

1845 JOURNAL
(THE AUSTRALIAN SECTION)

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RECORD: Darwin, C. R. 1845. *Journal of researches into the natural history and geology of the countries visited during the voyage of H.M.S. Beagle round the world, under the Command of Capt. Fitz Roy, R.N.* 2d edition. London: John Murray.

REVISION HISTORY: Scanned by John van Wyhe 2.2006; transcribed (double key) by AEL Data 4.2006. RN1

NOTE: See bibliographical [introduction](#) by R. B. Freeman.

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JOURNAL OF RESEARCHES
INTO THE
NATURAL HISTORY AND GEOLOGY
OF THE
COUNTRIES VISITED DURING THE VOYAGE OF H.M.S. BEAGLE
ROUND THE WORLD,
UNDER THE
Command of Capt. Fitz Roy, R.A.

BY CHARLES DARWIN, M.A., F.R.S.

SECOND EDITION, CORRECTED, WITH ADDITIONS.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.

1845.

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LONDON WILLIAM CLOWES AND SONS, STAMFORD STREET

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TO

CHARLES LYELL, ESQ., F.R.S.,

THIS SECOND EDITION IS DEDICATED WITH GRATEFUL PLEASURE, AS
AN ACKNOWLEDGMENT THAT THE CHIEF PART OF WHATEVER
SCIENTIFIC MERIT THIS JOURNAL AND THE OTHER WORKS OF THE
AUTHOR MAY POSSESS, HAS BEEN DERIVED FROM STUDYING THE
WELL-KNOWN AND ADMIRABLE

PRINCIPLES OF GEOLOGY.

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CHAPTER XIX.

AUSTRALIA.

Sydney—Excursion to Bathurst—Aspect of the Woods—Party of Natives—Gradual extinction of the Aborigines—Infection generated by associated men in health—Blue Mountains—View of the grand gulf-like Valleys—Their origin and formation—Bathurst, general civility of the lower orders—State of society—Van Diemen's Land—Hobart Town—Aborigines all banished—Mount Wellington—King George's Sound—Cheerless aspect of the Country—Bald Head, calcareous casts of branches of trees—Party of Natives—Leave Australia.

January 12th, 1836.—EARLY in the morning a light air carried us towards the entrance of Port Jackson. Instead of beholding a verdant country, interspersed with fine houses, a straight line of yellowish cliff brought to our minds the coast of Patagonia. A solitary lighthouse, built of white stone, alone told us that we were near a great and populous city. Having entered the harbour, it appears fine and spacious, with cliff-formed shores of horizontally stratified sandstone. The nearly level country is covered with thin scrubby trees, bespeaking the curse of sterility. Proceeding further inland, the country improves: beautiful villas and nice cottages are here and there scattered along the beach. In the distance stone houses, two and three stories high, and windmills standing on the edge of a bank, pointed out to us the neighbourhood of the capital of Australia.

At last we anchored within Sydney Cove. We found the little basin occupied by many large ships, and surrounded by warehouses. In the evening I walked through the town, and returned full of admiration at the whole scene. It is a most magnificent testimony to the power of the British nation. Here, in a less promising country, scores of years have done many times more than an equal number of centuries have effected in South America. My first feeling was to congratulate myself that I was born an Englishman. Upon seeing more of the town afterwards, perhaps my admiration fell a little; but yet it is a fine

town. The streets are regular, broad, clean, and kept in excellent order; the houses are of a good size, and the shops well furnished. It may be faithfully compared to the large suburbs which stretch out from London and a few other great towns in England; but not even near London or Birmingham is there an appearance of such rapid growth. The number of large houses and other buildings just finished was truly surprising; nevertheless, every one complained of the high rents and difficulty in procuring a house. Coming from South America, where in the towns every man of property is known, no one thing surprised me more than not being able to ascertain at once to whom this or that carriage belonged.

I hired a man and two horses to take me to Bathurst, a village about one hundred and twenty miles in the interior, and the centre of a great pastoral district. By this means I hoped to gain a general idea of the appearance of the country. On the morning of the 16th (January) I set out on my excursion. The first stage took us to Paramatta, a small country town, next to Sydney in importance. The roads were excellent, and made upon the MacAdam principle, whinstone having been brought for the purpose from the distance of several miles. In all respects there was a close resemblance to England: perhaps the alehouses here were more numerous. The iron gangs, or parties of convicts who have committed here some offence, appeared the least like England: they were working in chains, under the charge of sentries with loaded arms. The power which the Government possesses, by means of forced labour, of at once opening good roads throughout the country, has been, I believe, one main cause of the early prosperity of this colony. I slept at night at a very comfortable inn at Emu ferry, thirty-five miles from Sydney, and near the ascent of the Blue Mountains. This line of road is the most frequented, and has been the longest inhabited of any in the colony. The whole land is enclosed with high railings, for the farmers have not succeeded in rearing hedges. There are many substantial houses and good cottages scattered about; but although considerable pieces of land are under cultivation, the greater part yet remains as when first discovered.

The extreme uniformity of the vegetation is the most remarkable feature in the landscape of the greater part of New South

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Wales. Everywhere we have an open woodland, the ground being partially covered with a very thin pasture, with little appearance of verdure. The trees nearly all belong to one family, and mostly have their leaves placed in a vertical, instead of, as in Europe, in a nearly horizontal position: the foliage is scanty, and of a peculiar pale green tint, without any gloss. Hence the woods appear light and shadowless: this, although a loss of comfort to the traveller under the scorching rays of summer, is of importance to the farmer, as it allows grass to grow where it otherwise would not. The leaves are not shed periodically: this character appears common to the entire southern hemisphere, namely, South America, Australia, and the Cape of Good Hope. The inhabitants of this hemisphere, and of the intertropical regions, thus lose perhaps one of the most glorious, though to our eyes common, spectacles in the world—the first bursting into full foliage of the leafless tree. They may, however, say that we pay dearly for this by having the land covered with mere naked skeletons for so many months. This is too true; but our senses thus acquire a keen relish for the exquisite green of the spring, which the eyes of those living within the tropics, sated during the long year with the gorgeous productions of those glowing climates, can never experience. The greater number of the trees, with the exception of some of the Blue-gums, do not attain a large size; but they grow tall and tolerably straight, and stand well apart. The bark of some of the Eucalypti falls annually, or hangs dead in long shreds which swing about with the wind, and give to the woods a desolate and untidy appearance. I cannot imagine a more complete contrast, in every respect, than between the forests of Valdivia or Chiloe, and the woods of Australia.

At sunset, a party of a score of the black aborigines passed by, each carrying, in their accustomed manner, a bundle of spears and other weapons. By giving a leading young

man a shilling, they were easily detained, and threw their spears for my amusement. They were all partly clothed, and several could speak a little English: their countenances were good-humoured and pleasant, and they appeared far from being such utterly degraded beings as they have usually been represented. In their own arts they are admirable. A cap being fixed at thirty yards distance,

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they transfix it with a spear, delivered by the throwing-stick with the rapidity of an arrow from the bow of a practised archer. In tracking animals or men they show most wonderful sagacity; and I heard of several of their remarks which manifested considerable acuteness. They will not, however, cultivate the ground, or build houses and remain stationary, or even take the trouble of tending a flock of sheep when given to them. On the whole they appear to me to stand some few degrees higher in the scale of civilization than the Fuegians.

It is very curious thus to see in the midst of a civilized people, a set of harmless savages wandering about without knowing where they shall sleep at night, and gaining their livelihood by hunting in the woods. As the white man has travelled onwards, he has spread over the country belonging to several tribes. These, although thus enclosed by one common people, keep up their ancient distinctions, and sometimes go to war with each other. In an engagement which took place lately, the two parties most singularly chose the centre of the village of Bathurst for the field of battle. This was of service to the defeated side, for the runaway warriors took refuge in the barracks.

The number of aborigines is rapidly decreasing. In my whole ride, with the exception of some boys brought up by Englishmen, I saw only one other party. This decrease, no doubt, must be partly owing to the introduction of spirits, to European diseases (even the milder ones of which, such as the measles,* prove very destructive), and to the gradual extinction of the wild animals. It is said that numbers of their children invariably perish in very early infancy from the effects of their wandering life; and as the difficulty of procuring food increases, so must their wandering habits increase; and hence the population, without any apparent deaths from famine, is repressed in a manner extremely sudden compared to what happens in civilized countries, where the father, though in adding to his labour he may injure himself, does not destroy his offspring.

* It is remarkable how the same disease is modified in different climates. At the little island of St. Helena, the introduction of scarlet-fever is dreaded as a plague. In some countries, foreigners and natives are as differently affected by certain contagious disorders, as if they had been different animals; of which fact some instances have occurred in Chile; and, according to Humboldt, in Mexico. (Polit. Essay, New Spain, vol. iv.)

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Besides these several evident causes of destruction, there appears to be some more mysterious agency generally at work. Wherever the European has trod, death seems to pursue the aboriginal. We may look to the wide extent of the Americas, Polynesia, the Cape of Good Hope, and Australia, and we find the same result. Nor is it the white man alone that thus acts the destroyer; the Polynesian of Malay extraction has in parts of the East Indian archipelago, thus driven before him the darkcoloured native. The varieties of man seem to act on each other in the same way as different species of animals—the stronger always extirpating the weaker. It was melancholy at New Zealand to hear the fine energetic natives saying, that they knew the land was doomed to pass from their children. Every one has heard of the inexplicable reduction of the population in the beautiful and healthy island of Tahiti since the date of Captain Cook's voyages: although in that case we might have expected that it would have been increased; for infanticide, which formerly prevailed to so extraordinary a degree, has ceased, profligacy has greatly diminished, and the murderous wars become less frequent.

The Rev. J. Williams, in his interesting work,* says, that the first intercourse between natives and Europeans, "is invariably attended with the introduction of fever, dysentery, or some other disease, which carries off numbers of the people." Again he affirms, "It is certainly a fact, which cannot be controverted, that most of the diseases which have raged in the islands during my residence there, have been introduced by ships;† and what

* Narrative of Missionary Enterprise, p. 282.

† Captain Beechey (chap. iv., vol. i.) states that the inhabitants of Pitcairn Island are firmly convinced that after the arrival of every ship they suffer cutaneous and other disorders. Captain Beechey attributes this to the change of diet during the time of the visit. Dr. Macculloch (Western Isles, vol. ii., p. 32) says, "It is asserted, that on the arrival of a stranger (at St. Kilda) all the inhabitants, in the common phraseology, catch a cold." Dr. Macculloch considers the whole case, although often previously affirmed, as ludicrous. He adds, however, that "the question was put by us to the inhabitants who unanimously agreed in the story." In Vancouver's Voyage, there is a somewhat similar statement with respect to Otaheite. Dr. Dieffenbach, in a note to his translation of this Journal, states that the same fact is universally believed by the inhabitants of the Chatham Islands, and in parts of New Zealand. It is impossible that such a belief should have become universal in the northern hemisphere, at the Antipodes, and in the Pacific, without some good foundation. Humboldt (Polit. Essay on King of New

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renders this fact remarkable is, that there might be no appearance of disease among the crew of the ship which conveyed this destructive importation." This statement is not quite so extraordinary as it at first appears; for several cases are on record of the most malignant fevers having broken out, although the parties themselves, who were the cause, were not affected. In the early part of the reign of George III., a prisoner who had been confined in a dungeon, was taken in a coach with four constables

before a magistrate; and, although the man himself was not ill, the four constables died from a short putrid fever; but the contagion extended to no others. From these facts it would almost appear as if the effluvia of one set of men shut up for some time together was poisonous when inhaled by others; and possibly more so, if the men be of different races. Mysterious as this circumstance appears to be, it is not more surprising than that the body of one's fellow-creature, directly after death, and before putrefaction has commenced, should often be of so deleterious a quality, that the mere puncture from an instrument used in its dissection, should prove fatal.

17th.—Early in the morning we passed the Nepean in a ferryboat. The river, although at this spot both broad and deep, had a very small body of running water. Having crossed a low piece of land on the opposite side, we reached the slope of the Blue Mountains. The ascent is not steep, the road having been out with much care on the side of a sandstone cliff. On the summit an almost level plain extends, which, rising imperceptibly to the westward, at last attains a height of more than 3000 feet. From so grand a title as Blue Mountains, and from their absolute altitude, I expected to have seen a bold chain of mountains crossing the country; but instead of this, a sloping plain presents merely an inconsiderable front to the low land near the coast. From this first slope, the view of the extensive woodland to the east was striking, and the surrounding trees

Spain, vol. iv.) says, that the great epidemics at Panama and Callao are "marked" by the arrival of ships from Chile, because the people from that temperate region, first experience the fatal effects of the torrid zones. I may add, that I have heard it stated in Shropshire, that sheep, which have been imported from vessels, although themselves in a healthy condition, if placed in the same fold with others, frequently produce sickness in the flock.

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grew bold and lofty. But when once on the sandstone platform, the scenery becomes exceedingly monotonous; each side of the road is bordered by scrubby trees of the never-failing Eucalyptus family; and with the exception of two or three small inns, there are no houses or cultivated land: the road, moreover, is solitary; the most frequent object being a bullock-waggon, piled up with bales of wool.

In the middle of the day we baited our horses at a little inn, called the Weatherboard. The country here is elevated 2800 feet above the sea. About a mile and a half from this place there is a view exceedingly well worth visiting. Following down a little valley and its tiny rill of water, an immense gulf unexpectedly opens through the trees which border the pathway, at the depth of perhaps 1500 feet. Walking on a few yards, one stands on the brink of a vast precipice, and below one sees a grand bay or gulf, for I know not what other name to give it, thickly covered with forest. The point of view is situated as if at the head of a bay, the line of cliff diverging on each side, and showing headland behind headland, as on a bold sea-coast. These cliffs are composed of horizontal strata of whitish sandstone; and are so absolutely vertical, that in many places a person standing on the edge and throwing down a stone, can see it strike the trees in the abyss below. So unbroken is the line of cliff, that in order to reach the foot of the waterfall, formed by this little stream, it is said to be necessary to go sixteen miles round. About five miles distant in front, another line of cliff extends, which thus

appears completely to encircle the valley; and hence the name of bay is justified, as applied to this grand amphitheatrical depression. If we imagine a winding harbour, with its deep water surrounded by bold cliff-like shores, to be laid dry, and a forest to spring up on its sandy bottom, we should then have the appearance and structure here exhibited. This kind of view was to me quite novel, and extremely magnificent.

In the evening we reached the Blackheath. The sandstone plateau has here attained the height of 3400 feet; and is covered, as before, with the same scrubby woods. From the road, there were occasional glimpses into a profound valley, of the same character as the one described; but from the steepness and depth of its sides, the bottom was scarcely ever to be seen. The

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Blackheath is a very comfortable inn, kept by an old soldier; and it reminded me of the small inns in North Wales.

18th.—Very early in the morning, I walked about three miles to see Govett's Leap: a view of a similar character with that near the Weatherboard, but perhaps even more stupendous. So early in the day the gulf was filled with a thin blue haze, which, although destroying the general effect of the view, added to the apparent depth at which the forest was stretched out beneath our feet. These valleys, which so long presented an insuperable barrier to the attempts of the most enterprising of the colonists to reach the interior, are most remarkable. Great arm-like bays, expanding at their upper ends, often branch from the main valleys and penetrate the sandstone platform; on the other hand, the platform often sends promontories into the valleys, and even leaves in them great, almost insulated, masses. To descend into some of these valleys, it is necessary to go round twenty miles; and into others, the surveyors have only lately penetrated, and the colonists have not yet been able to drive in their cattle. But the most remarkable feature in their structure is, that although several miles wide at their heads, they generally contract towards their mouths to such a degree as to become impassable. The Surveyor-General, Sir T. Mitchell,* endeavoured in vain, first walking and then by crawling between the great fallen fragments of sandstone, to ascend through the gorge by which the river Grose joins the Nepean; yet the valley of the Grose in its upper part, as I saw, forms a magnificent level basin some miles in width, and is on all sides surrounded by cliffs, the summits of which are believed to be nowhere less than 3000 feet above the level of the sea. When cattle are driven into the valley of the Wolgan by a path (which I descended), partly natural and partly made by the owner of the land, they cannot escape; for this valley is in every other part surrounded by perpendicular cliffs, and eight miles lower down, it contracts from an average width of half a mile, to a mere chasm, impassable to man or beast. Sir T. Mitchell states that the great valley of the Cox river with all its branches, contracts, where it unites with the Nepean, into

* Travels in Australia, vol. i., p. 154. I must express my obligation to Sir T. Mitchell, for several interesting personal communications, on the subject of these great valleys of New South Wales.

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a gorge 2200 yards in width, and about 1000 feet in depth. Other similar cases might have been added.

The first impression, on seeing the correspondence of the horizontal strata on each side of these valleys and great amphitheatrical depressions, is that they have been hollowed out, like other valleys, by the action of water; but when one reflects on the enormous amount of stone, which on this view must have been removed through mere gorges or chasms, one is led to ask whether these spaces may not have subsided. But considering the form of the irregularly branching valleys, and of the narrow promontories projecting into them from the platforms, we are compelled to abandon this notion. To attribute these hollows to the present alluvial action would be preposterous; nor does the drainage from the summit-level always fall, as I remarked near the Weatherboard, into the head of these valleys, but into one side of their bay-like recesses. Some of the inhabitants remarked to me that they never viewed one of those bay-like recesses, with the headlands receding on both hands, without being struck with their resemblance to a bold sea-coast. This is certainly the case; moreover, on the present coast of New South Wales, the numerous, fine, widely-branching harbours, which are generally connected with the sea by a narrow mouth worn through the sand-stone coast-cliffs, varying from one mile in width to a quarter of a mile, present a likeness, though on a miniature scale, to the great valleys of the interior. But then immediately occurs the startling difficulty, why has the sea worn out these great, though circumscribed depressions on a wide platform, and left mere gorges at the openings, through which the whole vast amount of triturated matter must have been carried away? The only light I can throw upon this enigma, is by remarking that banks of the most irregular forms appear to be now forming in some seas, as in parts of the West Indies and in the Red Sea, and that their sides are exceedingly steep. Such banks, I have been led to suppose, have been formed by sediment heaped by strong currents on an irregular bottom. That in some cases the sea, instead of spreading out sediment in a uniform sheet, heaps it round submarine rocks and islands, it is hardly possible to doubt, after examining the charts of the West Indies; and that the waves have power to form high and precipitous cliffs, even in land-

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locked harbours, I have noticed in many parts of South America. To apply these ideas to the sandstone platforms of New South Wales, I imagine that the strata were heaped by the action of strong currents, and of the undulations of an open sea, on an irregular bottom; and that the valley-like spaces thus left unfilled had their steeply sloping flanks worn into cliffs, during a slow elevation of the land; the worn-down sandstone being removed, either at the time when the narrow gorges were cut by the retreating sea, or subsequently by alluvial action.

Soon after leaving the Blackheath, we descended from the sandstone platform by the pass of Mount Victoria. To effect this pass, an enormous quantity of stone has been cut through; the design, and its manner of execution, being worthy of any line of road in England. We now entered upon a country less elevated by nearly a thousand feet, and consisting of granite. With the change of rock, the vegetation improved; the trees were both finer and stood farther apart; and the pasture between them was a little greener and more plentiful. At Hassan's Walls, I left the high road, and made a short détour to a farm called Walerawang; to the superintendent of which I had a letter of

introduction from the owner in Sydney. Mr. Browne had the kindness to ask me to stay the ensuing day, which I had much pleasure in doing. This place offers an example of one of the large farming, or rather sheep-grazing, establishments of the colony. Cattle and horses are, however, in this case rather more numerous than usual, owing to some of the valleys being swampy and producing a coarser pasture. Two or three flat pieces of ground near the house were cleared and cultivated with corn, which the harvest-men were now reaping; but no more wheat is sown than sufficient for the annual support of the labourers employed on the establishment. The usual number of assigned convict-servants here is about forty, but at the present time there were rather more. Although the farm was well stocked with every necessary, there was an apparent absence of comfort; and not one single woman resided here. The sunset of a fine day will generally cast an air of happy contentment on any scene; but here, at this retired farm-house, the brightest tints on the surrounding woods could not make me forget that forty har-

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dened, profligate men were ceasing from their daily labours, like the slaves from Africa, yet without their holy claim for compassion.

Early on the next morning, Mr. Archer, the joint superintendent, had the kindness to take me out kangaroo-hunting. We continued riding the greater part of the day, but had very bad sport, not seeing a kangaroo, or even a wild dog. The greyhounds pursued a kangaroo rat into a hollow tree, out of which we dragged it: it is an animal as large as a rabbit, but with the figure of a kangaroo. A few years since this country abounded with wild animals; but now the emu is banished to a long distance, and the kangaroo is become scarce; to both the English greyhound has been highly destructive. It may be long before these animals are altogether exterminated, but their doom is fixed. The aborigines are always anxious to borrow the dogs from the farm-houses: the use of them, the offal when an animal is killed, and some milk from the cows, are the peace-offerings of the settlers, who push farther and farther towards the interior. The thoughtless aboriginal, blinded by these trifling advantages, is delighted at the approach of the white man, who seems predestined to inherit the country of his children.

Although having poor sport, we enjoyed a pleasant ride. The woodland is generally so open that a person on horseback can gallop through it. It is traversed by a few flat-bottomed valleys, which are green and free from trees: in such spots the scenery was pretty like that of a park. In the whole country I scarcely saw a place without the marks of a fire; whether these had been more or less recent—whether the stumps were more or less black, was the greatest change which varied the uniformity, so wearisome to the traveller's eye. In these woods there are not many birds; I saw, however, some large flocks of the white cockatoo feeding in a corn-field, and a few most beautiful parrots; crows like our jackdaws were not uncommon, and another bird something like the magpie. In the dusk of the evening I took a stroll along a chain of ponds, which in this dry country represented the course of a river, and had the good fortune to see several of the famous *Ornithorhynchus paradoxus*. They were diving and playing about the surface of the water, but showed so little of their bodies, that they might easily have been mistaken for water-

rats. Mr. Browne shot one: certainly it is a most extraordinary animal; a stuffed specimen does not at all give a good idea of the appearance of the head and beak when fresh; the latter becoming hard and contracted.*

20th.—A long day's ride to Bathurst. Before joining the high road we followed a mere path through the forest; and the country, with the exception of a few squatters' huts, was very solitary. We experienced this day the sirocco-like wind of Australia, which comes from the parched deserts of the interior. Clouds of dust were travelling in every direction; and the wind felt as if it had passed over a fire. I afterwards heard that the thermometer out of doors had stood at 119°, and in a closed room at 96°. In the afternoon we came in view of the downs of Bathurst. These undulating but nearly smooth plains are very remarkable in this country, from being absolutely destitute of trees. They support only a thin brown pasture. We rode some miles over this country, and then reached the township of Bathurst, seated in the middle of what may be called either a very broad valley, or narrow plain. I was told at Sydney not to form too bad an opinion of Australia by judging of the country from the road-side, nor too good a one from Bathurst; in this latter respect, I did not feel myself in the least danger of being prejudiced. The season, it must be owned, had been one of great drought, and the country did not wear a favourable aspect; although I understand it was incomparably worse two or three months before. The secret of the rapidly growing prosperity of Bathurst is, that the brown pasture which appears to the stranger's eye so wretched, is excellent for sheep-grazing. The town stands, at the height of 2200 feet above the sea, on the banks of the Macquarie: this is one of the rivers flowing into the vast and scarcely known interior. The line of watershed, which divides the inland streams from those on the coast, has a height

* I was interested by finding here the hollow conical pitfall of the lion-ant, or some other insect: first a fly fell down the treacherous slope and immediately disappeared; then came a large but unwary ant; its struggles to escape being very violent, those curious little jets of sand, described by Kirby and Spence (Entomol., vol. i., p. 425) as being flirited by the insect's tail, were promptly directed against the expected victim. But the ant enjoyed a better fate than the fly, and escaped the fatal jaws which lay concealed at the base of the conical hollow. This Australian pit-fall was only about half the size of that made by the European lion-ant.

of about 3000 feet, and runs in a north and south direction at the distance of from eighty to a hundred miles from the sea-side. The Macquarie figures in the map as a respectable river, and it is the largest of those draining this part of the water-shed; yet to my surprise I found it a mere chain of ponds, separated from each other by spaces almost dry. Generally a small stream is running; and sometimes there are high and impetuous floods. Scanty as the supply of the water is throughout this district, it becomest still scantier further inland.

22nd.—I commenced my return, and followed a new road called Lockyer's Line, along which the country is rather more hilly and picturesque. This was a long day's ride; and the house where I wished to sleep was some way off the road, and not easily

found. I met on this occasion, and indeed on all others, a very general and ready civility among the lower orders, which, when one considers what they are, and what they have been, would scarcely have been expected. The farm where I passed the night, was owned by two young men who had only lately come out, and were beginning a settler's life. The total want of almost every comfort was not very attractive; but future and certain prosperity was before their eyes, and that not far distant.

The next day we passed through large tracts of country in flames, volumes of smoke sweeping across the road. Before noon we joined our former road, and ascended Mount Victoria. I slept at the Weatherboard, and before dark took another walk to the amphitheatre. On the road to Sydney I spent a very pleasant evening with Captain King at Dunheved; and thus ended my little excursion in the colony of New South Wales.

Before arriving here the three things which interested me most were—the state of society amongst the higher classes, the condition of the convicts, and the degree of attraction sufficient to induce persons to emigrate. Of course, after so very short a visit, one's opinion is worth scarcely anything; but it is as difficult not to form some opinion, as it is to form a correct judgment. On the whole, from what I heard, more than from what I saw, I was disappointed in the state of society. The whole community is rancorously divided into parties on almost every subject. Among those who, from their station in life, ought to be the best, many live in such open profligacy that respectable

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people cannot associate with them. There is much jealousy between the children of the rich emancipist and the free settlers, the former being pleased to consider honest men as interlopers. The whole population, poor and rich, are bent on acquiring wealth: amongst the higher orders, wool and sheep-grazing form the constant subject of conversation. There are many serious drawbacks to the comforts of a family, the chief of which, perhaps, is being surrounded by convict servants. How thoroughly odious to every feeling, to be waited on by a man who the day before, perhaps, was flogged, from your representation, for some trifling misdemeanour. The female servants are of course much worse: hence children learn the vilest expressions, and it is fortunate, if not equally vile ideas.

On the other hand, the capital of a person, without any trouble on his part, produces him treble interest to what it will in England; and with care he is sure to grow rich. The luxuries of life are in abundance, and very little dearer than in England, and most articles of food are cheaper. The climate is splendid, and perfectly healthy; but to my mind its charms are lost by the uninviting aspect of the country. Settlers possess a great advantage in finding their sons of service when very young. At the age of from sixteen to twenty, they frequently take charge of distant farming stations. This, however, must happen at the expense of their boys associating entirely with convict servants. I am not aware that the tone of society has assumed any peculiar character; but with such habits, and without intellectual pursuits, it can hardly fail to deteriorate. My opinion is such, that nothing but rather sharp necessity should compel me to emigrate.

The rapid prosperity and future prospects of this colony are to me, not understanding these subjects, very puzzling. The two main exports are wool and whale-oil, and to both of these productions there is a limit. The country is totally unfit for canals, therefore there is a not very distant point, beyond which the land-carriage of wool will not repay the expense of shearing and tending sheep. Pasture everywhere is so thin that settlers have already pushed far into the interior: moreover, the country further inland becomes extremely poor. Agriculture, on account of the droughts, can never succeed on an extended scale: there-

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fore, so far as I can see, Australia must ultimately depend upon being the centre of commerce for the southern hemisphere, and perhaps on her future manufactories. Possessing coal, she always has the moving power at hand. From the habitable country extending along the coast, and from her English extraction, she is sure to be a maritime nation. I formerly imagined that Australia would rise to be as grand and powerful a country as North America, but now it appears to me that such future grandeur is rather problematical.

With respect to the state of the convicts, I had still fewer opportunities of judging than on the other points. The first question is, whether their condition is at all one of punishment: no one will maintain that it is a very severe one. This, however, I suppose, is of little consequence as long as it continues to be an object of dread to criminals at home. The corporeal wants of the convicts are tolerably well supplied: their prospect of future liberty and comfort is not distant, and after good conduct certain. A "ticket of leave," which, as long as a man keeps clear of suspicion as well as of crime, makes him free within a certain district, is given upon good conduct, after years proportional to the length of the sentence; yet with all this, and overlooking the previous imprisonment and wretched passage out, I believe the years of assignment are passed away with discontent and unhappiness. As an intelligent man remarked to me, the convicts know no pleasure beyond sensuality, and in this they are not gratified. The enormous bribe which Government possesses in offering free pardons, together with the deep horror of the secluded penal settlements, destroys confidence between the convicts, and so prevents crime. As to a sense of shame, such a feeling does not appear to be known, and of this I witnessed some very singular proofs. Though it is a curious fact, I was universally told that the character of the convict population is one of arrant cowardice: not unfrequently some become desperate, and quite indifferent as to life, yet a plan requiring cool or continued courage is seldom put into execution. The worst feature in the whole case is, that although there exists what may be called a legal reform, and comparatively little is committed which the law can touch, yet that any moral reform should take place appears to be quite out of the question. I was assured by

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well-informed people, that a man who should try to improve, could not while living with other assigned servants;—his life would be one of intolerable misery and persecution. Nor must the contamination of the convict-ships and prisons, both here and in England, be forgotten. On the whole, as a place of punishment, the object is scarcely gained; as a real system of reform it has failed, as perhaps would every other

plan; but as a means of making men outwardly honest,—of converting vagabonds, most useless in one hemisphere, into active citizens of another, and thus giving birth to a new and splendid country—a grand centre of civilization—it has succeeded to a degree perhaps unparalleled in history.

30th.—The Beagle sailed for Hobart Town in Van Diemen's Land. On the 5th of February, after a six days' passage, of which the first part was fine, and the latter very cold and squally, we entered the mouth of Storm Bay: the weather justified this awful name. The bay should rather be called an estuary, for it receives at its head the waters of the Derwent. Near the mouth, there are some extensive basaltic platforms; but higher up the land becomes mountainous, and is covered by a light wood. The lower parts of the hills which skirt the bay are cleared; and the bright yellow fields of corn, and dark green ones of potatoes, appeared very luxuriant. Late in the evening we anchored in the snug cove, on the shores of which stands the capital of Tasmania. The first aspect of the place was very inferior to that of Sydney; the latter might be called a city, this only a town. It stands at the base of Mount Wellington, a mountain 3100 feet high, but of little picturesque beauty: from this source, however, it receives a good supply of water. Round the cove there are some fine warehouses, and on one side a small fort. Coming from the Spanish settlements, where such magnificent care has generally been paid to the fortifications, the means of defence in these colonies appeared very contemptible. Comparing the town with Sydney, I was chiefly struck with the comparative fewness of the large houses, either built or building. Hobart Town, from the census of 1835, contained 13,826 inhabitants, and the whole of Tasmania 36,505.

All the aborigines have been removed to an island in Bass's

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Straits, so that Van Diemen's Land enjoys the great advantage of being free from a native population. This most cruel step seems to have been quite unavoidable, as the only means of stopping a fearful succession of robberies, burnings, and murders, committed by the blacks; and which sooner or later would have ended in their utter destruction. I fear there is no doubt, that this train of evil and its consequences, originated in the infamous conduct of some of our countrymen. Thirty years is a short period, in which to have banished the last aboriginal from his native island,—and that island nearly as large as Ireland. The correspondence on this subject, which took place between the government at home and that of Van Diemen's Land, is very interesting. Although numbers of natives were shot and taken prisoners in the skirmishing, which was going on at intervals for several years; nothing seems fully to have impressed them with the idea of our overwhelming power, until the whole island, in 1830, was put under martial law, and by proclamation the whole population commanded to assist in one great attempt to secure the entire race. The plan adopted was nearly similar to that of the great hunting-matches in India: a line was formed reaching across the island, with the intention of driving the natives into a *cul-de-sac* on Tasman's peninsula. The attempt failed; the natives, having tied up their dogs, stole during one night through the lines. This is far from surprising, when their practised senses, and usual manner of crawling after wild animals is considered. I have been assured that they can conceal themselves on almost bare ground, in a manner which until witnessed is scarcely credible; their dusky bodies being easily mistaken for the

blackened stumps which are scattered all over the country. I was told of a trial between a party of Englishmen and a native, who was to stand in full view on the side of a bare hill; if the Englishmen closed their eyes for less than a minute, he would squat down, and then they were never able to distinguish him from the surrounding stumps. But to return to the hunting-match; the natives understanding this kind of warfare, were terribly alarmed, for they at once perceived the power and numbers of the whites. Shortly afterwards a party of thirteen belonging to two tribes came in; and, conscious of their unprotected condition, delivered themselves up in despair. Subsequently by the

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intrepid exertions of Mr. Robinson, an active and benevolent man, who fearlessly visited by himself the most hostile of the natives, the whole were induced to act in a similar manner. They were then removed to an island, where food and clothes were provided them. Count Strzelecki states,* that "at the epoch of their deportation in 1835, the number of natives amounted to 210. In 1842, that is after the interval of seven years, they mustered only fifty-four individuals; and, while each family of the interior of New South Wales, uncontaminated by contact with the whites, swarms with children, those of Flinders' Island had during eight years, an accession of only fourteen in number!"

The Beagle staid here ten days, and in this time I made several pleasant little excursions, chiefly with the object of examining the geological structure of the immediate neighbourhood. The main points of interest consist, first in some highly fossiliferous strata, belonging to the Devonian or Carboniferous period; secondly, in proofs of a late small rise of the land; and lastly, in a solitary and superficial patch of yellowish limestone or travertin, which contains numerous impressions of leaves of trees, together with land-shells, not now existing. It is not improbable that this one small quarry, includes the only remaining record of the vegetation of Van Diemen's Land during one former epoch.

The climate here is damper than in New South Wales, and hence the land is more fertile. Agriculture flourishes: the cultivated fields look well, and the gardens abound with thriving vegetables and fruit-trees. Some of the farm-houses, situated in retired spots, had a very attractive appearance. The general aspect of the vegetation is similar to that of Australia; perhaps it is a little more green and cheerful; and the pasture between the trees rather more abundant. One day I took a long walk on the side of the bay opposite to the town: I crossed in a steamboat, two of which are constantly plying backwards and forwards. The machinery of one of these vessels was entirely manufactured in this colony, which, from its very foundation, then numbered only three and thirty years! Another day I ascended Mount Wellington; I took with me a guide, for I failed in a first

* Physical Description of New South Wales and Van Diemen's Land, p. 354.

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attempt, from the thickness of the wood. Our guide, however, was a stupid fellow, and conducted us to the southern and damp side of the mountain, where the vegetation

was very luxuriant; and where the labour of the ascent, from the number of rotten trunks, was almost as great as on a mountain in Tierra del Fuego or in Chiloe. It cost us five and a half hours of hard climbing before we reached the summit. In many parts the Eucalypti grew to a great size, and composed a noble forest. In some of the dampest ravines, tree-ferns flourished in an extraordinary manner; I saw one which must have been at least twenty feet high to the base of the fronds, and was in girth exactly six feet. The fronds forming the most elegant parasols, produced a gloomy shade, like that of the first hour of night. The summit of the mountain is broad and flat, and is composed of huge angular masses of naked greenstone. Its elevation is 3100 feet above the level of the sea. The day was splendidly clear, and we enjoyed a most extensive view; to the north, the country appeared a mass of wooded mountains, of about the same height with that on which we were standing, and with an equally tame outline: to the south the broken land and water, forming many intricate bays, was mapped with clearness before us. After staying some hours on the summit, we found a better way to descend, but did not reach the Beagle till eight o'clock, after a severe day's work.

February 7th.—The Beagle sailed from Tasmania, and, on the 6th of the ensuing month, reached King George's Sound, situated close to the S.W. corner of Australia. We staid there eight days; and we did not during our voyage pass a more dull and uninteresting time. The country, viewed from an eminence, appears a woody plain, with here and there rounded and partly bare hills of granite protruding. One day I went out with a party, in hopes of seeing a kangaroo hunt, and walked over a good many miles of country. Everywhere we found the soil sandy, and very poor; it supported either a coarse vegetation of thin, low brushwood and wiry grass, or a forest of stunted trees. The scenery resembled that of the high sandstone platform of the Blue Mountains; the Casuarina (a tree somewhat resembling a Scotch fir) is, however, here in greater number, and the Eucalyptus in rather less. In the open parts there were many grass-trees,—

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a plant which, in appearance, has some affinity with the palm; but, instead of being surmounted by a crown of noble fronds, it can boast merely of a tuft of very coarse grass-like leaves. The general bright green colour of the brushwood and other plants, viewed from a distance, seemed to promise fertility. A single walk, however, was enough to dispel such an illusion; and he who thinks with me will never wish to walk again in so uninviting a country.

One day I accompanied Captain Fitz Roy to Bald Head; the place mentioned by so many navigators, where some imagined that they saw corals, and others that they saw petrified trees, standing in the position in which they had grown. According to our view, the beds have been formed by the wind having heaped up fine sand, composed of minute rounded particles of shells and corals, during which process branches and roots of trees, together with many land-shells, became enclosed. The whole then became consolidated by the percolation of calcareous matter; and the cylindrical cavities left by the decaying of the wood, were thus also filled up with a hard pseudo-stalactitical stone. The weather is now wearing away the softer parts, and in

consequence the hard casts of the roots and branches of the trees project above the surface, and, in a singularly deceptive manner, resemble the stumps of a dead thicket.

A large tribe of natives, called the White Cockatoo men, happened to pay the settlement a visit while we were there. These men, as well as those of the tribe belonging to King George's Sound, being tempted by the offer of some tubs of rice and sugar, were persuaded to hold a "corrobery," or great dancing-party. As soon as it grew dark, small fires were lighted, and the men commenced their toilet, which consisted in painting themselves white in spots and lines. As soon as all was ready, large fires were kept blazing, round which the women and children were collected as spectators; the Cockatoo and King George's men formed two distinct parties, and generally danced in answer to each other. The dancing consisted in their running either sideways or in Indian file into an open space, and stamping the ground with great force as they marched together. Their heavy footsteps were accompanied by a kind of grunt, by beating their clubs and spears together, and by various other gesticula-

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tions, such as extending their arms and wriggling their bodies. It was a most rude, barbarous scene, and, to our ideas, without any sort of meaning; but we observed that the black women and children watched it with the greatest pleasure. Perhaps these dances originally represented actions, such as wars and victories; there was one called the Emu dance, in which each man extended his arm in a bent manner, like the neck of that bird. In another dance, one man imitated the movements of a kangaroo grazing in the woods, whilst a second crawled up, and pretended to spear him. When both tribes mingled in the dance, the ground trembled with the heaviness of their steps, and the air resounded with their wild cries. Every one appeared in high spirits, and the group of nearly naked figures, viewed by the light of the blazing fires, all moving in hideous harmony, formed a perfect display of a festival amongst the lowest barbarians. In Tierra del Fuego, we have beheld many curious scenes in savage life, but never, I think, one where the natives were in such high spirits, and so perfectly at their ease. After the dancing was over, the whole party formed a great circle on the ground, and the boiled rice and sugar was distributed, to the delight of all.

After several tedious delays from clouded weather, on the 14th of March, we gladly stood out of King George's Sound on our course to Keeling Island. Farewell, Australia! you are a rising child, and doubtless some day will reign a great princess in the South: but you are too great and ambitious for affection, yet not great enough for respect. I leave your shores without sorrow or regret.

CHAPTER XXI.

MAURITIUS TO ENGLAND.

[the following passage contains some comments on dung beetles in Tasmania]

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St. Helena, situated so remote from any continent, in the midst of a great ocean, and possessing a unique Flora, excites our curiosity. The eight land-shells, though now extinct, and one living Succinea, are peculiar species found nowhere else.

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Mr. Cuming, however, informs me that an English Helix is common here, its eggs no doubt having been imported in some of the many introduced plants. Mr. Cuming collected on the coast sixteen species of sea-shells, of which seven, as far as he knows, are confined to this island. Birds and insects,* as might have been expected, are very few in number; indeed I believe all the birds have been introduced within late years. Partridges and pheasants are tolerably abundant: the island is much too English not to be subject to strict game-laws. I was told of a more unjust sacrifice to such ordinances than I ever heard of even in England. The poor people formerly used to burn a plant, which grows on the coast-rocks, and export the soda from its ashes; but a peremptory order came out prohibiting this practice, and giving as a reason that the partridges would have nowhere to build!

* Among these few insects, I was surprised to find a small Aphodius (*nov. spec.*) and an Oryctes, both extremely numerous under dung. When the island was discovered it certainly possessed no quadruped, excepting *perhaps* a mouse: it becomes, therefore, a difficult point to ascertain, whether these stercovorous insects have since been imported by accident, or if aborigines, on what food they formerly subsisted. On the banks of the Plata, where, from the vast number of cattle and horses, the fine plains of turf are richly manured, it is vain to seek the many kinds of dung-feeding beetles, which occur so abundantly in Europe. I observed only an Oryctes (the insects of this genus in Europe generally feed on decayed vegetable matter) and two species of Phanæus, common in such situations. On the opposite side of the Cordillera in Chiloe, another species of Phanæus is exceedingly abundant, and it buries the dung of the cattle in large earthen balls beneath the ground. There is reason to believe that the genus Phanæus, before the introduction of cattle, acted as scavengers to man. In Europe, beetles, which find support in the matter which has already contributed towards the life of other and larger animals, are so numerous, that there must be considerably more than one hundred different species. Considering this, and observing what a quantity of food of this kind is lost on the plains of La Plata, I imagined I saw an instance where man had disturbed that chain, by which so many animals are linked together in their native country. In Van Diemen's Land, however, I found four species of Onthophagus, two of Aphodius, and one of a third genus, very abundant under the dung of cows; yet these latter animals had been then introduced only thirty-three years. Previously to that time, the Kangaroo and some other small animals were the only quadrupeds; and their dung is of a very different quality from that of their successors introduced by man. In England the greater number of stercovorous beetles are confined in their appetites; that is, they do not depend indifferently on any quadruped for the means of subsistence. The change, therefore, in habits, which must have taken place in Van Diemen's Land, is highly remarkable. I am indebted to the Rev. F. W. Hope, who, I hope, will permit me to call him my master in Entomology, for giving me the names of the foregoing insects.

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In the same quarter of the globe Australia is rising, or indeed may be said to have risen, into a grand centre of civilization, which, at some not very remote period, will rule as empress over the southern hemisphere. It is impossible for an Englishman to behold these distant colonies, without a high pride and satisfaction. To hoist the British flag, seems to draw with it as a certain consequence, wealth, prosperity, and civilization.

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