts of the body, it approaches to *concinnus*; but besides other differences, that animal does not possess any dark mark or spot on the sides of the body."

Fur short and rather close to the body; general colour of the upper surface greyish brown, suffused with rust-colour; under surface dirty yellowish white; head pale brown, with a dirty white mark on each side; cheeks almost white; ears pale internally, dusky externally; a rusty black patch on the body, immediately behind the base of the fore leg; fore feet brown; nails of the toes very short and scarcely projecting beyond the fleshy portion, which is extremely rough beneath; tail moderately bushy, coloured at the base like the body, but the apical third dusky black.

	Male.	
	feet.	inches.
Length from the nose to the extremity of the tail	3	0
,, of tail	1	3
,, ,, tarsus and toes, including the nail	0	5
,, ,, arms and hands, including the nails	0	$3\frac{1}{2}$
,, ,, face from the tip of the nose to the base of the ear	0	$3\frac{3}{4}$
,, ,, ear	0	$1\frac{3}{4}$

The larger figure is about the size of life.



PETROGALE CONCINNA, *Gould*

Hanhart imp. *Bellenaud & Vallon imp.*

PETROGALE CONCINNA, *Gould.*

Little Rock Wallaby.

Petrogale concinna, Gould in Proc. of Zool. Soc., part x. p. 57.—Gray, List of Mamm. in Coll. Brit. Mus., p. 92.
Macropus (*Heteropus*) *concinnus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 177.

Many parts of Australia are even yet almost unknown both to travellers and naturalists; particularly the countries bordering its northern and north-western coasts—not to mention the distant interior; and in all these parts, numerous new species of quadrupeds, birds, and other classes of natural history are in my opinion to be discovered. The north-west coast has, it is true, been visited by the officers of H.M. Surveying Ship Beagle, and such species as fell in their way have been collected by them, but their official duties prevented them from giving that attention to the subject that could be desired. Nearly all they did collect proved to be new to science. The present interesting Little Rock Wallaby may be cited as a case in point, having been one of the specimens thus procured and brought home by Lieut. Emery, R.N. The single specimen obtained by this gentleman, and which is now in the British Museum, is fully adult, and is remarkable for its brilliant colouring and diminutive size. Mr. Waterhouse remark, that "it may be readily distinguished from its congeners, not only by its small size and bright. colouring, but by the absence of any black spot behind the base of the fore-leg."

Fur moderately long and somewhat soft to the touch; general colour bright rusty-red; head palish ash-colour, slightly suffused with rust-colour, which tint is most conspicuous above the eyes; cheeks rusty-white, with an indistinct greyish-brown mark extending forwards from the front of the eye; ears very pale brown externally, and lined with a few white hairs internally; fur on the back grey next the skin, and this tint at the root of each hair is followed by brilliant rusty-red, then a broad space which is white, and lastly, the tip is deep rusty-brown; on the under parts of the body the fur is grey next the skin, and yellowish-white on the visible portion; fore-legs rusty-white; hands brownish-white; hind-legs pale rust-colour externally; tarsi brownish-white, slightly pencilled with brown; on the back of the neck an indistinct trace of a mesial darker mark; tail clothed at the base with fur like that of the body; beyond this the hairs are of a harsher nature, at first about half an inch in length, and on the apical third about an inch and a half, of a brownish-white, tipped with black.

The accompanying Plate represents the animal about the natural size.



DENDROLAGUS URSINUS, *Müll.*

J.Gould and H.C.Richter del. et lith.

Hullmandel & Walton, Imp.

DENDROLAGUS URSINUS, *Müll.*

Black Tree-Kangaroo.

Dendrolagus ursinus, Müll. Zoogd. van den Indischen Archipel., part iv. pl. 19; pl. 22. fig. 1, head; pl. 23. figs. 1-3, and pl. 24. fig. 1, skull; figs. 2 & 3, bones of hind-leg.—Gould, Mon. of Macropodidæ, pl. .—Waterh. Nat. Hist. Mamm., vol. i. p. 185.—Gray, List of Mamm. in Coll. Brit. Mus., p. 87.

As an evidence of how little we know of the productions of New Guinea, and of the infrequency of our intercourse with that country, I may state, that, although twelve years have elapsed since the publication of the second part of my "Monograph of the Macropodidæ, or Family of Kangaroos," I have not been able to obtain any information respecting the history and habits of this singular animal beyond the meagre account there given, the substance of which I here repeat.

Both the *Dendrolagus ursinus* and the *D. inustus* are natives of New Guinea, where they inhabit the trees, and feed upon the bark and leaves of the smaller branches, fruits and berries. They were discovered in Triton Bay by Dr. M. S. Müller, who states that they also frequent the interior of the country: in all probability they are generally dispersed over the forests of that *terra incognita*. What a field for enterprise here presents itself to the notice of the scientific explorer!

The specimen from which my former illustration was taken, and which was then in the Royal Museum at Leyden, now forms part of the fine collection at the British Museum; the half-figure, of the size of life, on the accompanying Plate was also taken from the same example.

The following accurate description of this animal is transcribed from Mr. Waterhouse's "Natural History of the Mammalia," a work of great scientific value, which it is to be regretted has been discontinued for want of a due appreciation of its merits on the part of the public:—

"This animal has received the specific name of *ursinus*, no doubt on account of a certain superficial resemblance it has to a small Bear, arising in a great measure from the nature of its fur, which differs much from that of the ordinary Kangaroos, not only in being harsh and glossy, but in being composed of one kind of hair only; it would appear that that kind of hair which forms the chief clothing in the ordinary Kangaroos is here entirely, or almost entirely, wanting; and that the hairs representing the longer interspersed hairs in the fur of those animals, here forms the entire coat. With all the essential characters of the true Kangaroos, we find, in these tree-climbing animals, the limbs modified for their different mode of life: the long hind-legs of the Kangaroo proper are replaced by comparatively short legs, and the fore-legs are but little inferior in size to the posterior limbs; the strong fore-feet are armed with stout and long claws, compressed and much curved, and fitted for clinging to the inequalities of the bark of the trees. The enormously long tail no doubt helps to balance the animal whilst on the branches of the lofty trees which it ascends in quest of food.

"On the upper parts and sides of the body, as well as the limbs (excepting at the base internally), the fur is black and glossy, and very nearly uniform to the skin, an indistinct brownish hue being only observable at the roots of the hairs; tail densely clothed throughout, and black, but tinted with brown at the roots of the hairs; ears densely clothed with very long hairs which completely conceal them; the hairs springing from the top of the ears are brown, but the rest are black; the head in front of the ears and the whole of the under parts of the body are brown, but varying in intensity in parts, being darker round the eye and on the muzzle, and yellowish on the cheeks; the belly is also yellowish, whilst the chest assumes a deeper hue; the muffle appears as if naked, but has in fact very minute hairs scattered over it."

DENDROLAGUS INUSTUS, *Müll.*

J. Gould. and H. C. Richter, del. et lith.

Hullmandel & Walton, Imp.

DENDROLAGUS INUSTUS, *Müll.*

Brown Tree-Kangaroo.

Dendrolagus inustus, Müll. Zoogd. van den Indischen Archipel., part iv. pl. 20; pl. 22. fig. 2, head; pl. 23. figs. 4–6, and pl. 24. fig. 4, skull; figs. 5 & 6, bones of hind-leg.—Gould, Mon. of Macropodidæ, pl. .—Waterh. Nat. Hist. of Mamm., vol. i. p. 188.

Since the appearance of the second part of my "Monograph of the Macropodidæ, or Family of Kangaroos," in which I published a reduced figure of this animal, taken from a preserved specimen in the Royal Museum at Leyden, a living example has been transmitted to the Gardens of the Zoological Society of London, and lived there for some years. In disposition it appeared to be more slothful than the terrestrial Kangaroos, as it spent the greater part of the day on the large branch of the tree placed in the cage in which it was kept, and there it would sit for hours together in a moping, sleepy attitude, with its great brush tail coiled round the front of its body; at other times it was somewhat more active, and would then sit erect, with the tail hanging down nearly straight, much after the manner of the Monkeys.

The *Dendrolagus inustus* is a native of New Guinea, where it was discovered by Dr. W. S. Müller in Triton Bay. The description of the habits of the animal, so long promised by this gentleman, has not yet, I believe, appeared; at least I am unable to find it in any of the great works on the Dutch possessions in the Indian Archipelago, to which I have access.

The following note, respecting the living specimen above mentioned, occurs in Mr. Mitchell's "Popular Guide to the Gardens of the Zoological Society of London," p. 58:—

"The Tree-Kangaroo (*Dendrolagus inustus*) has only in one instance been brought alive to Europe. This specimen was presented to the Society by Lieut.-Col. Butterworth, C.B., Governor of Singapore. The beautiful modification of structure in the extremities, by which it is enabled to ascend the straightest palm-trees, presents a most instructive contrast, when compared with the same organs in the Kangaroos, which bound in leaps of twenty feet along the ground."

The accompanying drawing, which represents half of the animal of the size of life, was made by Mr. H. C. Richter, from the living example in the Society's Gardens. The entire figure, from the Leyden specimen, is much reduced.

The following is Mr. Waterhouse's careful description of this species, which I transcribe rather than give one of my own, as the animal mentioned was somewhat out of condition when it died:—

"This species is about the same size as *D. ursinus*, from which it differs not only in being of a brown colour, but in having the muzzle and tarsi rather more elongated, and the ears less densely clothed with fur: the hairs of the back do not so distinctly radiate from a point, rather behind the shoulders, as in *D. ursinus*; over the shoulders, however, the hairs are directed outwards, and on the back part of the neck they are directed forwards, but are semi-erect, and those of the head are directed backwards. The fur is rather less harsh than in *D. ursinus*; its general hue is deepish brown on the upper parts of the body, but here each hair is brown at the base, shaded into brownish-black externally, whilst at the point they are of a very pale brown inclining to white; on the under parts of the body, the exposed portions of the hairs are white, or very nearly so, but in the middle they are of a very pale brown, at the base still paler, and nearly white in some parts; the sides of the head are pale brown, and the upper surface dusky-brown; the muzzle is clothed with very short hairs; the ears tolerably well clothed with longish hairs, brown on the inner side, and dusky on the outer; the limbs are brownish-white, but the hairs on these parts are brown at the root; the hinder part of the haunches and the under surface of the base of the tail are whitish; the tail is well clothed with longish harsh hairs, partly brownish-white and partly pale brown, the general hue being paler than that of the body; all the feet are dusky-brown, pencilled with whitish on the hinder parts."



DORCOPSIS BRUNI.

J. Gould and H. C. Richter, del. et lith.

Hullmandel & Walton, Imp.

DORCOPSIS BRUNI.

Filander.

Filander, Le Brun, Voy. par Muscovie, en Perse, et aux Ind. Orient., tom. i. p. 347. f. 213. 1718.—Ib. Edition of 1725, vol. v. p. 45. pl. at p. 43.

Didelphis Brunii, Schreb. Säug., tom. iii. p. 551. pl. 153.—Gmel. Edit. of Linn. Syst. Nat., tom. i. p. 109.—Shaw, Gen. Zool., vol. i. p. 480.—Quoy et Gaim. Voy. de l'Astrolabe, Zool., p. 116. pl. 20.

——— *Asiatica*, Pall. Act. Acad. Sci. Petrop. 1777, pt. 2. p. 229. tab. 9. figs. 4, 5.

Javan Opossum, Penn. Hist. of Quad., p. 305.

Halmaturus Brunii, Ill. Prod. Syst. Mamm. et Av., p. 80.

Macropus veterum, Less. Man. de Mamm., p. 227.

——— *Brunii*, Fischer, Syn. Mamm., p. 283.

Hypsiprymnus Bruni, Müll. Zoogd. der Indesch. Archipel., pt. 4. pl. 21; head, pl. 22. fig. 3; skull, pl. 23. figs. 7 and 8, and pl. 24. fig. 7; bones of hind leg, pl. 24. figs. 8, 9.

Halmaturus Asiaticus, Gray, List of Mamm. in Coll. Brit. Mus., p. 91.

Macropus Brunii, Waterh. Nat. Hist. of Mamm., vol. i. p. 180.

Dorcopsis Brunii, Müll. Verh. Zool. Mamm., p. 131. pl. 21.—Sclater in Journ. of Proc. of Linn. Soc., Zoology, vol. ii. p. 154.

Being desirous of rendering my account of the Kangaroos as perfect as possible, I have considered it advisable to figure and describe in this work the species of that group of animals inhabiting New Guinea, in addition to those found in Australia and Van Diemen's Land. Independently of the two species of *Dendrolagus*, this contiguous island presents us with another animal belonging to the same family, which is rendered especially remarkable from the circumstance of its being the earliest known species of this singular group of quadrupeds; its discovery dating as far back as 1711, long before the geographical limits of Australia had been ascertained, or its productions become known to us. But, although so long a time—nearly one hundred and fifty years—has elapsed since its discovery, little or nothing is known of its habits and economy, and specimens are still rarely to be found in our own museums or those of the Continent. In his work on "The Natural History of the Mammalia," Mr. Waterhouse states:—

"This singular animal is the first of the Kangaroo family with which naturalists became acquainted, being imperfectly described, but better figured, as early as the year 1711, by Le Brun; its characters were subsequently more carefully pointed out by Pallas, and it is upon the accounts of these two authors that all the various descriptions and notices in systematic works, chiefly under the specific names of *Filander* and *Brunii*, have been founded until a comparatively recent period. Several specimens of the Filander were seen, in a state of captivity, at Batavia by Le Brun; these, however, must have been transported from New Guinea, whence it has since been procured during the French expedition of the Astrolabe, and still more recently by the naturalists sent out by the Dutch Government, to whom we are indebted for many important additions to our knowledge of the natural-history productions of the islands of the Indian Archipelago. One of the specimens of this last-mentioned expedition is now in the British Museum, and enables me to give an original description."

The following quaint note is a translation of the passage referring to this animal in Le Brun's "Voyage par Muscovie, en Perse, et aux Indes Orientales," published in 1725:—

"Being at the country-house of my general in Batavia, I there saw a certain animal which is called Filander, and which is something very singular. There were several of them which ran about with the rabbits, and had their burrows under a little hill surrounded by a balustrade. This animal, which I have represented in the plate, has the hind-legs much longer than those of the front, and is nearly of the size and texture of hair of a large Hare; it has a pointed tail, and the head approaches that of a Fox; but the most singular thing about it is, that it has an opening under the belly in the form of a bag, in which the young enter and go out again even when they are tolerably large: one may often see the head and the neck out of this bag; but when the mother runs, they do not appear to keep at the bottom of the bag, because she jerks strongly in running."

The following is Mr. Waterhouse's description of the specimen in the British Museum, which was formerly in my own possession, I having received it from the late M. Temminck, of Leyden:—

"The Filander, like the Tree-Kangaroos, has the fur radiating from a point rather behind the shoulders, and the hair on the neck directed forwards as in those animals. The fur is remarkably short, rather soft,

and has very little gloss; on the crown of the head the hairs have their points directed inwards and backwards, and there meeting the hairs of the neck, which have the points directed forwards, a small tuft is formed at their point of junction on the back of the head. The general tint of the animal is brown, slightly inclining to greyish brown on the back; the sides of the body are of a somewhat brighter colour, being slightly tinted with yellowish; the whole of the under parts, as well as the fore-legs and feet, are of a dirty yellowish white; the hind-legs are of the same tint externally as the sides of the body, but paler on their inner sides; the tarsi are of a uniform pale brown. The ears are rather small, rounded at the tip, and clothed externally with short and almost velvet-like black hairs; internally the hairs are few in number and of a greyish hue; the tail is well clothed with short and soft hairs, brown on the upper surface, and brownish white beneath; on the sides of the tail the hairs, instead of pointing backwards as usual, are directed upwards; the tip of the tail is almost destitute of hair (apparently worn off by friction), and exhibits the scales very distinctly. The head is of a pale brown colour, and the muffle is naked.

	inches.	lines.
"Length from the tip of the nose to the root of the tail	29	3
,, of tail	18	3
,, ,, tarsus	6	0
,, from nose to ear	5	1
,, of ear	1	10
,, ,, fore-arm, from elbow to ends of fingers	7	6."

The Plate represents the fore part of the animal of the natural size; and complete figures in the distance, which are necessarily much reduced.



ONYCHOGALEA UNGUIFER, *Gould.*

J Gould and H C Richter, del et lith.

Hullmandel & Walton, Imp.

ONYCHOGALEA UNGUIFERA, *Gould.*

Nail-tailed Kangaroo.

HEAD, ARMS, AND TIP OF THE TAIL, IN TWO POSITIONS, OF THE SIZE OF NATURE.

A MORE singular Kangaroo than the present does not exist among the known species of this great family of animals, its whole contour being characterized by a degree of elegance seldom seen among the Mammalia; but its most peculiar feature is the well-developed but somewhat flat nail at the end of the tail. It is said that the Lion has this organ terminating in a spiny hook; and here we find an analogous feature among the Kangaroos. From the discovery of Australia to the present time (March 1863), the single specimen of this animal in the British Museum is the only one that has been sent to Europe. It will be seen by the accompanying illustration, that the appendage which renders this species so remarkable is covered and protected by a well-developed tuft of lengthened hairs. Reduced figures of the entire animal will be found on the succeeding Plate, and a more lengthened description on the accompanying page.



ONYCHOGALEA UNGUIFER, *Gould.*

Nail-tailed Kangaroo.

Macropus unguifer, Gould in Proc. of Zool. Soc., part viii. p. 93.—Ib. Mon. of Macropodidæ, pl. .—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 88.—Waterh. Nat. Hist. of Mamm., vol. i. p. 75.

This very elegant little Kangaroo, of which I have only seen a single example, was liberally placed in my hands, for the purpose of being described and figured, by Mr. Bynoe, of Her Majesty's Ship the Beagle, who had obtained it on the north-west coast during the present expedition of that vessel, whose captains and other officers, not only in this, but in her former voyage, have so largely extended our knowledge of the zoological productions of the little-known countries they have visited in the course of their explorations.

This animal peculiarly attracts our attention by the circumstance of its possessing a character not found in any other known member of its family, namely, a broad flattened nail much resembling that of the finger, situated at the extremity of the tail, but which is not ordinarily observable, from its being hidden in the tuft of long black hairs clothing the apical portion of that organ. It is true that a somewhat similar character exists in the *Onychogalea frænata*, but in that species it is merely rudimentary.

The foregoing remarks were published in my Monograph of the Kangaroos, and although nearly twenty years have since elapsed, no additional information has been obtained, nor has any other specimen than the original one in the British Museum been procured; it consequently still remains unique. It may be as well, however, to add Mr. Waterhouse's opinion respecting this animal, since it tends to establish a species dependent upon the skin of a single specimen; though no doubt could, I should suppose, be entertained by any one on this point, since the extreme elegance of the animal, both in shape and colour, and its lengthened tail terminated with an extraordinary-shaped nail, serve to distinguish it from every other known species.

"The muffle in *O. unguifer*," says Mr. Waterhouse, "is covered with hair, with the exception of a very narrow margin next the nostril-openings: the foremost of the three incisor teeth on either side of the upper jaw is distinctly the broadest, the other two are very nearly equal in width; the hindermost has a strong oblique external fold; these teeth are small compared with the incisors of most Kangaroos. A canine tooth is present, but it is very small. The tarsi are very long and slender; the ends of the nails of the double inner toe terminate $2\frac{1}{2}$ inches short of the end of the nail of the great central toe, and the tip of the nail of the outer toe is $1\frac{1}{2}$ inch short of the same point; the nails of the two larger toes are long, narrow, and much compressed above. The nails of the finger are rather short and broad."

Fur very short and moderately soft; general colour buffy yellow, extending on to the outer side of the legs and the base of the tail, and gradually passing into the all but pure white of the head, ears, legs and under surface; on each side of the body just before the knee a pale rusty patch; a brownish mark commences about the middle of the back, runs backward over the rump, and extends to about four inches along the upper surface of the tail; arms and tarsi cream-white; an indistinct yellowish-white mark, curving upwards, crosses the thigh at the base; middle portion of the tail brownish, the tip being clothed with a long black tuft, in the centre of which is a thinnish black nail half an inch in length and a quarter of an inch in breadth, convex above and concave beneath, considerably resembling the nail of the human finger.

	feet.	inches.
Length from the nose to the extremity of the tail	4	4
,, of tail	2	2
,, ,, tarsus and toes, including the nail		$7\frac{1}{2}$
,, ,, arm and hand, including the nails		5
,, ,, face from the tip of the nose to the base of the ear		$4\frac{1}{2}$
,, ,, ear		$2\frac{1}{2}$

One of the accompanying Plates represents the head and fore part of the body, and two views of the extremity of the tail, all of the natural size; the other Plate, reduced figures of the entire animal.



ONYCHOGALEA FRÆNATA: *Gould.*

ONYCHOGALEA FRÆNATA, *Gould.*

Bridled Nail-tailed Kangaroo.

Macropus frænatus, Gould in Proc. of Zool. Soc., Part VIII. p. 92.—Ib. Mon. of Macropodidæ, pl. .—Waterh. Nat. Hist. of Mamm., vol. i. p. 77.
Onychogalea frænata, Gray, List of Mamm. in Brit. Mus., p. 88.

The large ears, full eyes, delicate limbs and lengthened tail of the *Onychogalea frænata*, conjoined with the soft grey fur of its face and body, beautifully relieved by diverging lines of black and white, render it one of the most graceful objects that can be conceived. In its disposition it is timid, peaceful and shy in the extreme, and the faculty of hearing, as indicated by the great development of its ears, being remarkably acute, it is exceedingly difficult to procure. It is a native of the south-eastern portions of Australia, and the locality nearest to the colony of New South Wales in which I observed it was Brezi, on the river Mokai, whence it extended into the interior as far as I had an opportunity of proceeding; Mr. Gilbert subsequently discovered that it was common in the thick patches of scrub which are dispersed over all parts of the Darling Downs. It inhabits all the low mountain ranges, the elevation of which varies from one to six hundred feet, and which are of a sterile character—hot, dry, stony, and thickly covered with shrub-like stunted trees. These situations are also the abode of the *Halmaturus dorsalis*, with which I sometimes found the *Onychogalea frænata* associating; but it differs from that species, which is strictly an inhabitant of the brushes, in frequenting the more open parts, and occasionally even the plains. When started from its seat, which is formed like that of a hare, beneath the shelter of a tuft of grass or a small bush, it bounds away with remarkable fleetness, generally giving the best dogs a sharp run, and frequently making its escape by gaining the thick part of the brush, or the hole of a decayed tree; one of those I procured, on being sharply pressed, mounted the inside of a tree, to an opening nearly fifteen feet from the ground; whence it leaped down before the dogs and succeeded in reaching the hollow of a fallen trunk, from which it was finally taken by the hand.

In the neighbourhood of Brezi the natives hunt this species with dogs, and often kill it with spears, bommerengs and other weapons; at Gundermein on the Lower Namoi I found myself among a tribe of natives who succeed in capturing them with nets, which, although rudely constructed, are very well adapted to the purpose. On being made acquainted with my object, they were easily induced to accompany me to a "Brigaloe brush," in which the present species and the *Halmaturus dorsalis* were very abundant. Arriving at the skirts of the brush, the oldest men of the tribe separated from the rest, each two taking a net about twenty-five yards long by three and a half feet wide, with which they proceeded to those parts where the runs of the animals were most frequent, while the rest of the natives entered the brush on the opposite side, and with loud shouts and yells drove the Kangaroos towards the nets; by this means in a single afternoon they obtained for me as many specimens as I desired.

Its food consists of grass and various kinds of herbage, and its flesh, like that of the other small Kangaroos, is excellent, and when procurable was eaten by me in preference to other meat.

Some diversity of colour is found to occur in examples from different localities; those obtained by Mr. Gilbert on the Darling Downs being of a much browner hue than those I procured on the Mokai and Namoi.

Fur short and soft, general tint grey, being finely penciled with black and white; under surface of the body and inner side of the limbs white; on the cheeks a white mark, beneath which is a dusky line; ears clothed externally with grey hairs, edged with black at the apex and lined internally with white hairs;

muzzle blackish in front of the eye; from the occiput two conspicuous white marks run backward, and diverging, pass one on each side over the shoulder, and recurve at a short distance behind the insertion of the fore-leg; the space between these lines is black on the occiput, and brownish black on the back of the neck; sides of the neck suffused with pale ochreous yellow; tarsi and arms nearly white; hands and toes dusky, but most of the hairs round the nails of the former white; tail coloured like the body at the base, but black along the upper surface of the apical third, and at the point where the hairs being longer than elsewhere, hide a small horny tubercle with which the tail is terminated; under surface of the tail dirty yellowish white.

The female is not distinguished by any difference in marking; the stripes are quite as intense as in the male, and are even apparent in the fœtus.

Considerable variation occurs in the weight of individuals, and particularly in the size and weight of the sexes, fully adult males weighing from ten to twelve pounds, while the females do not exceed four or six.

The following are the admeasurements of the largest specimens I have seen; ordinarily they are about one-fifth smaller:—

	Male.		Female.	
	feet.	inches.	feet.	inches.
Length from the nose to the root of the tail	3	$7\frac{1}{2}$	2	$8\frac{1}{2}$
,, of the tail	1	7	1	3
,, ,, tarsus and toes, including the nails	0	$6\frac{1}{2}$	0	5
,, ,, arm and hand, including the nails	0	5	0	4
,, ,, face from the tip of the nose to the base of the ear . .	0	$3\frac{3}{4}$	0	$3\frac{1}{2}$
,, ,, ear	0	$3\frac{1}{2}$	0	$3\frac{1}{4}$

The Plate represents a male about three-fourths of the natural size.

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton Imp.



ONYCHOGALEA LUNATA, *Gould.*

Lunated Nail-tailed Kangaroo.

Macropus lunatus, Gould in Proc. of Zool. Soc., Part VIII. p. 93.—Gray, List of Mamm. in Brit. Mus., p. 88.—Waterh. Nat. Hist. of Mamm., vol. i. p. 79.

When writing upon the Birds of Australia I frequently had occasion to allude to the very remarkable manner in which different species of the same form represent each other on opposite parts of the continent; and that a similar law of representation exists among the Mammals, is evidenced by the present and preceding species, which, although most nearly allied, inhabit portions of the country as widely apart as if seas had flowed between, as at some distant period was probably the case. We have no evidence that they approach each other in the interior of the country, as neither of them have yet been discovered within the limits of the intervening colony of South Australia; consequently they must be regarded as beautiful representatives of each other in the respective countries they inhabit.

Although assimilating in form and markings to the *Onychogalea frænata*, the present species is certainly less ornamental, and is also much smaller in all its dimensions. The habits and economy of the two species are very similar; both exhibit a remarkable degree of shyness and timidity, and seek safety in flight upon the slightest alarm. I had no opportunity of observing it in a state of nature myself, but Mr. Gilbert's notes inform me that "the *Waurong*," by which name it is known to the natives, "is found in the gum forests of the interior of Western Australia, where there are patches of thick scrub and dense thickets, in the open glades intervening between which it is occasionally seen sunning itself, but at the slightest alarm immediately betakes itself to the shelter of the thick scrub; the dogs sometimes succeed in driving it out to the open spots, when, like the Kangaroo rats, it runs to the nearest hollow log, and is then easily captured. I remarked, that when sitting quietly cleaning itself, there was a constant twitching of the tail in an upward direction; an action which I have never seen performed by any other Kangaroo. I was not sufficiently near to ascertain whether this motion of the tail had any connection with the claw or nail at its extremity, but I think it not improbable. The *Waurong* makes no nest, but forms a hollow in the soft ground beneath a thick brush in which it lies during the heat of the day."

Fur soft and of moderate length; general tint ashy grey, finely pencilled with dusky and yellowish white; back of the neck and shoulders vinous rust-colour; a short distance behind the base of the fore-leg a distinct curved white mark; under surface of the body pale grey, the hairs tipped with dirty white; on the sides of the body a faint rusty tint, more distinct in some specimens than in others; around the eye a ring of pale rust-colour, and the muzzle suffused with the same tint; ear clothed with long white hairs within, and externally with very minute dusky hairs finely freckled with yellowish white; on the hinder half the hairs are longer and almost white, at the apex a delicate fringe of blackish hairs; fore-feet in some specimens brown, in others dirty white; tarsi chiefly dirty white, but the sides of the toes suffused with pale brown; tail clothed for the most part with short adpressed hairs, having a general greyish tint; on the upper surface the hairs are somewhat lengthened, and on the apical portion they form a slight crest which is usually blackish; at the tip of the tail is a small conical horny appendage like a nail, of about an eighth of an inch in length.

	Male.	
	ft.	in.
Length from the nose to the root of the tail	1	8
,, of the tail	0	12
,, ,, tarsus and toes including the nails	0	$4\frac{3}{4}$
,, ,, arm and hand including the nails	0	$3\frac{1}{4}$
,, ,, face from the tip of the nose to the base of the ear	0	3
,, ,, ear	0	$2\frac{1}{4}$

It is to be regretted that this as well as all other Kangaroos lose the delicate tints of their colouring on exposure to light; so much so in the present instance, that Museum and recent specimens could scarcely be considered as identical.

The Plate represents the two sexes rather under the natural size.



LAGORCHESTES FASCIATUS

J. Gould and H.C. Richter del et lith.

LAGORCHESTES FASCIATUS.

Banded Hare-Kangaroo.

Kangarus fasciatus, Péron et Lesueur, Voy. aux Terr. Aust., tom. i. p. 114. pl. 27.—Desm. Mamm., part i. p. 274.
Halmaturus elegans, Cuv. Règne Anim., tom. i. p. 187.
Bettongia fasciata, Gould, Mon. of Macropodidæ, pl.
Lagorchestes albipilis, Gould, Ann. and Mag. of Nat. Hist., vol. x. 1842, p. 2.
Macropus (*Lagorchestes*) *fasciatus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 87.

I BELIEVE that this beautiful species is noticed for the first time in the Voyage of the celebrated Dampier, but MM. Péron and Lesueur are undoubtedly entitled to the credit of making it known to science. It was during their voyage to the "Terres Australes," and while exploring the western coasts of Australia, that they met with it on Dirk Hartogs and the neighbouring islands, where it was found among the impenetrable low thickets formed of a species of *Mimosa*; "from these bushes," says MM. Péron and Lesueur, "it cuts away the lower branches and spines so as to form galleries communicating one with another, in which it takes refuge in time of danger. The females bring forth but one young one at a time. Although abundant on the islands, none were to be found on the main land. These little Kangaroos, like all feeble animals which have neither the power of attack nor of defence, are extremely timid. The slightest noise caused them to take flight to the thick brushwood in which their galleries are constructed, and where it is impossible to pursue them; hence, although very common, they are difficult to procure." Although the above-mentioned naturalists were unable to discover the animal on the main land, the researches of more recent travellers, aided by the facilities afforded by the colonization of the country, have shown that it is not only abundant there, but enjoys a most extensive range. Mr. Gilbert found it far in the interior of the Swan River Colony, and Mr. Eyre, one of the most indefatigable of Australian explorers, states that he frequently observed it in the Murray Scrub of South Australia; here then we have a range of many thousand square miles of country as the known habitat of this beautiful species, and we may consequently infer, that every intermediate district between Southern and Western Australia favourable to its habits is tenanted by it. Mr. Gilbert states that it is called *Marnine* by the natives of the interior of Western Australia, and is only to be found in densely thick scrubs, on flats and on the edges of swamps, where the small brush *Melaleuca* grows so thickly, that it is almost impossible for a man to force his way through; its runs being under this, the animal escapes even the quick eye of a native. The only possible means of obtaining it is by having a number of natives to clear the spot, and two or three with dogs and guns to watch for it.

During an excursion into the interior Mr. Gilbert was so fortunate as to cross one of its haunts, but so dense was the vegetation, that after three days of severe toil, he was only able to secure a single specimen; he adds, that it appears to run in company with the *Damas*, which being more numerous were continually presenting themselves and disappointing him, the vegetation being much too thick to distinguish the one from the other until after they had been shot. The natives are in the habit of burning these thickets at intervals of three years, and by this means destroy very great numbers; and this, in fact, appears to be the only plan they could very well adopt for capturing both the *Marnine* and the *Dama*, for the mere treading down an open space, as is done at King George's Sound, will not answer here: the specimen he procured was a male, and weighed three pounds and three-quarters.

From the period of MM. Péron and Lesueur's Voyage in 1800—1804 until 1842, when M. Priess, a German naturalist, visited Western Australia, no example of this little Kangaroo was sent to Europe. The specimens from which the description published by the former gentlemen was taken, still form part of the collection of the "Jardin des Plantes" at Paris, but from long exposure to a powerful light, and their muzzles having in the course of time become denuded of hair, their appearance is so much altered, that I was induced to believe that the animal brought home by M. Priess was both generically and specifically distinct; and therefore, while, from their apparently naked muzzles, I placed the Paris animals in the genus *Bettongia*, I referred the recently received specimen to the genus *Lagorchestes*, and gave it the name of *L. albipilis*; this error has been corrected by Mr. Waterhouse, who, after a careful examination and

comparison of specimens, satisfied himself that they were identical,—an opinion in which I now entirely coincide.

The flesh is said to resemble that of the rabbit, but has a slight aromatic flavour, arising probably from the nature of the plants on which they feed, nearly all of which are fragrant.

When MM. Péron and Lesueur visited the islands, all the females carried young in their pouch, and the devotedness with which they sought to save their offspring was truly admirable; although wounded they flew with the young in the pouch, and never left them until, overcome with fatigue and loss of blood, they could no longer carry them; they then stopped, and squatting themselves on their hind-legs, helped the young to get out of the pouch by means of the fore-feet, and sought to place them in a situation favourable for retreat.

Mr. Gilbert states that it makes no nest, but when on the plains squats precisely like a hare.

The sexes are very similar, and may be thus described:—

The fur is very long and soft; its general colour greyish, variegated with black, white, and rusty red, the latter colour being most conspicuous round the eyes; on the back are numerous narrow, transverse black bands; these are somewhat irregular and not well-defined; the spaces between the bands are partly of a rusty red, and partly whitish; the white joins the dark band, and is gradually shaded into the rusty red, to be followed by the next dark band; over the whole of the upper surface, sides and cheeks are numerous very long interspersed hairs, which have the exposed portion white, but, like the ordinary fur, are nearly black at the root; under surface dirty white, with a considerable admixture of grey; the ears are clothed with lengthened white hairs internally, and externally with short hairs finely freckled with brownish black and white; fore-feet dirty rust-red; tarsi pale rusty red penciled with blackish; sides of both tarsi and toes pale brown; tail tolerably well covered with short adpressed brownish grey hairs; on the under side the hairs are somewhat longer and of a brownish white; on the upper surface is a narrow blackish streak, and on the apical third the hairs are lengthened, and form a small dark crest at the point; they are sometimes an inch in length.

The Plate represents an adult male about the size of life.



LAGORCHESTES LEPOROÏDES, *Gould.*

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton, Imp.

LAGORCHESTES LEPOROÏDES, *Gould.*

Hare Kangaroo.

Macropus Leporides, Gould in Proc. of Zool. Soc., part viii. p. 93.—Waterh. in Jard. Nat. Lib. *Marsupialia*, p. 204.
Lagorchestes Leporoïdes, Gould, Mon. of Macropodidæ, pl. .—Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 95.
Macropus (*Lagorchestes*) *Leporoides*, Waterh. Nat. Hist. of Mamm., vol. i. p. 82.

The name of Hare Kangaroo has been given to this species, as much from the similarity of its size and the colour and texture of its fur, as from its habits assimilating in many particulars to those of that animal. I usually found it solitary, and sitting close in a well-formed seat under the shelter of a tuft of grass on the open plains. For a short distance its fleetness is beyond that of all others of its group that I have had an opportunity of coursing; its powers of leaping are also equally extraordinary, in proof of which I may mention an incident connected with the chase of the animal which occurred to myself. While out on the plains in South Australia I started a Hare Kangaroo before two fleet dogs; after running to the distance of a quarter of a mile, it suddenly doubled and came back upon me, the dogs following close at its heels; I stood perfectly still until the animal had arrived within twenty feet before it observed me, when to my astonishment, instead of branching off to the right or to the left, it bounded clear over my head, and on descending to the ground I was enabled to make a successful shot, by which it was procured.

Considerable diversity of colour is observable in different specimens, some being much redder than others; but the sexes are scarcely distinguishable in size.

I have but little doubt that this animal enjoys a wide range over the interior of New South Wales; it certainly inhabits the Liverpool Plains as well as those in the neighbourhood of the Namoi and the Gwydyr, from all of which localities I have received numerous examples; it is equally certain that it is found on the grassy plains of South Australia, for I not only found it there myself, but specimens have since been sent to me from thence by the late Mr. Strange. Now as the character of all these districts is very similar, it is probable that the Hare Kangaroo is equally abundant in the intermediate countries as it is in those above mentioned; as yet, I have never seen specimens in collections from the Northern or Western portions of Australia.

The following is Mr. Waterhouse's description of the character of the fur and the colouring of this animal, which being taken from my own specimen, and more minute than that given by myself in the "Proceedings of the Zoological Society," is here transcribed.

"Fur long and soft; on the upper parts of the body variegated with black, rust-colour and rusty white, the white most conspicuous and the rust-colour but little seen; the back of the neck and shoulders, and a considerable space round each eye tinted with palish rust-colour, sometimes inclining to buffy yellow; sides of the body and haunches suffused with rust-colour; under parts greyish white tinted with rust-colour, but nearly pure white between the hind legs; fore legs with a more or less strongly marked black patch, at the base externally (or behind the elbow), but the hairs on this part are pencilled with white; fore arm and hand with short brown hairs, pencilled with very pale brown; on the middle of the tibia is a dusky patch; tarsi impure palish rust-colour finely freckled with brown; toes brownish; tail clothed throughout with small adpressed hairs, which are partly black and partly white; beneath brownish white;" nails of the hind feet very long, pointed, and jet-black.

The figure is about the natural size; if at all different, it is a trifle less.



LAGORCHESTES HIRSUTUS: *Gould.*

LAGORCHESTES HIRSUTUS, *Gould.*

Rufous Hare Kangaroo.

Lagorchestes hirsutus, Gould in Proc. of Zool. Soc. 1844, p. 32.
Macropus (*Lagorchestes*) *hirsutus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 92.

All the examples I have seen of this species, some of which are at the British Museum, and the remainder in my own collection, have been procured in Western Australia, whence they were sent to this country by Mr. Gilbert; judging from the size of *Lagorchestes fasciatus*, I should suppose that the present animal would weigh about four or six pounds, the weight of a moderate-sized hare. The lengthened shaggy reddish hairs, which are abundantly distributed over the lower part of the back, and particularly near the base of the tail, at once distinguish it from all the other members of the genus. The only note transmitted by Mr. Gilbert, respecting the habits of the species, is as follows:—

"It has a hairy muzzle: in its habits it assimilates in an equal degree to those of the *Bettongiæ* and the *Lagorchesti*. It constructs a burrow, open at both ends, with a seat at the side of the entrance, from which it plunges into the burrow the instant it is alarmed. It feeds on the open country adjacent to the thickets, where there is a low thick scrub about two feet high: when running, and particularly when hunted, it utters a singular note, resembling the syllable *ting* rather quickly repeated. Some slight difference is found to exist in specimens from various localities, which I presume must be regarded as due to the difference of situation, and nothing more." He adds, that it is called *Woŏ-rup* by the Aborigines of the interior of Western Australia, who appear to give the name of *Mŏr-da* to the animal during the period of immaturity; at all events, the young example sent by him with that name attached to it, is undoubtedly the young of the present species. Both the adult and the young were procured in the Walyemara district.

Mr. Waterhouse having given a very accurate description of this animal from the specimens in the British Museum, I take the liberty of transcribing it:—

"The fur is long and moderately soft; the upper parts of the body grey, much tinted with rufous brown and freely pencilled with white; the sides of the body, rump, hind- and fore-legs are of a bright rust-red, deepest on the hinder and palest on the fore-legs; the throat, chest and mesial line of the belly rusty white; crown of the head grey; a broad space around the eye is of a bright, but palish rust-red, which tint extends on to the muzzle; a whitish line on the upper lip runs back past the angle of the mouth; ear clothed internally with somewhat lengthened white hairs, externally they are pencilled with rusty yellow and dusky, the former being, however, the prevailing tint; the hinder half is almost entirely clothed with small white hairs; the fore-feet are clothed with glistening yellowish white hairs; the tarsus is almost entirely of a pale rusty red, but is of a rusty white towards the hinder part, and the toes are obscurely suffused with brownish rust-red; the tail is clothed throughout with short, stiff, adpressed hairs, scarcely hiding the scaly skin; they are finely pencilled with black and rust-red at the base of the tail, but on the upper surface they assume an uniform brownish black tint, which is continued to the point; on the under surface they are of a dirty pale rust-red, and towards the apex is a naked scaly space of about an inch in length; the fur of the back is nearly black next the skin, but a considerable portion of each hair is of a brownish rust-red; near the point the hairs are broadly annulated with white, and at the point they are dusky or black; on the belly the fur is ashy grey next the skin."

The figure is rather less than the natural size.



LAGORCHESTES CONSPICILLATA, *Gould.*

J. Gould and H.C. Richter del. et lith.

Hullmandel & Walton, Imp.

LAGORCHESTES CONSPICILLATA, *Gould.*

Spectacled Hare Kangaroo.

Lagorchestes conspicillatus, Gould in Proc. of Zool. Soc., part ix. p. 82. — Ib. Mon. of Macropodidæ, pl. — Gray, List of Spec. of Mamm. in Coll. Brit. Mus., p. 95.
Macropus (*Lagorchestes*) *conspicillatus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 85.

I HAVE again to offer my thanks to the Officers of H.M.S. Beagle for subjects they have contributed to my illustrations of Australian zoology, and especially for the loan of two fine specimens of this highly interesting *Lagorchestes*, the second species yet discovered of this beautiful form. It is to Capt. Wickham and Mr. Bynoe that science is indebted for its discovery. It was procured on Barrow Island, which lies off the north-western coast of Australia, about thirty miles from the main land. The two specimens collected by those gentlemen are fortunately male and female, and hence the subject is rendered so much the more complete. The specimen sent me by Captain Wickham has, by his desire, been presented to the national collection at the British Museum, and his example will, I feel assured, be followed by my esteemed friend Mr. Bynoe, as no exertion should be spared to render that collection, already so fine, as complete as possible.

This species is rather less in size than the *Lagorchestes Leporöides*, from which it is distinguished by its fur being more dense and harsh to the touch, by the extreme blackness of the basal part of the hair, by the shortness of its ears, by the want of the black patch at the base of the arm, and by the red colouring around the eyes being of a more brilliant rusty hue than in that animal.

The sexes are alike in colour and size.

The above was published in my 'Monograph of the Macropodidæ' nearly twenty years ago; and, as Barrow Island has not been visited since, we have not received any additional examples of this very distinct species of *Lagorchestes*. Both the specimens above alluded to are in the British Museum.

Fur very long, dense, and rather soft to the touch; on the back it is of a black colour next the skin, yellowish white towards the apex, shaded into deeper yellow still nearer to the point, and black at the point; on the lower part of the back the portion of each hair which is yellow on the back is replaced by white, and there is an oblique white mark on each side of the rump; fur on the side of the body deep grey next the skin, brownish yellow in the middle, followed by black, then whitish, and at the point black; on the under surface of the body the fur is ash-coloured next the skin, and white externally, excepting on the sides of the belly, where it is of a rusty yellow hue externally; the hair on the upper surface of the head is black, freely pencilled with yellowish white; a broad space round the eye is covered with bright rusty red hairs, and this hue, though less bright, is extended backwards beneath the ear; lips and chin dirty white; throat white; ears internally clothed with whitish hairs, and externally with dirty white hairs on the apical portion, but towards the base there is an admixture of black; fore- and hind-legs and feet pale, the hairs being dirty white at the point and brown next the skin; tail slender, and, being but sparingly clothed with short dirty white bristly hairs, permits the scaly character of the skin to be seen; on the under surface it is more densely clothed, and the hairs are longer and of a dirty yellowish hue.

	Male.	
	feet.	inches.
Length from the nose to the extremity of the tail	2	$8\frac{1}{2}$
„ of tail	1	$1\frac{1}{2}$
„ of tarsus and toes, including the nail		$5\frac{1}{4}$
„ of arm and hand, including the nails		3
„ of face from the tip of the nose to the base of the ear		$3\frac{1}{4}$
„ of ear		$1\frac{1}{4}$

The accompanying Plates represent the head of the natural size, and the entire animal reduced.

Hullmandel & Walton, Imp.
LAGORCHESTES CONSPICILLATA, Gould
J. Gould and H.C. Richter del. et lith.



LAGORCHESTES LEICHARDTI, *Gould*

J. Gould and H.C. Richter, del. et lith. Hullmandel & Walton, Imp.

LAGORCHESTES LEICHARDTI, *Gould.*

Leichardt's Hare Kangaroo.

Two specimens—one adult, the other immature—of this beautiful species of *Lagorchestes* have been transmitted to me by direction of the Council of the Australian Museum at Sydney, New South Wales, for the purpose of being described and figured in the present work. The specimens in question formed part of the Mammalia collected by Dr. Leichardt during his extensive overland journey from Moreton Bay to Port Essington; unfortunately no information has been furnished me respecting them; perhaps, indeed, none was obtained. I am, therefore, unable to state the precise locality in which they were procured; but as I find no mention of them in the late Mr. Gilbert's Journal, we may infer that they were not obtained until after his lamented death, and that the country between the Gulf of Carpentaria and Port Essington is the natural habitat of the species. I have named it *Leichardti*, from a desire to assist in perpetuating the name of the intrepid traveller who has done so much in the exploration of Australia, and whose life it is to be feared has fallen a sacrifice to his zeal for discovery in the previously untraversed portions of that strange country.

The only species with which the *L. Leichardti* could be confounded is the *L. conspicillatus*, but on comparison it will be found to differ from that animal in the richly contrasted colouring of its crisp and wiry fur, in the whiteness of its rump and tail, in the brighter rusty hue of the space surrounding the eye, in the chestnut colour of the basal portion of the fur, and in its smaller ears.

I cannot conclude without offering my thanks to the Council of the Australian Museum for their kindness and liberality in permitting this rare and interesting animal to be sent to Europe, the discovery of which adds so much to the interest of "The Mammals of Australia."

Face grizzled grey and brown, passing into rufous between and on the ears, which are margined with white; around the eye a conspicuous oval patch of lively ferruginous red; hairs of the cheeks stiff and bristly; all the upper surface mottled rufous black and white, the base of the fur being chestnut, passing into black about the middle, then into white, and lastly into dark rufous at the tip; on the rump and base of the tail these colours give place to greyish white, intermingled with black; all the under surface greyish white; at the insertion of the hinder limbs two curved marks of grey; hands and toes washed with buff; nails black; tail greyish white.

Total length from the nose to the extremity of the tail two feet four inches; of the tail thirteen inches; of the tarsus and toes including the nail five inches and three-quarters; of the arm and hand including the nail three inches; of the face from the tip of the nose to the base of the ear two inches and five-eighths; of the ear one inch and an eighth.

The figure is rather under the size of life.

Hollamsdel & Walton, Imp.

Headland del. et Walter, sculp.

LAGORCHESTES LEICHARDTI, Gould.



BETTONGIA PENICILLATA, *Gray.*

J. Gould and H.C. Richter, del. et lith.

Hullmandel & Walton, Imp.

BETTONGIA PENICILLATA, *Gray*.

Jerboa Kangaroo.

Bettongia penicillata, Gray, in Mag. of Nat. Hist. new ser. vol. i. p. 584.—Waterh. Nat. Lib. Marsupialia, p. 183.—Gould, Mon. of Macropodidæ.—Gray, List of Mamm. in Brit. Mus., p. 93.
Hypsiprymnus murinus, Ogilby, in Proc. of Zool. Soc., Part vi. p. 63.
———— *setosus*, Waterh. Cat. of Mamm. in Mus. Zool. Soc., p. 65.
———— (*Bettongia*) *penicillatus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 212. pl. 9.

The eastern parts of Australia, particularly the districts on the interior side of the ranges of New South Wales, constitute the true habitat of the species figured on the accompanying Plate. I observed it to be very abundant on the Liverpool Plains, and on the banks of the river Namoi, from its source to its junction with the Gwydyr; but between the ranges and the coast I did not meet with it. I do not, however, assert that it is not an inhabitant of those districts also; but, if it be, it is certain that it is far less abundant there than on the other side of the ranges. I have never seen an example from South Australia; its place in that part of the country appearing to be supplied by its near ally the *Bettongia Ogilbyi*, a species dispersed in abundance from thence to the western limits of the country, or the colony of Swan River. Mr. Waterhouse is inclined to believe that these eastern and western animals (*B. penicillata* and *B. Ogilbyi*) are merely varieties of one and the same species; and, while I admit the feasibility of this opinion, the markings and colouring of the two animals are so different, that, in a work on the Mammals of Australia, I cannot do otherwise than figure both of them, leaving their specific value to be ascertained by future zoologists, should noopportunity for fully investigating the subject occur to myself: it is just one of those cases in which a careful examination of a great number of specimens and skeletons from both localities is required to determine so dubious a question, and such materials are not at present accessible.

Like the other members of the genus, this species constructs a thick grassy nest, which is placed in a hollow scratched on the ground for its reception, so that when completed it is only level with the surrounding grass, which it so closely resembles, that without a careful survey it may be passed unnoticed: the site chosen for the nest is the foot of a bush or any large tuft of grass; during the day it is generally tenanted by one, and sometimes by a pair of these little creatures, which lying coiled in the centre are perfectly concealed from view; there being no apparent outlet, it would seem that after they have crept in they drag the grass completely over the entrance, when, as I have before stated, the whole is so like the surrounding herbage that it is scarcely perceptible. The natives, however, rarely pass without detecting its presence, and almost invariably kill the sleeping inmates, by dashing their tomahawk or heavy clubs at it. The most curious circumstance connected with the history of the Jerboa Kangaroo is the mode in which it collects the grasses for its nest: these, as may be seen in the accompanying Plate, are carried with its tail, which is strongly prehensile, and, as may be easily imagined, their appearance when leaping towards their nests with their tails loaded with grasses is exceedingly grotesque and amusing: this curious feat is even exhibited in a state of confinement, a pair in the Menagerie of the late Earl of Derby having evinced the same natural habits, by frequently loading their tails with the hay of their nests, and carrying it round the cage in which they were kept. The usual resorts of the Jerboa Kangaroo are low grassy hills and dry ridges, thinly intersected with trees and bushes; and although not strictly gregarious, numbers may be found in the same locality. It is a nocturnal animal, lying curled up in the shape of a ball during the day, and sallying forth as night approaches in quest of food, which consists of grasses and roots, the latter being procured by scratching and burrowing, for which its fore-claws are admirably adapted, and its vicinity is frequently indicated by the little excavations it has made. When startled from its nest, it bounds with amazing rapidity, and always seeks the shelter of a hollow tree, or a small hole in a rock, etc.

Fur moderately long, and not very soft to the touch; general colour brown; the hairs on the upper surface grey at the base, pencilled with rusty white near the tip, and black at the point; under surface dirty white; internal surface of the ear yellow; feet very pale brown; tail brown above and pale brown beneath, the apical quarter clothed with brownish-black hairs, which are longer than those of the other parts of the tail, and form a kind of tuft.

	Male.		Female.	
	feet.	inches.	feet.	inches.
Length from the nose to the extremity of the tail	2	6	2	0
,, of tail	1	1		11¼
,, of tarsus and toes, including the nail		5		4
,, of arm and hand, including the nails		3½		2¾
,, of face from the tip of the nose to the base of the ear		3½		3
,, of ear		1¼		1

The figures are of the natural size.

Hullmandel & Walton, Imp.
BETTONGIA PENICILLATA, Gray.
J. Gould and H.C. Richter, del. et lith.



J. Gould and H.C. Richter, del. et lith.

BETTONGIA OGILBYI, *Gould.*

Hullmandel & Walton, Imp.

BETTONGIA OGILBYI, *Gould.*

Ogilby's Jerboa Kangaroo.

Bettongia Ogilbyi, Gould, MSS.
Hypsiprymnus Ogilbyi, Waterh. Nat. Lib. Marsupialia, p. 185.
Bettongia Ogilbii, Gray, List of Mamm. in Brit. Mus., p. 93.
Hypsiprymnus (Bettongia) Ogilbyi, Waterh. Nat. Hist. of Mamm., vol. i. p. 214.
Bettongia Gouldi, Gray ?

The *Bettongia Ogilbyi* is as abundantly distributed over Western Australia as the *B. penicillata* is over New South Wales, but while the latter appears to be confined to the country within the ranges, the former inhabits the districts near the coast. Besides specimens from Swan River, I have received others from the late Mr. Harvey, procured at Port Lincoln, and I have also seen examples in collections formed in the neighbourhood of Adelaide; those from the last-mentioned locality have the rufous tints of the tail and tarsi somewhat less highly coloured, but in other respects specimens from these distant countries are perfectly similar.

The *B. Ogilbyi* always appeared to me to have a longer head and proportionately longer ears and somewhat more slender tarsi than *B. penicillata*; these, however, are only slight differences; but the darker colouring of the body, the rusty red hue of the base and sides of the tail, and the rufous colouring of the feet, are characters always observable in the western animal, and constitute a style of colouring never seen in any example of the eastern species, or *B. penicillata* of New South Wales.

In Mr. Waterhouse's remarks on my specimen of *B. Ogilbyi*, published in the volume of the 'Naturalist's Library,' on the Marsupialia, he says, "This species is very closely allied to *B. penicillata*, but its tarsi are proportionately rather longer and more slender, and differ in being of a deeper hue; the ears are longer, and the apical half of the tail is black both above and below. In *B. penicillata* the black hair is confined to the upper surface of the tail; on the under part, lengthened, brown, adpressed hairs extend to the tip; this under part is, moreover, much more densely clothed than in the present species, in which the hairs are not sufficiently numerous to hide the scales: this does not arise from the wearing away of the hair, as is often the case; for the under side of the tail is better covered than the sides." In his more recent work, 'A Natural History of the Mammalia,' Mr. Waterhouse is rather doubtful as to the distinctness of the southern and western animals, and remarks, "All that can be said is, that the specimens of the tufted-tailed *Bettongiæ*, from the western and southern districts, are generally somewhat darker in the colouring of the feet and tail than those from New South Wales; but it is certainly, in some cases, difficult to distinguish these, which I can but regard as local varieties, by a difference of colouring."

"This species," says Mr. Gilbert in his notes on the 'Mammals of Western Australia,' "appears to be equally abundant in all parts of the colony, but to evince a preference, perhaps, for the white-gum forests. It makes a nest of dried sticks or strong coarse grass, under the shelter of the overhanging grasses of the *Xanthorrhœa*, or a bunch of dried grasses or sticks; the entrance being on one side and lengthened out so as to form a tube or porch. When driven from the nest it generally resorts to a hollow tree or stump; if this is not to be found, it makes a long circuit before returning to the nest. This animal is one of the favourite articles of food of the natives, who are very quick in detecting the nest, and generally capture the little inmate by throwing a spear through the nest and transfixing it to the ground, or by placing the foot upon and crushing it to death. It is almost invariably found in pairs, and, like the true *Macropi*, the female throws the young from the pouch when pursued."

Fur dense, the under fur very abundant, soft, long and woolly, general colour brown, obscurely washed with yellow on the sides of the face and body; under surface of the body dirty yellowish white; ears clothed with yellow hairs; hind feet brown, darkest on the sides, especially of the toes; fore-feet paler brown; tail well-clothed, a very small space at the base covered with fur, like that of the body; beyond this and extending to about the middle of the tail the hairs are of a rusty hue on the upper side, and very pale brown on the under; the apical half of the tail is clothed with black hairs, which vary from rather more than half to three quarters of an inch in length; those nearest the tip are the longest: on the sides of the tail the hairs are comparatively short, and excepting at the tip they are of a deep brown colour; on the under side of the apical half of the tail the hairs are longer than on the sides, and of a black colour; the ordinary hairs of the back are rather broadly annulated with pale rusty yellow, sometimes rusty white, and at the point they are blackish brown; the longer interspersed hairs are black; the fur both on the upper and under parts of the body is grey at the base.

The figures are of the natural size.

Hollmandel & Walton Imp.
BETTONGIA OGILBYI, Gould.
J. Gould and H.C. Richter del. et lith.



BETTONGIA CUNICULUS.

J. Gould and H.C. Richter, del. et lith.

Hullman del. & Walton, Imp.

BETTONGIA CUNICULUS.

Tasmanian Jerboa Kangaroo.

Hypsiprymnus cuniculus, Ogilb. in Proc. of Zool. Soc., part xi. p. 43.—Waterh. in Jard. Nat. Lib., Marsupialia, p. 186.
Bettongia setosa, Gray in Mag. Nat. Hist., new. ser. vol. i. p. 584.—Ib. List of Mamm. in Brit. Mus. Coll., p. 93.
——— *cuniculus*, Gould, Mon. of Macropodidæ, pl. .
Hypsiprymuus (*Bettongia*) *cuniculus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 200.—Gunn, Proc. of Roy. Soc. of Van Diemen's Land, vol. ii. p. 86.
Forest Kangaroo-Rat of the colonists of Van Diemen's Land.

Few of the indigenous quadrupeds of Van Diemen's Land are better known than the present, which may be said to be universally dispersed over that island, wherever localities occur favourable to its habits and mode of life; these are grassy plains and the stony ridges of the outskirts of the forest, precisely the reverse of the situations affected by the *Hypsiprymnus apicalis*, which resorts to the low and swampy districts covered with green and dense vegetation.

The *Bettongia cuniculus* is altogether a larger and more robust animal than either *B. Grayi* or *B. penicillata*. From the former it differs in having a rather more lengthened face, and from the latter in the tip of the tail being white. Mr. Waterhouse states that it is not only distinguished from the latter by its size, but that the proportions of the crania of the two animals differ very considerably. I believe the species to be strictly confined to Van Diemen's Land, as I have never received examples from any part of the continent. The only outward difference in the sexes consists in the smaller size of the female. It makes a thick and warm grassy nest in a slight depression under the shelter of a bush or large tuft of grass, and feeds on bulbous and other roots, which it readily scratches up with the powerful claws of its fore feet.

Mr. Richter has handed me the following notes made by him while engaged in drawing the animal in the Gardens of the Zoological Society in the Regent's Park:—

"The *Bettongia cuniculus* collected together a large mass of straw, &c. with its fore feet, threw it backward between its hind legs, curled the tail around it and hopped about with it in this position for several hours during the night. Both *B. cuniculus* and *B. Ogilbyi* have the power of elevating the duplex toe of the hind foot to scratch their ears, &c. In fighting, the teeth and fore legs are but little used; their chief attack being made by throwing themselves on one side and lashing out, with great velocity and strength, with their hind legs. In confinement they are very partial to bread and milk sweetened with sugar. They are very tame, seldom biting or showing anger on being handled. When angry they emit a succession of short hisses. The two species seem very inimical to each other. They drink a great quantity of water, as much as two or three ounces at a time, by lapping with the tongue. They invariably sleep with the tail brought between the hind legs and curled round the head, which is depressed to the ground. If given plenty of clean hay they cover themselves completely with it, forming a sort of bower or nest."

Fur rather long and not very soft; general colour brownish grey, pencilled with white; feet brownish white; tail well clothed with pale brown hairs, gradually passing into dark brown near the extremity and tipped with pure white; margin of the ears slightly tinged with yellowish; under surface of the body dirty white; fur both of the upper and under surface grey at the base.

The figures are of the natural size.



BETTONGIA GRAII, *Gould.*

J. Gould and H.C. Richter del. et lith. *Hullmandel & Walton, Imp.*

BETTONGIA GRAII, *Gould.*

Gray's Jerboa Kangaroo.

Hypsiprymnus Graii, Gould in Proc. of Zool. Soc., part viii. p. 178.—Waterh. in Jard. Nat. Lib. Mamm., vol. xi. (*Marsupialia*) p. 190.
Bettongia Grayii, Gray, List of Mamm. in Coll. Brit. Mus., p. 93.
Hypsiprymnus (*Bettongia*) *Graii*, Waterh. Nat. Hist. of Mamm., vol. i. p. 203.
——— *Lesueuri*, Quoy et Gaim. Voy. de la Coquille ?
Boor-dee, Aborigines of the mountain districts of Western Australia.

I first described this species in the "Proceedings of the Zoological Society of London" for 1840, from Swan River specimens, and remarked that it differed from its near ally, the *Bettongia rufescens*, in being of an ashy-brown colour above, and in having the hairs which clothe the back of the ears of the same colour as those of the head. During the years which have elapsed between 1840 and the time at which I am now writing (1855), many other specimens have come under my notice, the examination of which has confirmed my views as to its specific value: although in some of its characters it approximates to *B. rufescens*, its most near ally is the species found in Van Diemen's Land, and figured under the name of *B. cuniculus*; it differs, however, from that animal in its more bluff head and in its shorter hind feet. Mr. Waterhouse remarks also, that although the many specimens which have come under his notice exhibited considerable variation in their colouring, and sometimes approximated very closely to other species, yet, with the assistance of the skull, he found no difficulty in distinguishing them.

I have received examples of this animal from various parts of the south-western coasts of Australia, and it appears to be equally abundant in the plains around Adelaide as in those in the neighbourhood of Perth in Western Australia. My drawing was taken from living examples in the Menagerie of the Zoological Society, and I mention this because the positions may appear somewhat singular, but they are correct representations of those the animals assumed at the time. Mr. Gilbert, who had many opportunities of observing the *Bettongia Graii* in Western Australia, states that:—

"It is truly gregarious, many dwelling together in extensively ramified burrows with several entrances, before which the excavated earth is formed into large mounds; the openings are not, as usual, mere round holes, but are dug out in the form of tunnels with perpendicular sides, as correct as if dug with a spade. These burrows are usually constructed in a bank sloping down to a brook or river, and are very numerous along both banks of the river Avon. I made several attempts to dig them out, but failed in every instance in consequence of the depth, six or eight feet, and sometimes even more, at which the burrows are constructed, and of their running one into the other in endless confusion. The Boor-dee is exclusively a nocturnal feeder, and, by quietly watching near the entrances to the burrows at sunset, may be shot in considerable numbers either when they emerge or while feeding in the immediate vicinity. It is one of the most destructive animals to the garden of the settler that occurs in Western Australia, almost every kind of vegetable being attacked by it, but especially peas and beans; and I know of no species of its size which makes so loud a thumping noise while hopping along the ground on being alarmed; besides making this noise with its feet, it also utters, when first started, a most singular succession of sounds, which I find it impossible to describe. Many of the specimens brought in by the natives were much discoloured, either by their dirty cloaks, or the clayey soil in which they had been captured. A remarkable circumstance connected with this animal is, that it is extremely difficult to meet with specimens which are not more or less denuded of the fur of the back, and I have often shot examples almost destitute of fur on any part of the body; whether this is the result of disease or some accidental circumstance I am unable to say, but the skins of several I examined certainly presented a very similar appearance to that of dogs afflicted with mange.

"The Boor-dee is confined to the interior, and, besides burrowing as above described, sometimes dwells among the rocks like the *Petrogalæ*."

Fur of the upper and under surface grey at the base; hairs of the under surface dirty-white externally; those of the back dirty-white, inclining to ash-colour near the apex, and tipped with brownish-black; on the sides of the head and body a very faint wash of yellow; ears sparingly clothed, internally with small yellowish hairs, externally with fur like that of the head; feet, greyish-brown in Western Australian specimens, and dark brown, inclining to chestnut, in those from South Australia. A similar difference occurs in the colouring of the tail; there is also an absence of white hairs near the tip of South Australian specimens; nose and other denuded parts flesh-colour.

The figures are about the size of life.

Hullmandel & Walton, Imp.
Gould and H.C. Richter del. et lith.

BETTONGIA RUFESCENS, Gray.

J. Gould and H. Richter, del. et lith.

Hullmandel & Walton, Imp.



BETTONGIA RUFESCENS, *Gray.*

Rufous Jerboa Kangaroo.

Bettongia rufescens, Gray, Mag. Nat. Hist. 1837, vol. i. p. 584.—Gould, Mon. of Macropodidæ, pl. .—Gray, List of Mamm. in Coll. Brit. Mus., p. 94.

Hypsiprymnus rufescens, Waterh. in Jard. Nat. Lib. Mamm., vol. xi. (Marsupialia) p. 188.—Ib. Nat. Hist. of Mamm., vol. i. p. 196.

———— *melanotis*, Ogilby in Proc. of Zool. Soc., part vi. p. 62.

There will be but little difficulty in distinguishing this species from every other member of the genus *Bettongia* yet discovered. It is the largest and most powerful of its tribe, and this remark applies particularly to its strong hind feet and legs: the hair with which it is clothed is also more harsh and bristly than that of its allies; again, the back part of the ears is nearly black, and the back and upper surface generally are strongly suffused with chestnut-brown, with which the stiff silvery-white interspersed hairs present a strong contrast. The south-eastern portion of the continent is its true habitat; and it is almost universally dispersed over New South Wales, both on the sea and interior side of the mountain ranges. I found it very abundant on the stony sterile ridges bordering the grassy flats of the Upper Hunter, and in all similar situations. It constructs a warm nest in which it lies coiled up during the day, the nests being placed under the shelter of a fallen tree or some scrubby bush: it sometimes sits in a form like the Hare Kangaroo, but never sits out on the open plains like that species: on being startled, it runs for a short distance with remarkable rapidity; but, from its invariably seeking shelter in the hollow logs, easily falls a prey to the natives, who hunt it for food. In size it fully equals that of a full-grown rabbit: its food consists of roots and grasses. There is no material difference in the colouring of the sexes; but in size the female is somewhat smaller than the male.

Fur harsh and wiry; general colour grizzled-grey and rufous, the latter hue predominating on the back; ears black externally and buffy-white internally; under surface greyish-white, slightly tinged with buff; tail strongly prehensile, covered with short wiry grizzled-grey hairs, becoming whiter towards the tip, where they are much lengthened; under side of the tail, throughout its whole length, dirty-white; hands grey; nails white; tarsi and feet greyish.

The figures are about the size of life.

BETTONGIA RUFESCENS, Gray.
Hullmandel & Walton, Imp.
J.Gould and H.C.Richter, del. et lith.

Hullmandel & Walton, Imp.



Hullmandel & Walton, Imp.

BETTONGIA CAMPESTRIS, *Gould.*

Plain-loving Jerboa-Kangaroo.

Bettongia campestris, Gould in Proc. of Zool. Soc. Part xi. p. 81.
Hypsiprymnus (*Bettongia*) *campestris,* Waterh. Nat. Hist. Mamm., vol. i. p. 221.

It will be readily seen, on glancing at the accompanying Plate, that the *Bettongia campestris* cannot be confounded with any other species; its bluff head, the yellow colouring of its sides, and the peculiarly rigid texture of its fur being characters not combined in any of its congeners.

The stony and sandy plains of the interior of South Australia partially clothed with scrub are its native habitat, and I have not yet seen specimens of it from the other colonies either to the east or to the westward.

As confirmatory of its specific value I quote from Mr. Waterhouse, who says:—

"This is a very distinct species, remarkable for its short and broad head, and its general pale yellowish colouring.

"The hairs of the back are grey at the root, yellow in the middle, then blackish, followed by a long yellow white space, and black tip; on the chest and belly they are pale grey at the base and yellowish externally, but on the lower part of the abdomen the grey is wanting; the upper lip is white; the muffle is naked; tarsi rusty white; the tail is sparingly clothed with small pale hairs on the upper surface and sides; on the under part the hairs are more dense, harsher, and of a brownish white colour; the sides of the body and the outer surface of the hind legs are of a more distinct yellowish hue than the other parts."

The figures are of the natural size.

HYPSIPRYMNUS MURINUS.

J.Gould and H.C.Hatcher, del.et lith. Hullmandel & Walter, Imp.



HYPSIPRYMNUS MURINUS.

New South Wales Rat-Kangaroo.

Poto-Roo or *Kangaroo Rat*, White's Journ., p. 286. pl.
Macropus minor, Shaw, Gen. Zool., vol. i. part 11. p. 513. pl. 116.
Hypsiprymnus murinus, Ill. Prod. Syst. Mamm., p. 79.
Potoroïs murinus, Desm. Dict. d'Hist. Nat., tom. xxvii. p. 79, 80.—Ib. Mammalogie, p. 271.
Hypsiprymnus setosus, Ogilb. in Proc. of Comm. of Sci. and Corr. of Zool. Soc., part 1. p. 149.
———— *Peron*, Quoy et Gaim. Zool. de l'Uranie, p. 64.
———— *myosurus*, Ogilb. in Proc. of Zool. Soc., part 6. p. 62?
———— (*Potoroïs*) *murinus*, Waterh. Nat. Hist. of Mamm., vol. i. p. 225.
Bettong of the Aborigines of New South Wales.

The hot and dry climate of the Australian continent appears not to be so well adapted for the members of the genus *Hypsiprymnus* as the more humid atmosphere of Van Diemen's Land, and hence it is only in the swampy and damp parts of the brushes of New South Wales that the *H. Murinus* is to be found in any abundance. The district of Illawarra, Botany Bay, the low scrubs bordering the rivers Hunter, Manning, and Clarence, are the principal localities in which it may be successfully sought for.

The *Hypsiprymnus murinus* is one of the very oldest known species of the Australian quadrupeds, and this will, in some measure, account for the long list of synonyms assigned to it, and the diversity of opinion entertained by zoologists regarding its identity. Mr. Waterhouse, who has carefully investigated the subject, has cleared up these difficulties so successfully, that, my own opinion coinciding with his, it will be as well, perhaps, to transcribe the entire passage:—

"The present species was first described by Hunter under the name Potoroo, or Kangaroo-Rat, in the Appendix to "White's Journal," and from the description and somewhat rude figure there given, it would have been difficult to determine to which of the numerous species of Rat-Kangaroo since discovered, the Potoroo of White should be referred, were it not that the skull of that animal is still preserved in the Museum of the Royal College of Surgeons. By the aid of that skull we are enabled clearly to identify the Potoroo of "White's Journal" (upon which Shaw founded his *Macropus minor*) with the *Hypsiprymnus murinus* of Pander and D'Alton, and with the *H. Peron* of Quoy and Gaimard, founded upon a skull contained in the Paris Museum, of which Professor Owen has been so kind as to lend me a drawing.

"Mr. Ogilby states that the animal to which he has given the name of *H. setosus*, is known in the colony of New South Wales by the name '*Bettong*'; and this remark no doubt has reference to the Rat-Kangaroo, so labelled in the collection of the Linnæan Society, which specimens not only agree with Mr. Ogilby's description, but also with the animal I identify with the *Macropus minor* of Shaw."

The following note was made by Mr. Richter from living examples in the menagerie of the Zoological Society:—

"Though these *Hypsiprymni* stand as much on the hind legs as the *Bettongiæ*, they run in an entirely different manner, using the fore as well as the hind legs in a sort of gallop. They also never attempt to kick with their hind legs. They are very gentle and inoffensive in their manners, and much more stupid than the *Bettongiæ*. They feed like pigs, very seldom using the fore hands to convey their food to their mouths, and seemed to be very partial to boiled rice. They are very pert in their attitudes, sitting up and wriggling the tail laterally; express disapprobation by a slight hiss or sharp expiration; are very quick in their movements, and equally lively during day or night."

Fur long, loose, slightly glossy, and on the upper surface of the body of a dusky brown, a tint produced by the visible portion of the longer hairs being black, and the shorter fur of a pale yellow hue; fur of the under surface deep grey next the skin and of a dirty yellowish white on the surface; ears short and rounded, clothed internally with dirty white hairs; feet brown.

The figures represent both sexes of the size of life.

J. Gould and H. C. Richter, del et lith.

HYPSIPRYMNUS APICALIS.

Hullmandel & Walton, Imp.



HYPSIPRYMNUS APICALIS, *Gould.*

Tasmanian Rat-Kangaroo.

Ever since my visit to Australia I have been induced to consider the animal here figured, which is a native of Van Diemen's Land, to be distinct from the species known as the *Potoroo* or Kangaroo-Rat of "White's Journal," (*Potoroüs murinus*, Desm.), which inhabits New South Wales; it has not been an examination of dried skins which has induced this opinion, but abundant opportunities for observing the animal in a state of nature. Mr. Waterhouse, although he has made them identical, evidently had some doubt on the subject, since, when figuring the skull of the Van Diemen's Land animal, in comparison with that of the one from New South Wales, he places a note of interrogation after the name he has given to the former. I must admit that they are very closely allied, at the same time I find peculiar and well-marked characters by which they may each be distinguished from the other. The Tasmanian animal is always nearly a third larger in size, and has the tip of its tail white, a feature I have never seen in any other of the three species inhabiting the continent of Australia.

The *Hypsiprymnus apicalis* is very generally, I may say universally, dispersed over Van Diemen's Land; and I seldom failed to find it in low damp situations clothed with dense herbage: during the daytime it lies coiled up in its nest among the herbage in a depression of the ground; a very little noise near its retreat is, however, sufficient to disturb its repose, and cause it to dart away with rabbit-like rapidity to a place of security: it can seldom be induced to break covert into the open space, and if sharply pressed, invariably takes to the shelter of a large tree or stone, which everywhere abound; its food consists of roots, herbage, and the bark and leaves of trees. I must not omit to remark, that in no instance have I known dogs to partake of the flesh of this species either raw or dressed; while that of the members of the genus *Bettongia* is seldom refused. Mr. Richter has made so correct a drawing of this animal from life, and has so well represented in the reduced figures two of the positions frequently assumed by it, that a glance at the Plate will give more information on this point than any description.

The fur is long and of a dark hue; on the upper parts of the body it is of a dusky brown, a general tint produced by the admixture of brown and pale brownish yellow, the visible portion of the longer and coarser hairs being black, and that of the shorter fur of a pale yellow hue; the under surface of the body is of a dirty yellowish white or pale buff tint, with the fur of those parts as well as that of the back of a deepish grey colour next the skin; the ears are clothed internally with dirty white hairs, and externally with hairs of the same colour as the rest of the head; the feet are brown; the tail is of a darker hue than the body, and is tipped for about an inch with pure white; the muzzle is not only naked in front, but a narrow naked space continues upward towards the forehead.

The front figure represents the animal of the natural size.

J. Gould and H. C. Richter, del et lith.



HYPSIPRYMNUS GILBERTI, *Gould*

J. Gould and H.C. Richter del. et lith. *Hullmandel & Walton Imp.*

HYPSIPRYMNUS GILBERTI, *Gould.*

Gilbert's Rat-Kangaroo.

Hypsiprymnus Gilberti, Gould in Proc. of Zool. Soc., part ix. p. 14.—Ib. Mon. of Macropodidæ, pl. .—Gray, List. of Mamm. in Coll. Brit. Mus., p. 94.
———— *micropus*, Waterh. in Jard. Nat. Lib., Marsupialia, p. 180.
———— (*Potoroüs*) *Gilbertii*, Waterh. Nat. Hist. of Mamm., vol. i. p. 229.
Ngil-gyte, Aborigines of King George's Sound.

In its outward appearance this little animal closely resembles the *Hypsiprymnus murinus*, but on a comparison of the skulls of the two species a marked difference is observable, that of the present having the nasal bone more produced or swollen out at the sides; the tarsi and tail also are shorter, and the general colour is of a deeper hue in Gilbert's than in the *Hyp. murinus*. These *Hypsiprymni* are evidently analogues of each other, the former being found only on the western coast, while the other is confined to the eastern portions of Australia.

The animal here represented was procured at King George's Sound, where it is called *Ngil-gyte* by the Aborigines. In dedicating it to the late Mr. Gilbert, who proceeded with me to Australia to assist in the objects of my expedition, I embraced with pleasure the opportunity afforded me of expressing my sense of the great zeal and assiduity he displayed in the objects of his mission; and as science is indebted to him for the knowledge of this and several other interesting discoveries, I trust that, however objectionable it may be to name species after individuals, in this instance it will not be deemed inappropriate.

The above remarks were published in the first Part of my "Monograph of the Macropodidæ or Family of Kangaroos," soon after which Mr. Gilbert made a second journey to the interior of Western Australia, and while there, transmitted to me the following additional information respecting this species:—

"This little animal may be said to be the constant companion of *Halmaturus brachyurus*, as they are always found together amidst the dense thickets and rank vegetation bordering swamps and running streams. The natives capture it by breaking down a long, narrow passage in the thicket, in which a number of them remain stationed, while others, particularly old men and women, walk through the thicket, and by beating the bushes and making a yelling noise, drive the affrighted animals before them into the cleared space, where they are immediately speared by those on the watch: in this way a tribe of natives will often kill an immense number of both species in a few hours. I have not heard of the *Hypsiprymnus Gilberti* being found in any other part of the colony than King George's Sound."

General colour of all the upper surface mingled grey, brown and black, produced by the base of the hairs being grey, the middle portion brown and black; centre and lower part of the back washed with reddish brown; a blackish line commences at the nose and blends into the general colour on the forehead; all the under surface greyish white; hands greyish brown; feet blackish brown; tail black, very thinly clothed with short hairs.

The figures are of the natural size.

J. Gould and H.C. Richter del. et lith. Hullmandel & Walton imp.



HYPSIPRYMNUS PLATYOPS, *Gould.*

Broad-faced Rat-Kangaroo.

Hypsiprymnus platyops, Gould in Proc. of Zool. Soc., part xii. p. 103.
———— (*Potoroüs*) *platyops*, Waterh. Nat. Hist. Mamm., vol. i. p. 231.

This species is the least of the family of Kangaroos yet discovered; and is so rare that an adult male in my own collection and another in that of the British Museum, both procured by Mr. Gilbert in Western Australia, one in the Walyema Swamps, near Northam in the interior, and the other at King George's Sound, are all the examples that have yet been seen. When compared with *Hypsiprymnus Gilberti* and its allies, the present species will be found to differ from the whole of them in several particulars; the more important of which are its smaller size and the great breadth of its zygomatic arches, which, together with the brevity of its nose, give to the facial aspect of the animal a very bluff appearance, not unlike that of the young Wombat.

At the time Mr. Waterhouse wrote the first volume of his "Natural History of the Mammalia," the specimen from which he took his description was the only one that had reached this country; the adult male I have since received differs in no material respect, and I therefore transcribe his remarks and description verbatim.

"This," says Mr. Waterhouse, "is a small and very distinct species, readily distinguished from *Hyps. minor* and *H. Gilberti* by its having the tip of the muzzle naked in front only; while in the two species first named the naked part of the muzzle is extended somewhat on the upper surface; the zygomatic arches (so far as may be judged from the skull enclosed in the skin) must be thrown boldly out from the cranium, and thus give the breadth to the face which suggested the specific name."

"The hairs constituting the fur, are, on the back, grey at the root, then yellowish brown, and this is followed by a long space in each hair which is white, and this again is succeeded by black, that being the colour of the tips of the hairs; the white portion, showing conspicuously, gives the upper parts of the body the appearance of being distinctly pencilled with that hue; on the under parts of the body each hair is pale grey at the root, and dusky white externally; the feet are dirty white, indistinctly grizzled with brownish; this latter tint being most distinct on the sides of the toes: the ears are short and rounded, externally clothed with longish hairs, which are partly brown and partly white, and internally with hairs which are of a dirty white."

The figures are of the natural size.

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