

Three Expeditions into the Interior of Eastern Australia, Volume 2 eBook

Three Expeditions into the Interior of Eastern Australia, Volume 2 by Thomas Mitchell

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Published by T. and W. Boone, London.

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Published by T. & W. Boone, London.

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Published by T. and W. Boone, London.

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London, Published by T. & W. Boone.

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Major T.L. Mitchell del. Scherf Lith. J. Graf Printer to Her Majesty.

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...

Journal of an expedition to the rivers Darling and Murray, in the year 1836.

CHAPTER 3.1.

Route proposed. Equipment. List of the Men. Agreement with a native guide. Livestock. Corrobory-dance of the natives. Visit to the Limestone caves. Osseous breccia. Mount Granard, first point to be attained. Halt on a dry creek. Break a wheel. Attempt to ascend Marga. Snakes. View from Marga. Reach the Lachlan. Find its channel dry.

Route proposed.

Towards the end of the year 1835 I was apprised that the governor of New South Wales was desirous of having the survey of the Darling completed with the least possible delay. His excellency proposed that I should return for this purpose to the extreme point on the Darling where my last journey terminated and that, after having traced the Darling into the Murray, I should embark on the latter river and, passing the carts and oxen to the left bank at the first convenient opportunity, proceed upwards by water as far as practicable and regain the colony somewhere about Yass Plains.

Equipment.

The preparations for this journey were made, as on the former occasion, chiefly in the lumber-yard at Parramatta, and under the superintendence of the same officer, Mr. Simpson. Much of the equipment used for the last expedition was available for this occasion. The boats and boat-carriage were as serviceable as ever, with the advantage of being better seasoned; and we could now, having had so much experience, prepare with less difficulty for such an undertaking.

In consequence of a long-continued drought serviceable horses and bullocks were at that time scarce, and could only be obtained at high prices; but no expense was spared by the government in providing the animals required.

The party having preceded me by some weeks on the road, I at length overtook it on the 15th of March in a valley near the Canobolas which I had fixed as the place of rendezvous, and where, from the great elevation, I hoped still to find some grass. How we were to proceed however without water was the question I was frequently asked; and I was informed at Bathurst that even the Lachlan was dried up.

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On the following day I organised the party, and armed the men. I distributed to each a suit of new clothing; consisting of grey trousers and a red woollen shirt, the latter article, when crossed by white braces, giving the men somewhat of a military appearance.

Their names and designation were as follows:

List of the men.

*List of the party proceeding to the Darling in march 1836.**

(Footnote. The men whose names are printed in uppercase had obtained their freedom as a reward for past services in the interior. The asterisks distinguish the names of men who had been with me on one or both the former expeditions. Those to whose names the letter T is also prefixed having previously obtained a ticket of leave releasing them from a state of servitude. Each man was also furnished with a small case containing six cartridges which he was ordered always to wear about his waist.)

Column 1: Names.

Column 2: Occupation in the exploring party.

Column 3: Occasional employment.

Column 4: Arms and accoutrements.

Major T.L. Mitchell: Chief of the party : — : Rifle and pistols. G.C. Stapylton, Esquire : Second in command : — : Carabine and pistol. **Alexander Burnett : Overseer : Storekeeper : Carabine and pistol. **Robert Muirhead : Bullock-driver : Soldier and lance-corporal : Musket, bayonet and pistol. T*Charles Hammond : Bullock-driver : — : Musket, bayonet and pistol. T*William Thomas : Bullock-driver : Butcher : Musket, bayonet and pistol. Richard Lane : Bullock-driver : — : Carabine and pistol. James McLellan : Bullock-driver : — : Musket, bayonet and pistol. Charles Webb : Bullock-driver : — : Musket, bayonet and pistol. T*John Johnston : Blacksmith : — : Carabine. T Walter Blanchard : Blacksmith : Measurer : Carabine and pistol. **William woods : Horse carter : Sailor : Carabine and pistol. Charles King : Horse carter : Measurer : Musket, bayonet and pistol. John Gayton : Horse carter : Cook : Carabine. John Drysdale : Medical attendant : Barometer-carrier : Carabine. John Roach : Collector of birds : — : Pistol (fowling-piece). John Richardson : Collector of plants : Shepherd : Two pistols. **John Palmer : Sailor : Sailmaker : Carabine and pistol. John Douglas : Sailor : — : Carabine. T**Joseph Jones : Shepherd : — : Carabine. James Taylor : Groom : Trumpeter : Carabine and pistol. Edward Pickering : Carpenter : Barometer-carrier : Carabine. Archibald McKean : Carpenter : Barometer-carrier : Carabine. James Field : Shoemaker : — : Carabine. **Anthony Brown : Cook : — : Carabine and pistol.

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This was the army with which I was to traverse unexplored regions peopled, as far as we knew, by hostile tribes. But I could depend upon a great portion of the men, and amongst them were some who had been with me on the two former expeditions and who, although they had obtained their emancipation as the well merited reward of their past services in the interior, were nevertheless willing to accompany me once more. I accepted their services on obtaining a promise from the governor that if the expedition was successful their conditional pardons might be converted into absolute pardons, a boon on which even some wealthy men in the colony would probably have set a high value.

One of the most devoted of these followers was William Woods who, having long toiled carrying my theodolite to the summits of the highest mountains, was at length more comfortably situated than he had ever been in his life before as overseer of a road party. This poor fellow relinquished his place of authority over other men and in which he received 1 shilling per diem, again put on the grey jacket, and set a valuable example as the most willing of my followers, wherever drudgery or difficulty were most discouraging.

Livestock.

Our cattle were lean but I took a greater number in consequence. The pasturage was still meagre and scarcely any water remained on the face of the earth. It was unusually low in the holes last year, but this season very few indeed contained any. The equinox however was at hand, and I could not suppose that it was never to rain again, however hopeless the aspect of the country appeared at that time.

Agreement with A native guide.

In this camp of preparation I was visited by our old friends the natives; and one who called himself John Piper and spoke English tolerably well agreed to accompany me as far as I should go, provided he was allowed a horse and was clothed, fed, etc.; all which I immediately agreed to. I had not however forgotten Mr. Brown, and I reminded Burnett of that native's desertion; but Burnett, who seemed to be on excellent terms with Piper, assured me that after he should be some weeks' journey in the interior dread of the savage natives would prevent him from leaving our party, and so it turned out.

But in breaking on our stock of provisions, we commenced with due regard to their importance on an interior journey by so reducing the weight of our steel-yard that a five months' stock should last nearly seven months. This arrangement was however a secret known only to Burnett and myself.

The plan of encampment was to be the same as on the former journey, only that a greater number of carts stood in the line parallel to the boat-carriage.



March 17.

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I put the party in movement towards Buree and rode across the country on our right with Piper. We found the earth parched and bare but, as we bounded over hill and dale a fine cool breeze whispered through the open forest, and felt most refreshing after the hot winds of Sydney. Dr. Johnson's Obidah was not more free from care on the morning of his journey than I was on this, the first morning of mine. It was also St. Patrick's day, and in riding through the bush I had leisure to recall past scenes and times connected with the anniversary. I remembered that exactly on that morning, twenty-four years before, I marched down the glacis of Elvas to the tune of St. Patrick's Day in the Morning as the sun rose over the beleaguered towers of Badajoz. Now, without any of the pride, pomp, and circumstance of glorious war, I was proceeding on a service not very likely to be peaceful, for the natives here assured me that the Myalls were coming up murry coola, *i.e.* very angry, to meet us. At Buree I rejoined my friend Rankin who had accompanied me from Bathurst to the camp, and Captain Raine who occupied this place with his cattle. A hundred sheep and five fat oxen were to be furnished by this gentlemen to complete my commissariat supplies.

Corrobory-dance of the natives.

In the evening the blacks, having assembled in some numbers, entertained us with a corrobory, their universal and highly original dance. (See Plate.) Like all the rest of the habits and customs of this singular race of wild men, the corrobory is peculiar and, from its uniformity on every shore, a very striking feature in their character. The dance always takes place at night, by the light of blazing boughs, and to time beaten on stretched skins, accompanied by a song.* The dancers paint themselves white, and in such remarkably varied ways that no two individuals are at all alike. Darkness seems essential to the effect of the whole; and the painted figures coming forward in mystic order from the obscurity of the background, while the singers and beaters of time are invisible, have a highly theatrical effect. Each dance seems most tastefully progressive; the movement being at first slow, and introduced by two persons displaying graceful motions both of arms and legs, others one by one join in, each imperceptibly warming into the truly savage attitude of the corrobory jump; the legs then stride to the utmost, the head is turned over one shoulder, the eyes glare and are fixed with savage energy all in one direction, the arms also are raised and inclined towards the head, the hands usually grasping waddies, boomerangs, or other warlike weapons. The jump now keeps time with each beat, the dancers at every movement taking six inches to one side, all being in a connected line, led by the first. The line however is sometimes doubled or tripled according to space and numbers; and this gives great effect, for when the front line

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jumps to the *left*, the second jumps to the *right*, the third to the *left* again, and so on; until the action acquires due intensity, when all simultaneously and suddenly stop. The excitement which this dance produces in the savage is very remarkable. However listless the individual may be, laying perhaps, as usual, half asleep; set him to this dance, and he is fired with sudden energy, and every nerve is strung to such a degree that he is no longer to be recognised as the same person until he ceases to dance, and comes to you again. There can be little doubt that the corrobory is the medium through which the delights of poetry are enjoyed, in a limited degree, even by these primitive savages of New Holland.

(Footnote. To this end they stretch a skin very tight over the knees, and thus may be said to use the tympanum in its rudest form, this being the only instance of a musical instrument that I have seen among them. Burder says: "By the timbrels which Miriam and the other women played upon when dancing, we are to understand the tympanum of the ancient Greeks and Romans, which instrument still bears in the East the name that it is in Hebrew, namely, doff or diff, whence is derived the Spanish adufe, the name of the Biscayan tabor. Niebuhr describes this instrument in his Travels Part 1 page 181. It is a broad hoop, with a skin stretched over it; on the edge there are generally thin round plates of metal, which also make some noise when this instrument is held up in one hand and struck with the fingers of the other hand. Probably no musical instrument is so common in Turkey as this; for when the women dance in the harem the time is always beat on this instrument. We find the same instrument on all the monuments in the hands of the Bacchante. It is also common among the negroes of the Gold Coast and Slave Coast." Oriental Customs Volume 1.)

Visit to the limestone caves.

March 18.

As it was necessary to grind some wheat with hand-mills to make up our supply of flour, I was obliged to remain a day at Buree; and I therefore determined on a visit to the limestone caves, by no means the least remarkable feature in that country. The whole district consists of trap and limestone, the former appearing in ridges, which belong to the lofty mass of Canobolas. The limestone occurs chiefly in the sides of valleys in different places, and contains probably many unexplored caves. The orifices are small fissures in the rock, and they have escaped the attention of the white people who have hitherto wandered there. I had long been anxious to extend my researches for fossil bones among these caves, having discovered during a cursory visit to them some years before that many interesting remains of the early races of animals in Australia were to be found in the deep crevices and caverns of the limestone rock. How they got there was a question which had often puzzled me; but having at length arrived at some conclusions on the subject, I was now desirous to ascertain, by a more extensive

examination of the limestone country, whether the caves containing the osseous breccia presented here similar characteristics to those I had observed in Wellington Valley.

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Osseous breccia.

The first limestone we examined had no crevices sufficiently large to admit our bodies; but on riding five miles southward to Oakey creek we found a low ridge extending some miles on its left bank which promised many openings. We soon found one which I considered to be of the right sort, namely a perpendicular crevice with red tuff about the sides. Being provided with candles and ropes we descended perpendicularly first, about six fathoms to one stage, then obliquely, about half as far to a sort of floor of red earth; Mr. Rankin, although a large man, always leading the way into the smallest openings. By these means and by crawling through narrow crevices we penetrated to several recesses, until Mr. Rankin found some masses of osseous breccia beneath the limestone rock but so wedged in that they could be extracted only by digging. Unlike the same red substance at Wellington Valley where it was nearly as hard as the limestone, the red calcareous tuff found here was so loose that the mass of bones was easily detached from it; but none of them were perfect, except one or two vertebrae of a very large species of kangaroo. Pursuing this lode of osseous earth we traced it to several other recesses and in the lower side of an indurated mass (the upper part having been the floor of our first landing place) we found two imperfect skulls of *Dasyuri*, the teeth being however very well preserved. This was, doubtless, an unvisited cave; for the natives have an instinctive or superstitious dread of all such places, and it is not therefore probable that man had ever before visited that cavern. With all our ropes it cost some of us trouble to get out of it, after passing two hours in candle-light. It may thus be imagined what a vast field for such interesting researches remains still unexplored in that district where limestone occurs in such abundance.

The objects of my journey did not admit of further indulgence in the pursuit at that time; and I was content with drawing the attention of one of the party, a young gentleman residing in the neighbourhood, to it, in hopes he might discover some bones of importance.*

(Footnote. See a further account of these caves and some others in Chapter 3.15 below.)

Mount Granard, first point to be attained.

March 19.

Our stores being completed we proceeded along the course of the little rivulet of Buree, towards the Lachlan. My first object was to gain Mount Granard, described by Mr. Oxley as the most elevated pic of a very high range, and laid down on his map to the westward of where the Lachlan takes a remarkable turn from its general direction towards the low country more to the southward. I had long thought that it might be possible to ascertain from this hill whether any range extended westward of sufficient magnitude to separate the basins of the Murray and the Darling.

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I wished to visit it last year, but the loss of Mr. Cunningham, the consequent delay of the party, and the adverse nature of my instructions in regard to my own views, together prevented me. I then saw that the hills along the line I was now about to follow were favourable for triangulation; but the greater certainty of finding water in a large river like the Lachlan was my chief inducement for now moving towards its banks, as the season was of such unusual drought. On this day's journey I took for my guidance the bearing of a line drawn on the map from Buree, as fixed by my former survey, to the mouth of Byrne's creek, as laid down by Mr. Oxley; and which I supposed to be the same as that which descends from Buree.

Halt on A dry creek.

The line guided me tolerably well to where I encamped that night. This was on a fine-looking plain, within sight of the wooded banks of the creek; but, on examining the bed of the latter, I could find no water, although I followed it two miles down. There I arrived at a cattle station named Toogang, where there was water. It was nothing to the old hands of the Darling to go only *two* miles for water. We suffered no inconvenience from this; but it was deplorable to see the bed of what must in some seasons be a fine little stream so completely dry and dusty. This day we met with a new species of *Psoralea*.* At the camp I ascertained the magnetic variation to be 9 degrees 10 minutes 15 seconds East, by an observation of the star Beta Centauri.

(Footnote. A genus chiefly inhabiting the Cape of Good Hope, India, the Levant and North America, of which no species have before been published from Australia. I was subsequently fortunate enough to discover two more species of this genus; which with one as yet unpublished, found by Mr. Allan Cunningham in 1818 in the rocky islands of Dampier's Archipelago on the north-west coast, makes the number inhabiting Australia to be 4: all of which are remarkable for their resemblance to the North American form of the genus. The species we observed on this occasion was a small spreading herbaceous plant. P. patens, Lindley manuscripts; herbacea, pubescens, foliis pinnatim trifoliolatis, foliolis dentatis punctatis lateralibus oblongis obtusis intermedio ovato obtuso basi cuneato, racemo pedunculato laxo multifloro foliis multo longiore, bracteis subrotundis striatis obscure multipunctatis, ramis divaricatis.)

March 20.

We proceeded, crossing the channel near the cattle station where I learnt that it was joined immediately below by that which I had named King's creek on my last journey; also that water was abundant in it below the junction. Some natives joined us and Piper prevailed on one of them to be our guide, as far as he knew the country. The use of such a guide in following an unexplored watercourse is that bad places for the carts may be avoided, and the doubles of the stream cut off by the easiest routes.

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Break A wheel.

In crossing a gully which entered the creek near another station, called Chilberengaba, we broke a wheel, and though we had travelled only about seven miles we were obliged to encamp, and remain until the carpenter and the smith could repair it.

Attempt to ascend Marga.

In the meantime I set out with the native guide for the summit of Marga, which proved to be one of my old fixed points. It was about seven miles south-west of our camp; but after a most fatiguing ascent of two steep and rocky ridges, during great heat, I was obliged to return without reaching Marga. At the cattle station we heard of a bullock which had been left by us in an exhausted state during our last expedition; and we succeeded in bringing it in, and in laying the yoke on its neck for another visit to the banks of the Darling; it was fitter than any other of our working bullocks. I added a second species of *Psoralea* to that discovered yesterday, a small graceful plant with racemes of purplish minute flowers, elevated far above the leaves, and on slender stalks so tough as to be broken only with some difficulty.*

(Footnote. *P. tenax*, Lindley manuscripts; *herbacea, depressa, perennis, glabra, foliis glandulosis palmatim 5-foliolatis, foliolis linearibus vel lineari-oblongis obtusis, racemis cylindraceis longissime pedunculatis erectis, leguminibus ovatis scabris glabris.*)

March 21.

According to arrangements made with Captain King and Mr. Dunlop, the King's astronomer at the Parramatta observatory, I halted the party this day in order to make hourly observations of the barometer, thermometer, the sky, etc. This plan had been strongly recommended by Sir John Herschel; and for our present purposes it was most desirable in order that we might ascertain how far the fluctuations of the atmosphere in two places so distant as Parramatta and Byrne's creek corresponded in these simultaneous observations. During our last journey some discrepancies in the heights determined by the barometer on the Darling led to a suspicion that the fluctuations at such great distances, in situations so dissimilar, might vary considerably; and this was now to be ascertained.

The party impeded by rocks.

March 22.

We continued our journey along the left bank of the creek, but with considerable difficulty and delay occasioned by the projection of the rocky escarpment of the above-mentioned extremities of Mount Marga; so that we had to break away masses of rock and move the carts one by one, all hands assisting. We at length gained a pleasant



tract of land on which the grass was green and luxuriant in consequence of some partial rain; and on this place I encamped with the intention of next day ascending Marga. In the creek we found ponds, deep and clear like canals; their borders being reedy and their margins green. In these ponds the natives speared several fishes which had however a muddy flavour. Among them was one, apparently the eel-fish, caught during my first expedition in the Namoi and upper Darling.* This circumstance was rather in favour of the supposition that the streams unite; but still the fish seemed somewhat different.

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(Footnote. *Plotosus tandanus* see Volume 1.)

Snakes.

On this day's journey we saw several large snakes; one, large and black, was shot while swimming in a pond in the creek; the others were of that kind named, from the beautifully variegated skin, the carpet snake. The natives considered the latter very fierce and dangerous, saying it never ran away but always faced or pursued them. It had in fact the flat broad head and narrow neck which in general characterise the most venomous snakes, also large fangs hooked inwards, which the natives particularly pointed out. It had also, near the tail, two articulations with something like a toe and joint on each, such as I had not observed before in any other kind of snake. A smaller one of the same kind attacked one of the party, and also a native, but the former shook it from his clothes, it then fixed its teeth in the skin of the native who detached it with difficulty; but as no blood came from the bite he seemed to care little about it. The native name of this place was Cuenbla.

View from Marga.

March 23.

I set off, accompanied by my black guide mounted, for the top of Marga, and we reached it this time by a route in which the native displayed the usual skill of his race. Certainly I never ascended a hill of more perplexing features, all these heights being also of extremely difficult access, very steep and extending in the direction of 10 and 12 degrees East of North. They consist of the sharp edges of inclined strata of hard purple-coloured clay-slate. I was however rewarded for the fatigues this hill had cost me, on two different days, not with a fine view, for the summit was too woody for that, but with a sight of some important points determined during my late journey; and others which I had then observed only from the Canobolas but which I was now enabled to fix by angles observed from this station. The most important point visible besides the Canobolas was Mount Lachlan, by means of which I determined the true situation of Marga and the neighbouring hill Nangar; which is rather higher but more wooded, and 2 1/2 miles distant towards the south-east. These two form the summits of an isolated mountain mass on the left bank of Byrne's creek, the top of Marga being about 1000 feet above our camp on its banks. I drew outlines (according to my usual custom) of all the hills on the horizon before us, and took angles on them with the theodolite. Descending by a shorter route I reached the camp in time to protract my angles, whereby I ascertained to my great satisfaction that both Marga and Nangar had been truly fixed from the Canobolas, as well as other points observed in my former journey, the accuracy of which, by a good angle with Mount Lachlan, I was thus enabled to prove without going out of my way, besides establishing there a good base for extending the survey southward.



March 24.

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Our guide was now joined by some older natives, and one of them had been examining the country ahead, being anxious about the safe passage of our carts. His reconnaissance had not been made in vain, for he led us to an easy, open pass through a range of which we had heard much from stockmen as likely to trouble us because, as they said, its rocky extremities overhung the creek. We crossed it with ease however, guided by the native. It consisted of granite and evidently belonged geologically to the ridge traversed by us on the second day after leaving Buree during our last journey. On the range, green pine trees (callitris) and a luxuriant crop of grass covering the adjacent country, multitudes of fat cattle were to be seen on all sides. I had heard that, after crossing the burnt up surface of the colony, I should see green pastures here, beyond its limits.

Cross Byrne's creek.

We crossed Byrne's creek, near a cattle station called Lagoura, and after keeping its banks for four miles further (having for that distance granitic hills on our right) we finally quitted it, and passed over a grassy plain of the same kind of soil and character as those extensive level tracts seen during our last journey but having, what seemed singular to our unaccustomed sight, a coating of green herbage upon it.

New plants.

In our progress I found no fewer than three new species of the pretty genus *Trichinium*;* a small species of *Sida* before undiscovered, with minute yellow flowers,** and also a fine-looking acacia with falcate leaves, singularly white or rather silvery, and with drooping graceful branches.***

(Footnote.

1. *Tr. alopecuroideum*, Lindley manuscripts; caule ramoso glabro, foliis lanceolatis glabris subtus scabriusculis, spicis cylindraceutis elongatis, bracteis rotundatis, calycibus herbaceis sursum calvis acutis, rachi pilosa, cyatho staminum dentato.
2. *Tr. parviflorum*, Lindley manuscripts; foliis ovatis acutis petiolatis subtus et caule furfuraceo-tomentosis, spicis gracilibus elongatis, bracteis acuminatis scariosis, calycibus lanatis, rachi lanata, staminibus inaequalibus distinctis.
3. *Tr. sessilifolium*, Lindley manuscripts; foliis oblongis obtusis sessilibus et caule furfuraceo-tomentosis, spicis oblongis, bracteis rotundatis lanatis, calycibus longe tubulosis lanatis sursum pilosis, rachi tomentosa, staminibus inaequalibus distinctis.)

(**Footnote. *S. corrugata*, Lindley manuscripts; incana, prostrata, pusilla, foliis subrotundis angulatis cordatis palminerviis serratis, pedunculis 2-3 filiformibus petiolis longioribus, fructu disciformi corrugato, coccis monospermis commissuris muricatis.)



(***Footnote. This proved to be a very distinct, undescribed species. *A. leucophylla*, Lindley manuscripts; *gracilis*, ramulis filiformibus angulatis albido-sericeis, phyllodiis lineari-lanceolatis falcatis apice uncinatis obscure 2-nerviis appresse et densissime sericeis: margine superiore basi subglanduloso, racemis umbellatis axillaribus phyllodio multo brevioribus.)

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Reach the lachlan.

Travelling four miles more across level forest land, we reached the banks of the Lachlan at Waagan,* a cattle station a mile and a half below the junction of Byrne's creek of Oxley, which we had just traced in its course from Buree.

(Footnote. Waagan means a crow in the native language.)

Find its channel dry.

I beheld in the Lachlan all the features of the Darling, but on a somewhat smaller scale. The same sort of large gumtrees, similar steep, soft, muddy banks; and, even in this place, a margin with an outer bank. But its waters were gone, except in a few small ponds in the very deepest parts of its bed. Such was now the state of that river down which my predecessor's boats had floated. I had during the last winter drawn my whaleboats 1600 miles overland without finding a river where I could use them; whereas Mr. Oxley had twice retired by nearly the same routes, and in the same season of the year, from supposed inland seas!

CHAPTER 3.2.

Continue the journey.
Acacia pendula.
Ascend Mount Amyot.
Field's Plains.
Cracks in the surface.
Ascend Mount Cunningham.
Mr. Oxley's tree.
Rain.
Goobang Creek.
Large fishes.
Heavy rain.
Ascend Mount Allan.
Natives from the Bogan.
Prophecy of a Coradje.
Poisoned waterhole.
Ascend Hurd's Peak.
Snake and bird.
Ride to Mount Granard.
Scarcity of water there.
View from the summit.
Encamp there.
Ascend Bolloon, a hill beyond the Lachlan.



Natives refuse to eat emu.
Native dog.
Kalingalungaguy.
Mr. Stapylton overtakes the party.
Of the plains in general.
Character of the Goobang and Bogan.
Cudjallagong or Regent's Lake.
Nearly dry.
Dead trees in it.
Rocks near it.
Trap and tuff.
Natives there.
Women.
Men.
Their account of the country lower down.
Oolawambiloa.
Gaiety of the natives.
Colour light.
Mr. Stapylton surveys the lake.
Campbell's Lake.
Piper obtains a gin.
Ascend Goulburn range.
View from the summit.
Warranary.
A new Correa.

Continue the journey.

March 25.

Following the direction of the general course of the Lachlan as laid down by Mr. Oxley we crossed a fine tract of open forest land, and at the distance of five miles arrived at a dry reach. Soon after we passed Billabugan, a cattle station on the river where the dry branch joined it; and at three miles further we traversed the southern skirts of a plain, and finally made a bend of the Lachlan on which we encamped in latitude 33 degrees 24 minutes 28 seconds South. In the course of this day's journey we discovered a bush resembling the European dwarf elder but with yellow flowers, and fruit with scarcely any pulp.*

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(Footnote. This proves to be a new genus of Caprifoliaceae, paragraph mark Sambuceae. *Tripetelus australasicus*, Lindley manuscripts (tripetelos having 3 leaves; the calyx has 3 sepals, the corolla 3 petals, the stamens are 3, and the carpels are also 3). Calyx superus tridentatus. Corolla rotata, tripartita, lutea, laciniis concavis conniventibus. Antherae tres, fauce sessiles. Ovarium 3-loculare; ovulis solitariis pendulis; stigmata 3, sessilia. Fructus subexsuccus, 3-querter, 3-pyrenus, putamine chartaceo. Caulis herbaceus. Folia opposita, glabra, pinnata, 2-juga cum impari, laciniis lanceolatis acuminatis serratis; glandulis 2 verruciformibus loco stipularum. Flores laxae paniculati.)

Acacia pendula.

March 26.

This day at five miles further we ascended some undulating ground on which the acacias of the interior grew. We found the same ridged and wavy surface with the *Acacia pendula* and the pigeons which usually abound about such parts of the country. Here we found also a singular species of Jasmine, forming an upright bush not unlike a *Vitex*, with short axillary panicles of white flowers. It proved to be *J. lineare*, R. Br. We soon after came upon the borders of the great plain of Gullerong, which extends about eight miles from east to west, and three northward from a branch of the river, then quite dry. These I believe were the Solway-flats of Mr. Oxley. We turned from them late in the afternoon, at the suggestion of a native wearing a brass-plate like a bottle label, and on which was engraven Billy Hawthorne. We succeeded in reaching a bend of the river containing water only after travelling 18 1/4 miles; and in latitude 33 degrees 23 minutes 21 seconds South.

March 27.

This day being Sunday I halted; especially as the cattle had made an unusually long journey the day before. I wished to take sights for the purpose of ascertaining the rate of my chronometer, and to lay down my surveys. I found that Mr. Oxley's points on this river were much too far to the westward; a circumstance to be expected as his survey could not, at that early age of the colony, be connected with Parramatta by actual measurement; as mine was. Our latitudes however agreed very exactly.

Ascend mount Amyot.

March 28.

Continued our journey and, at only a mile and a half from our camp, I was surprised to find myself at the foot of Mount Amyot, better known to stockmen by its native name of Camerberdang. I gave the party a bearing or distant object to advance upon; and I lost no time in ascending the hill, followed by Woods with my theodolite. From its crest, low

as it was, I still recognised the Canobolas and ascertained from my drawings formerly made there that even on this hill (Mount Amyot) I had taken an angle from their summit last season. It was valuable now, enabling me to determine the true place of the hill from which I was to extend my angles further westward. I easily recognised Marga and Nangar, and a very useful and remarkable point of my former survey to the northward of those hills, also several still more conspicuous ones in the country beyond the Lachlan.

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Field's plains.

To the westward I beheld the view etched in Mr. Oxley's book as Field's Plains; and what was of much more importance to me then, Mounts Cunningham, Melville, Allan, *etc. etc.* on all which, as far as I could, I took angles, and then descending, rejoined the party about six miles on. I met at the foot of this hill a colonist, a native of the country.* He said he had been seventy miles down the river in search of a run for his cattle; but had found none; and he assured me that, without the aid of the blacks who were with him on horseback, he could not have obtained water.

(Footnote. Mr. James Collits of Mount York.)

Mount Amyot had the appearance of granite from the plains, but I found that it consisted of the ferruginous sandstone. It is the southern extremity of a long ridge elevated not more than 200 feet above the plains at its base. We encamped at a bend of the river, on the border of a small plain named Merumba in latitude 33 degrees 19 minutes 16 seconds South. Variation 8 degrees 54 minutes 15 seconds East.

We were here disturbed by herds of cattle running towards our spare bullocks and mixing with them and the horses. In no district have I seen cattle so numerous as all along the Lachlan; and notwithstanding the very dry season, they were nearly all in good condition. We found this day, near the river bed, a new herbaceous indigo with white flowers and pods like those of the prickly liquorice (*Glycyrrhiza echinata*).*

(Footnote. I. acantho carpa, Lindley manuscripts; caule herbaceo erecto ramisque angulatis scabriusculis, foliis pinnatis 5-jugis viscido-pubescentibus; foliolis lineari-lanceolatis mucronulatis margine scabris, racemis folio aequalibus, leguminibus subrotundo-ovalibus compressis mucronatis echinatis monospermis.)

March 29.

Our next point was Mount Cunningham (Beery birree of the natives) and we travelled towards it along the margin of Field's Plains as the angles of the river allowed.

CRACKS IN THE SURFACE.

This was our straightest course, but we had to keep along the riverbank for another reason. The plains were full of deep cracks and holes so that the cart wheels more than once sunk into them, and thus detained us for nearly an hour. A sagacious black advised us to keep near the riverbank, and we found the ground better. We encamped at half-past two o'clock, after a journey of ten miles; and I immediately set out, accompanied by a native and a man carrying my theodolite, both on horseback, for the highest or northern point of Mount Cunningham (a). The distance was full five miles; yet

we could not proceed direct on horseback, the scorched plains being full of deep, wide cracks; and we were therefore compelled to take a circuitous route nearer the river.

ASCEND MOUNT CUNNINGHAM.

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There our guide called up three savage-looking natives with spears, whom he described to be the natives of the hill, and they accompanied us to the top. With some difficulty we led our horses near the crest, our new friends always keeping the vantage ground of us, apparently from apprehension. At length I planted my theodolite on the highest part of the summit which commanded a fine view of the western horizon; and from the mouths of my sable guides I obtained the native names, in all their purity, of the various hills in sight. The most distant, named Bolloon, were said to be near the great lake Cudjallagong—no doubt Regent's Lake of Oxley—and a peak they called Tolga I took to be Hurd's Peak of the same traveller.

NYORORONG.

Still I saw nothing on the horizon in the direction of his Mount Granard, and in no other any hill of magnitude, except in the quarter whence I came, where I still discerned my old friends Marga and Nangar, with Nyororong and Berabidjal, high hills more to the southward.

Mount Cunningham consists of ferruginous sandstone. The sun had reached the horizon before I left the summit, which I did not until I had obtained an angle on every visible point. We arrived at the camp soon after seven o'clock. Latitude by an observation of Cor Leonis 33 degrees 15 minutes 27 seconds South.

MR. OXLEY'S TREE.

March 30.

I ascertained accidentally this morning that we were abreast of the spot where Mr. Oxley left the Lachlan and proceeded southward. This I learnt from a marked tree which a native pointed out to me distant about 250 yards south from our camp, on the opposite side of a branch of the river. On this tree were still legible the names of Mr. Oxley and Mr. Evans; and although the inscription had been there nineteen years the tree seemed still in full vigour; nor could its girth have altered much, judging from the letters which were still as sharp as when first cut, only the bark having overgrown part of them had been recently cleared away a little as if to render the letters more legible. I endeavoured to preserve still longer an inscription which had withstood the fires of the bush and the tomahawks of the natives for such a length of time by making a drawing of it as it then appeared.

By Mr. Oxley's journal we learn that where the river formed two branches he, on the 17th of May, 1817, hauled up his boats, and on the following day commenced his intended journey towards the south-east. But our latitudes also assisted us in verifying the spot. Mr. Oxley made the latitude of his camp (doubtless near the tree) 33 degrees 15 minutes 34 seconds South which gives a difference of seven seconds for the 250 yards between the tree and my camp. The variation of the needle Mr. Oxley found to be



here, in 1817, 7 degrees 0 minutes 8 seconds East and I had made it at the last camp (Merimbah) 8 degrees 54 minutes 15 seconds East, or nearly two degrees more, in a lapse of 19 years. The longitude of this point as now ascertained by trigonometrical measurement from Parramatta was 147 degrees 33 minutes 50 seconds East, or 17 minutes 50 seconds (equal on this parallel to 17 1/4 miles) nearer to Sydney than it is laid down by Mr. Oxley.

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We proceeded from this camp towards the southern extremity of Mount Cunningham, under which a small branch of the Lachlan passes so close that the party was occupied an hour and a half in removing rocks to open a passage for the carts. We then got into an open country in which we soon saw the same dry branch of the Lachlan before us; but we turned more to the north-west until we reached a slightly undulated surface. No branch of the river extends to the northward of Mount Cunningham as shown on Mr. Oxley's map; but a small tributary watercourse, then dry, skirts the eastern side of the hill, and enters that branch of the Lachlan which we were upon.

Yesterday and this day had been so excessively hot (82 degrees in the shade) that I confidently anticipated rain, especially when the sky became cloudy to the westward, while the wind blew steadily from the opposite quarter. A dense body of vapour in the shape of stratus, or fall cloud of the meteorologist, was at the same time stretching eastward along the distant horizon on both sides of us. After crossing some sound, open plains of stiff clay, guided by the natives, we gained an extensive pond of muddy water and encamped on a hill of red sand on its northern bank, and under shelter of a grove of callitris trees.

RAIN.

The wind now began to blow and the sky, to my great delight, being at length overcast, promised rain enough to fill the streams and waterholes: at twilight it began to come down. In the woods we passed through this day we found a curious willow-like acacia with the leaves slightly covered with bloom, and sprinkled on the underside with numerous reddish minute drops of resin.* The *Pittosporum angustifolium* we also recognised here, loaded with its singular orange-coloured bivalved fruit.

(Footnote. This is allied in some respects to A. verniciflua and exudans, but is a very distinct and well-marked species. A. salicina, Lindley manuscripts; glaucescens, ramulis angulatis, phyllodiis divaricatis lineari et oblongo-lanceolatis utrinque angustatis obtusissimis uninerviis venulis pinnatis: ipso apice glandulosis subtus resinoso-punctatis, capitulis 3-5 racemosis phyllodiis triplo brevioribus.)

March 31.

It rained during the night and this morning the sky seemed as if it would continue; the mercury in the barometer also falling, we halted. On a dry sandhill, with wood and water at hand, we were well prepared to await the results of a flood; some good grass also was found for the cattle on firm ground at the distance of about two miles.

GOOBANG CREEK.

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Mount Allan (Wollar of the natives) lay north-east by north, at a distance of 3 3/4 miles. It was not a conspicuous or commanding hill, but between it and our camp we this day discovered a feature of considerable importance. This was the Goobang creek of our former journey, to all appearance here as great a river as the Bogan and indeed its channel, where we formerly saw it, contained deep ponds of clear water at a season when the muddy holes of the Bogan had nearly failed us. Here the Goobang much resembled that river in the depth of its bed and the character of its banks: and its sources and tributaries must be also similar to those of the Bogan. Hervey's range gives birth to the one, Croker's range to the other and, their respective courses being along the opposite sides of the higher land extending westward between the Lachlan and Macquarie, all their tributaries must fall from the same ridge. Of these Mr. Oxley crossed several in his route from the Lachlan to the Macquarie; Emmeline's Valley creek belonging to the basin of the Goobang; Coysgaine's ponds and Allan's water to that of the Bogan. It was rather unfortunate, considering how much has been said about the Lachlan receiving no tributaries in its long course, that Mr. Oxley left unexplored that part where a tributary of such importance as the Goobang joins it; especially as the floods of this stream lay the country below Mount Cunningham under water, and are the sole cause of that swampy appearance which Mr. Oxley observed from the hill on looking westward. It would appear that this traveller's route northward was nearly parallel to the general course of the Goobang. The name this stream receives from the natives here is Billibang, Goobang being considered but one of its tributaries. Its course completes the analogy between the rivers and plains on each side, and the supposed disappearance of the channel of the Lachlan seemed consequently as doubtful as the mysterious termination of the Macquarie.

April 1.

The rain continuing, the party remained encamped. The barometer had fallen since we came here from 29.442, at which it stood last night at ten, to 29.180, which I noted this morning at six: the thermometer continuing about 60 degrees of Fahrenheit.

LARGE FISHES.

On dragging our net through the muddy pond we captured two fishes, but of monstrous size, one weighing 17 pounds, the other about 12 pounds. Although very different in shape, I recognised in them the fish of the perch kind with large scales* and the eel-fish** formerly caught by us in the Namoi. But the former when taken in that river was coarse and tasted of mud, whereas this ruffe, although so large was not coarse, but rich, and of excellent flavour—and so fat that the flakes fell into crumbs when fried. This day a bird of a new species was shot by Roach. It was of a swallow kind, about the size of a snipe, of a leaden colour, with dark head and wings.

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(Footnote. *Cernua bidyana*.)

(**Footnote. *Plotosus tandanus*.)

HEAVY RAIN.

April 2.

The rain continued through the night and this morning it fell rather heavily, so that enough of water could be gathered from the surface of the plains near our camp to preclude the necessity for our having recourse to the muddy pool. The barometer began to rise slowly from seven in the morning, when it had reached its minimum; but the weather continued hazy, with drizzling rain (from the south-west) until four o'clock, when the clouds slowly drew up. The plains were not yet at all saturated, although become too soft for our carts. The evening was cloudy, but by ten o'clock the state of the barometer was such as to leave little doubt about the return of fair weather. We this day found in the woods to the northward a most beautiful species of *Trichinium*, with spiky feathered pale yellow flowers, sometimes as much as six inches long.*

(Footnote. *Tr. nobile*, Lindley manuscripts; *foliis caulinis obovatis cuspidatis subundulatis ramisque corymbosis angulatis glabris, spica cylindracea: rachi lanata, calycis laciniis 3 acutis 2 retusis, bracteis puberulis*. Differs from *Tr. densum*, Cunningham in the bracts not being villous at the base, and from *T. macrocephalum*, R. Br. in having much larger flowers, which are yellow not lilac, and in three of the segments of the calyx being acute.)

ASCEND MOUNT ALLAN.

April 3.

Thick fog in the morning. The day being Sunday the party remained in the camp; but I do not think we could have left it from the soft state of the plains, however desirable it might have been to proceed. After twelve I rode to Wollar (Mount Allan) with the theodolite, and from its summit I intersected most of the hills seen from Mounts Amyot and Cunningham. A small wart on the eastern horizon, very distant yet conspicuous, I found to be Mount Juson, the hill on which I had stood with the brother of the botanist whose name had been given to this hill by Mr. Oxley.

The sameness in the surface of this country is apparently owing to the simplicity of its geological composition. All the hills I ascended below the junction of Byrne's creek consist of ferruginous sandstone, similar to that which constitutes all the hills I saw on, and even beyond, the Darling.

On passing to and from Mount Allan we crossed, at three-quarters of a mile from the camp, Goobang creek, the bed of which exactly resembles that of the Bogan. The

remains of drifted weeds on the trees and the uniformity of its channel showed that it is a considerable tributary of the Lachlan. At length the stars appeared in the evening, and I could once more see my unerring guides, the faithful Little Dog, and the mighty Hercules,* whereby our latitude seemed to be 33 degrees 8 minutes 55 seconds South.

(Footnote. Procyon, in Canis Minor and Regulus in Leo. The latter being also called Hercules and Cor Leonis.)

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NATIVES FROM THE BOGAN.

At the camp we recognised among the natives seated at our fire two of our friends from the Bogan. Their little shovel of hard wood (not used on the Lachlan) and one of the tomahawks formerly distributed by us left no room to doubt whether we were right about their features.

PROPHECY OF A CORADJE.

One was an old man and a Coradje, the other was a boy. They disappeared in the evening, but the Coradje was so far civil as to tell the men that, having heard The Major was praying for rain, he had caused the late fall. This priest had also prophesied a little for our information, telling the men that a day was at hand when two of them would go out to watch the bullocks and would never return.

April 4.

The surface being sufficiently dry to enable us to travel we accordingly continued our journey and, crossing the Goobang at 5 1/4 miles, we kept the right bank of it during the day. The surface on that side was dry and firm; and it may be remarked that if ever it becomes desirable to open a line of communication from Sydney towards the country on the lower part of the Murray, the right bank of the Goobang will probably be found the best direction as the adjacent valley affords both grass and water for the passage of cattle, and the doubtful plains of the Lachlan may be thus avoided.

POISONED WATERHOLE.

We finally encamped on the Lachlan at the junction of the Goobang, in latitude 33 degrees 5 minutes 20 seconds; longitude East 147 degrees 13 minutes 10 seconds. There the river contained some deep pools and we expected to catch fish; but Piper told us that the holes had been recently poisoned, a process adopted by the natives in dry seasons, when the river no longer flows, for bringing the fish to the surface of deep ponds and thus killing the whole; I need not add that none of us got a bite. All these holes were full of recently cut boughs of the eucalyptus, so that the water was tinged black.

ASCEND HURD'S PEAK.

April 5.

As soon as the party had started I gave the overseer the bearings and distances to be pursued; while I proceeded to the cone named Hurd's peak by Oxley, but by the natives Tolga. It was distant about four miles from our line of route. A low ridge of quartz rock extends from the Goobang to this peak the base of which consists of chlorite slate, and its summit of squarish pebbles of quartz, with the angles rounded, associated with



fragments of chlorite slate. There was just convenient room on it for the theodolite and, as it afforded a most satisfactory and commanding view, well suited for the purpose of surveying, it seemed to have been aptly named after a distinguished geographer. Many points of a distant range now appeared on the north-western horizon in the direction of Oxley's Mount Granard, and the ridge of Bolloon (towards the great lake Cudjallagong) seemed not very distant. I took angles on all the points and

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then hastened to overtake the party, which I did after they had travelled about nine miles. At fourteen miles we made the banks of the Lachlan, and encamped by the side of it on the edge of a plain in latitude 33 degrees 4 minutes 38 seconds South, longitude 147 degrees East. Judging by the relative position of Hurd's peak etc., I supposed it might have been about this place that Oxley's party crossed to the right bank of the river on his return towards Wellington valley. No traces however were discovered by us here of the first explorers of the Lachlan.

April 6.

The night had been mild and clear and the sun rose in a cloudless sky. We traversed plains of firmer surface than those crossed on the previous day. So early even as nine o'clock the heat was oppressive.

SNAKE AND BIRD.

On one of these plains I witnessed an instance of the peculiar fascination attributed to the serpent race. A large snake, lying at full length, attracted our attention and I wished to take it alive, but as Roach, the collector, was at a distance, some time elapsed before preparations were made for that purpose. The ground was soft and full of holes, into one of which it would doubtless have disappeared as soon as it was alarmed. The rest of the party came up yet, unlike snakes in general, who glide rapidly off, this creature lay apparently regardless of noise, or even of the approach of the man, who went slowly behind it and seized its head. At that moment a little bird fluttered from beside a small tuft within a few feet of the snake and, it seemed, as the men believed, scarcely able to make its escape.

When we were near the spot on which we intended to encamp a native pointed out to me a small hill beyond the river where, as he informed me, Mr. Oxley and his party had encamped before he crossed the Lachlan. It was called by this native Gobberguyn. We pitched our tents a little higher than that hill where a favourable bend of the river met my line of route. The cattle were much fatigued with the day's work although the distance did not exceed eleven miles. It was in my power however to give them rest for a day or two as the grass was tolerably good on that part of the riverbank, and I was within reach of Mount Granard, a height which I had long been anxious to examine, as well as the country to be seen from it. Among the usual grasses we found one which I had not previously seen and which proved to be a new species of *Danthonia*.*

(Footnote. *Danthonia pectinata*, Lindley manuscripts; *spica simplici secunda pleiostachya pectinata foliis multo longiore, palea inferiore villosissima; laciniis lateralibus membranaceis aristae aequalibus*.)

RIDE TO MOUNT GRANARD.

April 7.

I set off early for Mount Granard, followed by six men on horseback and a native named Barney who was also mounted. We rode at a smart pace on a bearing of 280 degrees across thirty miles of soft red sand in which the horses sank up to their fetlocks, and we reached the foot of the hill a little before sunset.

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SCARCITY OF WATER THERE.

Throughout that extent we neither saw a single watercourse nor discovered the least indication of water having lodged there during any season. At eleven miles from the camp we crossed a low ridge of granite (named Tarratta) a hopeful circumstance to us as promising a primitive range of hills between the Darling and Lachlan, and because in a crevice of this granite our aboriginal guide found some water. The desert tract we crossed was in other respects unvaried except that, in one place, we passed through four miles of a kind of scrub which presented difficulties of a new character. The whole of it consisted of bushes of a dwarf species of eucalyptus, doubtless *E. dumosa* (A. Cunningham) which grew in a manner that rendered it impossible to proceed, except in a very sinuous direction, and then with difficulty by pushing our horses between stiffly grown branches. Where no bushes grew the earth was naked, except where some tufts of a coarse matted weed resembling *Spinifex* impeded the horses, but seemed to be intended by Providence to bind down these desert sands. We saw blue ranges on our right, and I hoped that before we ascended Mount Granard we should cross some watercourse coming from them; but nothing of the kind appeared and, after traversing a dry sandy flat, we began to ascend. Finding myself separated from the summit, after we had climbed some way, by a deep rocky ravine, and being in doubt about obtaining water, I sent the people with the horses to encamp in the valley to which that ravine opened, with directions to look for water while daylight lasted.

VIEW FROM THE SUMMIT.

Meanwhile I proceeded to the summit with one of the men and the native. I arrived there and, just before the sun went down, obtained an uninterrupted view of the western horizon; but the scene was inconclusive as to the existence of such a dividing range as I hoped to see. Ridges and summits appeared abundantly enough, but they were not of a bold or connected character, and I did not obtain upon the whole a better idea than I previously had respecting the extension of that singular group of hills to the westward. I stood upon the best height however for carrying on my angles in that direction. To the eastward I saw Hurd's Peak and Bolloon, also Goulburn's and Macquarie's ranges, Mount Torrens, and Mount Aiton of Oxley. The last hill appeared alone on the horizon, in a south-south-east direction as shown in his map. But the most commanding point was Yerrarar, the highest apex of Goulburn range, forming with Bolloon and this station an almost equilateral triangle of about 30 miles a side.

The features before us terminated rather abruptly towards the south like cliffs of tableland, and seemed to mark out the basin of the Lachlan; but beyond those parts overlooking Mr. Oxley's route I could obtain no view, although I perceived that I might from Yerrarar.

ENCAMP THERE.

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Having completed my work as the sun was setting I hastened to the valley, and learnt that the party had discovered neither water nor grass. Barney the native had nevertheless obtained both when with me at the top of the mountain; and therefore, although it was dark and we were all fatigued, yet up that rocky mountain we were compelled to go with the horses, and encamp near the summit beside a little pool of water which had been well-known to Barney at other times. On this elevated crest the air was surprisingly mild during the night for, although I slept in my clothes and on the ground, I enjoyed its freshness as a great relief from the oppressive heat of the day. Our singular bivouac on the summit, which I had so long wished to visit, was adorned with a strange-looking tree, probably *Casuarina glauca*.

April 8.

Next morning I had an opportunity of surveying the hills around me more at leisure, and I noted down their various names from the lips of Barney for that desolate region, where neither a kangaroo nor a bird was to be seen or heard, was poor Barney's country, that lonely mountain his home!

I learned that the only water in these deserts was to be found in the crevices of rocks on such hills as this; and I thus understood the cause of the smoke I observed last year arising from so many summits when I looked over the same region from a hill on its northern limits. Perhaps within thirty miles around there was no other water, and the bare top of a mountain was certainly one of the last situations where I should have thought of seeking for it.

We descended after I had completed my survey from a hill which perhaps no white man will again ascend; I may however add, for the information of those who may be disposed to do so, that the well is on the crest of a ridge extending north-west from the principal summit, and distant therefrom about 200 yards. I had brought provisions for another day as I originally intended to examine the course of the Lachlan above Mount Torrens; but having seen enough from this hill to satisfy me on that point we retraced our steps to the camp.

April 9.

This day I halted as well to rest the horses as for the purpose of observing equal altitudes of the sun and protracting my survey.

ASCEND BOLLOON, A HILL BEYOND THE LACHLAN.

April 10.

Leaving the party encamped I crossed the Lachlan and rode eight miles due south to Bolloon which proved to be the highest cone of a low ridge situated within the great

bend of this river. I found it a valuable station for continuing my chain of triangles downwards, as from it Mounts Cunningham and Allan, Hurd's Peak, Peel's and Goulburn ranges, Mount Granard, *etc.* are all visible. We passed some lower hills belonging to the same chain, and of which the basis seemed to be the prevailing ferruginous sandstone. In my return to the camp I found the dogs had killed an emu.

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NATIVES REFUSE TO EAT EMU.

It is singular that none of the natives would eat of this bird; and the reasons they gave were that they were young men, and that none but older men who had gins were allowed to eat it; adding that it would make young men all over boils or eruptions. This rule of abstinence was also rigidly observed by our interpreter Piper.

NATIVE DOG.

Late in the night I was awoke by one of the watch firing a pistol at a native dog which had got close to the sheepfold. At the same moment a sheep leaped out and, having been at the first alarm pursued by our dogs, it was worried in the bed of the river. The native dog having howled as it escaped was supposed to have been wounded. To prevent such occurrences in future and as this arose from a neglect of my original plan, the two fires of the men's tents were ordered to be again placed in such positions as threw light around the sheepfold, which was of canvas fastened to portable stakes and pegs. (See plan of camp, Volume 1.)

KALINGALUNGAGUY.

April 11.

We left this camp (named Camarba) and continued our journey around the great bend of the Lachlan at which point (4 1/2 miles from our camp) the low ridge of Kalingalungaguy closed on the river. This ridge is a remarkable feature, extending north and south, and I expected to see some tributary from the north entering the river here; but we crossed on the east side of the ridge only a wide, dry and grassy hollow, which was however evidently the channel of a considerable body of water in times of flood, as appeared by marks on the trees which grew along the banks. All were of the dwarf box kind, named goborro by the natives, a sort of eucalyptus which usually grows by itself on the lower margins of the Darling and Lachlan, and other parts subject to inundation, and on which the occasional rise of the waters is marked by the dark colour remaining on the lower part of the trunk. In the bed of the Lachlan at the junction of the channel near Kalingalungaguy I found quartz rock.

MR. STAPYLTON OVERTAKES THE PARTY.

We had not proceeded far beyond that ridge when Mr. Stapylton overtook the party, having travelled in great haste from Sydney to join us as second in command, in compliance with my letter of instructions sent from Buree. Mr. Stapylton was accompanied by two stockmen, having left his own light equipments at Cordowe, a station above Mount Cunningham. On the plains which we crossed this day grew in great abundance that beautiful species of lily found in the expedition of 1831, and

already mentioned under the name of *Calostemma candidum*,* also the *Calostemma luteum* of Ker with yellow flowers.

(Footnote. Volume 1. C. candidum; floribus centralibus subsessilibus, articulo infra medium in pedicellis longioribus, corona integerrima.)

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At nine miles we crossed some granite rocks, evidently a part of the ridge of Tarratta, thus exhibiting a uniformity in the granite with the general direction of other ridges, which is about north-north-east. The strike is between north and north-east; the dip in some places being to the west, and in others to the east, at great inclinations. The ridge of Kalingalungaguy consists of quartz, clay-slate, and the ferruginous sandstone, but I observed in the bed of the river a trap-dyke extending to the Bolloon ridge. Of the few low hills about the Lachlan it may be observed that they generally range in lines crossing the bed of that river. Mount Amyot is a ridge of this sort, being connected to the southward with Mount Stewart and Nyororong; and to the northward with the high ground separating the Bogan from the Goobang; the latter creek also forcing its way through the same chain on its course westward. Mounts Cunningham, Melville, and the small hills about them on each bank belong to another system of ridges of similar character, but more broken up; and the range of Kalingalungaguy with that of Bolloon form a third, also intersected by the river.

OF THE PLAINS IN GENERAL.

The plains appear to be divided into several stages by these cross ridges, which may have shut up the water of high floods in extensive lakes during the existence of which the deposits formed the surface of the present plains. Loose red sand also constantly forms low hills on the borders of these plains; and it seems to have been derived from the decomposition of the sandstone, and may be a diluvial or lacustrine deposit. Blue clay appears in the lowest parts of the basin, and forms the level parts of the plain, with concretions of marl in thin layers. This has every appearance of a mud deposit; but its depth is greater than the lowest part visible in the channel of the river. The parallel course of small tributaries joining rivers, which seem to be the middle drain of extensive plains, may have been marked out during the deposition of the sedimentary matter as tributaries, on entering the channel of greater streams, immediately become a portion of them; hence it is, the general inclination being common to both, that such tributaries do not cross these sediments of floods now termed plains in order to join the main channel or river now remaining.

CHARACTER OF THE GOOBANG AND BOGAN.

Thus the Goobang, on entering the valley of the Lachlan, pursues a parallel course until the ridge from Hurd's peak confines the plain on the west and turns the Goobang into the main channel. The Bogan, on the opposite side of the high land, may be said to belong to the basin of the Macquarie, although it never joins that river, but merely skirts the plains which, below Cambelego, may be all supposed to belong to the original bed of the Macquarie. Throughout its whole course of 250 miles the left bank of the Bogan is close to low hills, while the right adjoins the plains of the

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Macquarie. The basin of the Macquarie, as shown by its course near Mount Harris and Morrisset's ponds, falls northward, but that of the Darling to the south-west. It is not at all surprising therefore that the course of a tributary so much opposed, as the Macquarie is, to that of the main stream, should spread into marshes: still less that, on being at length choked with the deposit filling up these marshes, it should work out for itself a channel less opposed to the course of the main stream. Duck creek appears to be now the channel by which the floods of the Macquarie join the Darling, and in a course much more direct than that through the marshes. Hence the Bogan also, being still less opposed to that of the Darling, finally enters that river without presenting the anomaly of an invisible channel. In like manner, at a much lower point on the Darling, the course of the little stream named Shamrock ponds, so remarkable in this respect, may be understood. This forms a chain of ponds, or a flowing stream, according to the seasons, between the plains on the left bank of the Darling, and the rising grounds further to the eastward: but instead of crossing the plains to join the main channel this supposed tributary, after approaching within one or two miles of the Darling where its plains were narrow, again receded from it as they widened, and finally disappeared to the left where the plains were broad, so that its junction with the Darling has not even yet been discovered. On this principle the channel of the Lachlan, as soon as it enters the plains belonging to the basin of the Murrumbidgee, may be sought for on the northern skirts of these plains, although its floods may have been found to spread in different channels more directly towards the main stream.

At 12 1/4 miles we crossed a dry and shallow branch of the river, and at 14 1/2 miles we at length reached the main channel, and encamped where a considerable pond of water remained in it, surrounded by abundance of good grass. In this hole we caught some cod-perch (*Gristes peelii*).

April 12.

I sent back three men with two horses to bring on the light cart of Mr. Stapylton, intending to await its arrival (which I expected would be in five days) at the end of this day's journey. It was my object to encamp as near as possible to Regent's Lake without diverging from the route which I wished to follow with the carts, along the bank of the Lachlan.

WANT OF WATER IN THE RIVER.

For this purpose it was desirable to gain a bend of that river at least as far west as the most western portion of the lake, according to Mr. Oxley's survey. This distance we accomplished and more; for we were obliged to proceed several miles further than I intended, and along the bank of the river, because no water remained in its bed, until

Mr. Stapylton found a good pond where we encamped after a journey of 16 1/4 miles. Notwithstanding such an alarming want of water in the river, we saw during this day's

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journey abundance in hollows on the surface of the plains; a circumstance clearly evincing that this river, as Mr. Oxley has truly stated, is not at all dependent for its supply on the rains falling here. The deep cracks on the plains, so abundant as to impede the traveller, seemed capable of absorbing not only the water which falls upon them, but also any which may descend from the low hills around. During our day's journey I found grey porphyry, the base consisting apparently of granular felspar with embedded crystals of common felspar and grains of hornblende.

April 13.

The night had been unusually warm, so much so that the thermometer stood during the whole of it at 76 degrees (the usual noonday heat) and so parching was the air that no one could sleep. A hot wind blew from the north-east in the morning, and the barometer fell 4/10 of an inch; there were also slight showers.

CUDJALLAGONG OR REGENT'S LAKE.

Leaving Mr. Stapylton in charge of the camp I went with a small mounted party to Cudjallagong (Regent's lake) which I found to be nine miles to the east-south-east of our tents. We passed by the place where Cudjallagong creek first leaves the river and by which this lake is supplied.

NEARLY DRY.

The uniformity of breadth and width in this streamlet and its tortuous course were curious, especially as it must lead the floods of the Lachlan almost directly back from the general direction of their current to supply a lake. Thus the fluvial process seemed to be reversed here, the tendency of this river being not to carry surface waters off, but rather to spread over land where none could otherwise be found, those brought from a great distance. The particular position of this portion of depressed surface being so far distant from the general course of the river and the communication between it and the river by a backwater so shallow and small, the lake can only receive a small share of the river deposits and this only from the waters of its highest floods. We found the "noble lake" (as it appeared when discovered by Mr. Oxley) now for the most part a plain covered with luxuriant grass; some water, it is true, lodged on the most eastern extremity, but nowhere to a greater depth than a foot. Innumerable ducks took refuge there and also a great number of black swans and pelicans, the last standing high upon their legs above the remains of Regent's lake. We found the water perfectly sweet even in this shallow state. It abounds with the large freshwater mussel which was the chief food of the natives at the time we visited it.

DEAD TREES IN IT.



On its northern margin and a good way within the former boundary of the lake stood dead trees of a full-grown size which had been apparently killed by too much water, plainly showing, like the trees similarly situated in Lake George and Lake Bathurst, to what long periods the extremes of drought and moisture have extended, and may again extend, in this singular country.

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ROCKS NEAR IT.

That the lake is sometimes a splendid sheet of water was obvious in its line of shores. These were overhung on the south-western side by rocky eminences which in some parts consisted of a red calcareous tuff containing fragments of schist; in others, of trap-rock or basalt which was very hard and black. The opposite shore was lower, with water-worn cliffs of reddish clay. By these cliffs and the beaches of drifted sand under them, we perceived that the prevailing winds in all times of high flood came from the south-west; the north-east side being very different from the opposite, which was free from sand and bore no such marks of chaffing waves.

TRAP AND TUFF.

At two places the banks are so low that in high floods the water must flow over them to the westward and supply, as I supposed, Campbell's lake, called Goorongully, and that to the north-east of Regent's lake. Upon the whole it appeared that the trap which originally elevated the western shore had either partially subsided, or that it was connected with a crater or cavity of which the only vestige is this lake. The calcareous conglomerate was unlike any rock I had seen elsewhere, consisting in part of a tuff resembling the matrix of the fossil bones found in limestone fissures. It is also worthy of notice that it appears in some low undulations which extend from the lake to the river, and that the channel conveying the waters to the lake lies in a hollow between them.

NATIVES THERE.

On first approaching the lake we saw the natives in the midst of the water, gathering the mussels (unio). I sent Piper forward to tell them who we were, and thus, if possible, prevent any alarm at our appearance. It began to rain heavily as we rode round; and although detached parties of gins on the south shore had taken fright, left their huts and run to the main camp, I was glad to find, when we rode up, that they remained quietly there, under cover from the heavy rain. These huts or gunyas consisted of a few green boughs which had just been put up for shelter from the rain then falling. The tribe consisted of about a hundred.

WOMEN.

The females and children were in huts at some distance from those of the men. A great number sat huddled together and cowered down under each gunya, their skinny limbs being so folded before their bodies that the head rested upon the knees. Among the faces were some which, being hideously painted white (the usual badge of mourning) grinned horribly; and the whole was so characteristic a specimen of life among the aborigines that the heavy rain did not prevent me from making a sketch. While I was thus employed the natives very hospitably made a fire in a vacant gunya, evidently for

the purpose of warming poor Barney, our guide, who seemed miserably cold, having no covering except a jacket, thoroughly wet.

MEN.

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The men were in general strong, healthy, and muscular, and among them was one who measured six feet four inches, as we afterwards ascertained at our camp. My chief object in visiting the lake was to cultivate a good understanding with these natives in the hopes that one of them might be induced to accompany me down the Lachlan. The facility with which Piper, then at a distance of 200 miles from his native place, Bathurst, conversed with these people showed that their dialects are not so varied as is commonly believed; and I had little doubt that he would be understood, even on the banks of the Darling.

THEIR ACCOUNT OF THE COUNTRY LOWER DOWN. OOLAWAMBILOA.

He ascertained from one of these natives of Regent's lake that after eight of our daily journeys, according to his comprehension, the bed of the Lachlan would contain no water, and that we must go to the right across "the middle," as Piper understood, reaching in four days more a lagoon called Burrabidgin or Burrabadimba: that there I must leave the carts and go with the native on horseback; and that in two days' travelling at the rate we could then proceed, we should reach Oolawambiloa, a very great water. They also said that water could be found in the bush at the end of each of those four days' journey by one of their tribe who would go with us and who had twice been at the great water. All this news made me impatient to go on; but we had to remain a day or two for the light cart. It rained heavily during the whole afternoon; nevertheless a body of these natives accompanied us back, keeping pace with our horses.

GAIETY OF THE NATIVES.

Each carried a burning torch of the resinous bark of the callitris, with the blaze of which these natives seemed to keep their dripping bodies warm, laughing heartily and passing their jokes upon us, our horses and particularly upon our two guides of their own race, Piper and Barney, who seemed anything but at home on horseback with wet clothes dripping about them.

COLOUR LIGHT.

These natives were of a bright copper colour, so different from black that one had painted his thighs with black chequered lines which made his skin very much resemble the dress of a harlequin.

MR. STAPYLTON SURVEYS THE LAKE.

Mr. Stapylton proceeded with a party to make a survey of Cudjallagong lake and creek, an operation which could be accomplished with less inconvenience as that gentleman's equipment could not come up to us until the 16th.

CAMPBELL'S LAKE.

He extended his survey to the small lake to the north-east, the first discovered by Mr. Oxley and named by him Campbell's lake. Mr. Stapylton found only a grassy plain without a drop of water. By an opening from Cudjallagong lake he proceeded to another likewise seen by Mr. Oxley. It had also become a verdant plain, nevertheless I thought it was necessary to distinguish it on my map by its native name of Goorongully, as Mr. Oxley had not supplied any to it.

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April 15.

The sky had continued overcast although no rain fell after the evening of the 13th. This day however the wind changed from north-west to west and the sky became clear.

PIPER OBTAINS A GIN.

The surveying party returned from the lake by midday; and with it came also Piper, my aboriginal interpreter, who had gone there chiefly with the view of obtaining a gin, a speculation which I thought rather hazardous on his part; yet, strange to say, a good strong woman marched behind him into our camp, loaded with a new opossum-skin cloak, and various presents, that had been given to Piper with her. How he contrived to settle this important matter with a tribe to whom he was an utter stranger could not be ascertained; for he left our party on the lake by night, going quite alone to the natives, and returned from their camp in the morning followed by his gin. To obtain a gin at Cudjallagong was the great ambition of most of the natives we had left behind, among whom were two, friends of Piper, whom I compelled to return, and who were most anxious to accompany us that they might obtain wives at this place.

ASCEND GOULBURN RANGE.

April 16.

The morning was beautifully clear and I set out for the summit of Goulburn range, named Yerrarar, fourteen miles distant from the camp. The country we rode over was so thinly wooded that the hill was visible nearly the whole way. The soil was good and firmer than the common surface of the plains, the basis being evidently different, consisting rather of trap than of the sandstone so prevalent elsewhere. At exactly halfway we passed a hill of trap-rock, connected with a low range extending towards still higher ground nearer Regent's lake, on the eastern side. This was the first trap-rock I had seen besides that of the lake during our whole journey down the Lachlan.

VIEW FROM THE SUMMIT.

On the summit I found hornstone and granular felspar. The whole of Goulburn range consisted also of the same rock. It was rather light-coloured, partially decomposed, and lay in rounded nodules and boulders which formed however ridges across the slopes of the ground, tending in general 12 or 14 degrees East of North. The hills were everywhere rocky, so that the ascent cost us nearly an hour, and we were forced to lead our horses; but it was well worth the pains for the summit afforded a very extensive prospect. The most interesting feature in the country was Regent's lake which, although fifteen miles distant, seemed at our feet, reflecting like a mirror the trees on its margin; and on the other side we looked into the unknown west, where the horizon seemed as level as the ocean. In vain I examined it with a powerful telescope, in search of some

remote pic; only a level and thinly wooded country extended beyond the reach even of telescopic vision.

With the spirit-level of my theodolite I found that the most depressed part extended about due west by compass, a circumstance which first made me imagine the Lachlan might have some channel in that direction.



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WARRANARY.

Of the Mount Granard range I could see and intersect only that remarkable cape-like point which was also the high land visible to the westward from Mount Granard itself, being named Warranary by Barney. Closer to the summit on which I stood were various ranges besides that of which it was the highest point, but even this was not, strictly speaking, a range, for it consisted on the southward of different masses, separated by portions of low, level country.

A NEW CORREA.

I recognised many of my stations, such as Mount Cunningham, Bolloon, Hurd's Pic, Mount Granard, etc. and having taken all the angles I could with the theodolite, and gathered some specimens of a curious new correa,* and a few bulbs of a pink-coloured amaryllis which grew on the summit,** we descended and, just as it became quite dark, reached the camp where I found that the men had arrived with Mr. Stapylton's light cart, although his own horse, having strayed at Cordowe, did not accompany it.

(Footnote. Resembling *C. rupicola* of Cunningham, but with larger and shorter flowers, and differently shaped leaves. Young shoots were covered with a white down which easily rubbed off. *C. leucoclada*, Lindley manuscripts; *ramulis albo-tomentosis gracilibus, foliis ovato-oblongis obtusissimis petiolatis supra glabris scabriusculis subtus tomentosis, floribus subsessilibus, corolla campanulata quadrifida, calyce cupulari truncato.*)

(**Footnote. *Calostemma carneum*, Lindley manuscripts; *foliis...tubo perianthii limbo subaequali, corona truncata dentibus sterilibus nullis, umbellis densis, pedicellis articulatis exterioribus longioribus.* Flowers pink.)

CHAPTER 3.3.

North arm of the Lachlan.

Quawys.

Wallangome.

Wild cattle.

Ascend Moriattu.

Leave the Lachlan to travel westward.

No water.

Natives from Warranary.

Course down the Lachlan resumed.

Extensive ride to the westward.

Night without water.

Continue westward, and south-west.



Sandhills.
Atriplex.
Deep cracks in the earth.
Search for the Lachlan.
Cross various dry channels.
Graves.
Second night without water.
Native tumulus.
Reedy swamp with dead trees.
Route of Mr. Oxley.
Dry bed of the Lachlan.
Find at length a large pool.
Food of the natives discovered.
Horses knock up.
Scenery on the Lachlan.
Character of the different kinds of trees.
Return to the party.
Dead body found in the water.
Ascend Burradorgang.
A rainy night without shelter.
A new guide.
Native dog.
Branches of the Lachlan.
A native camp.
Children.
A widow joins the party as guide.
Horse killed.
The Balyan root.
How gathered.
Reach the united channel of the Lachlan.
No water.
Natives' account of the rivers lower down.

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Mr. Oxley's lowest camp on the Lachlan.
Slow growth of trees.
A tribe of natives come to us.
Mr. Oxley's bottle.
Waljeers Lake.
Trigonella suavissima.
Barney in disgrace.
A family of natives from the Murrumbidgee.
Inconvenient formality of natives meeting.
Rich tints on the surface.
Improved appearance of the river.
Inhabited tomb.
Dead trees among the reeds.
Visit some rising ground.
View northward.
Difficulties in finding either of the rivers or any water.
Search for the Murrumbidgee.
A night without water.
Heavy fall of rain.
Two men missing.
Reach the Murrumbidgee.
Natives on the opposite bank.
They swim across.
Afraid of the sheep.
Their reports about the junction of the Darling.
Search up the river for junction of Lachlan.
Course of the Murrumbidgee.
Tribe from Cudjallagong visits the camp in my absence.
Caught following my steps.
Piper questions them.

NORTH ARM OF THE LACHLAN.

April 17.

We proceeded along the right bank of the Lachlan, crossing at five miles a small arm or ana-branch* which had been seen higher up diverging from the river, and flowing towards the north-west by Mr. Oxley. The local name of it is Yamorrima. Beyond this watercourse Cannil plains extend and were more grassy than plains in general. I observed a small ridge of trap-rock near the river. We crossed soon after the base of

Mount Torrens, also a hill of trap; and a continuation on this bank of the Lachlan of the Goulburn range. Mount Torrens is however only an elongated hill. The trap-rock reappears in some lower hills further northward, of which Mount Davison is the highest and most eastern.

(Footnote. See Footnote below.)

QUAWYS.

Beyond Mount Torrens we entered the region which lies to the westward of the Macquarie range, and found several new plants, especially a very pretty *Xerotes*, with sweetly perfumed flowers, being a good deal like *X. leucocephala*, but with the leaves filamentous at the edges, and the male spikes interrupted.* We encamped on a deep pond at a bend of the Lachlan named Gonniguldury. I learnt from the old native guide who accompanied us from Regent's lake that they call those ponds of a river which never dry up quawy, a word which proved to be of use to us in descending the Lachlan. At this camp I found, by a careful observation of alpha and beta Centauri, that the magnetic variation was 8 degrees 56 minutes 15 seconds East.

(Footnote. *X. typhina*, Lindley manuscripts; *acaulis*, *foliis longissimis angusto-linearibus margine laevibus filamentosis basi laceris*, *capitulis omnibus cylindraceis lanatis foemincis simplicibus masculis interruptis*.)

WALLANGOME.

April 18.

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We continued along the riverbank passing quawys of various names as they were pointed out by our guide. We crossed the skirt of an extensive plain (Eeoappa) which brought in view just ahead of us a low ridge named Wallangome. At 8 1/2 miles we found the river close under the southern extremity of this hill, and its rocks so obstructed our passage that we were delayed an hour in clearing a way. I ascended that point nearest the river and determined its position by taking angles on various heights already laid down in my map such as Granard, Yarrarar, Mount Torrens, etc. The hill itself consisted chiefly of quartz rock, but at its base were water-worn blocks of quartzose sandstone containing pebbles of quartz, and they seemed to be the principal rock in the bed of the Lachlan.

As we proceeded a low rocky ridge or extremity from Wallangome extended upwards of a mile along the river. Soon after we had passed a bend called Taralago we crossed the southern limits of a plain of which the local name is Nyaindurry, being bounded on the north-west by an isolated hill named Moriattu. After passing successively two similar points of the river we reached that of Gooda, where we encamped, the latitude observed being 33 degrees 23 minutes 3 seconds South.

WILD CATTLE.

Mr. Stapylton, with overseer Burnett and the natives, had gone forward early in the morning towards the hills near this place in pursuit of wild cattle, which were said to abound near it. The tracks we perceived were old, and although the other party had found many that were newer they returned without having seen any of these wild animals. It appeared that a herd of such cattle had got together about Macquarie's range, then only a short way ahead of us, and I saw no objections to the overseer's killing one or two, as he wished to do, in order that we might feed our native guides without drawing so largely as we were otherwise compelled to do on our own stock of provisions. This was a fortunate day for us in regard to plants. Besides several curious kinds of grass,* a splendid blue Brunonia was found on Wallangome. Its colour surpassed any azure I had ever seen in flowers, the tinge being rather deeper than that of the turquoise. We also obtained the seed so that I hoped this plant, which seemed hardy enough, might become a pleasing addition to our horticultural treasures.

The flowers are nature's jewels.**

(Footnote. *Lappago racemosa*, W. and *Aristida ramosa*, R. Br.)

(**Footnote. Croly's Gems.)

The pink lily* was also found, as on Yerrarar, amongst rocks, but growing in rich red soil. We gathered a number of the bulbs, being very desirous to propagate this plant, which differs from the common white amaryllis and others belonging to the plains not only in colour, but also in the absence from their corona of intermediate teeth. We again



found here the new Xerotes, having the flower in five or six round tufts on the blade. The flowered blades drooped around, radiating from the centre, while those without flowers stood upright, giving to the whole an uncommon appearance; the flower had a very pleasant perfume.

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ASCEND MORIATTU.

April 19.

Mr. Stapylton conducted the party forward while I went to the summit of Moriattu with the theodolite. Thence I saw Mount Granard, Yerrarar, and Mount Torrens, also the various points which I had intersected from Wallangome. A level plain appeared to extend southward in the midst of the groups of ridges composing Macquarie and Peel's ranges. Coccaparra, a range very abrupt on the eastern side, appeared to be Macquarie's range of Oxley, and an elevated extremity of it, near the river, I took to be Mount Porteous, and of which the local name is Willin.* To the northward the most remarkable feature was a line of plains similar to those beside the main channel of the river, and they appeared to border a branch from it, which extended in a western direction under the base of a small hill named Murrangong, and far beyond it. The hill on which I stood was the most perfectly isolated that I had ever seen, low level ground surrounding it on every side. It consisted of a variety of the same quartz rock as Wallangome, but contained pebbles of laminated compact felspar. This hill was abrupt and rocky on the west and north-west sides, the best ascent being from the south-east.

(Footnote. *Willi, an opossum*)

We overtook the party after it had crossed some extensive plains, where we observed a species of solanum, the berries of which our native guides gathered and ate.* Overseer Burnett made another search this day on Coccaparra range for the wild bullocks; the party fell in with a herd but it kept at a great distance and got off into scrubs. Their bedding places and paths were numerous, and it thus appeared that the number of these animals was considerable. We gathered on Coccaparra and Mount Porteous several bulbous plants of a species quite new to me, the root being very large. There also we found a remarkable acacia, having long upright needle-like leaves among which a few small tufts of yellow flowers were sparingly scattered.** We encamped on a pond of the river named Burrabadimba, after travelling fifteen miles.

(Footnote. *S. esuriale, Lindley manuscripts; caule humili suffruticoso, aculcis subulatis tenuibus in apice ramulorum et costa, foliis lineari-oblongis obtusis subrepandis utrinque cinereis stellato-pilosis, pedunculis subtrifloris, calycibus campanulatis pentagonis 5-dentatis stellato-pilosis corollis tomentosis multo brevioribus.*)

(**Footnote. This proved to be the rare *A. quadrilateralis* of De Candolle.)

LEAVE THE LACHLAN TO TRAVEL WESTWARD.

April 20.

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After proceeding some miles on this day's journey our Cudjallagong guide pointed in a west-north-west direction as the way to Oolawambiloa. Leaving therefore the Kalare or Lachlan, near a great bend in its general course which below this (according to Mr. Oxley's map) was south-west, we followed the route proposed by my native friend as it was precisely in the direction by which I wished to approach the Darling. The universal scarcity of water had however deprived me of every hope that any could be found in that country, at a season when we often sought it in vain, even in the bed of one of the large rivers of the country. Our guide however knew the nature of our wants, and also that of the country, and I eagerly followed him towards a hill, the most distant and most westerly on the northern horizon.

NO WATER.

At sunset we halted full twenty miles short of that hill, beside the bed of a small river, resembling in capacity and the nature of its banks that of the Bogan; but to the manifest consternation of our guide we could find no water in it, although some ponds had been only recently dried up. This watercourse, he informed me, was the same which I had seen passing by Murrangong, but he said it did not return its waters to the Lachlan, a circumstance which I could not understand. Booraran was the name he gave it. He went with some of our people in the dark and found a few quarts of water two miles beyond it, but our cattle were obliged to pass the night without any. The barometer had been falling for several days and the wind arising suddenly at 9 P.M. brought a misty mass of cloud which began most providentially to drop upon us, to the great relief of our thirsty cattle. This day we found on the plains a new species of *Sida* with small yellow flowers, very fragrant, and on a long stalk.* In the woods I observed a eucalyptus of a graceful drooping character, apparently related to *E. pilularis* and *amygdalina*.

(Footnote. *S. fibulifera*, Lindley manuscripts; *incano-tomentosa*, *pusilla*, *diffusa*, *foliis ovato-oblongis obtusis dentatis basi cordatis*, *stipulis longissimis setaceis*, *pedunculis axillaribus aggregatis filiformibus petiolis longioribus*, *calycibus lanatis corolla parum brevioribus*, *fructu disciformi convexo tomentoso*, *coccis monospermis*.)

NATIVES FROM WARRANARY.

April 21.

A rainy morning. Some strange natives approached from the woods while I was looking at the country beyond the dry channel, in the direction in which our guide still wished us to proceed (about west-north-west). They were grave and important-looking old men, and each carried a light. They called out to me in a serious tone "Weeri kally," words which I too well understood, meaning simply no water. I took my guide to them, but he still seemed in doubt about the scarcity.

COURSE DOWN THE LACHLAN RESUMED.

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It was necessary not to depend on uncertainties on such a point, and I therefore lost no time in shaping our course again towards the nearest bend of the Lachlan, which we reached after travelling nine miles in the rain, and we encamped beside a pond or quawmy named Buree. I considered this day's journey to be the first deviation from the most direct line of route towards that part of the Darling where my last journey terminated. It was evident that in common seasons the country I wished to traverse was not without water, our guide having suggested it as the way to Oolawambiloa (a name always referring to a great abundance of water). I considered it necessary now to ascertain, if possible, and before the heavy part of our equipment moved further, whether the Lachlan actually joined the Murrumbidgee near the point where Mr. Oxley saw its waters covering the country; or whether it pursued a course so much more to the westward as to have been taken for the Darling by Captain Sturt. Near the Lachlan at this place the *Anthericum bulbosum* occurred in abundance, and the cattle seemed to eat it with avidity.

On the bank of the river a new species of rosella appeared amongst the birds, and several were shot and preserved as specimens.

EXTENSIVE RIDE TO THE WESTWARD.

April 22.

I proceeded westward accompanied by five men and an aboriginal guide, all mounted on horseback. My object was to obtain, if possible, some knowledge of the final course of the Lachlan; and secondly to ascertain how far the hills to the north-west of our camp ranged beyond that very remarkable feature, resembling a cape or promontory and named Warranary, which marked the extent of our sight and knowledge at that time. This point was in a direct line between the camp we then occupied on the Lachlan and the lowest part of the Darling attained during the former journey, and we had just fallen back from want of water; a circumstance likely to compel me to follow the Lachlan downwards, at least if it could be ascertained thus early that this river could not possibly be the supposed Darling of Sturt. In case it proved otherwise I thought it not improbable that, at the end of two days' journey westward, I might fall in with the Lachlan, and if I could find water in it at such a point under any circumstances, I considered that a position so much advanced would be equally favourable, either for reaching the junction of the Murray or the upper Darling. Should I succeed in reaching the Lachlan at about sixty miles west of my camp I might be satisfied that it was this river which Captain Sturt took for the Darling, and then I might seek that river by crossing the range on the north. Whereas, should I find sufficient reason to believe that the Darling would join the Murray, I might continue my journey down the Lachlan until I reduced the distance across to the Darling as much as the scarcity of water might render necessary.

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We traversed fine plains of greater extent than I had ever seen before, and in general of more tenacious surface. They were in many parts covered with salsolaceous plants, but I found also a kind of grass which I had not previously noticed; and a curious woolly plant with two-spined fruit, belonging to the genus *Sclerolaena* of Brown.* I looked in vain however for the continuation of the range to the northward. The cape before-mentioned first rose to a considerable height over the horizon, but as we proceeded it sunk so as to be just visible behind us, bearing at the point where we lay down for the night 31 degrees East of North. The continuation of the range, as we now saw, receded to the north-west; so that the horizon of these plains continued unbroken save by the cape-like point of Warranary.

(Footnote. *S. bicornis*, Lindley manuscripts; *caule lanato ramoso, foliis linearibus succulentis glabris, calycibus solitariis bispinosis lana alba involutis.*)

A flight of the cockatoo of the interior, with scarlet and yellow top-knot, passed over our heads from the north-west.

The intense interest of this day's ride into a region quite unknown urged me forward at a good pace, having a horizon like that of the sea before and around us, and being in constant expectation of seeing either some distant summit or line of lofty river-trees; all the results of the journey depending on whether it should be the one or the other. Neither however, as already stated, appeared, and the sun went down on the unbroken horizon; nor could the native discern from the top of the highest tree any other objects besides the lofty yarra trees of the Lachlan, at a vast distance to the south-west by south. During the ride many a tree and bush rose on the horizon before us and sunk on that we left behind. We saw five emus together which did not run so far from us as usual but stood at a little distance to gaze on our advancing party. In a strip of scrub consisting of *Acacia longifolia* and *lanceolata* and some other graceful shrubs I found a new species of *correa*, remarkable for its small, green, bell-shaped flowers, and the almost total absence of hairiness from its leaves.*

(Footnote. *C. glabra*, Lindley manuscripts; *ramulis incanis, foliis ovalibus obtusis in petiolum angustatis glabris subtus punctatis, corolla brevi campanulata tomentosa 4-dentata calyce truncato cupulari triplo longiore.*)

NIGHT WITHOUT WATER.

Near this scrub we saw also many pigeons and parrots; which strengthened our hopes of finding water, which hopes however were disappointed, and we at length tied our horses' heads to the trees in a bit of scrub, and I lay down on a few boughs for the night under the cover of a gunya or bower which, on such occasions, was set up by Woods in a very short time. (See Volume 1.)

April 23.

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Dew had providentially fallen during the night and it proved in some measure a substitute for the want of water to our horses. It was also highly favourable to the object of our tour in affording a refraction when the sun rose, so that Coccaparra (Macquarie's range) appeared above the horizon and enabled me to determine our distance from it to be sixty miles. Still even this refractive state of the air brought no hills in view to the north or north-west, a circumstance which surprised me and afforded additional reason for supposing that the Lachlan might not unite so soon as had been imagined with the Murrumbidgee.

CONTINUE WESTWARD, AND SOUTH-WEST.

This may require explanation. The course of rivers is in general conformable to the direction of ranges or the position of those hills which bound the valley or basin, however extensive, in which they flow. As this range fell off to the north-west, opposite to where the course of the Murrumbidgee had continued south-west, it was less probable that the Lachlan would unite with the main stream there than if the range had approached, or had even continued parallel to it.

I was disappointed in not finding sufficient water for our use remaining on the surface after the late rain; and although the country appeared declining to the westward, and we saw more pigeons and recent marks of natives, I was reluctantly obliged at length to bend my steps south-westward and afterwards south. The country we traversed was one level plain whose extent westward we neither knew nor could discover, and for some hours during this day's ride scarcely a bush was visible.

SAND HILLS.

Clumps of trees of the flooded box, or marura of the natives, appeared occasionally in and about the many hollows in the surface; and, on the isolated eminences of red sand, callitris trees grew, always hopeless objects to persons in want of water. These patches of sand however were not numerous, and never rose more than a few feet above the common surface, which in general consisted of clay more or less tenacious. Parts of it were quite naked; but others bore a crop of grass about three years old which probably sprang up after the last thorough drenching of the surface.

DEEP CRACKS IN THE EARTH.

So parched however was the ground now, especially in those parts which bore no vegetation, that it yawned in cracks too deep to be fathomed by the length of my sabre and arm together.

ATRIPLEX.



The best ground for travelling was of a reddish colour, glossy and firm with tufts of a species of atriplex upon it; a dwarf grass with large seeds not seen elsewhere by me was springing up, apparently in consequence of the late rains. This new vegetation did not grow near the old grass, and was too thin and low to tinge the surface.* The dreary look of the old grass in other parts, decayed and of the colour of lead, could not be exceeded; roots and stalks being all dead and decayed like rotten timber.

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(Footnote. *Panicum flavidum* of Retz.)

SOUTH-WEST WINDS.

Every blade drooped towards the north-east and showed plainly how prevalent the south-west winds were on these open wastes. In a gloomy day a wanderer lost upon them might have known his course merely by the uniform drooping of those blades of grass towards the north-east.

SEARCH FOR THE LACHLAN.

After travelling ten miles south-west without perceiving any indication of the river I directed our course southward and, after proceeding seven miles in that direction, we came upon a hollow of *Polygonum junceum* so full of wide and deep cracks that our horses were got across with difficulty. It extended in a south-west direction towards some flooded box-trees. The country beyond was better wooded, and at eleven miles we at length approached a creek, and the large trees which enveloped it looked like those of the river itself; but we saw none of the yarra or white-trunked trees which always accompanied such waters and, although we certainly found the channel of a considerable current, it was shallow, quite dry, and full of *Polygonum junceum*.

I could hardly consider this a lateral branch of the river as I thought that I had seen its head in some hollows which I crossed on the plains the day before. After passing this channel however we descried a long dark line of river-trees which, as our horses were getting tired, we were now somewhat anxious to see and, the native perceiving smoke arising from the woods there, I, at his request, altered my course to that direction which was 30 degrees East of South.

THIRST OF BARNEY.

None of the party suffered so much apparently from the want of water as Barney, our native friend. He rode foremost of the men with a tin pot in his hand, his eyes fixed on remote distance and his mouth open, with the lower lip projecting, as if to catch rain from the heavens. When we were within two miles of those trees we found enough of rainwater in a shallow hole to refresh our horses, but it was surrounded with such tempting grass that the animals preferred the verdure to it. Barney drank as much as he wished, and I advised the men to fill their horns, but the horses soon trod the water into mud, and all expected to find plenty near the smoke; a hope in which I was by no means sanguine.

CROSS VARIOUS DRY CHANNELS.

The first line of trees we crossed enclosed only a shallow channel, overgrown with polygonum; and we in vain sought the natives although we saw where portions of fire had been recently dropped.

Three miles further we perceived a more promising line of trees and smoke arising from them also. There we found the yarra trees growing on a flat with a reedy channel meandering amongst them. The fire arose from some burning trees and grass; and there were huts of natives but no inhabitants.

GRAVES.

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Green bushes grew luxuriantly, and amongst them, in a romantic looking spot, three separate graves had been recently erected. Still we could perceive neither signs of water nor any of the natives who might have told us where to find it. Crossing another small plain of firm ground we came upon what seemed to be the main channel of the Lachlan, pursuing a course to the west-north-west. It had not however above one-third of the capacity of the bed above, but in every other respect it was similar. Having in vain looked for a waterhole we hastened towards another line of trees which we reached by sunset. It consisted of the yarra kind also, but overhung what was only a hollow in the midst of a plain, although evidently subject to inundation.

SECOND NIGHT WITHOUT WATER.

To find water there seemed quite out of the question; but we were nevertheless obliged to halt, for the sun had set. Late in the night, as we lay burning with thirst and dreaming of water, a species of duck flew over our heads which, from its peculiar note, I knew I had previously heard on the Darling. It was flying towards the south-west.

April 24.

We proceeded on the bearing of 80 degrees east of south, towards the nearest bend of a line of yarra river-trees. There we found, after riding two miles, another diminutive Lachlan, precisely similar to the former, but rather less: it was very sinuous in its course and full of holes, but surrounded by green bushes with chirping birds; but it was too obvious that these holes had been long, long dry. Thence I pursued a course 24 degrees North of East over naked ground, evidently subject at times to inundation, towards other large trees; being anxious to cross all the arms of the Lachlan before taking up its general course to guide us back to our camp which lay then, by my calculation, 43 miles in direct distance, higher up the river.

NATIVE TUMULUS.

On this flat we passed a newly-raised tumulus, a remarkable circumstance considering the situation; for I had observed that the natives of the Darling always selected the higher ground for burying in; and it might be presumed that, on this part of the Lachlan, the tribe (whose marks were numerous on the trees) could find no heights within their territory.

REEDY SWAMP WITH DEAD TREES.

We found that this belt of river-trees enclosed a dry swamp only, covered with dead reeds, amongst which stood a forest of dead yarra trees, bearing well-defined marks of water in dark stained rings at the height of about four feet on their barkless trunks. The soil was soft and rich and, where no roots of reeds bound it together, it opened in yawning cracks which were very deep. This dried up swamp was nearly a mile broad,

and beyond it we found firm open and good ground; some very large eucalypti or yarra growing between it and the edge of the reeds.

ROUTE OF MR. OXLEY.

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I was now satisfied that we had crossed the whole bed of the Lachlan; and I thought Mr. Oxley's line of route might have passed near the spot where I then stood; and that in a time of flood all the channels, save the one next the firm ground, might easily have escaped his notice. Here our horses began to be quite knocked up, chiefly from want of water; we therefore dismounted and dragged them on, for I hoped by taking the direction of Mr. Oxley's line of route, as shown on his map, that the branches would soon concentrate in one united channel.

DRY BED OF THE LACHLAN.

At the end of four miles we found that junction had taken place, and the bed of the river as broad and deep as usual, but it was everywhere dry. I made the people lead the exhausted horses from point to point, while I examined all the bends, for the course was very sinuous; still I saw no appearance of water, nor even of any having recently dried up.

FIND AT LENGTH A LARGE POOL.

After proceeding thus about two miles, the chirping of birds and a tree full of chattering parrots raised my hopes that water was near; and at a very sharp turn of the channel, to the great delight of all, I at length saw a large and deep pool. Our horses stood drinking a full quarter of an hour; and during the time a duck dropped into the pond amongst them. The poor bird appeared to have been as much overcome by thirst as ourselves for, on the inconsiderate native throwing his boomerang, it was scarcely able to fly to the top of the opposite bank. As the grass was good I halted during the remainder of the day for the sake of our horses; although the delay subjected us to another night in the bush. I made the men sit down out of sight of the pond for a reason which I did not choose to tell them; but it was that we might not, by our presence, deprive many other starving creatures of a benefit which Providence had so bountifully afforded to us.

On a large tree overlooking the pond, and which had already been deprived by the natives of a considerable patch of bark, I chalked the letter M, which the men cut out of the solid wood with their tomahawks. This being the lowest permanent pond above the separation of the river into so many arms, I thought that by such a mark of a white man the natives would be more ready to point out the spot to any future traveller when required. I found about the fires of the natives a number of small balls of dry fibre resembling hemp, and I at first supposed it to be a preparation for making nets, having seen such on the Darling.

FOOD OF THE NATIVES DISCOVERED.

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Barney the native however soon set me right by taking up the root of a large reed or bulrush which grew in a dry lagoon hard by, and by showing me how the natives extracted from the rhizoma a quantity of gluten; and this was what they eat, obtaining it by chewing the fibre. They take up the root of the bulrush in lengths of about eight or ten inches, peel off the outer rind and lay it a little before the fire; then they twist and loosen the fibres, when a quantity of gluten, exactly resembling wheaten flour, may be shaken out, affording at all times a ready and wholesome food. It struck me that this gluten, which they call Balyan, must be the staff of life to the tribes inhabiting these morasses, where tumuli and other traces of human beings were more abundant than at any part of the Lachlan that I had visited.

HORSES KNOCK UP.

April 25.

We continued our route upwards along the right bank of the Lachlan on a bearing of 36 degrees East of North taken from Mr. Oxley's map: and coming to the river at nine miles we again watered our horses, and rested them for they were very weak. After travelling fifteen miles one of them rode by Woods, who carried the theodolite, knocked up when we were far from the Lachlan. With some difficulty we however got it on until we reached the river and, finding water, we halted for the day after a ride of twenty-one miles.

SCENERY ON THE LACHLAN.

The scenery was highly picturesque at that part of the banks of the Lachlan notwithstanding the dreary level of the naked plains back from them.

CHARACTER OF THE DIFFERENT KINDS OF TREES.

The yarra grew here, as on the Darling, to a gigantic size, the height sometimes exceeding 100 feet; and its huge gnarled trunks, wild romantic-formed branches often twisting in coils, shining white or light red bark, and dark masses of foliage, with consequent streaks of shadow below, frequently produced effects fully equal to the wildest forest scenery of Ruysdael or Waterloo. Often as I hurried along did I take my last look with reluctance of scenes forming the most captivating studies. The yarra is certainly a pleasing object in various respects; its shining bark and lofty height inform the traveller of a distant probability of water, or at least of the bed of a river or lake; and being visible over all other trees it usually marks the course of rivers so well that, in travelling along the Darling and Lachlan, I could with ease trace the general course of the river without approaching its banks until I wished to encamp. The nature and character of several other species of the genus eucalyptus were nevertheless very different and peculiar. The small kind, covered with a rough bark and never exceeding the size of fruit trees in an orchard and called, I believe, by Mr. Oxley, the dwarf-box, but

by the natives goborro, grows only on plains subject to inundation, and it usually bears on the lower part of the trunk the mark of the water

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by which it is at times surrounded. Between the goborro and the yarra there seems this difference: the yarra grows only on the banks of rivers, lakes, or ponds, from the water of which the roots derive nourishment; but when the trunk itself has been too long immersed the tree dies; as appeared on various lakes and in reedy swamps on the Lachlan. The goborro on the contrary seldom grows on the banks of a running stream, but seems to thrive in inundations, however long their duration. Mr. Oxley remarked during his wet journey that there was always water where these trees grew. We found them in most cases during a dry season, a sure indication that none was to be discovered near them. It may be observed however that all permanent waters are invariably surrounded by the yarra. These peculiarities we ascertained only after examining many a hopeless hollow where grew the goborro by itself; nor until I had found my sable guides eagerly scanning the yarra from afar when in search of water, and condemning any distant view of goborro trees as hopeless during that dry season. In describing the trees which ornamented the river scenery I must not omit to mention a long-leaved acacia whose dark stems and sombre foliage, drooping over the bank, presented a striking and pleasing contrast to the yarra trunks, and the light soil of the water-worn banks. The bimbél (or spear-wood) which grows on dry forest land, the pine-like *Callitris pyramidalis* on red sandhills, and a variety of acacias in the scrubs, generally present groups of the most picturesque description.

RETURN TO THE PARTY.

April 26.

We continued towards the camp which I reached at about nine miles and found that nothing extraordinary had occurred during my absence. The overseer had been again to Coccoparra to hunt the wild cattle (by my orders) yet, although he found a herd and put two bullets through one animal, all escaped. The party thought to hem them in by driving them to the foot of the range; but as soon as the cattle found themselves beset they climbed, apparently without much difficulty, the abrupt rocky face of the hills, throwing down on their ascent the large fragments and loose stones that lay in their way and which, rolling down the declivities, checked their pursuers until the bullocks, wounded and all, escaped.

DEAD BODY FOUND IN THE WATER.

The working cattle had little good grass at the camp, and another reason I had for quitting it was the state of the waterhole. Even at first it was small and the water had a slightly putrid taste, the cause of which having been discovered, the water had become still less palatable. Piper, our native interpreter, in diving for fish on the previous day had, to his horror, brought up on his spear, instead of a fish, the putrid leg of a man! Our guide (to the Booraran) had left the camp during my absence; and it was said that

he was aware of the circumstance of the body of a native having been thrown into the hole; for he had abstained from drinking any of the water.

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I had still however a desire to reconnoitre the country to the southward in hopes that I might see enough of its features to enable me to arrive at some conclusion as to the final course of the Lachlan, and to arrange our further journey accordingly.

ASCEND BURRADORGANG.

April 27.

I rode to Burradorgang, a saddle-backed hill bearing 117 degrees from our camp and distant 19 miles. This hill I found to be the most western and the last between the Murrumbidgee and the Lachlan. I only reached its base with tired horses an hour before dusk. Just as I dismounted and began to climb the rocks a drizzling rain came on from the north-west, and it unfortunately first obscured that portion of the horizon which I was most anxious to see.

VIEW FROM BURRADORGANG.

To the northward, eastward, and southward however it continued clear, and the points visible in those directions fully occupied my attention until the western horizon became distinct. I was at once enabled to identify this hill with an angle observed when on the top of Yerrarar. Granard and the principal summits of Peel's and Macquarie's ranges were visible and, as the sky cleared I could see Warranary, that south-western extremity of the Mount Granard range already mentioned, and which I was enabled by my observations here to connect with the trigonometrical survey. But even from this summit nothing could be observed beyond besides the continuation of the range towards the north-west at an immense distance. The object next in importance was the country between me and the Murrumbidgee in a south-west direction. I expected that some kind of ridge or hills above the common level would separate that river from the Lachlan if the courses of both rivers continued to separate to any considerable distance westward. But although I perceived a low ridge extending towards the west from the most southern part of Peel's range I also saw that it terminated in the low level of the plains at about 20 degrees West of South.

A RAINY NIGHT WITHOUT SHELTER.

Burradorgang, this last of hills, consisted of ferruginous sandstone like all the others I saw further in the interior during the former journey. I descended to its base just as darkness came on; and myself and the men with me were forced to pass the night exposed to the wind and rain at a place where nevertheless we could find no water for our horses.

April 28.



The rain ceased some time before daybreak, but the weather continued cloudy and, fogs hanging on the distant horizon, I was not tempted again to ascend the mountain as I certainly should have done had the morning been clear. We mounted and retraced our steps to the camp. The country between this hill and the river consisted chiefly of soft red soil in which grew the cypress-like callitris, also acacia, and the bimbel or spear-wood.* It seemed to consist of a very low undulation, extending from the hill

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into the great angle formed by the Lachlan, whose general course changes near that camp from west to south-west. There was however a tract extending southward from the river for about three miles, on which grew yarra trees bearing the marks of occasional floods to the height of a foot above the common surface. This ground was probably in part under water when Mr. Oxley passed it, as he represents a swamp or morass in his map within this bend of the river. I found on the low tract, between Burradorgang and our camp, a new curious species of solanum, so completely covered with yellow prickles that its flowers and leaves could scarcely be seen.**

(Footnote. The wood named bimbel by the natives grows with a shining green lance-shaped leaf, and is in much request with them for the purpose of making their spears, boomerangs, waddies, etc.)

(**Footnote. *S. ferocissimum*, Lindl manuscripts; caule herbaceo erecto: aculeis confertissimis pugioniformibus arcuatis, foliis linearibus obtusis utrinque praesertim subtus furfuraceo-tomentosis aculeatissimis, pedunculis subtrifloris foliorum longitudine, calycibus inermibus.)

A NEW GUIDE.

On reaching the camp I found that Piper had fallen in with some natives, one of whom, an old man, undertook to conduct us to the Murrumbidgee in five days, assuring us that the Lachlan entered that river. This information, the dry state of the country, and the knowledge I had acquired of its principal features, determined me to follow the course of the Lachlan; and in the event of its soon uniting with the Murrumbidgee, to continue along the right bank of that river to its junction with the Murray, then to leave the bulk of our equipment, the carts and most of the cattle, and complete the survey of the Darling with a lighter party.

April 29.

We moved down the Lachlan, travelling in my former track, and we pitched our tents near the place where I had slept on the 26th, the cattle not being able to go further, from the softness of the ground after the rain.

April 30.

Following the same track, the party reached, at the distance of twelve miles, an angle of the river named Curwaddilly, at which there was a good pond, and here we encamped. From this point I obtained a bearing on Burradorgang, and it was the lowest station on the river which could be connected with my survey of the hills for, when Burradorgang sunk below the eastern horizon, a perfectly level line bounded our view on all sides.

NATIVE DOG.

May 1.

Just as the party was leaving the ground a noise was heard in the rear, and two shots were fired before I could hasten to the spot. These I found had been inconsiderately fired by Jones our shepherd at a native dog belonging to our new guide and which had attacked the sheep. This circumstance was rather unfortunate, for our guide soon after fell behind, alleging to the party that he was ill.

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I knew however where to find water that day; and we proceeded to the fine pond which I was so fortunate as to discover on the 24th ultimo after our horses had suffered thirst for three days and two nights. Two young natives who had accompanied us for some days undertook to find water for a couple of journeys beyond this pond. The men caught in this friendly pool several good cod-perch (*Gristes peelii*) a fish surpassing, in my opinion, all others in Australia. As we crossed the plains this day I observed the natives eating a plant which grew in the hollows and we found it, when boiled, a very good vegetable.

BRANCHES OF THE LACHLAN.

May 2.

We pursued a course nearly west for seven miles, having the Lachlan on our left until we were stopped by a watercourse, or branch of the river, which crossed our intended route at rightangles. Its banks were steep and the passage of our waggon was consequently a work of difficulty, but the best crossing place appeared to be just where it left the main channel. Here accordingly we cut down the bank on each side with spades and filled up the soft lowest part of the hollow with stumps and branches of trees, and all of which being covered with earth from the sides, the carts were got safely across after about half an hour's work. We soon however came to another similar watercourse, but by the advice of the natives we followed it to the northward, and we found that at a short distance it branched into shallow hollows of polygonum which we traversed without delay or difficulty. Soon after we had resumed our course by crossing these hollows, we came upon the main channel which very much resembled other parts of the Lachlan, only that it was smaller.

A NATIVE CAMP.

Piper's gin came to tell us that there was water ahead, and that natives were there. We accordingly approached with caution and having found two ponds of water we encamped beside them, the local name of the situation being Combedyega.

CHILDREN.

A fire was burning near the water and at it sat a black child about seven or eight years old, quite blind. All the other natives had fled save one poor little girl still younger who, notwithstanding the appearance of such strange beings as we must have seemed to her, and the terror of those who fled, nevertheless lingered about the bushes and at length took her seat beside the blind boy. A large supply of the balyan root lay near them, and a dog so lean as scarcely to be able to stand, drew his feeble body close up beside the two children as if desirous to defend them. They formed indeed a miserable



group, exhibiting nevertheless instances of affection and fidelity creditable both to the human and canine species. An old man came up to the fire afterwards with other children. He told us the name of the waterholes between that place and the Murrumbidgee, but he could not be prevailed on to be our guide.

A WIDOW JOINS THE PARTY AS GUIDE.

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Subsequently however a gin who was a widow, with the little girl above-mentioned, whose age might be about four years, was persuaded by him to accompany us.

HORSE KILLED.

At this camp, just after I had inspected the horses and particularly noticed one as the second best draught animal we had, I was requested by the overseer to look at him again, both bones of his near thigh having been broken by an unlucky kick from a mare. The horse had been with me on two former expeditions, and it was with great regret that I consented to his being shot. We were enabled to regale the old native with his flesh, the men shrewdly giving him to understand through Piper that the horse was with us what the emu was with them, too good a thing to be eaten by young men. He seemed to relish it much and next morning we left him roasting a large piece.

THE BALYAN ROOT.

The principal food of these inhabitants of the Kalare or Lachlan appeared to be balyan, the rhizoma, as already stated, of a monocotyledonous plant or bulrush growing amongst the reeds. It contains so much gluten that one of our party, Charles Webb, made in a short time some excellent cakes of it; and they seemed to me lighter and sweeter than those prepared from common flour.

HOW GATHERED.

The natives gather the roots and carry them on their heads in great bundles within a piece of net. The old man came thus loaded to the fire where the blind child was seated; and indeed this was obviously their chief food among the marshes.

May 3.

We proceeded nearly west according to the suggestion of our female guide. We crossed, at a few miles from Combedyega, my track in the afternoon of April 23rd; and soon after we entered on plains similar to those which we had traversed that day:

The morn was wasted in the pathless grass,
And long and lonesome was the wild to pass.

REACH THE UNITED CHANNEL OF THE LACHLAN.

We saw however the river-line of trees on our left, and late in the day we approached it. Here I recognised the Lachlan again united in a single channel, which looked as capacious as it was above, the only difference being that the yarra trees seemed low and of stunted growth. A singular appearance on the bushes which grew on the immediate bank attracted my attention. A paper-like substance hung over them in the manner in which linen is sometimes thrown over a hedge; but on examination it



appeared to be the dried scum of stagnant water. This—marks of water on the trees and the less water-worn character of the banks which were of even slope and grassy—seemed to show that the current of the river during floods here loses its force, and that the water is consequently slower in subsiding than higher up the stream.

NO WATER.

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The course of the river was very tortuous, but still I in vain traced the channel for water, even in the sharpest of its turnings, until long after it was quite dark. We encamped at length near a small muddy hole discovered with the assistance of our female guide, after having travelled nineteen miles. I found the latitude of this camp to be 33 degrees 52 minutes 59 seconds, which was so near that of Mr. Oxley's lowest point according to his book that I concluded we must be close to it. Fortunately we found some natives at this waterhole who told us that a long while ago white men had been encamped on the opposite side of the Kalare, and that the place where they had marked a tree was not very far distant, but that it had recently been burnt down. We saw today for the first time on the Kalare the red-top cockatoo (*Plyctolophus leadbeateri*).

NATIVES' ACCOUNT OF THE RIVERS LOWER DOWN.

May 4.

This morning it rained and, considering the long journey of yesterday, I gave the cattle rest. Here the natives again told us of Oolawambiloa, near a great river coming from the north, and only five days' journey from where we should make the Murrumbidgee. They also told us that the latter river was joined by another coming from the south before it reached Oolawambiloa.

We had now therefore the direct testimony of the natives that the Darling (for it could be no other) joined the Murray and that the river Lachlan did not lose its channel here as supposed by Mr. Oxley, but that in five days' journey further we might expect to trace it into the Murrumbidgee.

MR. OXLEY'S LOWEST CAMP ON THE LACHLAN.

May 5.

The ground being very heavy the cattle in the carts proceeded but slowly along the plains to the northward of the Lachlan; and while the party followed Mr. Stapylton I went along the bank with the natives to visit Mr. Oxley's last camp, which was not above a mile from that we had left. On my way I crossed a bed of fine gravel, a circumstance the more remarkable, not only because gravel was so uncommon on these muddy plains, but because Mr. Oxley had also remarked that no stone of any kind could be seen within five miles of the place. This gravel consisted of sand and pebbles of quartz about the size of a pea. Our female guide, who appeared to be about thirty years of age, remembered the visit of the white men; and she this day showed me the spot where Mr. Oxley's tent stood, and the root with some remains of the branches of a tree near it which had been burnt down very recently, and on which she said some marks were cut.

SLOW GROWTH OF TREES.

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Several trees around had been sawn and on two, about thirty yards west from the burnt stump, were the letters WW and IW 1817. The tree bearing the last letters was a gaborro or dwarf box, and had been killed two years before by the natives stripping off a sheet of bark; but from the growth of the solid wood around the carved part it appeared that this tree had increased in diameter about an inch and a half in seventeen years; the whole diameter, including the bark, being sixteen inches. We immediately dug around the burnt stump in search of the bottle deposited there by Mr. Oxley, but without success. The gins said that he rode forward some way beyond, and marked another tree at the furthest place he reached. I accordingly went there with them, and they showed me a tree marked on each side but, the cuttings being in the bark only, they were almost grown out. It stood beside a small branch or outlet of the river, which led into a hollow of polygonum. The natives also said that one of Mr. Oxley's men was nearly drowned in trying to cross this but that they got him out. They positively assured me that this was the farthest point Mr. Oxley reached; and it seemed the more probable as during a flood the deep and narrow gully extending between the river and the field of polygonum must have then been under water, and a most discouraging impediment to the traveller. I place this spot in latitude 33 degrees 45 minutes 10 seconds South; longitude 144 degrees 56 minutes East. The natives further informed me that three white men on horseback who had canoes (boats) on the Murrumbidgee had visited this part of the Lachlan since, and that after crossing it and going a little way beyond, they had returned.

A TRIBE OF NATIVES COME TO US.

In the evening, while a heavy shower fell, the natives who had come with me gave the alarm that a powerful tribe was advancing with scouts ahead, as when they mean mischief. We were immediately under arms and soon saw a small tribe consisting chiefly of old men, women, and children, approaching our party. They sat down very quietly near us, lighting their fire and making huts without saying a word; and on Piper going to them we soon came to a good understanding.

MR. OXLEY'S BOTTLE.

From them we learnt that, after the tree at Oxley's camp had been burnt down, a bottle had been found by a child who broke it, and that it contained a letter. This information saved us all further search, although it had been my intention to halt next day and send back six men to dig for the bottle; I had purposed also to have promised a full one in exchange for it, if they had found it.

May 6.

The chief of the new tribe had ordered a man to accompany us as guide, but after going a mile or two he fell back and left us; and we were thus compelled again to depend on

the information of the gin for the situation of water. I regretted exceedingly the defection of this envoy, by whose means I hoped to have been passed from tribe to tribe.

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The grass had improved very much on the banks of the Lachlan. A vast plain of very firm surface extended southward, but not a tree was visible upon it, while on our side the country was wooded in long stripes of trees.

WALJEERS LAKE.

About seven miles from the camp the river, the general course of which had been for several days about south-west, turned southward; and we came in sight of Waljeers. The natives had for some days told us of Waljeers, which proved to be the bed of a lake nearly circular and about four miles in circumference. It was perfectly dry, but in wet seasons it must be a fine sheet of water. As we approached its banks I observed that the surface, which was somewhat elevated above the country nearer the river, consisted of firm red soil with large bushes of atriplex, mesembryanthemum, and other shrubs peculiar to that kind of surface, which is so common on the left bank of the Bogan.

TRIGONELLA SUAVISSIMA.

The whole expanse of the lake was at this time covered with the richest verdure and the perfumed gale which:

fanned the cheek and raised the hair, Like a meadow breeze in spring,

heightened the charm of a scene so novel to us. I soon discovered that this fragrance proceeded from the plant resembling clover which we found so excellent as a vegetable during the former journey.* A young crop of it grew in scanty patches near the shores of the lake, and I recognised it with delight, as it seems the most interesting of Australian plants. The natives here called it Calomba and told us that they eat it. Barney said it grew abundantly at Murroagin after rain. It seems to spring up only on the richest of alluvial deposits, in the beds of lagoons during the limited interval between the recession of the water and the desiccation of the soil under a warm sun.** Exactly resembling new mown hay in the perfume which it gives out even when in the freshest state of verdure, it was indeed sweet to sense and lovely to the eye in the heart of a desert country. When at sea off Cape Leeuwin in September 1827, after a three months' voyage and before we made the land, I was sensible of a perfume from the shore which this plant recalled to my recollection.

(Footnote. *Trigonella suavisissima*, Volume 1.)

(**Footnote. On leaving Sydney for this expedition I placed in charge of Mr. McLeay, colonial secretary, the first specimen of this plant produced by cultivation. It grew luxuriantly in a flower-pot from seeds brought from the Darling where it was discovered. Volume 1.)



In the bed of Waljeers we again found the *Agristis virginica* of Linnaeus,* and an *Echinochloa* allied to *E. crusgalli*, two kinds of very rich grass; but most of the verdure in the middle of the bed consisted of a dwarf species of *Psoralea* which grew but thinly.** *Hibiscus* was also springing very generally. The bed of this lake had been full of the freshwater mussel; and under a canoe (which I took away in the carts) were several large crayfish dead in their holes. Dry and parched as the bed of the lake then was, the natives found nevertheless live freshwater mussels by digging to a substratum of sand. I understood that they also find this shell alive in the same manner, in the dry bed of the Lachlan.

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(Footnote. See Volume 1.)

(**Footnote. The third species of *Psoralea* before referred to (March 19th). *P. cinerea*, Lindley manuscripts; herbacea, incana, foliis pinnatim trifoliolatis, foliolis dentatis punctatis ovatis acutis intermedio basi cuneato, racemo pedunculato denso multifloro foliis triplo longiore, bracteis minimis ovatis acuminatis, calycibus pellucide paucipunctatis, caule ramisque strictis.)

This lake was surrounded by yarra trees similar to those on the banks of the river; and within them was a narrow belt of slender reeds but no bulrushes. On the western shore lay a small beach of sand. The banks were in height about eight feet above the ordinary water-line of the lake; and the greatest depth in the centre was about sixteen feet below that line. The yarra trees distinguishing the margin continued to form a dense belt extending westward from the northern shore; and the natives informed me that these trees surrounded a much smaller lake named Boyonga which lay, as they pointed, immediately to the northward of it.

On ascending the bank overlooking the western shore of Waljeers we found that it also consisted of firm red soil with high bushes of *atriplex*, etc., as on the opposite side. We next traversed a plain of the same elevation but of firmer texture than any we had seen nearer the Lachlan. The grass upon it was also good and abundant; and we found ourselves upon the whole in a better sort of country than we had seen for weeks; but still water was, if possible, scarcer than ever. After travelling about seven miles beyond Waljeers we regained the banks of the Lachlan; but I pursued its channel about two miles without finding a drop, and we encamped finally without having any for the animals after travelling upwards of sixteen miles.

BARNEY IN DISGRACE.

May 7.

The grass was green and abundant and dew had fallen upon it during the night; our cattle therefore had not fared as badly as on other nights of privation; and were able to proceed. After we had left our former encampment and the envoy had deserted us it occurred to me that our friend Barney, who had accompanied us a long way, appeared rather too anxious to have a gin. He had been busy, as I subsequently learnt, in raising a hue and cry on the approach of the tribe we last met, in hopes that we might quarrel with them, and that he might get one, in consequence, on easy terms. I recollected that he reminded me of his wants in this respect at the very moment these people were approaching. I foresaw the mischief likely to arise from this readiness of Barney to insult native tribes while under the wing of our party; and the unfavourable impression he was likely to make on them respecting us if he were allowed to covet their gins. I therefore blamed him for causing the return of the guide who had been sent with us by that tribe, placed him in irons for the night and, much as I liked the

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poor fellow as an intelligent native, I thought it necessary to send him back this morning in company with a mute young savage, also from Cudjallagong, who seemed much inclined to become a follower of the camp. Our stock of provisions could not be too carefully preserved and such followers, when beyond their beat, might have had claims on it not to be resisted. There then remained with us, besides Piper and his gin, two intelligent native boys, each being named Tommy, together with The Widow and her child. The two Tommies obtained new chronometrical surnames, being known in the party as Tommy Came-first and Tommy Came-last. The former had been told plainly to go back, upon which he was heard to say he should follow the party, notwithstanding Majy's orders, as he could always find opossums in the trees. I was pleased with his independence on being told this, and allowed him to accompany the party as well as his friend Tommy Came-last, whom he had picked up somehow in the woods.

A FAMILY OF NATIVES FROM THE MURRUMBIDGEE.

Our female guide maintained that there was a waterhole some miles onward at Pomabil; and we accordingly proceeded in that direction, regaining first the firm plains outside the trees growing on the river margin. We reached the part to which she had pointed and she went forward to look for the water but, on her calling out soon after that natives were there, we advanced into the wood, when we observed smoke arising and natives running away, pursued by The Widow. At length, perceiving that she stood talking to them, we went up. The strangers consisted of a family just come from the Murrumbidgee, and presented such a picture of the wild and wonderful that I felt a strong desire to make a sketch of the whole group. One man who was rather old being in mourning, as I was told, for the death of a brother, had his face, head and breast so bedaubed with white that he resembled a living skeleton; the others had large sticks, snakes and other reptiles in their hands, but they were perfectly naked and, crowding around him, presented a strange assemblage.

INCONVENIENT FORMALITY OF NATIVES MEETING.

I was anxious to learn from the principal personage the situation of the water; but on this first meeting it was necessary, as usual on all such occasions, to continue for some time patient and silent. This formality was maintained very remarkably by the old man and Piper. In vain did I desire the latter to ask him a question; each stood silent for a full quarter of an hour about eight yards apart, neither looking at the other. The female however became the intermediate channel of communication, for both spoke alternately in a low tone to her. At length Piper addressed the old man, raising his voice a little but with his head averted; and the other answered him in the same way; until at length by slow degrees they got into conversation. We were then informed that water was to be found a mile or two on, and the

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old man agreed to guide overseer Burnett and Piper to the place. I conducted the wheel-carriages along the firm plain outside and, after proceeding more than 2 1/2 miles, I heard a shot from Burnett, announcing his arrival at the water. I accordingly proceeded with the party in that direction, and we encamped near the river, amid the finest verdure that we had yet seen and after a journey of nine miles. We were informed that the Lachlan contained water in more abundance one or two days' journey lower down, and that the Murrumbidgee was not far to the southward.

May 8.

This day being Sunday I gave the cattle rest; but Mr. Stapylton went down the river with two men to make sure of water at our next stage. They found a pond at the distance of about eleven miles; the way to it being over a fine hard plain covered with mesembryanthemum and salsolae. The party saw a large kangaroo, the first observed on the banks of the Lachlan during this journey. The old man and his family had proceeded across to Waljeers in order to procure mussels, the object, as I understood, of his journey from the Murrumbidgee.

May 9.

We moved to the pond above-mentioned, named Yambarenga, and found near it a number of large huts similar to those of the Darling. The water was very green and muddy but the taste was good. The plain we traversed this day exactly resembled the best of the ground on the Darling; and in some places I observed the Quandang bushes,* having their branches covered with a parasitical plant whose bright crimson flowers were very ornamental.**

(Footnote. *Fusanus acuminatus*.)

(**Footnote. *Loranthus quandang*, Lindley manuscripts; *incanus*, foliis oppositis lineari-oblongis obsolete triplinerviis obtusis, pedunculis axillaribus folio multo brevioribus apice divaricato-bifidis 6-floris, floribus pentameris aequalibus, petalis linearibus, antheris linearibus basi insertis. Next *L. gaudichaudi*.)

THE MURRUMBIDGEE SEEN FROM THE LACHLAN.

South of the spot where we now encamped the ground, which consisted of firm red clay, gradually rose; and from a tree Burnett observed the tall yarras of the Murrumbidgee at a distance of about eight miles. The latitude observed was 34 degrees 14 minutes 37 seconds South, longitude 144 degrees 25 minutes East.

May 10.



A thick fog prevented the men from getting the cattle together as early as usual. In the meantime I made a drawing of the native female and the scenery around; and we finally left the encamping ground at a quarter before eleven. The first part of this day's journey was over a rising ground, on leaving which the country seemed as if it descended westward into a lower basin, so that I took the river Lachlan which lay below to be already the Murrumbidgee.

RICH TINTS ON THE SURFACE.

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We next travelled over a fine hard plain covered very generally with small bushes of a beautiful orange-flowered, spreading under-shrub, with broad thin-winged fruit;* but the *Mesembryanthemum aequilaterale* grew almost everywhere and seemed to take the place of grass. It crept over the light red earth, ornamenting it with a rich variety of bright green, light red, purple, and scarlet tints which, when contrasted with the dead portions that were all of a pale grey colour, produced a fine harmonious foreground, fit for any landscape. The plains were intersected by a small wood of goborro (dwarf box) and after crossing this and keeping the lofty yarra trees in view we found these trees at length growing on ground which was intersected by hollows full of reeds, other parts of the surface bearing a green crop of grass.

(Footnote. *Ropera aurantiaca*, Lindley manuscripts; *foliolis linearibus obtusis succulentis petiolo aequalibus, petalis obovatis obtusissimis, fructibus orbiculatis*. November 1838: This *Ropera* has grown in the gardens of the Horticultural Society at Chiswick and proves a pretty new annual flower.)

IMPROVED APPEARANCE OF THE RIVER.

The banks of the river bore here a very different aspect from any parts which we had seen above; and I supposed that we were at length approaching its junction with the Murrumbidgee. The bed was broader but not so deep, and contained abundance of water at every turning. Ducks, pigeons, cockatoos and parrots were numerous; and we had certainly reached a better country than any we had yet traversed.

INHABITED TOMB.

On a corner of the plain, just as we approached the land of reedy hollows, I perceived at some distance a large, lonely hut of peculiar construction, and I accordingly rode to examine it. On approaching it I observed that it was closed on every side, the materials consisting of poles and large sheets of bark, and that it stood in the centre of a plot of bare earth of considerable extent, but enclosed by three small ridges, the surface within the area having been made very level and smooth. I had little doubt that this was a tomb but, on looking through a crevice, I perceived that the floor was covered with a bed of rushes which had been recently occupied. On removing a piece of bark and lifting the rushes, I ascertained, on thrusting my sabre into the hollow loose earth under them, that this bed covered a grave.

Tommy Came-first, who was with me, pronounced this to be the work of a white man; but by the time I had finished a sketch of it The Widow had hailed him from the woods and told him that it was a grave, after which I could not prevail on him to approach the spot. I carefully replaced the bark, anxious that no disturbance of the repose of the dead should accompany the prints of the white man's feet. I afterwards learnt from The Widow that the rushes within that solitary tomb were actually the nightly bed of some near relative

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or friend of the deceased (probably a brother) and that the body was thus watched and attended in the grave through the process of corruption or, as Piper interpreted her account, until no flesh remains on the bones; "and then he yan (i.e. goes) away!" No fire, the constant concomitant of places of shelter, had ever been made within this abode alike of the living and the dead, although remains of several recent fires appeared on the heath outside.

DEAD TREES AMONG THE REEDS.

In the afternoon we came upon the river where rich weeds and lofty reeds enveloped a soft luxuriant soil. The yarra, or bluegum, not only grew on its banks, but spread over the flats; but I remarked that where the reeds grew thickest most of the trees were dead; and that almost all bore on their trunks the marks of inundation. These dead trees among reeds suggest several questions: Were they killed by the frequent burning of the reeds in summer? If so, how came they to grow first to such a size among them? Or did excess of moisture or its long continuance kill them? Are seasons now different from those which must have admitted of the growth of these trees for half a century? Or have changes in the levels of the deposits made by the larger rivers below, produced inundations above, to a greater extent than they had spread formerly?

I was returning with the overseer from examining the country some miles in advance of the carts, and with the intention of encamping where I had left them halted, when I found the men had followed my track into some bad ground. After extricating them from it I proceeded three miles further to Bidyengoga, which we did not reach until dark. Water was found in the bed of the Lachlan on our penetrating through a broad margin of reeds towards some lofty yarra trees. Latitude 34 degrees 12 minutes 17 seconds South; longitude 144 degrees 18 minutes East.

VISIT SOME RISING GROUND.

May 11.

Rising ground appeared on the horizon about four miles to the north-west, and an intervening plain of firm clay covered with atriplex and salsolae rose towards it from the very margin of the reedy basin of the river. Although anxious to see the junction of the Lachlan and Murrumbidgee, curiosity irresistible led me to the rising ground, while Mr. Stapylton traced the supposed line of the Lachlan and the overseer conducted the carts and party westward. Unlike the hills I had seen on the limits of interior plains elsewhere, the ridge I now visited consisted of the same rich loam as the plains themselves.

VIEW NORTHWARD.

It was connected with other low ridges which extended in a north-western direction into a country finely diversified with hill, dale, and patches of wood, but in all probability at that time entirely without water. The dry bed of a lake lay in a valley immediately north of the hills on which I stood. A few trees of stunted appearance alone grew in the hollow. On the top of this ridge I ate a russet apple which had grown in my garden at Sydney, and I planted the seeds in a spot of rich earth likely to be saturated with water as often as it fell from the heavens.

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DIFFICULTIES IN FINDING EITHER OF THE RIVERS OR ANY WATER.

Southward I could see no trace of the Lachlan, and I hastened towards the highest trees where I thought it turned in that direction. I thus met the track of the carts at rightangles and galloped after them as they were driving through scrubs and over heaths away to the westward. When I overtook them I found that Mr. Stapylton had crossed over to them and told Burnett to say to me that he had not seen the Lachlan.

SEARCH FOR THE MURRUMBIDGEE.

A row of lofty yarra trees appeared to the southward and, as I expected to find the Murrumbidgee among them, I directed my course thither, travelling to the westward of south as well as any appearance of water would allow. We passed through a scrub which swarmed with kangaroos, bronze-wing pigeons, and cockatoos; also by a rather singular hollow resembling the bed of a dry lake, in which we found several grasses apparently new and very beautiful,* together with a low but wide-spreading bush which bore a fruit resembling a cherry in size and taste, but with a more elongated stone.

(Footnote. *A Poa near P. australis*, R. Br. and *Bromus australis* of R. Br.)

After descending into what I had thought was the bed of a river we found unequal ground and saw, at a distance, patches of reeds, also lofty yarra trees growing all about. On reaching the reeds we found they filled only very slight hollows in the surface and, after passing through them, we crossed another firm plain with atriplex and salsolae. No river was to be seen, but another line of trees bounded this plain, exactly like those on the banks of streams, and on reaching it I felt confident of finding water; but on the contrary there was only an open forest of goodly trees without the least indication of it.

A NIGHT WITHOUT WATER.

The sun had now set and I directed the people to encamp while I rode forward in search of this river. Passing through a thick scrub I observed another line of river trees, but I penetrated their shades with no better success than before.

HEAVY FALL OF RAIN.

A dark and stormy night of wind and rain closed over us and, notwithstanding the want of water which we were again destined to experience, we got wet enough before we regained the camp. Mr. Stapylton had arrived there before me without having seen either the Lachlan or the Murrumbidgee in the course he had taken, and as the general bearings and directions I had given him did not admit of his deviating too far from the route of the carts he had been obliged to return unsuccessful. After so long a day's journey the cattle were doomed to pass another night yoked up, although surrounded by

luxuriant pasture, for thus only could we prevent them from straying in search of water. The rain however moistened the grass on this as on three former occasions when we had suffered the same privation; and the cattle were ordered to be loosened to feed at the earliest dawn.

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May 12.

It had rained heavily during the night so that water was no longer scarce. The canoe brought from Waljeers had been placed to receive the rain and conduct it into a cask which was thus filled.

TWO MEN MISSING.

On getting up I learnt that two men had set off in quest of water and had been absent all night. That they should have taken this step without first asking permission was wrong, but that nobody had mentioned the circumstance to me till then was still more vexatious as, by firing shots and throwing up rockets, these men might have found their way back in the dark. I was very glad however to hear them at length answer our shots, and not at all sorry to see them come in thoroughly drenched with the empty kettles on their shoulders. After this I learnt, when we were about to start, that six of the bullocks had got away; Piper however managed to trace and bring them back. The weather then cleared up and we proceeded, in a south-west direction as nearly as patches of scrub permitted, in search of the Murrumbidgee; for I was then convinced, from the different appearance of the country, that we had got beyond the junction of the Lachlan. On passing the scrubs we crossed a plain of the same kind which we had so often met. It sloped towards a belt of large trees in a flat, where we also saw reeds, the ground there being very soft and heavy for the draught animals. Passing this flat we again reached firm ground with stately yarra trees; and charming vistas through miles of open forest scenery had indeed nearly drawn me away from the bearing which was otherwise most likely to hit the river.

REACH THE MURRUMBIDGEE.

I however continued to follow it and, in the midst of such scenery without being at all aware that I was approaching a river, I suddenly saw the water before me and stood at last on the banks of the Murrumbidgee.

This magnificent stream was flowing within eight feet of its banks with considerable rapidity, the water being quite clear; and it really exceeded so much my expectations (surpassing far the Darling and all the Australian rivers I had then seen) that I was at first inclined to think it could be nothing less than the Murray which, like the Darling, might have been laid down too far to the west. At all events I was delighted to find that this corner of Australia could supply at least one river worthy of the name. After thirsting so long amongst the muddy holes of the Lachlan I witnessed, with no slight degree of satisfaction, the jaded cattle drinking at this full and flowing stream, resembling a thing of life in its deep and rippling waters. Now at length there was an end to the privations we had so often suffered from want of water; and the bank was also clothed with excellent grass—a pleasing sight for the cattle. Reeds appeared in patches back from

the river but, unlike the banks of the Darling, the best and clearest ground was on the immediate margin of the Murrumbidgee.

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NATIVES ON THE OPPOSITE BANK.

Piper, with that keenness of vision so peculiar in savages, soon descried some natives on the other side, and pointed out to me a tribe filing in a straggling line through the woods at a distance. I made him cooey to them, they answered the call, and in a short time appeared on the opposite bank. Our first interview with these sons of the woods was highly creditable to them. They advanced in a numerous group, but in a silent and submissive manner, each having a green bough twined round the waist or in his hand. They sat down on the opposite bank and The Widow, having taken a position exactly facing them, held a parley which commenced before I could get to the spot. It was now that we learnt the full value of this female, for it appeared that while some diffidence or ceremony always prevents the male natives, when strangers to each other, from speaking at first sight, no such restraint is imposed on the gins; who with the privilege of their sex are ever ready to speak, and the strangers as it seemed to answer; for thus at least we held converse with this tribe across the river. Our female guide, who had scarcely before ventured to look up, stood now boldly forward and addressed the strange tribe in a very animated and apparently eloquent manner; and when her countenance was thus lighted up, displaying fine teeth and great earnestness of manner, I was delighted to perceive what soul the woman possessed, and could not but consider our party fortunate in having met with such an interpreter.

THEY SWIM ACROSS.

At length the strangers proposed swimming over to us and we invited them to do so.

AFRAID OF THE SHEEP.

They then requested that those wild animals, the sheep and horses, might be driven away, at which The Widow and Piper's gin laughed heartily, but they were removed accordingly. The warriors of the Murrumbidgee were about to plunge into the angry flood, desirous, no doubt, of showing off like so many Caesars before these females, but their fears of the sheep, which they could not hide, must have said little for their prowess in the eyes of the damsels on our side of the water. The weather was cold, but the stranger who first swam across bore in one hand a piece of burning wood and a green branch. He was no sooner landed than he converted his embers into a fire to dry himself. Immediately after him followed a grey-haired chief (of whom I had heard on the Lachlan) and two others. It appeared however that Piper did not at first understand their language, saying it was "Irish"; but it happened that there was with this tribe a native of Cudjallagong (Regent's lake) and it was rather curious to see him act as interpreter between Piper and the others.

THEIR REPORTS ABOUT THE JUNCTION OF THE DARLING.

We learnt that the Murrumbidgee joined a much larger river named the Milliwa, a good way lower down, and that these united streams met, at a still greater distance, the Oolawambiloa, a river from the north which received a smaller one, bringing with it all the waters of Wamboul (the Macquarie). These natives proposed to amuse us with a corrobory dance, to which I did not object, but they postponed it until the following evening.

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SEARCH UP THE RIVER FOR JUNCTION OF THE LACHLAN.

May 13.

Having been very anxious to complete my survey of the Kalare by determining the true situation of its junction with the Murrumbidgee, I set out this morning with the intention of tracing this river upwards to that point, which I thought could not be at a greater distance than ten or twelve miles. We sought it however in vain, until darkness put a stop to our progress after we had measured full twenty miles. We lay down by the riverside and, although entirely without either food or shelter, determined to prosecute our search at daylight next morning.

COURSE OF THE MURRUMBIDGEE.

May 14.

Having laid down our work on the map last evening (by the light of the fire) I found that we were to the eastward, not only of our late camp where we had wanted water, but also even of our last camp on the Lachlan, and to the southward of it thirteen miles. It thus appeared that the river had taken a very extraordinary turn to the south or south-east, probably near our last encampment upon it. After measuring three miles further this morning, by which I was enabled to intersect a low hill in the situation where I expected to find the Kalare, and being then on a bend of the Murrumbidgee whence I could see no other indication of it save the line of trees some miles off, in which however it no doubt was, the whole intervening space being covered with *Polygonum junceum*, I was content with intersecting the point where that line joined the Murrumbidgee, chiefly out of consideration for the men who were with me. It was well that I then determined to return, for one man became so faint, when within a few miles of the camp, that the two others had to remain with him until I rode forward to it and sent back the doctor with something for them to eat.

The course of the Murrumbidgee, as far as I traced it in that excursion, appeared to be about west, and I distinctly saw, from the highest point I attained on that river, rising ground at a great distance also bearing east. Under these circumstances it was obvious that the long course of the river Lachlan is in no part better defined than where it enters the basin of the Murrumbidgee. Water, which had been so scarce in other parts, was abundant where its channel and immediate margins assumed the reedy character of the greater river. So far from terminating in a lagoon or uninhabitable marsh, the banks of the Lachlan at fifty miles below the spot where Mr. Oxley supposed he saw its termination as a river, are backed on both sides by rising ground, until the course turns finally southward into the Murrumbidgee.

TRIBE FROM CUDJALLAGONG VISITS THE CAMP IN MY ABSENCE.

On my arrival at the camp I found that six of the party mounted had set out in search of me at midday. A strong tribe had arrived soon after my departure and, in conjunction with those natives whom we found there, it had been molesting the camp during the whole of the night. On first coming up the men composing it boldly approached the fires and took their seats, demanding something to eat.

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MOVEMENTS OF THE TRIBE.

It appeared that they had followed our cart track downwards, having with them a native of Cudjallagong. They inquired particularly why Majy had gone to the junction of the Kalare with so few people; and they gave a very unfavourable account of the tribe at that place. This alarmed Mr. Stapylton, and when he observed the tribe set off in the morning, back along the cart track, he despatched the party on horseback under Burnett with orders to observe the movements of the tribe, to look for my track and, if possible, to join me. The party returned to the camp about eight in the evening, to my great satisfaction, for I had been apprehensive that they might have proceeded to seek me at the junction and I had despatched two men to recall them as soon as I returned.

CAUGHT FOLLOWING MY STEPS.

Burnett reported when he returned that he had found our track after making a considerable circuit five or six miles from the camp; and as Piper, who accompanied him, was tracing my steps homewards, on perceiving some natives running along it, he concluded that we were just before them and sounded the bugle, when they proved to be the tribe before mentioned, all armed with spears. What their object was I cannot say, for three of them had been trotting along the footmarks, while the rest of the tribe in a body kept pace abreast of them. On hearing the bugle it appeared that they seemed much alarmed and drew up at a distance.

PIPER QUESTIONS THEM.

They would not allow Piper to approach them, but one at length came forward and informed him that Majy was gone home. Piper was so dubious about this that he insisted on examining the points of their spears.

During the nights passed at this camp the natives were on the alert, so that their various movements, cooys, and calls kept the party in a state of watchfulness, aware, as experience had taught us, of their thieving propensities. Some rockets sent up about the time I was expected on the evening of our absence had however scared them a little; and it is probable that the man from Cudjallagong had given them new ideas about soldiers. Piper's watchword, also, when taking up his carabine, usually was "Bell gammon soldiers."* They left the neighbourhood of our camp on my return and we saw no more of the tribe which had followed me.

(Footnote. Meaning Soldiers are no joke!)

CHAPTER 3.4.

The Murrumbidgee compared with other rivers.
Heaps of stones used in cooking.



High reeds on the riverbank.
Lake Weromba.
Native encampment.
Riverbanks of difficult access.
Best horse drowned.
Cross a country subject to inundations.
Traverse a barren region at some distance from the river.
Kangaroos there.
Another horse in the river.
Lagoons preferable to the river for watering cattle.
High wind, dangerous in a camp under trees.

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Serious accident; a cartwheel passes over The Widow's child.
Graves of the natives.
Choose a position for the depot.
My horse killed by the kick of a mare.
Proceed to the Darling with a portion of the party.
Reach the Murray.
Its breadth at our camp.
Meet with a tribe.
Lake Benanee.
Discover the natives to be those last seen on the Darling.
Harassing night in their presence.
Piper alarmed.
Rockets fired to scare them away.
They again advance in the morning.
Men advance towards them holding up their firearms.
They retire, and we continue our journey.
Again followed by the natives.
Danger of the party.
Long march through a scrubby country.
Dismal prospect.
Night without water or grass.
Heavy rain.
Again make the Murray.
Strange natives visit the camp at dusk.

THE MURRUMBIDGEE COMPARED WITH OTHER RIVERS.

May 15.

The night had been stormy with rain so that I had not been able to ascertain the latitude of the point at which we had reached this important river. It was Sunday and, although the two men sent after Burnett's party had come in early enough, we remained in the same camp. I had already been struck with the remarkable dissimilarity between the Murrumbidgee and all the interior rivers previously seen by me, especially the Darling. The constant fulness of its stream, its water-worn and lightly-timbered banks, and the firm and accessible nature of its immediate margin, unbroken by gullies, were all characters quite the reverse of those which I had seen elsewhere. Whatever reeds or polygonum might be outside, a certain space along the river was almost everywhere clear, probably from its constant occupation by the natives.

HEAPS OF STONES USED IN COOKING.

One artificial feature not observed by me in other places distinguishes the localities principally frequented by the natives, and consists in the lofty mounds of burnt clay or ashes used by them in cooking. The common process of natives in dressing their provisions is to lay the food between layers of heated stones; but here, where there are no stones, the calcined clay seems to answer the same purpose, and becomes better or harder the more it is used. Hence the accumulation of heaps resembling small hills.* Some of them were so very ancient as to be surrounded by circles of lofty trees; others, long abandoned, were half worn away by the river which, in the course of ages, had so far changed its bed that the burnt ashes reached out to mid-channel; others, now very remote from the river, had large trees growing out of them.

(Footnote. And Jacob said unto his brethren, Gather stones: and they took stones, and made a heap, and they did eat there upon the heap. Genesis 31:46. "Thevenot describes the way of roasting a sheep, practised by the Armenians, by which also the use of smoky wood is avoided; for having flayed it, they cover it again with the skin, and put it into an oven upon the quick coals, covering it also with a good many of the same coals, that it may have fire under and over to roast it well on all sides; and the skin keeps it from being burnt." Harmer. Whoever has seen the Australian natives cook a kangaroo must recognise in this description the very same process.)

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HIGH REEDS ON THE RIVERBANK.

I saw the first of these heaps when near the end of the last day's journey along the Lachlan, where this river partook of the reedy character of the Murrumbidgee. I understood that the balyan or bulrush-root which is the chief food of the natives there is prepared in those kilns when a family or tribe are together. I ascertained the name of the place to be Weyeba; its latitude is 34 degrees 21 minutes 34 seconds South; longitude 143 degrees 56 minutes 27 seconds East.

May 16.

We commenced our journey down the Murrumbidgee. Our route passed occasionally through reeds as we cut off the bends of the river; but they formed no serious impediment although they stood so high that we occasionally experienced some difficulty in following each other through them. Having found, after surveying the river a few miles down, that the general course was about south-west, as I had also found it to be above our camp, I followed that direction as a general line of route, leaving the river at length at some distance to the left. The country looked well, lofty yarra trees and luxuriant grass giving it the appearance of fine forest land; but most of these trees bore marks of inundation, and the water appeared to have reached several feet up their trunks. At length I came on a native path conducting westward; but as it led to rising ground with *Atriplex halimoides*, etc., I bent our course to the south and reached the river at sunset.

LAKE WEROMBA.

Burnett and Piper followed the native path until they came to the bed of a fine lake about half a mile across, and they met some natives who told them that the name of it was Weromba. Mr. Stapylton also discovered a small lake of the same sort near our route and south of the other. Both sheets of water, like that of Waljeers, were surrounded by a ridge of rising ground consisting of the red earth of the dry plains, and it was covered with the salsolaceous shrubs peculiar to them. These lakes seem to be supplied only from the highest floods of the river, and to constitute a remarkable and peculiar feature in the character of the surface. I had been informed of a very large one of the same kind named Quawingame near the left bank of the Lachlan, and not far from its junction with the Murrumbidgee; but the singular turn of the first-mentioned river prevented me from seeing it.

NATIVE ENCAMPMENT.

As we drew near the river I perceived the huts of a tribe with a fire smoking before each. I immediately sent back for the gins, but before they could come up the natives whom we saw there noticed us and immediately disappeared among the reeds,

shrieking as if they had been mad. Our females soon after approached their huts and called on them to return, but in vain.

RIVERBANKS OF DIFFICULT ACCESS. BEST HORSE DROWNED.

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A misfortune befel us this evening which made the party better aware of the treacherous nature of the banks of this part of the Murrumbidgee. I had just time before it got dark to find a place where the cattle could approach the water, the banks being almost everywhere water-worn and perpendicular, and consequently inaccessible and dangerous to animals in descending to drink. To this point I had sent the sheep, and the men were leading the horses also towards it when the foremost, which unfortunately was the best, made a rush to the water at a steeper place, and fell into the river. He swam however to the other side but, in returning, sank in the middle of the stream, never to rise again. He had winkers on and I think it probable that he had put his foot into a short rein which was attached to the collar. This horse was of the Clydesdale breed and drew the cart containing my instruments throughout the journey along the Darling last year. His name was Farmer—an unfortunate appellation for surveying horses—for Farmer's Creek, in the new road to Bathurst, was named after another horse which fell there and broke his neck while I was marking out the line.

CROSS A COUNTRY SUBJECT TO INUNDATIONS.

The land adjacent to the river was of the richest quality; and the grass on it was luxuriant and the forest scenery fine. The lofty trees certainly bore marks of inundation one or two feet high; but as land still higher was not far distant it cannot be doubted, notwithstanding its liability to become flooded, that the soil might supply the wants of an industrious population; especially as its spontaneous productions are the chief support of the aboriginal inhabitants.

TRAVERSE A BARREN REGION AT SOME DISTANCE FROM THE RIVER.

May 17.

A beautiful morning. The latitude of this camp being exactly that of the most southern bend of the river in Arrowsmith's map, I ventured upon a course nearly west in order to clear the bends. The lofty trees I had seen before me were found to be situated, not on the banks of the river, but amongst scrubs. We afterwards came to sandhills and extensive tracts covered with that most unpleasing of shrubs to a traveller, the *Eucalyptus dumosa*, and the prickly grass mentioned by Mr. Oxley. We traversed ridges of sand rising perhaps sixty feet above the plains, nearer the river; and, when viewed from trees, the same kind of country seemed unlimited in all directions. I therefore travelled south-south-west and afterwards southward; until we once more entered among the yarra trees on the more open ground by the river, and encamped after a journey of about twelve miles. The country we had this day traversed was of so unpromising a description that it was a relief to get even amongst common scrubs, and escape from those of the *Eucalyptus dumosa*. This species is not a tree but a lofty bush with a great number of stems, each two or three inches in diameter; and the bushes grow thickly together, having between them nothing but the prickly grass in large tufts. This dwarf wood approached to the very river, where we encamped without leaving an

intermediate plain, as on the Lachlan. In this country, however dreary it appeared, we found a beautiful grevillea not previously seen by us.

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KANGAROOS THERE.

During the day we saw also a great many kangaroos and killed two of them.

ANOTHER HORSE IN THE RIVER.

Notwithstanding every precaution in watering the cattle, and at a place selected too as the best that could be found after a careful examination of two miles of the river, one of the horses fell in; but on this occasion it was safely got out again. The abundance of water, though a novelty to us, was a source of new trouble and anxiety from the danger our cattle were in of being drowned, owing to the precipitous banks and soft mud of the river. This peril was indeed so imminent that in the morning it was thought most prudent to water all the horses with a bucket, and not to risk the loss of the bullocks by suffering them to drink at all.

May 18.

Being determined to keep the river in sight, we this day continued our journey along its margin. I found we could follow the general course without entering bends by travelling at the base of a second bank, which seemed to divide the yarra-tree flats from the scrubby ground behind.

LAGOONS PREFERABLE TO THE RIVER FOR WATERING CATTLE.

We came thus upon some rainwater in the clay of the plains which, being sufficient to satisfy the bullocks, we gladly availed ourselves of the opportunity it afforded of watering them without unyoking. After proceeding about three miles further we saw a lagoon between us and the Murrumbidgee. It resembled a bend of the river, and contained abundance of water on which were three pelicans and a number of ducks. When we had travelled nearly far enough to encamp, we came on two other lagoons of the same kind, similarly situated and both containing water. The grass being good, I determined to pitch our tents between them, as the cattle might thus be watered for one night at least without the risk of being bogged or drowned. These lagoons looked like different bends of a river, although we saw the ends of both and passed on firm ground between them. It was evident however that they could only be supplied by the inundations of the river. On this day we killed a kangaroo.

HIGH WIND, DANGEROUS IN A CAMP UNDER TREES.

May 19.

During the night the weather was tempestuous; at three A.M. it blew a hurricane and the rain fell heavily afterwards. I was not sorry when the wind abated for we were so confined for room between the two lagoons that my tent had been pitched, and most of our encampment placed, unavoidably under a large yarra tree, a very unsafe position

during high winds, but fortunately no branches fell. In the morning, after proceeding about a mile, another lagoon lay before us, which was full of water and indeed terminated in the river. We avoided it by turning to the right and gaining the higher ground above the level of floods. We continued along this upper land, thus crossing two small plains; but soon after, being apprehensive of

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going too far from the river, we again entered the open forest of yarra trees which marked so distinctly its immediate margin. At 3 1/2 miles we passed a bend of the river, full of dead trees, the banks being quite perpendicular and loose. After reaching another bend three miles further we noticed two lagoons, apparently the remains of an ancient channel of the river; and at ten miles we came upon a creek as capacious as the Lachlan and full of large ponds of water. Mr. Stapylton examined this creek some way up and he found that it came from the north-east; and on arriving at a favourable place I crossed with the party and encamped, the day having been very rainy and cold. We soon discovered that this channel was only a branch of one from the north and, the latter being very deep, I determined to halt next day, that its course might be explored while the men made a fit passage across it for the carts.

May 20.

This morning the weather appeared beautifully serene; and the barometer had risen higher than I had ever seen it on this side of the mountains. Mr. Stapylton, who left the camp in the morning, returned about sunset after exploring the creek through a very tortuous course, more or less to the northward of west. He had also ascertained that it supplied a small lake about eight miles to the westward of our camp, whence he had perceived its course bending again towards the river, of which he in fact considered it only a branch: and I therefore concluded that the ponds of water so abundant in it were but the remains of a flood in the Murrumbidgee.

May 21.

A good passageway having been made, we crossed the watercourse and proceeded towards Lake Stapylton as I understood that there we might easily recross. I was informed by Burnett that when the journey commenced this morning the gins in the bush had not responded to Piper's call until after such a search as convinced him that both intended to leave the party. He said that in such cases the law of the aborigines was that the two first attempts of a wife to leave her husband might be punished by a beating, but that for the third offence he might put her to death. On the way we traversed the head of a creek somewhat similar to the last, at a place where it was nearly level with the plain although, just below, it contained a fine reach of water obviously supplied by the river.

SERIOUS ACCIDENT; A CARTWHEEL PASSES OVER THE WIDOW'S CHILD.

Here an unfortunate accident befel the little native child Ballandella who fell from a cart and, one of the wheels passing over, broke her thigh. On riding up I found The Widow her mother in great distress, prostrate in the dust with her head under the limb of the unfortunate child. I made the doctor set it immediately; but the femora having been

broken very near the socket, it was found difficult to bandage the limb so as to keep the bone in its place. Every care however was taken of the poor little infant that circumstances would allow; and she bore the pain with admirable patience though only four years old. In her cries on first meeting with the accident she was heard to call for Majy, a curious instance of this child's sense at so early an age.

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I found that the ground near the lake afforded so good a position for a depot that I encamped upon it with the intention of ascertaining what grass the neighbourhood afforded, and how the situation was likely to answer this purpose in other respects. It had been latterly my intention to leave the carts, boats, and most of the cattle in a depot at the junction of the Murrumbidgee and Murray; and to proceed with two light carts only and a month's provisions to complete the survey of the Darling. We were now, I considered, within three days' journey, at most, of that junction (according to Arrowsmith's map) and as these rivers were dangerous to the cattle, and their banks much frequented by the natives, such a place as this seemed more convenient and secure for a temporary depot.

GRAVES OF THE NATIVES.

On the rising ground near our camp were several graves, all inclosed in separate parterres of exactly the same remarkable double or triple ridges as those first seen on the lower part of the Lachlan. There were three of these parterres all lying due east and west. On one, evidently the most recent, the ashes of a hut appeared over the grave. On another, which contained two graves (one of a small child) logs of wood mixed with long grass were neatly piled transversely; and in the third, which was so ancient that the enclosing ridges were barely visible, the grave had sunk into a grassy hollow. I understood from The Widow that such tombs were made for men and boys only, and that the ashes over the most recent one were the remains of the hut which had been burnt and abandoned after the murder of the person whose body was buried beneath had been avenged by the tribe to whom the brother or relative keeping it company above ground had belonged.

CHOOSE A POSITION FOR THE DEPOT.

May 22.

This morning the bullock-drivers gave so favourable an account of the pasture that I determined to leave a depot there and to set out next morning with the rest of the party for the Darling. The day was therefore passed in making the necessary arrangements. I proposed leaving Mr. Stapylton with eight trusty men; and to take with me the rest, consisting of fifteen, including Burnett and Piper. I calculated on being absent four weeks at most; and rations for the supply of the party for that time were immediately weighed out and packed, along with our tents, in two light carts which were to be drawn by five bullocks each. Thus I expected to be able to travel fifteen miles a day; and to have the men in better order for dealing with the fire-eaters of the Darling than when they were all occupied as bullock-drivers, carters, *etc. etc.*

MY HORSE KILLED BY THE KICK OF A MARE.

May 23.

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Before I got up this morning I was informed that the same unlucky mare which had already caused the death of one of the horses had just broken the thigh of my own horse; and thus I was forced to have it shot when it was in better condition than usual, having been spared from working much for some time that it might be fresh for this excursion. Such an inauspicious event on the morning of my intended departure for the Darling was by no means encouraging. I left The Widow at the depot camp, having given directions that she should have rations and that every care should be taken of the child whose broken limb had been set and bound to a board in such a manner that the little patient could not, by moving, disturb the bone in healing. Mr. Stapylton was aware of the necessity for preventing The Widow from going back just then, lest she might have fallen into the hands of any pilfering tribe likely to follow us. The accident which had befallen Ballandella (of whom she was very fond) was however likely to be a tie on her, at least until our return; for it would have been very injurious to have moved the child in less than several weeks. A stockyard was to be erected for the cattle that they might be brought up there every night during our absence; and the men appointed to remain at the depot were told off in watches for the cattle and camp.

PROCEED TO THE DARLING WITH A PORTION OF THE PARTY.

Mr. Stapylton and I then separated with a mutual and most sincere wish that we should meet again as soon as possible. The position of the camp was excellent, being on the elevated edge of a plain overlooking an extensive reach of water, and surrounded with grass in greater abundance and variety than we had seen in any part for some time.

During our progress this day we were for some miles in danger of being shut in by the creek extending from the lake, as it increased prodigiously and at length resembled a still reach of the Murrumbidgee itself. After crossing it several times I was fortunate enough to be able to keep the right bank, by which we got clear, passing along the edge of a slight fall which looked like the berg of the main stream.

REACH THE MURRAY.

At 7 1/2 miles we crossed ground of a more open character than any we had seen for some days; and it appeared to belong to the river margin, as it was marked by some yarra trees. On approaching this river I judged, from the breadth of its channel, that we were already on the banks of the Murray. Thus without making any detour, and much sooner than I had reason to expect from the engraved map, we had reached the Murray, and our depot thus proved to be in the best situation for subsequently crossing that river at its junction with the Murrumbidgee, as originally intended. Leaving a little plain on our right, we entered the goborro or box-forest with the intention of keeping near the river; but from this we had to recede on meeting with a small but deep branch of the stream with some water in it. Proceeding next directly towards some high trees at the western extremity of the plains, we reached a favourable bend of the Murray and there encamped.

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ITS BREADTH AT OUR CAMP. DESCRIPTION OF ITS BANKS.

This magnificent stream was 165 yards broad, its waters were whitish, as if tinged with some flood; the height of the red bank, not subject to inundation, was 25 feet and by comparing these measurements with the Murrumbidgee, which at Weyeba was 50 yards wide, with banks 11 feet high (and that seemed a fine river) some idea may be formed of the Murray.* At the place where we encamped the river had no bergs, for its bank consisted of the common red earth covered with the acacia bushes and scrub of the interior plains. The land at the point opposite was lower and sandy, and a slight rapid was occasioned in the stream by a ridge of ironstone.

(Footnote. See comparative sections of these and other rivers to one scale on the General Map in Volume 1.)

May 24.

It was quite impossible to say on what part of the Murray, as laid down by Captain Sturt, we had arrived; and we were therefore obliged to feel our way just as cautiously as if we had been upon a river unexplored. The ground was indeed a tolerable guide, especially after we found that this river also had bergs which marked the line of separation between the desert plain or scrub and the good grassy forest-land of which the river-margin consisted. As we proceeded I found it best to keep along the bergs as much as possible in order to avoid ana-branches* of the river. Where the bergs receded forest land with the goborro or dwarf-box intervened. In travelling over ground of this description we crossed, at two miles from the camp, a dry creek or branch, and another at a mile and a quarter further.

(Footnote. Having experienced on this journey the inconvenient want of terms relative to rivers I determined to use such of those recommended by Colonel Jackson in his able paper on the subject, in the Journal of the Royal Geographical Society for 1833, as I might find necessary. They are these: Tributary: Any stream adding to the main trunk. Ana-branches: Such as after separation unite. Berg, bergs: Heights now at some distance, once the immediate banks of a river or lake. Bank: That part washed by the existing stream. Border: The vegetation at the water's edge, forest trees, or quays of granite, etc. Brink: The water's edge. Margin: The space between the brinks and the bergs.)

MEET WITH A TRIBE.

Soon after we entered a small plain bounded on the west by another dry channel, and beyond this we were prevented from continuing in the direction in which I wished to travel by a creek full of water, obliging us to turn northward and eastward of north until I at length found a crossing-place, and just as we perceived smoke at some distance beyond the other bank. To this smoke Piper had hastened, and when I reached a plain

beyond the creek I saw him carrying on a flying conversation with an old man and several gins who were retiring in a north-west direction to a wood about a mile distant.

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LAKE BENANEE.

This wood we also at length reached, and we found that it encircled a beautiful lake full sixteen miles in circumference and swarming with natives both on the beach and in canoes.

The alarm of our arrival was then resounding among the natives whom I saw in great numbers along its western shores. This lake, like all those we had previously seen, was surrounded by a ridge of red earth, rather higher than the adjacent plains, and it was evidently fed, during high floods, by the creek we had crossed. I travelled due west from the berg of this lake along the plain which extended in that direction a mile and three-quarters. We then came to another woody hollow or channel in which I could at first see only a field of polygonum, although we soon found in it a broad deep reach of still water. In tracing it to the left or from the lake towards the river, we found it increased so much in width and depth, after tracing it three-quarters of a mile, that a passage in that direction seemed quite out of the question. Many of the natives who had followed us in a body from the lake overtook us here. They assured Piper that we were near the junction of this piece of water with the Millewa (Murray) and that in the opposite direction, or towards the lake, they could show us a ford. We accordingly turned and we came to a narrow place where the natives had a fish-net set across. On seeing us preparing to pass through the ford, they told Piper that, at a point still higher up, we might cross where the channel was dry. Thither therefore we went, the natives accompanying us in considerable numbers, but each carrying a green bough. Among them were several old men who took the most active part and who were very remarkable from the bushy fulness and whiteness of their beards and hair; the latter growing thickly on the back and shoulders gave them a very singular appearance, and accorded well with that patriarchal authority which the old men seem to maintain to an astonishing degree among these native tribes. The aged chiefs from time to time beckoned to us, repeating very often and fast at the same time "goway, goway, goway," which, strange to say, means "come, come, come." Their gesture and action being also precisely such as we should use in calling out "go away!" We crossed the channel at length where the bed was quite dry, and pitched our tents on the opposite side.

DISCOVER THE NATIVES TO BE THOSE LAST SEEN ON THE DARLING.

It will however be readily understood with what caution we followed these natives when we discovered, almost as soon as we fell in with them, that they were actually our old enemies from the Darling! I had certainly heard, when still far up on the Lachlan, that these people were coming down to fight us; but I little expected they were to be the first natives we should meet with on the Murray, at a distance of nearly two hundred miles from the scene of our former encounter.

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There was something so false in a forced loud laugh, without any cause, which the more plausible among them would frequently set up, that I was quite at a loss to conceive what they meant by all this uncommon civility. In the course of the afternoon they assembled their women and children in groups before our camp, exactly as they had formerly done on the Darling; and one or two small parties came in, whose arrival they seemed to watch with particular attention, hailing them while still at a distance as if to prevent mistakes. We now ascertained through Piper that the tribe had fled precipitately from the Darling last year to the country westward, and did not return until last summer, when they found the two bullocks we left there; which, having become fat, they had killed and eaten. We also ascertained that some of the natives then in the camp wore the teeth of the slaughtered animals, and that they had much trouble in killing one of them, as it was remarkably fierce. This we knew so well to the character of one of the animals that we had always supposed it would baffle every attempt of these savages to take it.

In the group before me were pointed out two daughters of the gin which had been killed, also a little boy, a son. The girls exactly resembled each other and reminded me of the mother. The youngest was the handsomest female I had ever seen amongst the natives. She was so far from black that the red colour was very apparent in her cheeks. She sat before me in a corner of the group, nearly in the attitude of Mr. Bailey's fine statue of Eve at the fountain; and apparently equally unconscious that she was naked. As I looked upon her for a moment, while deeply regretting the fate of her mother, the chief who stood by, and whose hand had more than once been laid upon my cap, as if to feel whether it were proof against the blow of a waddy, begged me to accept her in exchange for a tomahawk!

HARASSING NIGHT IN THEIR PRESENCE.

The evening was one of much anxiety to the whole party. The fiendish expression of some of these men's eyes shone horribly, and especially when they endeavoured to disguise it by treacherous smiles. I did not see the tall man nor the mischievous old one of last year; but there were here many disposed to act like them. One miserable-looking dirty aged man was brought forward, and particularly pointed out to me by the tribe. I accordingly showed him the usual attention of sitting down and smoothing the ground for him.* But he soon requested me to strip, on which I arose, mindful of a former vow, and perceiving the blacksmith washing himself, I called him up and pointed out the muscles of his arm to the curious sage. The successor and brother, as the natives stated, of king Peter, was also looking on, and I made Vulcan put himself into a sparring attitude and tip him a touch or two, which made him fall back one or two paces, and look half angry. We distinctly recognised the man who last year threw the two spears at Muirhead; while on their part they evidently knew again Charles King who, on that occasion, fired at the native from whose spears Tom Jones so narrowly escaped.

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(Footnote. Instead of handing a chair the equivalent of politeness with Australian natives is to smooth down or remove with the foot any sharp spikes or rubbish on the ground where you wish your friend to be seated before you.)

Night had closed in and these groups hung still about us, having also lighted up five large fires which formed a cordon around our camp. Still I did not interfere with them, relying chiefly on the sagacity and vigilance of Piper whom I directed to be particularly on the alert. At length Burnett came to inform me that they had sent away all their gins, that there was no keeping them from the carts, and that they seemed bent on mischief.

PIPER ALARMED.

Piper also took alarm and came to me inquiring, apparently with a thoughtful sense of responsibility, what the Governor had said to me about shooting blackfellows. "These," he continued, "are only Myalls" (wild natives). His gin had overheard them arranging that three should seize and strip him, while others attacked the tents. I told him the Governor had said positively that I was not to shoot blackfellows unless our own lives were in danger. I then went out—it was about eight o'clock—and I saw one fellow, who had always been very forward, posted behind our carts and speaking to Piper's wife.

ROCKETS FIRED TO SCARE THEM AWAY.

I ordered him away, then drew up the men in line and when, as preconcerted, I sent up a rocket and the men gave three cheers, all the blacks ran off, with the exception of one old man who lingered behind a tree. They hailed us afterwards from the wood at a little distance where they made fires, saying they were preparing to corrobory and inviting us to be present. Piper told them to go on, and we heard something like a beginning to the dance, but the hollow sounds they made resembled groans more than any sort of music, and we saw that they did not, in fact, proceed with the dance. It was necessary to establish a double watch that night and indeed none of the men would take their clothes off. The most favourable alternative that we could venture to hope for was that a collision might be avoided till daylight.

THEY AGAIN ADVANCE IN THE MORNING.

May 25.

The night passed without further molestation on the part of the natives; but soon after daybreak they were seen advancing towards our camp. The foremost was a powerful fellow in a cloak, to whom I had been introduced by king Peter last year, and who was said to be his brother. Abreast of him, but much more to the right, two of the old men, who had reached a fallen tree near the tents, were busy setting fire to the withering branches. Those who were further back seemed equally alert in setting fire to the bush and, the wind coming from that quarter, we were likely soon to be enveloped in smoke.

I was then willing that the barbarians should come again up, and anxious to act on the defensive as long as possible; but when I saw what the old men were about I went into my tent for my rifle and ordered all the men under arms. The old rascals, with the sagacity of foxes, instantly observed and understood this movement and retired.

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MEN ADVANCE TOWARDS THEM HOLDING UP THEIR FIREARMS.

I then ordered eight men to advance towards the native camp, and to hold up their muskets as if to show them to the natives, but not to fire unless attacked, and to return at the sound of the bugle.

THEY RETIRE, AND WE CONTINUE OUR JOURNEY.

The savages took to their heels before these men who, following the fugitives, disappeared for a time in the woods but returned at the bugle call. This move, which I intended as a threat and as a warning that they should not follow us, had at least the effect of giving us time to breakfast, as Muirhead observed on coming back to the camp.

AGAIN FOLLOWED BY THE NATIVES. DANGER OF THE PARTY.

We afterwards moved forward on our journey as usual; but we had scarcely proceeded a mile before we heard the savages in our rear and, on my regaining the Murray, which we reached at about three miles, they were already on the bank of that river, a little way above where we had come upon it and consequently as we proceeded along its bank they were behind us. They kept at a considerable distance; but I perceived through my glass that the fellow with the cloak carried a heavy bundle of spears before him.

He comes, not in peace, O Cairbar:
For I have seen his forward spear. Ossian.

LONG MARCH THROUGH A SCRUBBY COUNTRY.

We were then upon a sloping bank or berg,* which was covered backwards with thick scrub; below it lay a broad reach of still water in an old channel of the river and which I, for some time, took to be the river itself. It was most painfully alarming to discover that the knowledge these savages had acquired of the nature of our arms, by the loss of several lives last year, did not deter them from following us now with the most hostile intentions.

(Footnote. See above.)

DISMAL PROSPECT.

We had endeavoured to prevent them, by the demonstration of sending the men advancing with firearms, yet they still persisted; and Piper had gathered from them that a portion of their tribe was still before us. Our route lay along the bank of a river, peopled by other powerful tribes; and at the end of 200 miles we could only hope to reach the spot where the party already following in our rear had commenced the most unprovoked hostility last season. I had then thought it unsafe to divide my party, it was already divided now, and the cunning foe was between the two portions; a more



desperate situation therefore than this half of my party was then in can scarcely be imagined. To attempt to conciliate these people had last year proved hopeless. Our gifts had only excited their cupidity, and our uncommon forbearance had only inspired them with a poor opinion of our courage; while their meeting us in this place was a proof that the effect of our arms had not been sufficient to convince them of our superior strength. A drawn battle was out of the question, but I was assured

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by Piper and the other young natives that we should soon lose some of the men in charge of the cattle. Those faithful fellows, on whose courage my own safety depended—some of them having already but narrowly escaped the spears of these very savages on the former journey. We soon discovered that the piece of water was not the river, by seeing the barbarians passing along the other side of it; and I thereupon determined to travel on as far as I could. The river taking a great sweep to the southward, we proceeded some miles through an open forest of box or goborro; and when I at length met with sandhills and the *Eucalyptus dumosa* I continued to travel westward, not doubting but that I should reach the Murray by pursuing that course. We looked in vain however during the whole day for its lofty trees, and in fact crossed one of the most barren regions in the world.

NIGHT WITHOUT WATER OR GRASS.

Not a spike of grass could be seen and the soil, a loose red sand, was in most places covered with a scrub like a thick-set hedge of *Eucalyptus dumosa*. Many a tree was ascended by Burnett, but nothing was to be seen on any side different to what we found where we were. We travelled from an early hour in the morning until darkness and a storm appeared to be simultaneously drawing over us. I then hastened to the top of a small sandhill to ascertain whether there was any adjacent open space where even our tents might be pitched, and I cannot easily describe the dreariness of the prospect that hill afforded. No signs of the river were visible unless it might be near a few trees which resembled the masts of distant ships on a dark and troubled sea; and equally hazardous now was this land navigation, from our uncertainty as to the situation of the river on which our finding water depended, and the certainty that, wherever it was, there were our foes before us, exulting perhaps in the thought that we were seeking to avoid them in this vile scrub. On all sides the flat and barren waste blended imperceptibly with a sky as dismal and ominous as ever closed in darkness. One bleak and sterile spot hard by afforded ample room for our camp; but the cattle had neither water nor any grass that night.

HEAVY RAIN.

A heavy squall set in and such torrents of rain descended as to supply the men with water enough; and indeed this was not the only occasion during the journey when we had been providentially supplied under similar circumstances.

May 26.

It appeared that we had not, even in that desert, escaped the vigilance of the natives, for Piper discovered, within three hundred yards of our camp, the track of two who, having been there on the preceding evening, had that morning returned towards the

river. At an early hour we yoked up our groaning cattle and proceeded, although the rain continued for some time. I pursued by compass the bearing of the high trees I had seen, though they were somewhat to the northward of west.

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AGAIN MAKE THE MURRAY.

Exactly at five miles a green bank and, immediately after, the broad expanse of the Murray, with luxuriantly verdant margins, came suddenly in view on the horizon of the barren bush in which we had travelled upwards of twenty-three miles, and which here approached the lofty bank of the river. The green hill I had first seen afforded an excellent position for our camp; and as the grass was good I halted for the rest of the day to refresh the cattle.

STRANGE NATIVES VISIT THE CAMP AT DUSK.

Towards evening the natives were heard advancing along our track, and seven came near the camp but remained on the river margin below, which from our post on the hill we completely overlooked. Piper went to these natives to ascertain if they were our enemies from the lake. He recognised several whom he had seen there, and he invited them to come up the hill; but when I saw them I could not, from their apparently candid discourse, look upon them as enemies. They said that the tribe which we had seen at Benanee did not belong to that part of the country, but had come there to fight us, on hearing of our approach. One of them, who had been seen at the lake, asked Piper several times why I did not attack them when I had so good an opportunity, and he informed us that they were the same tribe which intended to kill another white man (Captain Sturt) in a canoe, at the junction of the rivers lower down. They also informed us, on the inquiry being made, that the old man who then behaved so well to the white men was lately dead, and that he had been much esteemed by his tribe. I desired Piper to express to them how much we white men respected him also. I afterwards handed to these people a fire-stick and, pointing to the flat below, gave them to understand, through Piper, that the tribe at Benanee had behaved so ill and riotously about our camp that I could not allow any natives to sit down beside us at night.

CHAPTER 3.5.

New and remarkable shrub.
Darling tribe again.
Their dispersion by the party.
Cross a tract intersected by deep lagoons.
Huts over tombs.
Another division of the Darling tribe.
Barren sands and the *Eucalyptus dumosa*.
Plants which grow on the sand and bind it down.
Fish caught.
Aspect of the country to the northward.
Strange natives from beyond the Murray.
They decamp during the night.



Reach the Darling and surprise a numerous tribe of natives.
Piper and his gin explain.
Search for the junction with the Murray.
Return by night.
Followed by the natives.
Horses take fright.
Break loose and run back.
Narrow escape of some men from natives.
Failure of their intended attack.
Different modes of interment.
Reduced appearance of the Darling.
Desert character of the country.
Rainy morning.
Return of the party.
Surprise the females of the tribe.
Junction of the Darling and Murray.
Effect of alternate floods there.

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NEW AND REMARKABLE SHRUB.

May 27.

In the scrub adjoining our camp we found a new and remarkably beautiful shrub bearing a fruit, the stone of which was very similar to that of the quandang (*Fusanus acuminatus*) although there was no resemblance either in the form of the tree or of the flower. This shrub was not unlike the weeping willow in its growth, and the fruit, which grew at the extremities of the drooping branches, had the shape of a pear and a black ring at the broad end. The crop then on the tree was unripe, and was probably a second one; the flower was also budding, and we hoped to see the full blossom on our return. Only three or four of these trees were seen, and they were all on the hill near our encampment. Here likewise grew a new shrubby species of *Xerotes*, with hard rush-like leaves, but allied to *X. gracilis*.*

(Footnote. *X. effusa*, Lindley manuscripts; *acaulis, foliis linearibus longissimis semiteretibus margine scabris dorso striatis: apice dentato tabescente, panicula mascula effusa abbreviata, bracteis acuminatis scariosis pedicello brevioribus*.)

DARLING TRIBE AGAIN.

We proceeded on our journey as usual, but had not gone far when we heard the voices of a vast body of blacks following our track, shouting prodigiously, and raising war cries. It now became necessary for me to determine whether I was to allow the party under my charge to be perpetually subject to be cut off in detail by waiting until these natives had again actually attacked and slain some of my people, or whether it was not my duty, in a war which not my party, but these savages, had virtually commenced, to anticipate the intended blow. I was at length convinced that, unless I could check their progress in our rear and prevent them from following us so closely, the party would be in danger of being compelled to fight its way back against the whole savage population, who would be assembled at that season of drought on the banks of the large rivers. But in order to ascertain first whether this was the hostile tribe I sent overseer Burnett with Piper and half the party into the scrub which skirted our line of route. We were travelling along the berg or outer bank of the river, a feature which not only afforded the best defensive position but also guided me in tracing the river's course. It was also in many parts the only ground clear of timber or bushes and therefore the best for travelling upon. I directed the men to allow the tribes to pass along our track towards me, as I intended to halt with the carts after crossing the low hill. Piper recognised from this scrub the same people he had seen at Benanee.

DISPERSION OF THE DARLING TRIBE BY THE PARTY.



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The natives however having immediately discovered our ambushade by the howling of one of their dogs, halted and poised their spears; but a man of our party (King) inconsiderately discharging his carabine, they fled as usual to their citadel, the river, pursued and fired upon by the party from the scrub. The firing had no sooner commenced than I perceived from the top of the hill which I ascended some of the blacks, who appeared to be a very numerous tribe, swimming across the Murray. I was not then aware what accidental provocation had brought on this attack without my orders, but it was not the time to inquire; for the men who were with me, as soon as they heard the shots of their comrades and saw me ascend the hill, ran furiously down the steep bank to the river, not a man remaining with the carts. The hill behind which these were posted was about a quarter of a mile from the river, and was very steep on that side, while on the intervening space or margin below lofty gum trees grew, as in other similar situations. By the time I had also got down, the whole party lined the riverbank, the men with Burnett being at some distance above the spot at which I reached it. Most of the natives were then near the other side, and getting out while others were swimming down the stream. The sound of so much firing must have been terrible to them and it was not without effect, if we may credit the information of Piper who was afterwards informed that seven had been shot in crossing the river, and among them the fellow in the cloak, who at Benanee appeared to be the chief. Much as I regretted the necessity for firing upon these savages, and little as the men might have been justifiable under other circumstances for firing upon any body of men without orders, I could not blame them much on this occasion; for the result was the permanent deliverance of the party from imminent danger. Our men were liable in turn to be exposed singly while attending the cattle, which often unavoidably strayed far from the camp during the night; and former experience had, in my mind, rendered the death of some of these men certain. I was indeed satisfied that this collision had been brought about in the most providential manner; for it was probable that, from my regard for the aborigines, I might otherwise have postponed giving orders to fire longer than might have been consistent with the safety of my men. Such was the fate of the barbarians who, a year before, had commenced hostilities by attacking treacherously a small body of strangers, which, had it been sent from heaven, could not have done more to minister to their wants than it did then, nor endured more for the sake of peace and goodwill. The men had then been compelled to fire in their own defence and at the risk of my displeasure. The hostility of these savages had also prevented me from dividing my party, and obliged me to retire from the Darling sooner than I might otherwise have done. It now appeared that they had discovered this, judging from

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their present conduct, and unappalled by the effect of firearms, to which they were no longer strangers, they had boastfully invaded the haunts of other tribes, more peaceably disposed than themselves, for the avowed purpose of meeting and attacking us. They had persisted in following us with such bundles of spears as we had never seen on other occasions, and they were on the alert to kill any stragglers, having already, as they acknowledged, destroyed two of our cattle.

This collision took place so suddenly that no man had thought of remaining at the heads of the horses and cattle, as already stated; nor was I aware of this until, on returning to them, I found the reins in the hands of Piper's gin; a tall woman who, wrapped in a blanket, with Piper's sword on her shoulder, and having a blind eye, opaque and white like that of some Indian idol, presented rather a singular appearance as she stood the only guardian of all we possessed. Her presence of mind in assuming such a charge on such an occasion was very commendable, and seemed characteristic of the female aborigines.

I gave to the little hill which witnessed this overthrow of our enemies and was to us the harbinger of peace and tranquillity the name of Mount Dispersion.

CROSS A TRACT INTERSECTED BY DEEP LAGOONS.

The day's journey was still before us. On leaving the river we soon encountered a small creek or ana-branch* and, though I made a practice of avoiding all such obstructions by going round rather than crossing them, yet in the present case I was compelled to deviate from my rule on finding that this creek would take me too far northward. Soon after, we approached a lagoon and during the whole day, turn wherever we would, we were met by similar bodies of water or, as I considered them, pools left in the turnings and windings of some ana-branch formed during high floods of the river. Nevertheless I managed to preserve a course in the desired direction; and at length we encamped on the bank of several deep ponds which lay in the channel of a broad watercourse. I was anxious to avoid if possible being shut up between ana-branches and the river lest, as the river seemed rising, I might be at length surrounded by deep water. I was in some uncertainty here about the actual situation of the Murray and our position was anything but good; for it was in the midst of scrubby ground, and did not command, in any way, the place where alone grass enough was to be found for the cattle. The bergs of the river were not to be seen, although the river itself could not be distant; for the whole country traversed this day was of that description which belongs to the margin of streams, being grassy land under an open forest containing goborro and yarra trees. These are seldom found in that region at any considerable distance from the banks of the river, the whole interior country being covered with *Eucalyptus dumosa* and patches of the pine or *Callitris pyramidalis*.

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(Footnote. See above.)

May 28.

A thick fog hung over us in the morning but it did not impede our progress. For the first three miles our way was along the banks of the channel or lagoon beside which we had passed the night. It then crossed a polygonum flat and several dry hollows, beyond which I at length saw the rising ground of the river-berg and, immediately after, the river itself, flowing by the base of a precipitous red cliff in which the scrubby flat country we were travelling upon abruptly terminated. We had cut off a great bend of the Murray by our intricate journey among the lagoons; and had again reached the river precisely at the point most desirable.

HUTS OVER TOMBS.

On this upper ground we observed several tombs, all enclosed within parterres of the same boat-like shape first seen by us on the day we traced the Lachlan into the basin of the Murrumbidgee. Two of the tombs here consisted of huts, very neatly and completely thatched over, the straw or grass being bound down by a well-wrought net. Each hut had a small entrance on the south-west side, and the grave within was covered with dry grass or bedding on which lay however some pieces of wood. There was a third grave with coverings of the same kind, but it was not so neatly finished, nor was it covered with net.* There were also graves without any covering; one where it appeared to have been burnt; and two old-looking graves were open, empty, and about three feet deep.

(Footnote. Isaiah 45:4. Who remain among the graves.] "The old Hebrews are charged by the prophet Isaiah with remaining among the graves and lodging in the monuments." See Lewis' Origines Hebraeae volume 3 page 381.)

ANOTHER DIVISION OF THE DARLING TRIBE.

We had not proceeded far through the scrub on the top of the precipice overhanging the river when the usual alarm term "the natives" was passed along to me from the people in the rear of our party. Piper had been told that we should soon see the other division of the Darling tribe, which was still ahead of us; and I concluded that these natives belonged to it and were awaiting us at this point where, as they had foreseen, we were sure to come upon the river. Four or five advanced up to us while the rest followed among the bushes behind. I recognised two men whom I saw last year on the Darling. They begged hard for axes and held out green boughs, but I had not forgotten the treachery of their burning boughs on our former interview and, thinking I recognised the tall man who had been the originator of the war, I went up to him with no very kind feeling; but I was informed he was only that man's brother. My altered manner however was enough for their quick glance; and indeed one of the best proofs that these natives

belonged to the Darling tribe was the attention with which they watched me when they asked for tomahawks, and their speaking so much to Piper about Majy.

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Of the evil tendency of giving these people presents I was now convinced, and fully determined not to give more then. This resolution the natives having discovered very acutely, their ringleaders vanished like phantoms down the steep cliffs, and we heard no more of the rest. It is possible that this portion of the tribe had not then received intelligence of what had befallen the others or they would not have advanced so boldly up. Be that as it may they followed us no more, having probably heard in the course of the day from the division of the tribe which we had driven across the Murray.

BARREN SANDS AND THE EUCALYPTUS DUMOSA. PLANTS WHICH GROW ON THE SAND AND BIND IT DOWN.

The river taking a turn to the southward, we again entered the dumosa scrub but it was more open than we had seen it elsewhere. The soil consisted of barren sand; there was no grass, but there were tufts of a prickly bush which tortured the horses and tore to rags the men's clothes about their ankles. I observed that this bush and the Eucalyptus dumosa grew only where the sand seemed too barren and loose for the production of anything else; so loose indeed was it that, but for this dwarf tree and prickly grass, the sand must have drifted so as to overwhelm the vegetation of adjacent districts, as in other desert regions where sand predominates. Nature appears to have provided curiously against that evil here by the abundant distribution of two plants so singularly adapted to such a soil. The root of the Eucalyptus dumosa resembles that of a large tree; but instead of a trunk only a few branches rise above the ground, forming an open kind of bush, often so low that a man on horseback may look over it for miles. The heavy spreading roots however of this dwarf tree and the prickly grass together occupy the ground and seem intended to bind down the sands of the vast interior deserts of Australia. Their disproportioned roots also prevent the bushes from growing very close together and, the stems being leafless except at the top, this kind of eucalyptus is almost proof against the running fires of the bush. The prickly grass resembles at a distance, in colour and form, an overgrown bush of lavender; but the pedestrian and the horse both soon find that it is neither lavender nor grass, the blades consisting of sharp spikes which shoot out in all directions, offering real annoyance to men and horses.

On ascending a small sandhill about three P.M. I perceived that I could not hope to reach the river in the direction I was pursuing. Accordingly I turned to the left and, entering a rather extensive valley which was bounded on the south by the river-bergs at a distance of three or four miles, we encamped on the immediate bank of the Murray shortly before sunset. There was little grass about the river for the ferruginous finely-grained sandstone formed still the riverbank, and was exactly similar to the arenaceous rock on the eastern coast.

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FISH CAUGHT.

The river had more the appearance of having a flood in it now than at the time we first made it, and here we caught some good cod-perch (*Gristes peelii*) one weighing seventeen pounds. As we came along the lagoons in the morning of this day we shot a new kind of duck.

May 29.

The broad slopes of the river-berg, or second bank, were generally distinguished by a strip of clear ground which we found the best for travelling upon; and it afforded us also the satisfaction of overlooking the friendly river at a greater or less distance on the left. The Murray meandered between the opposite bergs of the valley or basin which was here about four miles wide.

ASPECT OF THE COUNTRY TO THE NORTHWARD.

From a hill situated between the river and the scrub I this day saw, for the first time since we left the Lachlan, a ridge on the horizon. It appeared to the northward, the west end being distant about seven miles; and it was long, flat, and not much higher than the surrounding country. An extensive plain reminded us of those on the Darling and in the more hollow part of it I perceived the dry bed of a lake, bordered by some verdure. On proceeding I observed that the bergs fell off; and we descended into a valley where a line of yarra trees enveloped a dry creek, very much resembling the one seen by us on the Darling and named Clover-creek. Crossing this dry course we soon regained the berg of the river, and found it as favourable to our progress as before but, being of red sand, I at length led the party along the firm clay at the base of the higher ground.

STRANGE NATIVES FROM BEYOND THE MURRAY.

As the dogs were chasing a kangaroo across a bit of open flat four natives appeared at the other side. They came frankly up to us and they were well painted, broad white patches marking out the larger muscles of the breasts, thighs, and arms, and giving their persons exactly the appearance of savages as I have seen them represented in theatres. Their hair was of a reddish hue and they were altogether men of a different make from the tribe of the Darling. We accordingly allowed them to remain in the camp which I took up on the margin of the Murray soon after our meeting with them. They told us that a creek named Bengallo joined the Murray amongst the numerous lagoons where we had been encamped two days before; and they supposed it came from the hills near the Bogan, because natives from that river sometimes came to the Murray by the banks of the creek. They also informed us that the name of a river to the southward was Perrainga; and (if we understood each other rightly by Piper's interpretation) their name for lake Alexandrina was Kayinga: a lake which however had, according to them, a wide deep outlet to the sea.

THEY DECAMP DURING THE NIGHT.

During that night it rained heavily and the natives left us, without notice, during an interval of fair weather. There was much scrub about the river and I was not quite satisfied with the position of our camp, but a strict watch was always kept up, and we had excellent watch-dogs, no bad protection against the midnight treachery of the aborigines.

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REACH THE DARLING AND SURPRISE A NUMEROUS TRIBE OF NATIVES.

May 30.

We heard our new acquaintance cooeing in the bush but we gave no attention to them and proceeded on our journey. The smooth and verdant escarp of the river-berg guided us, while the river itself was sometimes at hand and sometimes four miles off. This day I recognised several shrubs which I had seen before only on the Darling. At length the berg terminated altogether in a smooth round hill beyond which lay a low woody country, intersected by lines of yarra trees in almost every direction. I thought I perceived in one of these lines the course of the Darling coming into the extensive valley from the northward; and the old hands exclaimed, when they saw the bare plains to the north-west of our camp, that we had got upon the Darling at last. Beyond this valley to the south-westward I perceived that the bergs of the opposite bank of the Murray were continuous and advanced to a point about west-south-west. Upon the whole I was satisfied that we were near the junction of the two rivers; and we encamped on the lower extremity of the point, already mentioned, which overlooked a small lagoon and was not above three hundred yards from an angle of the Murray.

May 31.

I now ventured to take a north-west course in expectation of falling in with the supposed Darling. We crossed first a plain about two miles in breadth, when we came to a line of yarra trees which enveloped a dry creek from the north-east, and very like Clover-creek. We next travelled over ground chiefly open, and at four miles crossed a sandhill on which was a covered tomb, after the fashion of those on the Murray. On descending from the sand-ridge we approached a line of yarra trees which overhung a reach of green and stagnant water. I had scarcely arrived at the bank when my attention was drawn to a fire about a hundred yards before us and from beside which immediately sprung up a numerous tribe of blacks who began to jump, wring their hands, and shriek, as if in a state of utter madness or despair.

PIPER AND HIS GIN EXPLAIN.

These savages rapidly retired towards others who were at a fire on a further part of the bank, but Piper and his gin, going boldly forward, succeeded at length in getting within hail and in allaying their fears.

SEARCH FOR THE JUNCTION WITH THE MURRAY.

While he was with these natives I had again leisure to examine the watercourse upon which we had arrived. I could not consider it the Darling as seen by me above, and so little did it seem the sister stream to the Murray as described by Sturt that I at first thought it nothing but an ana-branch of that river. Neither did these natives satisfy me

about Oolawambiloa, by which I had supposed the Darling was meant but respecting which they still pointed westward. They however told Piper that the channel we had reached contained all the waters of Wambool (the Macquarie)

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and Callewatta (the upper Darling) and I accordingly determined to trace it up at least far enough to identify it with the latter. But I thought it right that we should endeavour first to recognise the junction with the Murray as seen by Captain Sturt. The natives said it was not far off; and I accordingly encamped at two o'clock that I might measure back to that important point. Thirteen natives set out as if to accompany us, for they begged that we would not go so fast. Three of them however soon set off at full speed as if on a message; and the remaining ten fell behind us. We had then passed the camp of their gins and I supposed at the time that their only object was to see us beyond these females, Piper being with us.

RETURN BY NIGHT.

I pursued the river through a tortuous course until sunset when I was obliged to quit it and return to the camp by moonlight without having seen anything of the Murray. I had however ascertained that the channel increased very much in width lower down and, when it was filled with the clay-coloured water of the flood then in the Murray, it certainly had the appearance of a river of importance.

FOLLOWED BY THE NATIVES.

June 1.

The country to the eastward seemed so dry and scrubby that I could not hope in returning to join Mr. Stapylton's party or reach the Murray by any shorter route than that of our present track; and I therefore postponed any further survey back towards the junction of the Darling and Murray until I should be returning this way. We accordingly proceeded upwards and were followed by the natives. They were late in coming near us however which Piper and his gin accounted for as follows: As soon as it was known to them, the day before, that we were gone to the junction, the strong men of the tribe went by a shorter route; but they were thrown out and disappointed by our stopping short of that promising point. There they had passed the night and, having been busy looking for our track in the morning, the earth's surface being to them a book they always read, they were late in following our party.

Kangaroos were more numerous and larger here than at any other part we had yet visited. This day one coming before me I fired at it with my rifle; and a man beside me, after asking my permission, fired also. The animal nevertheless ran amongst the party behind, some of whom hastily and without permission discharged their carabines also.

HORSES TAKE FRIGHT.

At this four horses took fright and ran back at full speed along our track. Several of the men who went after these horses fell in with two large bodies of natives coming along this track, and one or two men had nearly fallen into their hands twice.

BREAK LOOSE AND RUN BACK.

Tantragee (McLellan) when running at full speed pursued by bands of savages escaped only by the opportune appearance of others of our men who had caught the horses and happened to come up.

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NARROW ESCAPE OF SOME MEN FROM NATIVES.

The natives then closed on our carts, and accompanied them in single files on each side; but as they appeared to have got rid of all their spears I saw no danger in allowing them to join us in that manner. Chancing to look back at them however, when riding some way ahead, the close contact of such numbers induced me to halt and call loudly, cautioning the men, upon which I observed an old man and several others suddenly turn and run and, on my going to the carts, the natives fell back, those in their rear setting off at full speed.

FAILURE OF THEIR INTENDED ATTACK.

Soon after I perceived the whole tribe running away, as if a plan had been suddenly frustrated. Piper and his gin, who had been watching them attentively, now came up and explained to me these movements. It appeared that the natives entertained the idea that our clothes were impervious to spears, and had therefore determined on a trial of strength by suddenly overpowering us, for which purpose they had planted (i.e. hidden) their spears and all encumbrances, and had told off for each of us six or eight of their number, whose attack was to be sudden and simultaneous. A favourable moment had not occurred before they awoke my suspicions; and thus their motives for sudden retreat were to be understood. That party consisted of strong men, neither women nor boys being among them; and although we had little to fear from such an attack, having arms in our hands, the scheme was very audacious and amounted to a proof that these savages no sooner get rid of their apprehensions than they think of aggression. I had on several occasions noticed and frustrated dispositions apparently intended for sudden attacks, for the natives seemed always inclined to await favourable opportunities, and were doubtless aware of the advantage of suddenness of attack to the assailants.* Nothing seemed to excite the surprise of these natives, neither horses nor bullocks, although they had never before seen such animals, nor white men, carts, weapons, dress, or anything else we had. All were quite new to them and equally strange, yet they looked at the cattle as if they had been always amongst them, and they seemed to understand at once the use of everything.

(Footnote. For a proof of this see extract from Sydney Herald of May 21st 1838 in Appendix 2.3.)

We continued our journey and soon found all the usual features of the Darling; the hills of soft red sand near the river covered with the same kind of shrubs seen so much higher up.

DIFFERENT MODES OF INTERMENT.

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The graves had no longer any resemblance to those on the Murrumbidgee and Murray, but were precisely similar to the places of interment we had seen on the Darling, being mounds surrounded by and covered with dead branches and pieces of wood.* On these lay the same singular casts of the head in white plaster which we had before seen only at Fort Bourke.** It is indeed curious to observe the different modes of burying adopted by the natives on different rivers. For instance on the Bogan they bury in graves covered like our own and surrounded with curved walks and ornamented ground.*** On the Lachlan under lofty mounds of earth, seats being made around them. On the Murrumbidgee and Murray the graves are covered with well thatched huts containing dried grass for bedding and enclosed by a parterre of a particular shape, like the inside of a whale-boat.**** On the Darling, as above stated, the graves are in mounds* covered with dead branches and limbs of trees, and are surrounded by a ditch, which here we found encircled by a fence of dead limbs and branches.

(Footnote. See Plate 16 volume 1.)

*(**Footnote. See Volume 1.)*

*(***Footnote. See Plate 20 volume 1.)*

*(****Footnote. See above.)*

REDUCED APPEARANCE OF THE DARLING.

As we proceeded the sandhills became more numerous and their surface softer; while the scrub was at length so close that it was difficult to follow any particular bearing in travelling through it. Near the river the surface was broken up by beds of dry lagoons which evidently became branches of the main stream in times of flood; and the intervening ground was covered with *Polygonum junceum*. At length I reached an angle of the river and encamped on a small flat beside a sandhill. Here the Darling was only a chain of ponds and I walked across its channel dry-shod, the bed consisting of coarse sand and angular fragments of ferruginous sandstone. The width and depth between the immediate banks were about the same as I had found them in the most narrow and shallow parts during my former journey. While I stood on the adverse side or right bank of this hopeless river I began to think I had pursued its course far enough. The identity was no longer a question.

DESERT CHARACTER OF THE COUNTRY.

The country on its banks in this part presented also the same unvaried desert features that it did in the districts examined by us during the preceding year. The Murray, unlike the Darling, was a permanent river, and I thought it advisable to exhaust no more of my means in the survey of deserts but rather employ them and the time still at my disposal in exploring the sources of that river, according to my instructions and in hopes of

discovering a better country. My anxiety about the safety of the depot brought me more speedily to this determination. During the wet and cold weather there might be less activity among the savage natives, but it was not probable

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that the tribe which had collected 500 men to attack Captain Sturt would be quiet in my rear after having lost some of their number. To be in detached parties amongst a savage population was perilous in proportion to the length of time we continued separate; and I did not feel warranted in exhausting all my means in order to attain, by a circuitous route, the point where my survey ought to have commenced; while a second duty for which the means now left were scarcely adequate remained to be performed. I had already reached a point far above where any boat could be taken, or even any heavy carts; and nothing was to be gained by following the river further.

The natives were heard by Piper several times during the day's journey in the woods beyond the river, as if moving along the right bank in a route parallel with ours; but they did not appear near our camp, although their smoke was seen at a distance.

RAINY MORNING.

June 2.

For several days the barometer had been falling and this morning the weather was rainy and cold.

RETURN OF THE PARTY.

After tracing the further course of the Darling for some distance and obtaining, during an interval of sunshine, a view from a sandhill which commanded a very extensive prospect to the northward, I commenced the retrograde movement along our route, which was but too deeply visible in the sand. From what Piper had said the men expected an engagement during the morning; and it was doubtful, on account of the wetness of the day, whether their pieces would go off if the natives came on; but fortunately we continued our journey unmolested. We reached our former encampment notwithstanding the unfavourable state of the ground, and again pitched our tents upon it. We found among the scrubs this day a new curious species of *Baeckea* with extremely small scattered leaves not larger than grains of millet, plano-convex and covered with pellucid dots.*

(Footnote. *B. crassifolia*, Lindley manuscripts; *glaberrima*, *foliis subrotundis oblongisque obtusis plano-convexis crassis*, *floribus solitariis axillaribus pedicellatis cernuis*, *laciniis calycinis marginatis integerrimis petalis integris brevioribus*.)

SURPRISE THE FEMALES OF THE TRIBE.

June 3.

The natives had not again appeared, so that Piper's conjecture that they were moving up the river by the opposite bank with a view to assemble the tribes higher up appeared to be correct. Their gins had been left at their old camp; for as the party crossed a flat not far from it, and I fired at a kangaroo, their voices were immediately heard, signal columns of smoke arose in the air, and they hurried with their children to the opposite side of the Darling. From this astonishment on their part at our appearance, and especially from their flight, knowing well then who we were, it was not improbable that they knew the men were absent on some mischievous scheme affecting us.

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JUNCTION OF THE DARLING AND MURRAY.

I struck out of the former line of route for the purpose of extending my measurement to the junction of the rivers, and thus at length found the Darling within a zone of trees which I had formerly taken for the line of the Murray. The banks were high and the channel was also much broader here. After tracing this river about four miles I found that the still but turbid backwater from the larger stream nearly reached the top of the grassy bank of the other. At length I perceived the Murray before me coming from the south-south-east, a course directly opposed to that in which I had followed the Darling for a mile. Both rivers next turned south-west, then westward, leaving a narrow tongue of land between, and from the point where they both turned westward to their junction at the extremity of this ground between them, I found that the distance was exactly three-quarters of a mile. A bank of sand extended further and, on standing upon this and looking back, I recognised the view given in Captain Sturt's work and the adjacent localities described by him. The state of the rivers was no longer however the same as when this spot was first visited. All the water visible now belonged to the Murray, whose course was rapid, while its turbid flood filled also the channel of the Darling, but was there perfectly still. We were then distant about a hundred miles from the rest of the party who, before we could join them, might have had enough to do with the natives. I thought that in case it might ever be necessary to look for us, this junction was the most likely spot where traces might be sought; and I therefore buried near the point, beside a tree marked with a large M and the word Dig, a phial in which I placed a paper containing a brief statement of the circumstances under which we had arrived there, and our proposed route to the depot, adding also the names of the men with me. As the ground was soft it was not necessary to dig but merely to drop the phial into a hole made with the scabbard of my sabre; and I hoped that the bottle would escape in consequence the notice of the natives.

EFFECT OF ALTERNATE FLOODS THERE.

The greater width and apparently important character of the Darling near its mouth may perhaps be accounted for by supposing that floods do not always occur in it and the Murray at the same time. The remoteness of the sources of the two rivers and the consequent difference of climate may occasion a flood in the one, while the waters of the other may be very low. That this is likely to happen sometimes may be inferred from the difference between the relative state of the atmosphere on the eastern coast and on the Darling. This difference seems to have been so considerable during the last journey as materially to have affected our barometrical measurements taken simultaneously with observations at Sydney. When the bed of the greater river is also the deepest any flood descending

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by the other channel when the larger stream is low must flow with greater force into that which is deeper, and in a soft and yielding soil may thus increase the width of its own channel. On the contrary a flood coming down the greater river while the minor channel may happen to be dry must first flow upwards some miles and so fill this channel and, being thus affected both by the rising and subsidence of the greater stream, this process would have had a tendency to deepen and widen the lower part of the Darling.

CHAPTER 3.6.

Return along the bank of the Murray.
Mount Lookout.
Appearance of rain.
Chance of being cut off from the depot by the river floods.
A savage man at home.
Tributaries of the Murray.
A storm in the night.
Traverse the land of lagoons before the floods come down.
Traces of many naked feet along our old track.
Camp of 400 natives.
Narrow escape from the floods of the river.
Piper overtakes two youths fishing in Lake Benanee.
Description of the lake.
Great rise in the waters of the Murray.
Security of the depot.
Surrounded by inundations.
Cross to it in a bark canoe made by Tommy Came-last.
Search for the junction of the Murrumbidgee and Murray.
Mr. Stapylton reaches the junction of the rivers.
Reception by the natives of the left bank.
Passage of the Murray.
Heavy rains set in.
Row up the Murray to the junction of the Murrumbidgee.
Commence the journey upwards, along the left bank.
Strange animal.
Picturesque scenery on the river.
Kangaroos numerous.
Country improves as we ascend the river.
A region of reeds.
The water inaccessible from soft and muddy banks.
Habits of our native guides.
Natives very shy.

Piper speaks to natives on the river.
Good land on the Murray.
Wood and water scarce.
Junction of two branches.
Swan Hill.

RETURN ALONG THE BANK OF THE MURRAY.

Returning from the junction towards our last camp on the Murray we again crossed, when within a mile of that position, the dry channel we had seen on proceeding towards the north-west. It contained some deep lagoons on which were pelicans, but we crossed it where the bed was quite dry and where it presented, like many other parts occasionally under water, striking proofs of the uncertainty of seasons in these parts of Australia. Numerous dead saplings of eight or ten years growth stood there, having evidently flourished in that situation until the water again filled this channel, after so long an interval of drought, and killed them.

On reaching the firm ground beyond we came upon some old graves which had been disturbed, as the bones protruded from the earth. Piper said that the dead were sometimes dug up and eaten; but this I could not believe.

MOUNT LOOKOUT.

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By three P.M. we again occupied the remarkable point where we had formerly encamped. It is at this point (Mount Lookout on the map) that the berg of the Murray terminates on the basin of the Darling and thus commands, as before observed, an extensive view over the woody country to the westward. It would be an important position in any kind of warfare, and during my operations I felt as strong upon it with my party as if we had been in a citadel. I had now, I hoped, again got between the junction tribes and our old enemies, though the latter were still between us and our depot; and thus any danger of the junction tribes uniting with those up the Murray was less to be apprehended. Piper however discovered the track of a considerable number who had proceeded up the river the day before. Indeed all the tracks of natives he found led upwards and, seeing no longer any of them there, we felt more anxious about the safety of the depot.

APPEARANCE OF RAIN. CHANCE OF BEING CUT OFF FROM THE DEPOT BY THE RIVER FLOODS.

The barometer had been falling gradually from the 1st instant, and this was another source of anxiety to me; for we were in no small danger of being separated from the other party by any such rise of the river as might be expected after a heavy fall of rain.

June 4.

Notwithstanding the unpromising state of the mercurial column the night had been fair, and in the morning the sky was clear. We lost no time in moving on and we continued until we were four miles beyond our former camp; and then crossing Golgol creek we occupied a clear point of land between it and the Murray.

A SAVAGE MAN AT HOME.

As I was reconnoitring the ground for a camp I observed a native on the opposite bank and, not being seen by him, I watched awhile the habits of a savage man at home. His hands were ready to seize any living thing; his step, light and noiseless as that of a shadow, gave no intimation of his approach; and his walk suggested the idea of the prowling of a beast of prey. Every little track or impression left on the earth by the lower animals caught his keen eye, but the trees overhead chiefly engaged his attention; for deep in the heart of some of the upper branches he probably hoped to find the opossum on which he was to dine. The wind blew cold and keenly through the lofty trees on the river margin, yet that broad brawny savage was entirely naked. Had I been unarmed I had much rather have met a lion than that sinewy biped; but situated as I was, with a broad river flowing between us while I overlooked him from a high bank, I ventured to disturb his meditations with a loud halloo: he stood still, looked at me for about a minute, and then retired with that easy bounding step which may be termed a running walk, and exhibits an unrestrained facility of movement, apparently incompatible with

dress of any kind. It is in bounding lighting at such a pace that, with the additional aid of the

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woomerah, an aboriginal native can throw his spear with sufficient force and dexterity to kill the emu or kangaroo, even when at their speed. One or two families of natives afterwards appeared hutted on the riverbank nearly opposite to our camp, and Piper opened a conversation with them across the river. These people had heard nothing of what had befallen the Benanee tribe. They had some years before seen white men go down and return up the river in a large canoe; and Piper also learnt from them that the Millewa (Murray) had now a flood in it, having for some time previous been much lower than it was then; but they assured Piper, apparently with exultation, that it flowed always.

TRIBUTARIES OF THE MURRAY.

The name of the creek we had just crossed was Golgol, and it came from the low range of the same name which I had observed on May 29. From what these natives said of Bengallo creek I thought it might be that branch of the Lachlan, already mentioned as Boororan, flowing westward under Warranary and other hills between the Murrumbidgee and the Darling.

A STORM IN THE NIGHT.

June 5.

Rain had fallen during the night but the day was favourable though cloudy. I ventured on a straight line through the sand and bushes of *Eucalyptus dumosa* in order to cut off some miles of our beaten track, which was nearer the river and rather circuitous. We crossed some sandhills, the loose surface of which was bound down only by the prickly grass already described. From these hills the view was extensive and bounded on all sides by a perfectly level horizon. On one of them a solitary tree drew my attention and, on examining it, I discovered with much satisfaction that it was of that singular kind I had only once or twice seen last year in the country behind the Darling. The leaves, bark, and wood tasted strongly of horse-radish. We now obtained specimens of its flower and seed, both of which seemed very singular.* By the more direct route through the scrub this day, with what we gained yesterday, we were enabled to reach, at the usual hour for encamping, the red cliffs near the spot where we formerly met the second division of the Darling tribe. I took up a position on the western extremity of the broken bank, overlooking an angle of the river, and commanding a grassy flat where our cattle would be also secure. The weather became very boisterous after sunset, and our tents were so much exposed to the fury of the wind that at one time I thought they would be blown into the river. The waters continuing to rise, the Murray now poured along nearly on a level with its banks, and how we should cross or avoid:

The mosses, waters, slaps, and stiles



that lay between us and the depot, if the river rose much longer, was a question for which I was prepared. On the other hand the very cold and boisterous weather was in our favour as being opposed to any assembling of the tribes at points of difficulty along the line of our track, as they certainly ought to have done as good tacticians, for they never lost sight of our movements while we were in that country.

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(Footnote. A new and genuine species of *Gyrostemon*. *Gyrostemon pungens*, Lindley manuscripts; *foliis rhomboideis acutis glaucis in petiolum angustatis*. The capsules are arranged in a single verticillus and consequently this species will belong to *Gyrostemon* as distinguished from *Codonocarpus* by Mr. Endlicher.)

TRAVERSE THE LAND OF LAGOONS BEFORE THE FLOODS COME DOWN.

June 6.

It had rained heavily during the night but the morning was clear. As we continued our journey the natives were heard in the woods although none appeared. Fortunately for our progress the floods had not reached the lagoons, and we succeeded in passing the whole of this low tract, so subject to inundations, without difficulty; and we finally encamped within four miles of the ground where we had been obliged to disperse the Darling tribes. We pitched our tents on the eastern side of the lagoon where we found an agreeable shelter from the storm in some scrub which, on former occasions, we should not have thought so comfortable a neighbour. We could now enter such thickets with greater safety; and in this we found a very beautiful new shrubby species of cassia, with thin papery pods and numbers of the most brilliant yellow blossoms. On many of the branches the leaflets had fallen off and left nothing but the flat leafy petioles to represent them. The pods were of various sizes and forms, on which account, if new, I would name it *C. heteroloba*.*

(Footnote. *C. heteroloba*, Lindley manuscripts; *foliolis bijugis linearibus carnosius cito deciduis apice mucronulatis recurvis, glandula parva conica inter omnia, petiolo compresso herbaceo nunc aphylo mucronulato, racemis paucifloris folio brevioribus, leguminibus oblongis planis obtusis papyraceis continuis aut varie strangulatis*.)

June 7.

The ground had been so heavy for travelling during some days that the cattle much needed rest; and as I contemplated the passage, in one day of that dumosa scrub, occupying twenty miles along the tract before us, I made this journey a short one, moving only to our old encampment of May 26. The scrub here seemed more than usually rich in botanical novelties for, besides the Murrayana tree, we found a most beautiful *Leucopogon* allied to *L. rotundifolius* of Brown, with small heart-shaped leaves polished on the upper side and striated on the lower, so as to resemble the most delicate shell-work.* Piper discovered, on examining the ground where we had repulsed the Darling tribes, that they had left many of their spears, nets, etc. on our side of the river, and had afterwards returned for them, also that a considerable number did not swim across, but had retired along the riverbank. Upon the whole it was estimated that the numbers then in our rear amounted to at least one hundred and eighty.



(Footnote. *L. cordifolius*, Lindley manuscripts; ramulis pubescentibus, foliis sessilibus subrotundis planis patentibus cordatis mucronatis margine scabris supra laevigatis subtus striatis, floribus solitariis sessilibus axillaribus.)

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TRACES OF MANY NAKED FEET ALONG OUR OLD TRACK.

June 8.

As soon as daylight appeared this morning we commenced our long journey through the scrub; and we discovered to our surprise, by the traces of innumerable feet along our track, that the natives had not, as I till then supposed, come along the riverbank, but had actually followed us through that scrub. They have nevertheless a great dislike to such parts, not only because they cannot find any game there, but because the prickly spinifex-looking grass is intolerable against their naked legs. While we were encamped in the scrub on May 25 they must have also passed that stormy night there, without either fire or water. On our way through it now we discovered a new hoary species of *Trichinium*, very different from Brown's *Tr. incanum*.^{*} The cattle, though they were jaded, accomplished the journey before sunset, and we halted beside the large lagoon adjacent to that part of the river which was within three miles of our former camp, being the spot where the natives, in following us from lake Benanee, first emerged from the woods. The weather being still boisterous, we occupied a piece of low ground where we were sheltered from the west or stormy quarter by the river berg.

(Footnote. *Tr. lanatum*, Lindley manuscripts; *incano-tomentosum*, caule corymboso, foliis obovatis cuneatisque, capitulis hemisphericis lanatis, bracteis dorso villosis.)

CAMP OF 400 NATIVES.

On the brow of this height and just behind our camp I counted the remains of one hundred and thirty-five fires at an old encampment of natives and, as one fire is seldom lighted for less than three persons, there must have been at least four hundred. The bushes placed around each fire seemed to have been intended for that temporary kind of shelter required for only one night.

June 9.

We proceeded this morning as silently as possible, for we were now approaching the haunts of the enemy, and I wished to come upon them by surprise, thinking that I might thereby sooner ascertain whether any misfortune had befallen the depot.

NARROW ESCAPE FROM THE FLOODS OF THE RIVER.

Two creeks lay in our way and, from the flood then in the Murray, it was likely that they might be full of water, and the savages prepared to take advantage of the difficulty we should then experience in crossing them. The first channel we arrived at, which was quite dry when we formerly crossed, was now brimful of the muddy water of the Murray and before we reached its banks we heard the voices of natives on our right. We forded it however without annoyance, the water reaching only to the axles of the carts, but the

current was very strong and FROM the river, that is to say, upwards. We next reached our old camp where we had passed that anxious night near Benanee. Here to my great satisfaction and indeed surprise, I found the bed of the larger creek, which occasioned us so great a detour when we first met the natives, still quite dry at our old crossing-place; being in the same state in which it was then, although the flood water was now fast approaching it. We got over however with ease and at length again traversed the plain which skirts the lake; and we were glad to find that tranquillity prevailed along its extensive shores.

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PIPER OVERTAKES TWO YOUTHS FISHING IN LAKE BENANEE.

I perceived only one or two natives fishing, and I took Piper down to the beach to speak to them, being desirous also to examine at leisure this fine sheet of water. We found on arriving there that other natives had run off from some huts on the shore, but Piper pursued those in the lake, for the purpose of obtaining information about the tribe, until they ran so far out into the water that they seemed at length up to their ears, and I was really afraid that the poor fellows, who were found to be only boys, would be drowned in endeavouring to avoid him. I could scarcely distinguish them at length from the numerous waterfowl floating around. In vain I called to their pursuer to come back, Piper was not to be baffled by boys, and continued to walk through the water like a giant, brandishing a short spear, or, as the boys would probably say to their tribe;

Black he stood as night,
Fierce as ten furies, terrible as hell,
And shook a dreadful dart.

At length, when apparently near the centre of the lake, he overtook one; and while leading him towards the shore he ascertained that the Darling tribe had returned to the lake only on the day before, having been ever since their dispersion on the 27th May until this time, on the opposite bank of the Murray. That they were then fishing in a lagoon near the river (where in fact we afterwards saw smoke and heard their voices) and that they had despatched three messengers to a portion of the tribe on the upper Darling, with the news of what had befallen them, of our progress in that direction, and requesting them to join them as soon as possible at the lake.

DESCRIPTION OF THE LAKE.

I perceived that the depth of water in this basin did not then in any part exceed 8 or 10 feet, although the surface was probably 20 feet below the level of the sandy beach, thus making 28 or 30 feet the extreme depth when full. Now that I could examine it at leisure, I found that this fine lake was much more extensive than I had at first supposed. The breadth was about four miles, and I could see along it in a westerly direction at least six miles. Part of the north-western shore seemed to be clear of trees but well covered with grass, and to slope gently towards the water. The whole was surrounded by a beach consisting of fine clean quartzose sand. This was an admirable station for a numerous body like that from the Darling. The cunning old men of that tribe seemed well aware that there they could neither be surrounded nor surprised; the approach to the lake from the river being also covered in both directions by deep creeks, passable only at certain places. Their choice of such a position was creditable to their skill in strategy, and consistent with their thorough knowledge of localities. I could spare no time to look at the country beyond this lake (or northward) as I wished to do. From what we learnt

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however we were satisfied that the depot was safe, and this fact relieved me from much anxiety. We had still to cross that creek or ana-branch which apparently supplies the lake, although it was then still dry. I had observed that such ana-branches* were deepest at the lower mouths, as if the river floods entered first there and flowed upwards; although before the river reached its maximum a strong current would probably set downwards in the same channel, which would thus become at last a branch of the main stream.

RETURN TO THE DEPOT.

We reached our former camp on the Murray by 3 P.M., and once more pitched our tents on the bank of this river. By comparing its height, as measured formerly, with as much of it as remained above the waters, I found that it had risen eight feet and a half. We were then within a short day's journey of the depot but anxious enough still to know if it were safe.

June 10.

We started early and, by crossing a small plain, cut off half a mile of our former route. When within a few miles of the camp of Mr. Stapylton we heard a shot, and soon discovered that it was fired by one of the men (Webb) rather a mauvais sujet, who had been transgressing rules by firing at a duck. We learnt from him however the agreeable news that the depot had not been disturbed.

GREAT RISE IN THE WATERS OF THE MURRAY.

It was now cut off from us by a deep stream which filled the creek it overlooked and which flowed with a considerable current towards the Murray, having also filled Lake Stapylton to the brim.

SECURITY OF THE DEPOT.

Mr. Stapylton and his party were well; and during the whole time that we had been absent the natives had never approached his camp. Such singular good fortune was more than I could reasonably have expected, and my satisfaction was complete when I again met Stapylton and saw the party once more united. The little native Ballandella's leg was fast uniting, the mother having been unremitting in her care of the child. Good grass had also been found so that the cattle had become quite fresh and indeed looked well.

SURROUNDED BY INUNDATIONS. CROSS TO IT IN A BARK CANOE MADE BY TOMMY CAME-LAST.

I was ferried over Stapylton's creek in a bark canoe by Tommy Came-last who also, by the same simple means, soon conveyed every article of equipment and the rest of the party across to the depot camp.

We had now got through the most unpromising part of our task. We had penetrated the Australian Hesperides, although the golden fruit was still to be sought. We had accomplished so much however, with only half the party, that nothing seemed impossible with the whole; and to trace the Murray upwards and explore the unknown regions beyond it was a charming undertaking when we had at length bid adieu forever to the dreary banks of the Darling.

SEARCH FOR THE JUNCTION OF THE MURRUMBIDGEE AND MURRAY.

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The first object of research was the actual junction of the Murrumbidgee with the Murray. I knew that the creek on which I had fixed the depot camp came from the former and entered the latter; and that our depot thus stood on a tract surrounded by water, being between the creek and the main stream. We were already in fact on a branch-island, immediately adjacent to the junction we were in search of and, as I intended to across the Murray either at or below that point, I determined to make an excursion in search of it next morning.

June 11.

Riding southward I reached a bend of the river about two miles from our camp. While tracing the stream upwards from that point we saw some natives running away from their fires. One of them however held up a green branch in each hand and, though as he ran he answered Piper, and a gin had left a heavy bag near us, yet he could not be prevailed on to stop. When Piper took the bag to the tribe he was obliged to follow them nearly a mile, when a number at length stood still together, but at a considerable distance from us, and kept incessantly calling for tomahawks. From the number of huts along the riverbank it was obvious that the inhabitants were numerous, and I was therefore the more surprised that our depot could have continued so long near them without their discovering it. After following the river upwards of eight miles without meeting with the Murrumbidgee I came to a place where it seemed to have formerly had a different channel, and to have left a basin where the banks of the stream were of easy access, the breadth being only 110 yards. This spot was so favourable for effecting a passage that I determined on moving the party to it at once; and to entrust to Mr. Stapylton the further search for the junction of the Murrumbidgee, which could not be far from it.

MR. STAPYLTON REACHES THE JUNCTION OF THE RIVERS.

June 12.

While I conducted the party to the point at which I intended to cross Mr. Stapylton returned along our old route to where we first traversed the now flooded creek and, by tracing it downward to the Murrumbidgee, and that river to the Murray, he ascertained the junction to be little more than a mile from the encampment which I had taken up with the intention of crossing the Murray. Meanwhile no time had been lost there in pitching the boats and sinking them in the adjacent basin of still water that the planks might swell and unite.

June 13.

I crossed early in the morning and found the opposite bank very favourable for the cattle to get out; this being a object of much importance.

RECEPTION BY THE NATIVES OF THE LEFT BANK.

I was met as favourably by the natives on this first passage of the Murray as I had been on our first approach to the Murrumbidgee. A small tribe came forward and laid a number of newly-made nets at my feet. I declined accepting anything however save a beautifully wrought bag, telling the owner through Piper that when the party should have passed to that side I would give him a tomahawk in return for it.

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PASSAGE OF THE MURRAY.

As soon as the day had become rather warm we endeavoured to swim the bullocks across by driving them into the water at the mouth of the basin where the river seemed most accessible. But the bank was soft and muddy, and the animals, when driven into the water, got upon an island in a shallow part, whence they could not be dislodged, much less compelled to swim from it to the opposite shore. Not a little time was thus lost, while only a few could be drawn over by ropes attached to the boats; and by which process one was accidentally drowned. This was owing to the injudicious conduct of one of the men (Webb) who gave the animal rope instead of holding its head close aboard, so as to keep the mouth at least above water. The drivers then represented that the rest of the bullocks had been too long in the water to be able to cross before the next day but, having first tried their plan, I now determined to try my own; and I directed them to take the cattle to the steepest portion of the bank, overhanging the narrow part of the river, and just opposite to the few bullocks which had already gained the opposite shore. Notwithstanding the weakness of the animals this measure succeeded for, on driving them down the steep bank so that they fell into the water, the whole at once turned their heads to the opposite shore and reached it in safety. We next swam the horses over by dragging each separately at the stern of a boat, taking care to hold the head above water. Thus by sunset everything except one or two carts and the boat-carriage had been safely got across.

The natives beyond the Murray were differently-behaved people from those of the Darling for, although one group sat beside that portion of our party which was still on the right bank, another, at a point of the opposite shore to the eastward of our new camp, and a third near my tent in the neck of a peninsula on which I found we had landed, not one of them caused us any anxiety or trouble. It was to the last party that I owed the tomahawk, and I went up with it as they sat at their fires. They were in number about twenty and unaccompanied by any gins. The man who had given me the bag seemed to express gratitude for the tomahawk by offering me another net, also one which he wore on his head; and he presented to me his son. He saw the two native boys who then accompanied me as interpreters dressed well and apparently happy, and I had no doubt the poor man was willing to place his own son under my care. I endeavoured to explain that we had no more tomahawks, that we had given none to any other tribe upon the Murray, and that our men were apt to be very saucy with their guns if too much troubled. Experience had taught me the necessity for thus perpetually impressing on the minds, even of the most civil of these savages that, although inoffensive, we were strong; an idea not easily conceived by them. They however came forward and sat down near us until very heavy rain, which fell in the night, obliged them to seek their huts.

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HEAVY RAINS SET IN.

June 14.

The morning dawned under the most steady fall of rain that I had seen during the journey; and this happened just after new moon, a time when I had hoped for a favourable change in the weather. Everything was got across the river this day, and we were prepared for the survey of a new region. I was occupied with the maps of the country which we had just left sufficiently to be regardless of the rain, even if it had continued to fall many days; and very thankful was I that we had got thus far without having been impeded by the weather.

June 15.

The rain ceased in the morning and the barometer had risen so much that no more was to be apprehended then; yet the blacksmith had still some work to do to the boat-carriage, and we were therefore obliged to halt another day.

ROW UP THE MURRAY TO THE JUNCTION OF THE MURRUMBIDGEE.

In the afternoon I proceeded in one of the boats up the river to the junction of the Murrumbidgee; and I ascertained that there was a fresh in that river also. It was certainly narrower at the mouth than at Weyeba; and here indeed some fallen trees almost crossed the stream. There was a hollow or break in the bank of the Murray, about 100 yards lower down, which seemed to have been once an outlet of the Murrumbidgee. The opening formed a deep section through a stratum of ferruginous sandstone, and was fully equal to the present breadth of the tributary river. On pulling higher up, the Murray seemed rather smaller above this junction, although still a splendid stream. The natives on this side told Piper that the Darling tribe from the other had danced a corrobory with them about six weeks before, and promised to return in one moon. They also inquired whether Piper had seen any of that tribe as they were waiting for us whitefellows, to which Piper answered that he had NOT. I blamed him for this reply, and asked why he did not say that we had been obliged to fire upon and kill some of them: but he said he could not tell them that, because they would hate him so.

COMMENCE THE JOURNEY UPWARDS, ALONG THE LEFT BANK.

June 16.

We left our encampment and commenced our travels up the left bank of the Murray over ground which seemed much better than any we had seen on the right bank. We crossed grassy plains bounded by sandhills on which grew pines (callitris); and open forests of goborro (or box-tree) prevailed very generally nearer the river. Where this tree grew we found the ground still good for travelling upon, notwithstanding the heavy

rain, in consequence apparently of the argillaceous character of the soil; for in the plains of red earth, which before the last fall of rain we had found the best, the horses now sank above their fetlocks and the carts could scarcely be dragged along. In the course of the day we passed several broad lagoons in channels which probably were ana-branches of the river in high floods. On the largest plain crossed by the party four emus appeared, and one of them was killed after a fine chase by the dogs. The river appeared to come from the east-south-east but the course was very tortuous, and we encamped at a reach where it seemed to come from the south.

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STRANGE ANIMAL.

The most remarkable incident of this days' journey was the discovery of an animal of which I had seen only the head among the remains found in the caves at Wellington Valley. This animal was of the size of a young wild rabbit and of nearly the same colour, but had a broad head terminating in a long very slender snout, like the narrow neck of a wide bottle; and it had no tail. The forefeet were singularly formed, resembling those of a hog; and the marsupial opening was downwards, and not upwards as in the kangaroo and others of that class of animals. This quadruped was discovered on the ground by our native guides, but when pursued it took refuge in a hollow tree from which they extracted it alive, all of them declaring that they had never before seen an animal of that kind.*

(Footnote. The original has been deposited in the Sydney Museum but, having shown my friend Mr. Ogilby a drawing of it, he has noticed the discovery in the Proceedings of the Zoological Society for 1838 describing the animal as "belonging to a new genus closely allied to Perameles, but differing in the form of the forefeet, which have only two middle toes resembling those of a hog, and in the total absence of tail. This genus has been named by Mr. Ogilby Chaeropus ecaudatus.)

June 17.

The cattle were not brought up until ten o'clock, an unusual circumstance, and one which curtailed the day's journey. The course of the river compelled us to travel southward, and even to the westward of south; but we found better ground by keeping on the open forest-land of box or goborro, which in general occupied a very extensive space between the river and the bergs of soft red sandhills on which grew the callitris.

SALSOLAE ON THE PLAINS.

The plains covered with salsolae which, as I have just remarked, before the rain, were considered to afford the best surface for travelling on, had now become so soft as to be almost impassable, at least by our wheels, and I this day avoided them as much as I could. The margin where the box or goborro grew was in many parts hollowed into lagoons or ana-branches of the river, so that it was desirable to shape our line of route as closely by the base of these bergs or sandhills as possible.

PICTURESQUE SCENERY ON THE RIVER.

On crossing the point of one of them we came upon a most romantic-looking scene where a flood branch had left a serpentine piece of water, enclosing two wooded islands of rather picturesque character, the whole being overhung by the steep and bushy slope of the hill. The scenery of some lakes thus formed was very fine, especially when their rich verdure and lofty trees were contrasted with the scrub which covered the sandhills

nearest the river, where a variety of shrubs such as we had not previously seen formed a curious foreground. Amongst them was a creeper with very large pods, two of which were brought to me last year, while on the Darling, by one of the men, who could not afterwards find the tree again, or say what it was like. We also found one *Eucarya murrayana* with young unripe fruit. (See Plate 28 which represents the general character of the scenery on the Murray.)

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KANGAROOS NUMEROUS.

The country abounded with kangaroos. On ascending some grassy ridges I perceived a verdant plain which extended as far as I could see to the westward. It was bounded on the south, not by scrub, but by a forest of large trees; and the horizon beyond presented something like an outline of hills, a refreshing sight, accustomed as we had been for several months to a horizon as level as that of the ocean. After travelling about three miles we were obliged to turn westward by a creek or ana-branch of the river, having on its banks large yarra trees resembling those in the main stream. It prevented us from approaching the Murray during the rest of the day, and we finally encamped on its margin having found there most excellent grass.

June 18.

Continuing along the firm ground between the bergs and this creek we pursued a course which for some miles bore to the westward of south. We passed through forests of the box or goborro, under which grew a luxuriant crop of grass and two of these flats (on which we saw yarra trees also) stretched away to the westward, breaking the elsewhere unvaried wilderness of sandhills and scrub. On crossing one of these forest flats we heard the sound of the natives' hatchet on some hollow trees before us; and Piper as usual hastened forward to communicate with them, but in vain for, as soon as they saw him, they ran like kangaroos, leaving the fortunate opossum which they had been seeking still alive in his hole in the tree. At length we got clear of the creek on reaching a bend of the river not far beyond the spot where we had seen the natives.

COUNTRY IMPROVES AS WE ASCEND THE RIVER.

The Murray was flowing rapidly in a narrower channel and within two or three feet of the top of the banks. The country appeared on the whole superior to any that we had seen on the other side of this river. The grassy flats backed by hills covered with callitris seemed very eligible for cattle runs, the chief objection to them being only that the banks of the river were so steep and yielding that the water was in general inaccessible. The breadth seldom exceeded 60 or 70 yards; and I suspected that we might be already above the junction of some stream on the right bank, especially as the course came now so much from the southward.

A REGION OF REEDS.

On crossing the extremity of a sandhill, about two miles from the spot where we afterwards encamped, I perceived that reeds covered a vast region before us. They grew everywhere, even under the trees, and extended back from the channel of the river as far as I could see and, no alternative presenting itself, we endeavoured to face them. The lofty ash-hills of the natives, used chiefly for roasting the balyan (or bulrush) a root found only in such places, again appeared in great numbers. We soon came

upon a lagoon about a mile in circumference and surrounded on all sides by high reeds. One or two smooth grassy hills arose among them, but the ground, even where they grew, was as firm and good for travelling upon as any that we had recently crossed. They were no impediment to a man or bullock in motion, but grew to the height of about seven or eight feet.

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THE WATER INACCESSIBLE FROM SOFT AND MUDDY BANKS.

Grass was also to be found among them and I was willing to encamp there; but the difficulty was in finding a spot where the cattle could approach the water. The flood ran high in the deep and rapid river; yet the margin was covered with high reeds and, although I ultimately encamped near a small lagoon within the reeds, the cattle would not venture to drink at it, instinctively shrinking back from the muddy margin. In the course of the evening one animal fell into the river and was extricated with great difficulty and after much digging in the bank. One remarkable difference between this river and the Murrumbidgee was that, in the latter, even where reeds most prevailed, a certain space near the bank remained tolerably clear: whereas on this river the reeds grew most thickly and closely on its immediate banks, thus presenting a much less imposing appearance than the Murrumbidgee, with its firmer banks crowned with lofty forests of yarra. Each Australian river seems to have some peculiar character, sustained with remarkable uniformity throughout the whole course.

HABITS OF OUR NATIVE GUIDES.

June 19.

Piper, although so far from his country, could still point directly to it, but he had grown so homesick that he begged Burnett not to mention Bathurst. To return except with us was quite out of the question, and as we still receded he dragged, as the phrase is, a lengthening chain. He studied my visage however and could read my thoughts too well to doubt that I too hoped to return. The whole management of the chase now devolved on him and the two boys, his humble servants; and this native party usually explored the woods with our dogs for several miles in front of the column. The females kept nearer the party, and often gave us notice of obstacles in time to enable me to avoid them. My question on such occasions was Dago nyollong yannagary? (Which way shall we go?) to which one would reply, pointing in the proper direction, Yalyai nyollong-yannar! (Go that way.) Depending chiefly on the survey for my longitude, my attention was for the most part confined to the preservation of certain bearings in our course by frequent observations of the pocket compass; but in conducting carts where no roads existed, propitiating savage natives, taking bearings and angles, observing rocks, soil and productions, so much care and anxious attention was necessary that I believe I was indebted to the sympathy even of my aboriginal friends for the zealous aid they at all times afforded.

Notwithstanding the obvious necessity for closely watching the cattle, they had been suffered to ramble nine miles up the river during the night; and were not brought back to the camp until noon. This unusual and untoward circumstance was the more surprising as the whole country along the riverbank was covered with good grass. Whether they had instinctively set off towards the upper country, where most of them were bred; or that want of water after a hard day's work had occasioned such restlessness, it was

difficult to say; but they wandered even beyond the camp that we reached this day in a journey commenced however only at half-past 12.

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NATIVES VERY SHY.

The natives peeped over the reeds at us from a considerable distance; and some of those whom Piper saw when in search of the men with the cattle, immediately jumped into the river, carrying their spears and boomerangs with them. We had not proceeded above a mile and a half when I perceived among the reeds close to the berg on which we were travelling a small, deep and still branch of the river, apparently connected with numerous others, in all of which the water was quite still, although it had the same muddy colour as that flowing in the river, and they seemed to be equally deep. These still channels wound in all directions among the reeds. Further on the water was not even confined to such canals, large spaces between them being inundated, and lofty gum (or yarra) trees stood even in the water. Light appeared at length through the wood before us, which soon terminated on a sea of reeds bounded only by the horizon. On ascending some sandhills confining this basin of reeds on our side, I observed a low grassy ridge with pines upon it, and forming a limit to the reedy basin, except in a part of the horizon which bore 14 degrees South of East. A broad sheet of water (probably only an inundation occasioned by the late rain) filled the centre of the reedy space. About six miles from our last camp we came upon the river flowing with a strong current; and at its full width the water not more than a foot below the level of the right bank. Thus the Murray seemed to flow through that reedy expanse, unmarked in its course by trees or bushes, although one or two distant clumps of yarra probably grew on the banks of the permanent stream. At two miles further on these trees again grew plentifully, close under the berg along which we travelled, and where I hoped again to see the river. We found however that the yarras only enclosed shallow lagoons; and on a small oasis of dry ground near one of them we encamped for the night. A species of solanum forming a very large bush was found this day in the scrub, also several interesting shrubs, and among them some fine specimens of that rare one, the *Eucarya murrayana*. But in all these scrubs on the Murray the *Fusanus acuminatus* is common and produces the quandang nut (or kernel) in such abundance that it and gum acacia may in time become articles of commerce in Australia.*

(Footnote. Having brought home specimens of most of the woods of the interior, I find that several of the acacias would be valuable for ornamental work, having a pleasing perfume resembling that of a rose. Some are of a dark colour of various shades and very compact; others light-coloured and resembling in texture box or lancewood. The new caper tree also resembles the latter so much as not to be distinguished from it. Specimens of these woods may be seen at Hallet's, Number 83 High Holborn.)

June 20.

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The morning was frosty and clear. Soon after we left our encampment we came to a ridge or berg, bare of trees with the exception of a fine clump on the highest part; and behind it was an extensive flat which was also destitute of wood, only a few atriplex bushes appearing upon it. I sent the carts across this flat while I rode along the crest of the ridge. The sea of reeds skirted this ridge on the north, and a meandro-serpentine canal full of water intersected the reedy expanse in almost all directions. The river flood had not reached it, at least if it had the water continued unmoved by any current. I perceived some smoke arising from the reeds at the distance of a mile, and at the extreme point of a tongue of firmer ground which extended into them.

PIPER SPEAKS TO NATIVES ON THE RIVER.

Piper went boldly up to the fire and found three families of blacks in as many canoes on the river. They told him there was a junction of rivers some way ahead of us; and I understood him to say that part of these natives had come across from Waljeers. The country opened more and more as we proceeded, and the basin of reeds was more extensive. The bergs on the opposite side (on which I had fixed several points) were distant on an average about eight miles, which was the breadth therefore of that low margin of reeds. The winding borders of this plain terminated on our side in rich grassy flats, some of which extended back farther than I could discover; and on two of these plains I perceived fine sheets of water, surrounded by shining verdure and enclosed by sheltering hills clothed with *Callitris pyramidalis*.

GOOD LAND ON THE MURRAY.

One or two spots seemed very favourable for farms or cattle stations. The soil in these grassy flats was of the richest description: indeed the whole of the country covered by reeds seemed capable of being converted into good wheat land, and of being easily irrigated at any time by the river. This stream was also navigable when we were there, and produce might be conveyed by it at such seasons to the seashore. There was no miasmatic savannah, nor any dense forest to be cleared; the genial southern breeze played over these reedy flats which may one day be converted into clover-fields. For cattle stations the land possessed every requisite, affording excellent winter grass back among the scrubs to which cattle usually resort at certain seasons; while at others they could fatten on the rich grass of the plains, or during the summer heat enjoy the reeds amid abundance of water. We found on these plains an addition to the common grasses.* The fine open country afforded extensive views, and to the eastward and south-east we saw hills with grassy sides and crowned with *callitris*.

(Footnote. *An Andropogon allied to A. bombycinus.*)

WOOD AND WATER SCARCE.

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Through the intervening valley flowed the Murray, the course of which was seldom visible as no trees grew along its border. Under such circumstances we could not encamp upon the bank, neither could it be safely approached by cattle; and our prospect of obtaining wood and watering our animals was this day rather uncertain. At length we came upon a path which Mr. Stapylton pursued amongst high reeds for a mile without reaching the river as we both expected. I continued to travel towards four trees on the side of a green hill, still at a great distance but in the direction in which I wished to proceed.

JUNCTION OF TWO BRANCHES. SWAN HILL.

When we arrived there just before sunset we had the good fortune to find close under the hill a bend of the Murray, and to discover the junction of another river or branch with it at this point. Within the margin we found a small pond quite accessible to the cattle, and behind the hill was an extensive flat covered with the richest grass. Here therefore we could encamp most contentedly beside a clear hill, always a desirable neighbour, and an accessible river. We were also thus enabled to determine the junction perhaps of two rivers, an important object in geography. The latitude was 35 degrees 19 minutes 43 seconds South.

The lesser stream was about 50 yards wide, but below the junction the main stream divided into two branches so that I was doubtful whether this might not be only the termination of an ana-branch. From the falling off of the bergs on the distant right bank, and the approach of a line of lofty trees from the same quarter, I was almost convinced that some junction took place thereabouts, as indeed the natives last seen had informed us. During the day columns of smoke arose behind us in the direction where we had seen these natives, and further eastward we perceived a widespreading conflagration, doubtless caused by them although this expression of ire troubled us but little so long as the flames did not approach our route. The scrubs now receded from the river, but the curious variety of acacias they contained still drew our attention towards them. We found this day several which were new. One with a rigid hard leaf, not in flower, resembled in many respects the *A. farinosa* met with two days later, but it was perfectly smooth in all its parts.* Another appeared to be related to *A. hispidula*, but with much narrower leaves without the ragged cartilaginous margin of that species.**

(Footnote. *A. sclerophylla*, Lindley manuscripts; *ramulis angulatis glabriusculis, phyllodiis rigidis carnosius rectiusculis linearibus apice latioribus mucronulatis multinerviis glabris eglandulosis, capitulis 1-2 sessilibus glaberrimis.*)

(**Footnote. *A. aspera*, Lindley manuscripts; *phyllodiis oblongo-linearibus uninerviis mucronatis eglandulosis ramisque angulatis asperrimis, capitulis 1-2 axillaribus, pedunculis villosis phyllodiis duplo brevioribus.*)



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CHAPTER 3.7.

Exploring through a fog.

Lakes.

Circular Lake of Boga.

Clear grassy hills.

Natives on the lake.

Scarcity of fuel on the bank of a deep river.

Different character of two rivers.

Unfortunate result of Piper's interview with the natives of the lake.

Discovery of the Jerboa in Australia.

Different habits of the savage and civilized.

A range visible in the south.

Peculiarities in the surface of the country near the river.

Water of the lakes brackish, or salt.

Natives fly at our approach.

Arrival in the dark, on the bank of a watercourse.

Dead saplings of ten years growth in the ponds.

Discovery of Mount Hope.

Enter a much better country.

Limestone.

Curious character of an original surface.

Native weirs for fish.

Their nets for catching ducks.

Remarkable character of the lakes.

Mr. Stapylton's excursion in search of the main stream.

My ride to Mount Hope.

White Anguillaria.

View from Mount Hope.

Return of Mr. Stapylton.

SWAN HILL.

June 21.

Among the reeds on the point of ground between the two rivers was a shallow lagoon where swans and other wild fowl so abounded that, although half a mile from our camp, their noise disturbed us through the night. I therefore named this somewhat remarkable and isolated feature Swan Hill, a point which may probably be found to mark the junction of two fine streams.

EXPLORING THROUGH A FOG.

I wished to devote the day to meteorological observations as prearranged with my friends in the Colony, Mr. Dunlop and Captain King; but a thick fog in the morning promised a day of clear settled weather, and I was obliged to proceed; I observed the barometer however every hour during the journey. For several miles we travelled through the mist over plains partly covered with reeds and partly with grass. Having reconnoitred the country on the previous evening I had no difficulty in pursuing the direction I then chose for this day's route.

LAKES. CIRCULAR LAKE OF BOGA.

At eleven A.M. when the fog arose I perceived a low grassy ridge before us; and a fine lake covered with black swans, ducks and other waterfowl was afterwards discovered beyond it. We passed along the southern shore of this lake, thus keeping it between us and the river. It was surrounded with reeds and bulrushes, and appeared to be supplied by a small feeder from the river, like other similar lakes which we had seen near rivers elsewhere: but the water could pass by such small channels only during the highest floods, for the lake was even then very low, although the flood in the river was evidently high. This lake was about three miles in circumference.

CLEAR GRASSY HILLS.

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As I ascended a grassy hill two miles beyond it I perceived on my left another smaller lake; with no reeds about it, but with grass growing to the water's edge; and there we also found a curious little plant covered with short imbricated silvery leaves, but not in flower. Behind the lake, or away from the river, was the low scrub of the back country in which I again saw, just coming into flower, the *Cassia heteroloba* discovered on the 6th instant. On reaching the top of the hill I discovered to the eastward a third lake, much larger than either of the others, and apparently of a different character for its banks were higher, and it contained one or two small islets while the surface of the water was covered with some brown aquatic weed. It was bounded on the east by a ridge which seemed green, smooth, and quite clear of trees. A low neck of firm ground separated the lake first seen from this; and it was also connected with the hill on which I then stood.

NATIVES ON THE LAKE.

In one place, a narrow line of high reeds appearing likely to impede us, Mr. Stapylton rode forward to examine it. As he reached the spot much smoke suddenly arose, evidently from natives whom he had thus accidentally disturbed. He nevertheless pressed forward amongst the reeds, and soon reappeared on the green hill beyond, thus showing us there was no obstruction, and the carts proceeded through. These reeds enveloped a small creek or hollow through which the floods of the river supplied the lake. In one part was a pool of water, and in another the bottom was so soft that the united strength of two teams was necessary to draw out the wheel of a cart which sunk into it. We found there the huts of natives who had fled on Mr. Stapylton's approach, having left their fishing spears, skin cloaks, shields, *etc.* They soon appeared on the lake in twenty-four canoes, all making for the little isle in the centre which, being covered with reeds, was probably their stronghold according to their modes of warfare. The aquatic tribes, as I have elsewhere observed, invariably take to the water in times of alarm, and from among the reeds in their little island these people could easily throw their spears at any assailant without being themselves exposed, or even seen. Piper found in their huts some fragments of blue earthenware, nicely attached with gum to threads by which it would appear that the gins wore them in their hair as ornaments.

SCARCITY OF FUEL ON THE BANK OF A DEEP RIVER.

Being desirous to learn the native names of these lakes, and to obtain some information respecting the rivers, I requested Piper and the two Tommies to remain behind for the purpose of obtaining a parley if possible. I should indeed have encamped by this lake had not the environs been entirely destitute of wood. Before us however, although at the distance of some miles, was a line of majestic trees which appeared to mark the course of a river; and I had directed Mr. Stapylton to lead the party through the reeds along an interval which appeared to be chiefly covered with grass, and by which I expected he would arrive at the line of high trees. Meanwhile I was occupied alone to

the southward of the lake, surveying it. Near the margin I found a small fragment of highly vesicular lava.

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DISCOVERY OF THE RIVER.

The ground traversed by the party was firm and, when I overtook it within a mile and a half of the line of trees, we came suddenly on a river full to the very margin, and flowing slowly to the westward, its width being about 50 yards. Not a tree grew near it, nor did I see any indication of a river until I reached the bank.

The ground presented an unbroken level, or declined slightly towards the line of trees which still marked, as I supposed, the course of the Murray. We had no means of reaching it however, nor any alternative left but to change our route towards the east-south-east and travel along the bank of this river, in hopes it might at last approach the trees. We found on the contrary that it receded from them towards a country without a single bush; and thus while the sun was setting on a raw frosty evening we could not encamp for want of fuel, although water and grass were abundant. One solitary group of trees seeming to be on our side of the stream, though distant about two miles, Mr. Stapylton and myself galloped towards them, the party following. There too we found the river, separating us even from these trees, three very small ones only being on our side, and likely to fall when cut into the stream. It had become quite dark before we got to them but, by lighting some reeds, the rest of the party found its way to us; and there we encamped, although the green wood could not be made to burn, while the thermometer stood so low as 29 degrees. We were perhaps more sensible of the want of fuel from the abundance so apparent on the banks of what seemed another river at so small a distance across the open plain.

DIFFERENT CHARACTER OF TWO RIVERS.

These streams flowing so near each other seemed in this respect distinctly different: the one being edged with only reeds, the other with lofty trees like almost every interior river of New South Wales.

UNFORTUNATE RESULT OF PIPER'S INTERVIEW WITH THE NATIVES OF THE LAKE.

Piper came in soon after the carts arrived, bringing a sad account of his interview with the natives. It appeared that, as soon as our party had proceeded to some distance from the lake, twelve men sprang from among the reeds armed with spears, boomerangs, *etc.*, and when Piper accosted one of them, inquiring the name of the lake "I wont tell you," was the answer (*murry coolah*, *i.e.* very angrily). They then told him there was "too much ask" about him, and they blamed him for bringing the whitefellows there; adding that they did not like him; and an old man calling to the rest to kill him, for that he was no good, two spears were immediately thrown. These Piper parried with his carbine, and then instantly discharged it at the foremost, wounding him in the right jaw. The rest immediately disappeared among the reeds. The wounded savage fell, but Piper loaded again and killed him by another shot through the body. Such was Piper's

story. I blamed him very much for firing at the wounded man, and I regretted exceedingly the result of his interview. I was besides most anxious to maintain a good understanding with these people.

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The spears used on this occasion were made of reed and pointed with bones of the emu; but we saw at their huts several heavy jagged ones of very hard wood for the purposes of fishing. The natives wore cloaks made of kangaroo skins.

DISCOVERY OF THE JERBOA IN AUSTRALIA.

A very curious and rare little quadruped was this day found by the two Tommies, who had never before seen such an animal. Its fore and hind legs resembled in proportion those of the kangaroo; and it used the latter by leaping on its hindquarters in the same manner as that animal. It was not much larger than a common fieldmouse, but the tail was longer in proportion to the rest of the body even than that of a kangaroo, and terminated in a hairy brush about two inches long.* (Plate 29.)

(Footnote. This appears to be a species of Jerboa, thus for the first time seen by us in Australia. My friend Mr. Ogilby has described this animal in the Linnean Transactions from my drawing and descriptions; the specimen itself having been deposited in the Australian Museum at Sydney. Dipus mitchellii, D. plantis subpentadactylis; corpore supra cinereo-fusco, subtus albido; auriculis magnis, cauda longissima, floccosa. Linnean Transactions volume page 129.)

We also discovered a beautiful new species of the Cape genus Pelargonium, which would be an acquisition to our gardens. I named it *P. rodneyanum** in honour of Mrs. Riddell at Sydney, grand-daughter of the famous Rodney.

(Footnote. P. rodneyanum, Lindley manuscripts; patentim pilosum, caule subterraneo horizontali crasso fragili ramos erectos promente apice tantum epigaeos foliosos, ramulis herbaceis erectis, foliis ovato-oblongis sublobatis basi cuneatis obtusis grosse crenatis tenuibus glabriusculis longipetiolatis, pedunculis erectis foliis longioribus, umbellis tomentosis 8-10-floris demum laxis divaricatis, petalis anguste obovatis calyce triplo longioribus, staminum tubo obliquo: sterilium 3 denticuliformibus, fortium 2 sterilibus interjectis caeteris longioribus.)

DIFFERENT HABITS OF THE SAVAGE AND CIVILIZED.

At this camp where we lay shivering for want of fire, the different habits of the aborigines and us, strangers from the north, were strongly contrasted. On that freezing night the natives, according to their usual custom, stripped off all their clothes previous to lying down to sleep in the open air, their bodies being doubled up around a few burning reeds. We could not understand how they could lay thus naked when the earth was white with hoar frost; and they were equally at a loss to know how we could sleep in our tents without a bit of fire to keep our bodies warm. For the support of animal heat, fire and smoke are almost as necessary to them as clothes are to us. The naked savage however is not without some reason on his side, for fire is the only means he possesses

to warm his body when cold, and it is therefore the only comfort he ever knows;
whereas

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we require both fire and clothing and have no conception of the intensity of enjoyment imparted to the naked body of a savage by the glowing embrace of a cloud of smoke in winter. In summer also he may enjoy, unrestrained by dress, the luxury of a bath in any pool when not content with the refreshing breeze that fans his sensitive body during the intense heat. Amidst all this exposure the skin of the Australian native remains as smooth and soft as velvet, and it is not improbable that the obstructions of drapery would constitute the greatest of his objections in such a climate to the permanent adoption of a civilised life.

A RANGE VISIBLE IN THE SOUTH.

June 22.

A night of hard frost was succeeded by a beautifully clear morning. The refraction brought the summits of a distant range above the south-east horizon; and the sight was so welcome to us, after having found Australia a mere desert from the want of hills, that I was at a loss for a name to give these that should sufficiently express my satisfaction. I found the breadth of the river at our camp to be 50 yards; and the velocity 4 chains (or 88 yards) in 127 seconds, being something less than a mile and a half per hour; and the height of the bank above the water to be 18 inches.

PECULIARITIES IN THE SURFACE OF THE COUNTRY NEAR THE RIVER.

The entirely open country through which the nearer river or branch continued to flow, and the lofty and remarkable trees on the banks of the other enabled me, in chaining along our route, to survey the course of both by fixing points on the more distant, and tracing the nearer. At length we approached a better-wooded country where clear green hills appeared to our right. I ascended the highest of these and discovered a vast plain beyond which appeared to be, or rather to have been, the bed of an extensive lake. I was now struck with the uncommon regularity of the curve described by the hill or ridge, having previously observed the same peculiarity in that which overlooked the lake of the savage tribe. We passed over some slight undulations covered with luxuriant grass, and were not sorry to see a wood of pines (or callitris) on our left. Large gumtrees (yarra) grew beyond and, the general course I wished to pursue leading towards them, I hoped to reach there an angle of the river. We found however that they hung over a small ana-branch only, in which the muddy flood-water of the river was then flowing. This stream was nevertheless exactly what we wanted, being safely accessible to our cattle, which the river itself was not. We therefore pitched our tents on a spot where there was excellent grass, and wood was again to be had in great abundance. We found in the adjacent scrub a remarkably rigid bush with stiff sickle-shaped blunt leaves and mealy balls of flowers not quite expanded;* also an acacia resembling *A. hispidula*, but the leaves were quite smooth and much smaller.** In approaching this spot we had

passed along a low sandy ridge, every way resembling a beach but covered with pines and scrub. A bare grassy hill extended southward from each end of it; and the intervening hollow containing some water was evidently the bed of a lake, nearly dry.

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(Footnote. It is found to be an acacia related to *A. multinervia*. *A. farinosa*, Lindley manuscripts; *ramulis angulatis glabriusculis, phyllodiis rigidis carnosis incurvis linearibus apice latioribus mucronatis multinerviis glabris: margine superiore infra medium glanduloso, capitulis 2-4 axillaribus breviter pedunculatis farinosis.*)

(**Footnote. For description see 19th September.)

June 23.

The most eastern of these smooth bare ridges was immediately above our camp and, observing in it the regularity of curve which I had noticed in others, I was struck with the analogy, and in these ridges being always on the eastern shore of hollows or lakes, while the western was irregularly indented, and was in some parts so abrupt as to have the character of cliffs. The southern end of the ridges was generally the highest.

WATER OF THE LAKES BRACKISH, OR SALT.

Perceiving no reeds near the lake nor any birds upon it I sent Mr. Stapylton to taste the water, which he found to be quite salt, like that of the sea. This and several of the other basins were surrounded by high ground and were without any communication with the river.

NATIVES FLY AT OUR APPROACH.

I passed soon after another of these circular basins which, although much smaller, presented similar features, and had some rather brackish water in pools in the deepest part. During the day's journey we passed several ridges connected with extensive basins in a similar manner, and in the bottom of one of these I perceived *Polygonum junceum* growing amongst yarra trees. On the western shore we saw the remains of large native ash-hills. They were old and overgrown with bushes, but they proved that this lake had once contained mussels and the balyan or bulrush, a root eaten by the natives and cooked in such ovens as these. The other lake was surrounded by a circle of yarra trees and had but recently become dry, the earth in it being still without vegetation and covered with innumerable native companions and white cockatoos. Finding no indication of the river, notwithstanding the presence of so many yarra trees, I turned to the east towards another line of them which appeared still more promising. There however we encountered the dry bed only of a small creek which we crossed, and continued eastward, passing over much grassy land, and through much wood of the box or goborro species of eucalyptus. We travelled thus upwards of seven miles beyond the dry creek without discovering any sign of the river, although we had previously traced it so far in pursuing a much more southerly direction.

NATIVES FLY AT OUR APPROACH.

The natives were heard in this wood chopping with their stone hatchets but they fled at our approach. On entering a small plain we saw their deserted fire on the opposite side. Beyond this another plain, still more extensive, appeared before us, and a few yarra trees on the horizon gave some promise of water, though not of the river.



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ARRIVAL IN THE DARK, ON THE BANK OF A WATERCOURSE.

Before I reached the spot and while far ahead of the party darkness had overtaken us; but I found there a deep creek with some water in large ponds; and by lighting a fire the carts at length came up to us, after a journey of nineteen miles. This seemed by moonlight such a singular place that I was anxious for daylight to see at what we had arrived.

June 24.

I expected to find the main stream not far from the ponds, but the morning light shone over a plain which extended in a north-western direction to the very horizon. It was bounded on the north by very distant trees which had not the usual appearance of trees distinguishing the river. The country on all sides seemed perfectly level, and if there was any exception at all it was in the box forests to the southward whence we had come, and where the land seemed lower than the plain on which we had encamped. The bed of the creek was full twenty feet below the general surface. The symmetry of the curves described by it was remarkable, and it was rendered still more striking by a narrow line of rushes which had grown on the margin of the water when it had stood at a much higher level.

DEAD SAPLINGS OF TEN YEARS GROWTH IN THE PONDS.

A concentric border of grass of uniform breadth grew on the slope above the rushes, and one of fragrant herbs below the line of rushes, all being at nearly equal distances; while a single row of bare poles measuring from three to five inches in diameter stood where a row of saplings had grown in what had, at one time, been the very centre of the stream. These poles were the remains of yarra trees eight or ten years old, and marked the extent doubtless of a long period of drought which had continued until some high flood killed them.

DISCOVERY OF MOUNT HOPE.

The grass was excellent over the whole of the plains on both sides and, from a tree near the camp, Burnett descried a goodly hill bearing 36 1/2 degrees East of South and distant, as afterwards ascertained, twenty-two miles.

Near our camp we found some recent fireplaces of the natives, from which they must have hastily escaped on our approach for, in the branches of a tree, they had left their net bags containing the stalks of a vegetable that had apparently undergone some culinary process, which gave them the appearance of having been half boiled. Vegetables are thus cooked, I was told, by placing the root or plant between layers of hot embers until it is heated and softened. The stalks found in the bag resembled those of the potato, and they could only be chewed, such food being neither nutritious nor



palatable for it tasted only of smoke.* A very large ash-hill, raised no doubt by repeated use in such simple culinary operations, and probably during the course of a great many years, was close to our camp. On its ample surface were just visible the vestiges of a very ancient grave, once encompassed by exactly the same kind of ridges that I had observed around the inhabited tomb near the junction of the Lachlan and Murrumbidgee. The natives were at length seen about two miles off on the skirts of the wood; and although I sent forward the overseer and Piper, each carrying a large green bough, they all ran away, leaving behind them their spears and skin cloaks.

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(Footnote. July 17 1838. This plant has at length flowered in the Horticultural Gardens at Chiswick and proves to be a new species of *Pieris* of which Dr. Lindley has favoured me with the following description: *P. barbarorum*; sparse hispida, foliis ciliatis supra nitidis scabriusculis radicalibus spathulato-lanceolatis subdentatis caulinis oblongis sessilibus amplexi-caulibus recurvis dentatis integrisque, caule stricto ramoso, involucri foliolis lineari-lanceolatis acutis apice vel secus dorsum serie simplici pilorum longorum reflexorum appendiculatis, achaeniis badiis longe rostratis transverse rugosissimis disci sterilibus.)

While the party proceeded eastward along the bank of Moonlight creek, as we named it, I sent Mr. Stapylton across the wide plain to ascertain, if possible, whether the river flowed through it without the usual indication of trees on its banks, as we had found to be the case below. Mr. Stapylton found beyond the northern limits of the plain, amongst yarra trees, an ana-branch only, but containing quite clear and still water.

The course of the creek which I in the meantime traced first led me to the north-east where high trees seemed to mark its course, to the bed of the river; but a smaller branch, still dry, extended southward from it, which, on returning to the main party, I found it desirable that the carts should cross. We next passed for three miles through a forest of goborro, and then crossed a plain three miles in extent. Beyond the plain we approached a promising line of lofty yarra trees, but found it shaded only a hollow subject to inundations. Two miles and a half further we came to another similar line of trees, and we found within its shade an ana-branch full of clear water. A little in advance a much deeper branch afforded a good spot for our camp, as I intended to cross it by some means in the afternoon and seek for the river.

ENTER A MUCH BETTER COUNTRY.

The plains we had crossed this day were covered with excellent grass; and in many places detached groups of trees gave to the country a park-like appearance very unlike anything on the banks of the Darling.

After crossing the creek by means of a fallen tree, I found the ground beyond to be of the richest description, with excellent grass and lofty yarra trees growing upon it. I passed through two separate strips of high reeds extending north-east and south-west; but I found they only enveloped lagoons of soft mud and, seeing no appearance of the river at two miles from the camp, I returned. We found on the hills a little bush, very like European heaths, having the branches covered with small three-cornered leaves and tipped with clusters of small pink flowers.*

(Footnote. *Baeckea micrantha*.)

LIMESTONE.

June 25.

The country we passed over this day was upon the whole richer in point of grass than any we had seen since we left Sydney; I therefore suspected that the soil had some better rock for a basis than sandstone; and I had reason to believe that it was limestone, from indications of subsidence which I observed on the surface.

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CURIOUS CHARACTER OF AN ORIGINAL SURFACE.

We had discovered no similar country during either of the two former journeys. There were none of the acacia trees we had seen on the lower Bogan; while the grasses were also different from any of those on the Darling. A fine new species of *Daviesia*, very like a *Grevillea* and forming a most singular bush, grew here. It had no leaves, but green branches formed into short, broad, thick vertical plates arranged spirally, and much lower than the little axillary clusters of flowers which were just beginning to open.* We also met with bushes of the rare *Trymalium majoranaefolium*, a hoary bush with clusters of small grey flowers, enclosed when young in a bright, large membranous involucre. Once or twice distant rows of lofty gumtrees appeared to indicate the line of the river; but on approaching them we found either dry hollows or the same ana-branch, as it seemed, on which we last encamped. I observed at several places that the more dense box-forests near this branch of the river were skirted with ground broken into low undulations six or eight feet square. These appeared where there was great depth of soil, and were probably caused by deep rents or cracks opened at the first induration of the deposit, and subsequently modified by rain and other atmospheric agents. This seems to be the state of the deep deposits at the present day where, from the absence of trees, the surface of tenacious soils remains visible. I was first struck with this effect in the clays near the Darling where alternate saturation and desiccation seemed to check all vegetation. On the upper parts of the Bogan also I saw these inequalities on a very large scale, but there the hollows still exist under dense forests of *casuarinae*, and are so deep and extensive that I for some time was induced to examine them in hopes of finding water; but from a small hole or fissure still remaining there I soon learnt that any such search was hopeless.

(Footnote. *D. pectinata*, Lindley manuscripts; *glabra*, *aphylla*, *ramis lateralibus ensiformibus crassis rigidis spinosis verticalibus pectinatim spiralibus dorso decurrentibus racemulis glomeratis multo longioribus*.)

When we had travelled some miles, the hill we had seen from the camp on Moonlight creek bore exactly south by compass, and appeared to be about half the distance that it was from us when discovered. At 3 1/2 miles we again came upon the ana-branch; a slight current now appeared in it and the water was tinged with the turbid colour of the main stream.

LAST CAMP ON THE MURRAY.

After winding around several of its turnings we encamped at one P.M. beside a large pool. This day's journey was nearly fourteen miles.

June 26.

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The barometer being unusually low, and some long journeys having prevented me from laying down my surveys of the lakes as well as having fatigued the cattle, I halted here with the intention of filling up my maps, refreshing the animals, and reconnoitring the country to the south-west, in which direction a vast extent was unexplored. The river we had endeavoured to trace thus far was now so shut in by ana-branches that it could rarely be seen at all; but I had now brought the survey of it so far upwards that I should be able to trace it, or its several tributaries, downwards upon the same point when returning to the northward, under the western extremities of the Snowy Range. I hoped then also to obtain a better knowledge of the branches composing the Murray than we possessed at this time.

This day I requested Mr. Stapylton to cross the piece of water where we had encamped, and endeavour to find the river in a north-east direction; but he ascertained that the watercourse turned northward, and to the west of north, without entering the river, as far as he traced it. He then returned after having followed its course five miles without falling in with the main stream. His party saw some of the natives who could not be induced to stop by all the calls of Piper.

NATIVE WEIRS FOR FISH.

Mr. Stapylton observed in the channel he traced a net or fence of boughs which the natives had that morning set up; and which showed not only that they expected a flood, but also, from the manner in which it was placed, that the water would flow first up the channel. This circumstance, as already observed, is not unusual in ana-branches where the lower end is naturally on a lower level, having been worn by the currents into a deeper channel there than at the upper end, where the water not unfrequently leaves the river by overflowing its banks in various channels of small depth.

THEIR NETS FOR CATCHING DUCKS.

The natives had left in one place a net suspended across the river between two lofty trees, evidently for the purpose of catching ducks and other waterfowl. The meshes were about two inches wide, and the net hung down to within five feet of the surface of the stream. In order to obtain waterfowl with this net some of the natives proceed up, and others down, the river to scare the birds from other places and, when any flight comes into the net, it is suddenly lowered into the water, thus entangling the birds beneath until the natives go into the water and secure them. Among the first specimens of art manufactured by the primitive inhabitants of these wilds none come so near our own as the net which, even in quality, as well as the mode of knotting, can scarcely be distinguished from those made in Europe. As these natives possess but little besides what was essentially necessary to their existence, we may conclude that they have used spears for killing the kangaroo, stone-axes for cutting out the opossum, and nets for catching birds, or kangaroos, or fish, since their earliest occupation of Australia.* Almost every specimen of art they possess is the result of urgent necessity. Perhaps

the iron tomahawk is the only important addition made to their implements during many centuries.

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(Footnote. Isaiah 24:17 Fear, and the pit, and the snare are upon thee.] "These images are taken from the different methods of hunting and taking wild beasts which were anciently in use. The snare or toils were a series of nets enclosing, at first, a great space of ground in which the wild beasts were known to be, and drawn in by degrees into a narrower compass till they were at last closely shut up and entangled in them." Harmer. This is precisely the method adopted by the Australian natives at present for the same or similar purposes.)

REMARKABLE CHARACTER OF THE LAKES.

On laying down my survey of the country which we had lately passed over I found that the lakes were nearly all circular or oval, and that a very regularly curved ridge, as before stated, bounded the eastern shore of all of them. The number of lakes or hollows of this character already seen by us to the south-west of the Murray amounted to eleven. In three of them the water was salt, and the greater number had no communication with the river; but between it and the others there was a narrow creek or gully, but accessible only to the highest floods. The northern margin of one of the salt lakes consisted of a bank of white sand on which grew thickly a kind of pine, different from the trees around. The channels between the river and the lakes seemed neither to belong to the original arrangement of watercourses, nor to ana-branches of the rivers; for they frequently extended upwards in directions opposed to that of the river's course. The fact being established that some of these lakes have no obvious connection with the river, it becomes probable that they are the remains of what the surface was before the fluvial process began to carry off its waters. I had no difficulty in referring to an early system of this kind other lakes which we had seen elsewhere, the anomalous peculiarities of which were equally remarkable. Among these were Cudjallagong and others adjacent; Waljeers; the two smaller on the Murrumbidgee named Weromba; also Lake Benanee and Prooa its neighbour; in all which the peculiarities accorded with what I had observed in those on the left bank of the Murray.

MR. STAPYLTON'S EXCURSION IN SEARCH OF THE MAIN STREAM.

June 27.

The morning was clear and Mr. Stapylton set out with a party of six men to trace, if possible, the branch on which we were encamped into the main stream. At ten the weather became hazy; at noon the sky was overcast; and at two P.M. a steady rain set in which continued until six P.M. when the barometer began to rise and, the moon soon after shining out, the sky became once more serene. A hill apparently covered with good grass was within sight of our present camp but inaccessible from it because a reach of deep and still water intervened. This day I sent Burnett with Piper to the hill, and they brought me some of the soil which I found consisted of loose red sand.

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MY RIDE TO MOUNT HOPE.

June 28.

The morning being fine I at length proceeded towards the hill which we had already twice seen from great distances. It bore 206 degrees 45 minutes (from North) and was exactly ten miles from our camp. After riding six miles through box-forest we crossed a dry creek, and immediately entered upon an extensive plain beyond which I had the satisfaction of seeing the hopeful hill straight before me.

This hill consisted of immense blocks of common granite composed of white felspar and quartz and black mica; and it appeared to form the western extremity of a low range. It was indeed a welcome sight to us all after traversing for several months so much flat country; and to me it was particularly interesting for, from its summit, I expected to obtain an extensive view over the unknown region between us and the southern coast. I accordingly named the hill Mount Hope.

WHITE ANGUILLARIA.

On the verdant plain near its foot we found a beautiful white anguillaria, a flower we had not seen elsewhere and which, notwithstanding the season, was in full bloom and had a pleasing perfume. It might indeed be called the Australian snowdrop for its hardy little blossom seemed quite insensible to the frost.

VIEW FROM MOUNT HOPE.

On reaching the summit of Mount Hope I saw various higher hills extending from south-south-west to west-south-west at a distance of about 35 miles. They were not all quite connected, and I supposed them to be only the northern extremities of some higher ranges still more remote. I perceived along their base a line of lofty trees, but it was most apparent on the horizon to the westward of the heights. The intervening country consisted, as far as the glass enabled me to examine it, of open grassy plains, beautifully variegated with serpentine lines of wood. In all other directions the horizon was unbroken and, as the trees of the Murray vanished at a point bearing 143 1/2 degrees from North on the border of a very extensive plain, I concluded that an important change took place there in the course of that river or the Goulburn (of Hovell and Hume); for it was uncertain then which river we were near. The granitic range of Mount Hope terminates in the plains, one or two bare rocks only projecting above ground on the flats westward of the hill. On its summit we found some plants quite new to us and, among the rocks on its sides, a species of anguillaria different from that on the plains, being larger in the stem and having a dark brown ring within the chalice, the edge of the leaves being tinged with the same colour.* We found here again the *Baeckea micrantha* seen on the 24th instant, also a remarkable new species of *Eriostemon* forming a scrubby spiny bush, with much the appearance of a



Leptospermum,** and a new and very beautiful species of Pleurandra, with the aspect of the yellow Cistus of the Algarves.*** A remarkable hill of granite appeared 5 1/3 miles from Mount Hope, bearing 30 degrees 10 minutes West of South. It is a triangular pyramid and, being quite isolated, it closely resembles the monuments of Egypt.



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(Footnote. *Anguillaria dioica*.)

(**Footnote. *E. pungens*, Lindley manuscripts; ramulis teretibus pilosulis, foliis acerosis pungentibus glandulosis, pedicellis solitariis axillaribus brevibus unifloris, staminibus glabriusculis, antheria inappendiculatis.)

(***Footnote. *P. incana*, Lindley manuscripts; foliis linearibus obtusis tomentosis marginibus revolutis costam tangentibus, floribus sessilibus terminalibus, staminibus 6 ima basi monadelphis.)

Soon after my return to the camp Mr. Stapylton came in with his party, having succeeded in finding the river by tracing the branch upwards of thirteen miles. This branch was connected with others on both sides, so that Mr. Stapylton was obliged at last to cross it, and make direct for the river which, at the point where he fell in with it, was running at the rate of 2940 yards per hour, and was 99 yards wide, being therefore probably still the Murray itself.

RETURN OF MR. STAPYLTON.

The country which I had seen this day beyond Mount Hope was too inviting to be left behind us unexplored; and I therefore determined to turn into it without further delay, and to pursue the bearing of 215 degrees from North as the general direction of our route, until we should fall in with the line of river trees before mentioned.

CHAPTER 3.8.

The Party quits the Murray.
Pyramid Hill.
Beautiful country seen from it.
Discovery of the river Yarrayne.
A bridge made across it.
Covered by a sudden rise of the river.
Then cross it in boats.
Useful assistance of Piper.
Our female guide departs.
Enter a hilly country.
Ascend Barrabungalo.
Rainy weather.
Excursion southward.
The widow returns to the party.
Natives of Tarray.
Their description of the country.
Discover the Loddon.



The woods.
Cross a range.
Kangaroos numerous.
The earth becomes soft and impassable, even on the sides of hills.
Discover a noble range of mountains.
Cross another stream.
Another.
General character of the country.
Proposed excursion to the mountains.
Richardson's creek.
Cross a fine stream flowing in three separate channels.
A ridge of poor sandy soil.
Cross another stream.
Trap-hills and good soil.
Ascend the mountain.
Clouds cover it.
A night on the summit.
No fuel.
View from it at sunrise.
Descend with difficulty.
Men taken ill.
New plants found there.
Repose in the valley.
Night's rest.
Natives at the camp during my absence.

THE PARTY QUITTS THE MURRAY.

June 29.

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The party moved forward in the direction of Mount Hope and, leaving it on the left, we continued towards Pyramid Hill where we encamped at about three-quarters of a mile from its base. We were under no restraint now in selecting a camp from any scarcity of water or grass; for all hollows in the plains contained some water and grass grew everywhere. The strips of wood which diversified the country as seen from the hills generally enclosed a depression with polygonum bushes, but without any marks of having had any water in them although, in very wet seasons, some probably lodges there, as in so many canals, and this indeed seemed to me to be a country where canals would answer well, not so much perhaps for inland navigation as for the better distribution of water over a fertile country enclosed as this is by copious rivers.

PYRAMID HILL.

June 30.

Having seen the party on the way and directed it to proceed on a bearing of 215 degrees from North I ascended the rocky pyramidal hill, which I found arose to the height of 300 feet above the plain.

BEAUTIFUL COUNTRY SEEN FROM IT.

Its apex consisted of a single block of granite, and the view was exceedingly beautiful over the surrounding plains, shining fresh and green in the light of a fine morning. The scene was different from anything I had ever before witnessed either in New South Wales or elsewhere. A land so inviting and still without inhabitants! As I stood, the first European intruder on the sublime solitude of these verdant plains as yet untouched by flocks or herds, I felt conscious of being the harbinger of mighty changes; and that our steps would soon be followed by the men and the animals for which it seemed to have been prepared. A haziness in the air prevented me however from perceiving clearly the distant horizon from that summit, but I saw and intersected those mountains to the southward which I had observed from Mount Hope.

The progress of the party was still visible from that hill, pursuing their course over the distant plains like a solitary line of ants. I overtook it when a good many miles on; and we encamped after travelling upwards of fourteen miles in one uninterrupted straight line. Our camp was chosen on the skirts of a forest of box, having a plain on the east covered with rich grass, and where we found some small pools of rainwater.

July 1.

Proceeding still on the bearing followed yesterday we reached at three miles from our camp a fine chain of ponds. They were deep, full of water, and surrounded by strong yarra trees. Passing them we met a small scrub of casuarinae which we avoided; and we next entered on a fine plain in which the anthisteria or oatgrass appeared. This is



the same grass which grows on the most fertile parts of the counties of Argyle and Murray and is, I believe, the best Australian grass for cattle: it is also one of the surest indications of a good soil and dry situation.

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DISCOVERY OF THE RIVER YARRAYNE.

Beyond the plain the line of noble yarra trees, which I had observed from Mount Hope, gave almost certain promise of a river; and at 6 1/2 miles our journey was terminated by a deep running stream. The banks were steep and about twenty feet high, but covered thickly with grass to the edge of the water. The yarra trees grew by the brink of the stream and not on the top of the bank. The water had a brown appearance as if it came from melted snow but, from the equality of depth (about nine feet) and other circumstances, I was of opinion that it was a permanent running stream. The current ran at the rate of four chains in 122 seconds, or near 1 1/2 mile per hour; thus it would appear from what we had seen that there is much uniformity in the velocity of the rivers, and consequently in the general inclination of the surface. The banks of this little river were however very different in some respects from any we had previously seen, being everywhere covered thickly with grass. No fallen timber impeded its course, nor was there any indication in the banks that the course was ever in the least degree affected by such obstructions.

A BRIDGE MADE ACROSS IT.

It was so narrow that I anticipated little difficulty in making a bridge by felling some of the overhanging trees. Finding a large one already fallen across the stream where the slopes of the banks could be most readily made passable, we lost no time in felling another which broke against the opposite bank and sunk into the water. No other large trees grew near but the banks were, at that place, so favourable for the passage of the waggons that I determined to take advantage of the large fallen tree; and to construct a bridge by bringing others of smaller dimensions to it, according to the accompanying plan, and not unmindful of the useful suggestions of Sir Howard Douglas respecting temporary bridges.

July 2.

Late in the evening of this day we completed a bridge formed of short but strong sleepers, laid diagonally to the fallen tree which constituted its main support, and the whole was covered with earth from cuttings made in the banks to render it accessible to the carts. At length everything was ready for crossing and we had thus a prospect of being able to advance beyond the river into that unknown but promising land of hill and dale.

COVERED BY A SUDDEN RISE OF THE RIVER.

July 3.

This morning our bridge was no longer to be seen, the river having risen so much during the night that it was four feet under water. Yet no rain had fallen for five days previous,



and we could account for this unexpected flood only by supposing that the powerful shining of the sun during the last two days had melted the snow near the sources of the stream. At noon the water had risen fourteen feet. A whispering sound much resembling wind among the trees now arose from it and, however inconvenient to us, the novelty of a sudden rise in the river was quite refreshing, accustomed as we had been so long to wander in the beds of rivers and to seek in vain for water. Our little bridge continued to be passable even when covered with four feet of water but, as it had no parapets, we could not prevent some of the bullocks from going over the side on attempting to cross when it was thus covered.

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THEN CROSS IT IN BOATS.

The river still continuing to rise, we were compelled at last to launch the boats, and by this means we effected the passage of the whole party and equipment before sunset; the boats having been also again mounted on the carriage the same evening. The carts and boat-carriage were drawn through the bed of the river by means of the drag-chains which reached from the carriage on one side to a strong team of bullocks on the other.

USEFUL ASSISTANCE OF PIPER.

This was a very busy day for the whole party, black and white; I cannot fairly say savage and civilised for, in most of our difficulties by flood and field, the intelligence and skill of our sable friends made the whitefellows appear rather stupid. They could read traces on the earth, climb trees, or dive into the water better than the ablest of us. In tracing lost cattle, speaking to the wild natives, hunting, or diving, Piper was the most accomplished man in the camp. In person he was the tallest, and in authority he was allowed to consider himself almost next to me, the better to secure his best exertions. When Mr. Stapylton first arrived Piper came to my tent and observed that "That fellow had TWO coats," no doubt meaning that I ought to give one of them to him! The men he despised, and he would only act by my orders. This day he rendered us much useful assistance in the water; for instance, when a cart stuck in the bottom of the river, the rope by which it was to be drawn through having broken, Piper, by diving, attached a heavy chain to it, thereby enabling the party to draw it out with the teams.

OUR FEMALE GUIDE DEPARTS.

At this place The Widow, being far beyond her own country, was inclined to go back and, although I intended to put her on a more direct and safe way home after we should pass the heads of the Murrumbidgee on our return, I could not detain her longer than she wished. Her child, to whom she appeared devotedly attached, was fast recovering the use of its broken limb; and the mother seemed uneasy under an apprehension that I wanted to deprive her of this child. I certainly had always wished to take back with me to Sydney an aboriginal child with the intention of ascertaining what might be the effect of education upon one of that race. This little savage, who at first would prefer a snake or lizard to a piece of bread, had become so far civilised at length as to prefer bread; and it began to cry bitterly on leaving us. The mother however thought nothing of swimming, even at that season, across the broad waters of the Millewa, as she should be obliged to do, pushing the child before her, floating on a piece of bark.

ENTER A HILLY COUNTRY.

July 4.

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At the distance of about a mile to the southward a line of trees marked the course of another channel which, containing only a few ponds, we crossed without difficulty. Beyond it we traversed a plain five miles in extent, and backed by low grassy hills composed of grey gneiss. The most accessible interval between these hills still appeared to be in the direction I had chosen at Mount Hope, as leading to the lowest opening of a range still more distant: I therefore continued on that bearing, having the highest of those hills to our left at the distance of five or six miles. On entering the wood skirting the wide plain, our curiosity was rather disappointed at finding, instead of rare things, the black-butt gum and casuarinae, trees common in the colony. The woolly gum also grew there, a tree much resembling the box in the bark on its trunk, although that on the branches, unlike the box, is smooth and shining. In this wood we recognised the rosella parrot, and various plants so common near Sydney but not before seen by us in the interior.

At ten miles we travelled over undulating ground for the first time since we left the banks of the Lachlan; and we crossed a chain of ponds watering a beautiful and extensive valley covered with a luxuriant crop of the anthisteria grass. Kangaroos were now to be seen on all sides, and we finally encamped on a deeper chain of ponds, probably the chief channel of the waters of that valley. A ridge of open forest-hills appearing before us, I rode to the top of one of the highest summits while the men pitched the tents; and from it I perceived a hilly country through whose intricacies I at that time saw no way, and beyond it a lofty mountain range arose in the south-west. To venture into such a region with wheel-carriages seemed rather hazardous when I recollected the coast ranges of the colony; and I determined to examine it further before I decided whether we should penetrate these fastnesses, or travel westward round them, thus to ascertain their extent in that direction and that of the good land watered by them.

July 5.

I proceeded with several men mounted towards the lofty hill to the eastward of our route, the highest of those I had intersected from Mount Hope and the Pyramid-hill, its aboriginal name, as I afterwards learnt, being Barrabungale.* Nearly the whole of our way was over granite rocks. We had just reached a naked mass near the principal summit when the clouds, which had been lowering for some time, began to descend on the plains to the northward, and soon closing over the whole horizon compelled me to return, without having had an opportunity of observing more than that the whole mass of mountains in the south declined to the westward. This was however a fact of considerable importance with respect to our further progress; for I could enter that mountain-region with less hesitation as I knew that I could leave it, if necessary, and proceed westward by following down any of the valleys which declined in that direction.

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(Footnote. *Warrabangle* is a very similar name and belongs to a hill similarly situated five degrees further to the northward. See Map.)

ASCEND BARRABUNGALE. RAINY WEATHER. EXCURSION SOUTHWARD.

July 6.

The morning being rainy, I could learn nothing more by ascending Barrabungle as I intended; but I rode into the country to the southward in order to examine it in the direction in which I thought it most desirable to lead the party. After passing over several well-watered grassy flats or valleys, each bounded by open forest-hills, we crossed at six miles from the camp a range the summit of which was covered by a low scrub, but it did not much impede our way. Beyond this range we again found open forest land, and we saw extensive flats still more open to our right, in which direction all the waters seemed to fall. At length, after travelling about twelve miles, we came upon a deep chain of ponds winding through a flat thickly covered with anthisteria and resembling a field of ripe grain. Smoke arose in all directions from an extensive camp of natives but, although I cooeyed and saw them at a distance, they continued to crouch behind trees and would not approach. I did not disturb them further, but returned with the intention of leading the party there the next day when I hoped to see more of these natives. An abundance of a beautiful white or pale yellow-flowered, herbaceous plant reminding me of the violets of Europe, to which it was nearly allied, grew on the sides of hills.*

(Footnote. *This has been ascertained to be a new species of the genus Pigea. P. floribunda*, Lindley manuscripts; *caule erecto ramoso, foliis alternis linearibus et lineari-lanceolatis obtusis glabris, racemulis secundis paucifloris foliis brevioribus, sepalis petalisque glandulosis ovatis acutis, labelli lamina obovata rotundata basi bilamellata, antheris sessilibus syngonistis apice lamina oblonga membranacea acutis, processibus 2 corniformibus basi staminum 2 anteriorum.*)

THE WIDOW RETURNS TO THE PARTY.

In the evening The Widow returned with her child on her back. She stated that after we left our late encampment a numerous tribe arrived on the opposite bank of the river and, seeing the fires on her side, called out very angrily, as Piper translated her tale, “murry coola” (very angry); inquiring who had made those fires, and that, receiving no reply (for she was afraid and had hid herself) they danced a corrobory in a furious style during which she and the child crept away, and had passed two nights without fire and in the rain. Piper seemed angry at her return, but I took particular care that she should be treated with as much kindness as before. She was a woman of good sense and had been with us long enough to feel secure under our protection, even from the wrath of Piper as displayed on this occasion; and I discovered that her attempted return home

had been suggested by Piper's gin who probably anticipated a greater share of food after The Widow's departure.

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NATIVES OF TARRAY. THEIR DESCRIPTION OF THE COUNTRY.

July 7.

The party moved to the creek where I had before seen the natives; and Piper found at their fires an old woman and several boys. They said, pointing far to the south-east, doubtless to Port Phillip, that a station of whitefellows was there and that they had been themselves to the sea, which was not very distant. The old woman spoke with expressive gestures of a part of the coast she called Cadong, where the waves raged; and of a river she named Woollamaee running into it. It appeared that the rest of the tribe were at that time in search of opossums; but she promised that when they returned in the evening or next day some of them should visit our camp.

July 8.

This morning Piper prevailed on an old man with his gins and some boys to come to us. The former pointed towards Cadong in the direction of 232 degrees from North and, in reply to my queries through Piper, said it was not Geelong (Port Phillip) but a water like it; and that no white men had ever been there. On mentioning lake Alexandrina by its native name Keyinga, he said that it was a place filled sometimes with rain (i.e. river-) water and not like Cadong which was saltwater. He described the whole country before us as abounding in good water and excellent grass; and he said that in the direction I was pursuing there was no impediment between me and the sea coast. Piper's countenance brightened up with the good news this man gave him; assuring me that we should "find water all about: no more want water." In return for all this intelligence I presented the old man with an iron tomahawk which he placed under him as he sat; and he continued to address me with great volubility for some time. I was told by Piper that he was merely saying how glad he was, and enumerating (apparently with a sort of poetic fervour) the various uses to which he could apply the axe I had given him. I left these natives with the impression on my mind that they were quiet, well-disposed people.

FINE APPEARANCE OF THE COUNTRY.

Proceeding a little west of south-west we intersected this creek (Tarray) three times, leaving it finally flowing southward and to our left, into that of Dyoombors which it joined at a mile and a half from where we had been encamped. At three miles, having crossed a low ridge of forest land, we entered a fine valley, backed on the west by romantic forest hills, and watered by some purling brooks which united in the woods on the east. The flat itself had a few stately trees upon it, and seemed quite ready to receive the plough; while some round hillocks on the north were so smooth and grassy that the men said they looked as if they had already been depastured by sheep. From an extremity of the clear ridge I obtained an extensive view of the mountain chain to the south-east;

and I intersected most of its summits. The whole seemed smooth (i.e. not rocky) grassy, and thinly timbered.

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Crossing the lower or outer extremity of this forest ridge, we entered another fine valley watered by a creek which we passed at six miles from the commencement of the day's journey. This little channel was grassy to the water's edge, and its banks were firm and about eight feet high, the course being eastward. In the valley I saw the Banksia for the first time since we left the Lachlan. A calamifolia, or needle-leaved wattle, occurred also in considerable quantity. After crossing two more brooks and some flats of fine land with grassy forest-hills on our right, we reached the crest of a forest-range which afforded an extensive view over the country beyond it. The surface seemed to be low for some distance, but then to rise gradually towards some rocky points over which were partially seen the summits of a higher range still further southward.

DISCOVER THE LODDON.

The descent to the low country was easy for our carts; and we found there a beautifully green and level flat, bounded on the south by a little river flowing westward. The banks of this stream consisted of rounded acclivities and were covered with excellent grass. The bed was 18 or 20 feet below the level of the adjacent flats and, from its resemblance in some respects to the little stream in England, I named it the Loddon. We encamped on its bank in latitude 36 degrees 36 minutes 49 seconds South, longitude 143 degrees 35 minutes 30 seconds East.

July 9.

By continuing the same line of route we crossed several minor rivulets, all flowing through open grassy vales bounded by finely undulating hills. At about three miles we came to a deep chain of ponds, the banks being steep and covered with grass. Keeping a tributary to that channel on our left, we passed some low hills of quartz; and a little beyond them we crossed poor hills of the same rock bearing an open box-forest.

THE WOODS.

After travelling through a little scrub we descended on one of the most beautiful spots I ever saw: The turf, the woods, and the banks of the little stream which murmured through the vale had so much the appearance of a well kept park that I felt loth to injure its surface by the passage of our cartwheels. Proceeding for a mile and a half along the rivulet and through a valley wholly of the same description, we at length encamped on a flat of rich earth (nearly quite black) and where the anthisteria grew in greater luxuriance than I had ever before witnessed in Australian grasses. The earth indeed seemed to surpass in richness any that I had seen in New South Wales; and I was even tempted to bring away a specimen of it. Our dogs killed three kangaroos, and this good fortune was most timely as I had that very morning thought it advisable to reduce the allowance of rations.



July 10.

Tracing upwards the rivulet of the vale we left this morning we passed over much excellent grassy land watered by it, the channel containing some very deep ponds surrounded by the white-barked eucalyptus.

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CROSS A RANGE.

A hill on its bank consisted of a conglomerate in which the ferruginous matter predominated over the embedded fragments of quartz. The ground beyond was hilly, and we at length ascended a ridge, apparently an extremity of a higher range. On these hills grew the varieties of eucalypti known in the colony, such as ironbark, bluegum, and stringybark. The lower grounds were so wet and soft, and the watercourses in them so numerous, that I was desirous to follow a ridge as long as it would take us in the direction in which we were proceeding; and this range answered well for the purpose. Its crest consisted of ferruginous sandstone much inclined, the strike extending north-north-west. I found the opposite side much more precipitous, and that it overlooked a much lower country. In seeking a favourable line of descent for the carts, I climbed a still higher forest-hill on the left, which consisted chiefly of quartz-rock. I not only recognised from that hill some lofty points to the eastward, and obtained angles on them, but I also perceived very rugged summits of a range at a great distance in the south-west. Having selected among the various hills and dales before me that line of route which seemed the best and, having taken its bearing, I returned to conduct the carts by a pass along one side of that hill, having found it in a very practicable state for wheel-carriages. At three miles beyond the pass we crossed a deep creek running westward which I named the Avoca, and we encamped on an excellent piece of land beyond it.

KANGAROOS NUMEROUS.

This day we had even better fortune in our field sports than on the one before for, besides three kangaroos, we killed two emus, one of which was a female and esteemed a great prize, for I had discovered that the eggs found in the ovarium were a great luxury in the bush; and afforded us a light and palatable breakfast for several days.

July 11.

At the end of two miles on this day's journey we crossed a deep stream running westward. The height of its banks above the water was twelve feet, and they were covered with a rich sward. The land along the margins of the stream was as good as that we were now accustomed to see everywhere around us, so that it was no longer necessary to note the goodness or beauty of any place in particular. At four miles we passed over a forest-hill composed of mica-slate and, after crossing another good valley at six miles, I saw before us, on gaining a low forest ridge, other grassy hills of still greater height, connected by a rock that cost us less trouble to ascend than I expected.

THE EARTH BECOMES SOFT AND IMPASSABLE, EVEN ON THE SIDES OF HILLS.

It was in the valleys now that we met most difficulty, the earth having become so soft and wet that the carts could be got through some places only by the tedious process of dragging each successively with the united strength of several teams.

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DISCOVER A NOBLE RANGE OF MOUNTAINS.

From a high forest-hill about a mile east of our route I first obtained a complete view of a noble range of mountains rising in the south to a stupendous height, and presenting as bold and picturesque an outline as ever painter imagined. The highest and most eastern summit was hid in the clouds although the evening was serene. It bore West of South 26 degrees 54 minutes; and the western extremity, which consisted of a remarkably round hill, bore 16 degrees 30 minutes South of West. Having descended from the range by an easy slope to the southward, we passed through a beautiful valley in which we crossed, at a mile and a quarter from the hills, a fine stream flowing also westward; and in other respects similar to those we had already met. I named it Avon water and we encamped on its left bank.

CROSS ANOTHER STREAM.

July 12.

At two miles and a half from the spot where we had slept we crossed another stream flowing west-north-west which I named the Small-burn. Beyond it the ground was good and grassy, but at this season very soft, so that the draught was most laborious for the cattle. At seven miles we crossed a wet flat with ponds of water standing on it, and beyond we entered on a clay soil altogether different from any hitherto passed on this side the Yarrayne.

ANOTHER.

About eight miles from our camp we reached a fine running brook with grassy banks, its course being to the north-west. The bed consisted of red-sand and gravel, and the banks were about fourteen feet high, presenting fine swelling slopes covered with turf. On this stream, which I named the Dos casas, I halted, as it was doubtful whether some of the carts could be brought even so far before night, the ground having proved soft and rotten to such a degree, especially on the slopes of low hills, that in some cases the united strength of three teams had been scarcely sufficient to draw them through. It was night before the last cart arrived, and two bullocks had been left behind in an exhausted state.

GENERAL CHARACTER OF THE COUNTRY.

July 13.

We had at length discovered a country ready for the immediate reception of civilised man; and destined perhaps to become eventually a portion of a great empire. Unencumbered by too much wood, it yet possessed enough for all purposes; its soil was exuberant and its climate temperate; it was bounded on three sides by the ocean;

and it was traversed by mighty rivers, and watered by streams innumerable. Of this Eden I was the first European to explore its mountains and streams, to behold its scenery, to investigate its geological character and, by my survey, to develop those natural advantages certain to become, at no distant date, of vast importance to a new people. The lofty mountain range which I had seen on the 11th was now before us, but still distant between thirty and forty miles; and as the cattle required rest I determined on an excursion to its lofty eastern summit. Such a height was sure to command a view of the country between these mountains and the sea in the direction of Lady Julia Percy's Isles; and of that region between the range and those less connected forest-hills I had seen to the eastward.

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PROPOSED EXCURSION TO THE MOUNTAINS.

When I first discovered these mountains I perceived that the land immediately to the eastward of them was very low and that, if I found it necessary, I might conduct the party in that direction to the coast. I was however more desirous to level my theodolite on that summit first, and thus obtain valuable materials for the construction of an accurate map of the whole country around it. I accordingly left the party encamped and proceeded towards the mountain, accompanied by six men on horseback, having previously instructed Mr. Stapylton to employ the men during my absence in forming a way down the bank, and a good ford across the stream in order that there might be no impediment to the immediate advance of the party on my return.

RICHARDSON'S CREEK.

Pursuing the bearing of 193 degrees we crossed, at three miles from the camp, a deep creek similar to that on which it was placed; and the first adventure of the morning occurred here. The fordable place was so narrow that the horse of one of the party plunged into the deep water with its rider who, while the animal was swimming, incautiously pulled the bridle and of course overturned it, so that they parted company in the water, the horse reaching one bank, the rider the other. The latter, who was my botanical collector Richardson, took his soaking on a cold frosty morning so philosophically, talking to his comrades as he made his way to the bank, partly swimming, partly floating on two huge portfolios, that I gave his name to the creek, the better to reconcile him to his wet jacket. We entered soon after upon one of the finest tracts of grassy forest land we had ever seen. The whole country recently crossed was good, but this was far better, having several broad and deep ponds, or small lakes, in the woods, and all full of the clearest water. At eight miles I perceived a forest-hill on my left (or to the eastward) and the country before us was so open, sloping and green, that I felt certain we were approaching a river; and we soon came upon one, which was full, flowing and thirty feet wide, being broader than the Yarrayne but not so uniformly deep. Unlike the latter river, reeds grew about its margin in some places, and its banks, though grassy and fifteen feet high, were neither so steep as those of the Yarrayne, nor so closely shut together.

CROSS A FINE STREAM FLOWING IN THREE SEPARATE CHANNELS.

We swam our horses across, but our progress had scarcely commenced again on the other side when it was impeded by another similar stream or channel. In this we managed, with Piper's assistance, to find a ford but, at less than a quarter of a mile, we met a third channel, more resembling the first in the height of its banks and velocity of the current, and also from its flowing amongst bushes. This we likewise forded, and immediately after we ascended a piece of rising ground which convinced me that we had at length crossed all the branches of that remarkable river. It is probable we came

upon it where it received the waters of tributaries, and some of these channels might be such.



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A RIDGE OF POOR SANDY SOIL.

We next fell in with some undulating ground different in many respects from any that we had traversed during the morning. The soil was poor and sandy; and the stunted trees and shrubs of the Blue mountains grew upon it, instead of the novelties we expected at such a great distance from home. We also recognised the birds common about Sydney. On reaching the higher part of this ground (at nine miles) I again saw the mountain which then bore 196 degrees. The intervening ground seemed to consist of a low ridge rather heavily wooded, its crest presenting a line as level as the ocean. At eleven miles I supposed we were upon the dividing ground between the sea-coast country and that of the interior, and on what appeared to be the only connection between the forest mountains to the eastward and the lofty mass then before us. We found upon this neck huge trees of ironbark and stringybark; some fine forest-hills appeared to the eastward and distant only a few miles.

CROSS SEVERAL FINE STREAMS.

At the end of sixteen, eighteen, nineteen, twenty-one, and twenty-three miles we crossed small rivers, all flowing westward, and the third over sandstone. After passing the last or fifth stream, we halted on a very fine open, dry and grassy flat. We found a large fallen tree which we set on fire and passed the night, a very mild one, most comfortably on the ground beside it, with the intention of renewing our journey at daylight in the morning.

TRAP-HILLS AND GOOD SOIL.

July 14.

On leaving our bivouac we crossed some hills of trap-rock which were lightly wooded and covered with the finest grass in great abundance. The scenery around them, the excellent quality of the soil, the abundance of water and verdure, contrasted strangely with the circumstance of their lying waste and unoccupied. It was evident that the reign of solitude in these beautiful vales was near a close; a reflection which, in my mind, often sweetened the toils and inconveniences of travelling through such houseless regions. At the foot of the last hill, and about a mile on our way, we crossed a chain of deep ponds running to the south-west. Beyond them was a plain of the very finest open forest-land, on which we travelled seven miles; and then came upon a river with broad deep reaches of very clear water, and flowing towards the north-west. We easily found a ford and, on proceeding, entered upon a tract of white sand where banksia and casuarinae were the chief trees. There was also some good grass but it grew rather thinly upon it. The next water we crossed was a small mountain-torrent hurrying along to the eastward in a deep and rocky channel overhung with bushes.

ASCEND THE MOUNTAIN.

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Being now close under the mountain, we dismounted and sent our horses back for the sake of food to the bank of the last-mentioned river. The first part of our ascent, on foot, was extremely steep and laborious, although it was along the most favourable feature I could find. Above it the impediments likely to obstruct our further ascent were two high and perpendicular rocky cliffs; but I had observed before ascending those crevices and intervals between rocks where we might most easily effect an ascent; and through these we accordingly penetrated without much difficulty. The upper precipice consisted of cliffs about 140 feet in perpendicular height. Fortunately the ablest of the men with me was a house carpenter and, being accustomed to climb roofs, he managed to get up and then assist the rest.

CLOUDS COVER IT.

Having gained the top of this second precipice, we found winter and desolation under drizzling clouds which afforded but partial and transient glimpses of the world below. The surface at the summit of the cliffs was broad and consisted of large blocks of sandstone, separated by wide fissures full of dwarf bushes of banksia and casuarinae. These rocks were inclined but slightly towards the north-west and, the bushes being also wet and curiously encrusted with heavy icicles, it was by no means a pleasant part of our journey to travel nearly half a mile upwards, either on the slippery rock or between fissures among wet bushes. At length however we reached the highest point and found that it consisted of naked sandstone. The top block was encrusted with icicles, and had become hoary under the beating of innumerable storms. At the very summit I found a small heath-like bushy *Leucopogon*, from six inches to a foot high. It was in flower although covered with ice.* Also a variety of *Leucopogon villosus*, with rather less hair than usual, and another species of the same genus, probably new. Near the highest parts of the plateau I found a new species of eucalyptus with short broad viscid leaves, and rough-warted branches.**

(Footnote. *L. glacialis*, Lindley manuscripts; ramulis pubescentibus, foliis lineari-lanceolatis erectis contortis acutis ciliatis margine scabris, floribus terminalibus solitaririis et aggregatis, pedicellis pubescentibus distanter squamatis, calicibus glabris.)

(**Footnote. *E. alpina*, Lindley manuscripts; ramulis brevibus rigidis angulatis, foliis alternis petiolatis ovato-oblongis viscosi basi obliquis, umbellis axillaribus paucifloris petiolis brevioribus, operculo hemisphaerico verrucoso inaequali tubo calycis turbinato verrucoso brevior.)

A NIGHT ON THE SUMMIT.

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All around us was hidden in mist. It was now within half an hour of sunset, but the ascent had cost so much trouble, and the country this summit commanded was so interesting to us that I was unwilling to descend without trying whether it might not be clear of clouds at sunrise. We had not come prepared in any way to pass the night on such a wild and desolate spot, for we had neither clothing nor food, nor was there any shelter; but I was willing to suffer any privations for the attainment of the object of our ascent. One man, Richardson, an old traveller, had most wisely brought his day's provisions in his haversack, and these I divided equally among FIVE. No rocks could be found near the summit to shelter us from the piercing wind and sleet.

NO FUEL.

The thermometer stood at 29 degrees, and we strove to make a fire to protect us from the piercing cold; but the green twigs, encrusted with icicles, could not by our united efforts be blown into a flame sufficient to warm us. There was abundance of good wood AT THE FOOT OF THE CLIFFS—huge trees of ironbark, stringybark and bluegum but, had we descended, a second ascent might have appeared too laborious on a mere chance of finding the summit clear; so we remained above. The men managed to manufacture some tea in a tin pot, and into the water as it boiled I plunged a thermometer which rose to exactly 95 degrees of the centigrade scale. We got through that night of misery as well as might have been expected under the circumstances, and we succeeded in keeping the fire alive although, while twigs were blown into red heat at one end, icicles remained at the other, even within a few inches of the flame. In order to maintain it through the night we divided, at eleven o'clock, the stock of branches which had been gathered before dark into eight parcels, this being the number of hours we were destined to sit shivering there; and as each bundle was laid on the dying embers we had the pleasure at least of knowing that it was an hour nearer daylight. I coiled myself round the fire in all the usual attitudes of the blacks, but in vain; to get warm was quite impossible, although I did once feel something like comfort when one of the men gave me for a seat a flat stone on which the fire had been blown for some hours. Partial cessations in the fall of sleet were also cheering occasionally; but the appearance of stars two hours before daylight promised to reward our enterprise and inspired me with hope.

VIEW FROM IT AT SUNRISE.

July 15.

At six o'clock the sky became clear, the clouds had indeed left the mountain and, as soon as it was day, I mounted the frozen rock. In the dawn however all lower objects were blended in one grey shade, like the dead colouring of a picture. I could distinguish only a pool of water, apparently near the foot of the mountain. This water I afterwards found to be a lake eight miles distant and in my map I have named it Lake Lonsdale, in honour of the Commandant

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then or soon after appointed at Port Phillip. I hastily levelled my theodolite but the scene, although sublime enough for the theme of a poet, was not at all suited to the more commonplace objects of a surveyor. The sun rose amid red and stormy clouds, and vast masses of a white vapour concealed from view both sea and land save where a few isolated hills were dimly visible. Towards the interior the horizon was clear and, during a short interval, I took what angles I could obtain. To the westward the view of the mountain ranges was truly grand. Southward or towards the sea I could at intervals perceive plains clear of timber and that the country was level, a circumstance of great importance to us; for I was apprehensive that between these mountains and the coast it might be broken by mountain gullies as it is in the settled colony and all along the Eastern coast. If such had proved to be the case the carts could not have been taken there; and I must have altered the plan of my intended route. Before I could observe the angles so desirable clouds again enveloped the mountain, and I was compelled to quit its summit without completing the work. The wind blew keenly, the thermometer stood as low as 27 degrees, and in the morning the rocks were more thickly encrusted with ice.

DESCEND WITH DIFFICULTY.

The difficulty of our descent under such circumstances was therefore increased but no impediment could have arrested us then, the lower regions having so many attractive charms for such cold and hungry beings.

MEN TAKEN ILL.

That night on the summit materially injured the health of two of my best men who had been with me on all three of my expeditions. Muirhead was seized with ague and Woods with a pulmonary complaint; and although both recovered in a few weeks they were never so strong afterwards.

NEW PLANTS FOUND THERE.

We found upon the mountain, besides those already mentioned, various interesting plants which we had seen nowhere else. Amongst them:

A most beautiful downy-leaved *Epacris* with large, curved, purple flowers, allied to *E. grandiflora* but much handsomer.*

(Footnote. *E. tomentosa*, Lindley manuscripts; *foliis ovatis acutis planis crassis tomentosis, floribus cernuis, corolla arcuata infundibulari laciniis obtusis apiculatis*.)

A most remarkable species of *Phebalium** with holly-like leaves and bright red flowers resembling those of a *Boronia*. It was related to *P. phyllifolium* but quite distinct.



(Footnote. *P. bilobum*, Lindley manuscripts; ramulis tomentosis, foliis glabris cordato-ovatis retusis bilobis dentatis margine revolutis, pedicellis axillaribus pubescentibus folio brevioribus, ovario tricorni.)

A new *Cryptandra* remarkable for its downy leaves.*

(Footnote. *C. tomentosa*, Lindley manuscripts; undique dense tomentosa, ramulis racemosis, foliis fasciculatis linearibus obtusis marginibus revolutis contiguis, capitulis terminalibus congestis, calycibus campanulatis bracteis acutis scariosis parum longioribus. Next to *C. propinqua*.)

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A beautiful species of *Baeckea*, with downy leaves and rose-coloured flowers resembling those of the dwarf almond.*

(Footnote. *B. alpina*, Lindley manuscripts; *tota pubescens, foliis lineari-ovatis petiolatis obtusis concavis, pedicellis axillaribus et terminalibus foliis longioribus supra medium bibracteatis: bracteis oppositis obovatis cucullatis, laciniis calycinis cordatis obtusis petalis denticulatis duplo brevioribus, antheris apice verruciferis.*)

A new *Pultenaea* allied to *P. biloba*, but more hairy and with the flowers half concealed among the leaves.*

(Footnote. *P. montana*, Lindley manuscripts; *foliis obcordatis muticis lobis rotundatis supra scabris utrinque ramulisque hirsutis, capitulis solitariis terminalibus sessilibus foliis parum longioribus, calycibus villosis laciniis subulatis appressis.*)

A new species of *Bossiaea* which had the appearance of a rosemary bush, and differed from all the published kinds in having linear pungent leaves.*

(Footnote. *B. rosmarinifolia*, Lindley manuscripts; *ramis teretibus villosis, foliis linearibus pungentibus margine revolutis supra glabris subtus pallidis pilosis, floribus solitariis axillaribus.*)

A beautiful new and very distinct species of *Genetyllis*, possessing altogether the habit of a Cape *Diosma*, the heath-like branches being terminated by clusters of bright pink and white flowers.*

(Footnote. *G. alpestris*, Lindley manuscripts; *ramulis piloso-hispidis, foliis linearibus tetragonis scabro-pilosis, capitulis sessilibus terminalibus nudis rachi lanata, tubo ovarii pentagono pubescente, sepalis petalis pluries brevioribus, stigmatibus glaberrimis.*)

Several species of *Grevillea*, particularly a remarkable kind with leaves like those of a European holly, but downy.*

(Footnote. *G. aquifolium*, Lindley manuscripts propria; *foliis oblongis extra medium incis: lobis triangularibus apice spinosis; adultis super glabratibus: subter mollibus pubescentibus, racemis pedunculatis, calycibus villosis, ovario hirsutissimo, stylo glabro.*)

Another fine new species with leaves like those of a European oak.*

(Footnote. *G. variabilis*, Lindley manuscripts propria; *incana, foliis cuneatis angulatis oblongisve basi cuneatis pinnatifidis sinuatis angulatisque subtus tomentosis lobis mucronatis triangularibus vel rotundatis, racemis tomentosis pedunculatis.*)



And a third with brownish red flowers and hoary leaves; varying from an erect straight-branched bush to a diffuse entangled shrub.*

(Footnote. *G. alpina*, Lindley manuscripts *Ptychocarpa*; *foliis lineari-oblongis tomentosis muticis margine revolutis supra subtus pilis appressis sericeis, racemis paucifloris, pistillis basi hirsutissimis, calycibus ferrugineis tomentosis. alpha, ramis erectis, foliis longioribus angustioribus. beta, ramis diffusis intricatis, foliis brevioribus nunc mollibus nunc supra scabris.*)

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Lastly a new Leucopogon, besides that found on the summit as already mentioned.*

(Footnote. *L. rufus*, Lindley manuscripts; ramulis foliis que subtus pubescentibus, foliis ovatis acuminatis apice spinosis erectis concavis supra laevigatis subtus striatis margine laevibus, floribus subsolitariis sessilibus axillaribus, barba corollae cinnamomea.)

ON THE APPLICATION OF NAMES.

In adding this noble range of mountains to my map I felt some difficulty in deciding on a name. To give appellations that may become current in the mouths of future generations has often been a perplexing subject with me, whether they have been required to distinguish new counties, towns, or villages, or such great natural features of the earth as mountains and rivers. I have always gladly adopted aboriginal names and, in the absence of these, I have endeavoured to find some good reason for the application of others, considering descriptive names the best, such being in general the character of those used by the natives of this and other countries. Names of individuals seem eligible enough when at all connected with the history of the discovery or that of the nation by whom it was made. The capes on the coast I was then approaching were chiefly distinguished with the names of naval heroes and, as such capes were but subordinate points of the primitive range, I ventured to connect this summit with the name of the sovereign in whose reign the extensive, valuable, and interesting region below was first explored; and I confess it was not without some pride as a Briton that I more majorem* gave the name of the Grampians to these extreme summits of the southern hemisphere.

(Footnote. *Procedo, et parvam Trojam, simulataque magnis Pergama, et arentem Xanthi cognomine rivum, Agnosco. Aen. lib 3.*)

REPOSE IN THE VALLEY.

We reached the banks of the little river where the horses awaited us in three hours, the distance being eight miles from the summit of Mount William. There we found a large fire and, under a wide spreading casuarina during a delightful interval of about twenty minutes, I enjoyed the pleasures of eating, sleeping, resting, and warming myself, almost all at the same time. To all who would know how to enjoy most intensely a good fire, shelter, sunshine, and the dry soft turf I would recommend, by way of whet, a winter night on a lofty mountain, without fire, amidst frost-covered rocks and clouds of sleet. I shall long remember the pleasure of those moments of repose which I enjoyed on my arrival in the warm valley after such a night. We could afford no longer delay however, having brought provisions only for one day with us, whereas this was the morning of the third of our absence from the camp. Retracing our steps we reached the little river only at eight in the evening and, as I hoped to find a ford in it at daylight, we lay down on its bank for the night.

NIGHT'S REST.

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July 16.

I slept on a snug bit of turf within two feet of the stream; so that the welcome murmur of its rippling waters assisted my dreams of undiscovered rivers. As soon as morning dawned I succeeded in finding a ford on that branch across which we swam our horses on the 13th. We thus met with less cause of delay and reached the camp at an early hour, with excellent appetites for breakfast.

NATIVES AT THE CAMP DURING MY ABSENCE.

Two natives had visited the party during my absence and had slept by the fires. They had been at cattle stations and could say "milk." They consequently approached our camp boldly, and during the night showed much restlessness, endeavouring to decoy the gins away with them. But The Widow gave the alarm, and very properly handed over these insidious wooers to the especial surveillance of the man on duty. Notwithstanding they were vigilantly watched they contrived to steal a tomahawk, and went off leaving their wooden shovels at our camp, saying they should return. I had now several men on the sicklist, but under the treatment of Drysdale, our medical attendant, they speedily recovered.

CHAPTER 3.9.

Plains of stiff clay.
The Wimmera.
Difficult passage of its five branches.
Ascend Mount Zero.
Circular lake, brackish water.
The Wimmera in a united channel.
Lose this river.
Ascend Mount Arapiles.
Mr. Stapylton's excursion northward.
Salt lakes.
Green Hill lake.
Mitre lake.
Relinquish the pursuit of the Wimmera.
The party travels to the south-west.
Red lake.
Small lakes of fresh water.
White lake.
Basketwork of the natives.
Muddy state of the surface.
Mr. Stapylton's ride southward.
Disastrous encounter of one man with a native.



A tribe makes its appearance.
More lakes of brackish water.
Escape at last from the mud.
Encamp on a running stream.
Fine country.
Discovery of a good river.
Granitic soil.
Passage of the Glenelg.
Country well watered.
Pigeon ponds.
Soft soil again impedes the party.
Halt to repair the carts and harness.
Natives very shy.
Chetwynd rivulet.
Slow progress over the soft surface.
Excursion into the country before us.
Beautiful region discovered.
The party extricated with difficulty from the mud.

PLAINS OF STIFF CLAY.

July 17.

The ground on the sides of the low hills was still so soft (and in this respect I had found the country we had lately crossed even worse than that previously traversed by the carts) that the only prospect which remained to us of being able to continue the journey was by proceeding over the plains extending along the interior side of the Grampians of the South. The soil of such plains consisted chiefly of clay, and we had recently found that it bore the wheels

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of the waggons much better during the winter season than the thin and loose soil on the sides of hills; apparently because this lay on rock, or a substratum so tenacious as to support the water in or just under the surface. The wheels and also the feet of the cattle sunk at once to this rocky subsoil whatever its depth, and up came the water, so that on level parts our track resembled a ditch of mud and water, and on slopes it formed a current of water and a drain from the sides of hills. I had observed the plains during my reconnaissance of the interior from the side of Mount William, and I now directed our course towards them. We crossed without difficulty the little river by the passage Mr. Stapylton had prepared during my absence and, after travelling about four miles first west and then north-west, we came upon an extensive plain. The soil consisted of good strong clay on which the cattle travelled very well, and it was covered with the best kind of grass. On reaching it I resumed my former course which was nearly west-south-west towards Mount Zero, a name I applied to a remarkable cone at the western extremity of the chain of mountains. After travelling 2 1/2 miles over the plain we again reached the banks of Richardson's creek, and forded it after some delay and considerable difficulty on account of the softness of the bottom. We next entered on a tract of grassy forest land, the trees being chiefly box and casuarinae. At 2 1/2 miles beyond Richardson's creek we crossed a small run of water flowing west-north-west, apparently towards it. After passing over similar ground for some miles further and having had another plain on our right, we at length encamped near a large serpentine pond or lake which was broad, deep, and bordered with lofty gum trees.

July 18.

We continued for five miles along good firm ground on which there was open forest of box and gumtrees; and part of the bold outline of the Grampians appeared to our left.

THE WIMMERA.

At nine miles we fell in with a flowing stream, the water being deep and nearly as high as the banks. I did not doubt that this was the channel of the waters from the north side of these mountains, and I was convinced that it contained the water of all the streams we had crossed on our way to Mount William, with the exception of Richardson's creek, already crossed by the party where it was flowing to the north-west. The richness of the soil and the verdure near the river, as well as the natural beauty of the scenery could scarcely be surpassed in any country. The banks were in some places open and grassy and shaded by lofty yarra trees, in others mimosa bushes nodded over the eddying stream.

Continuing along the right bank in a north-west direction we travelled two miles on a grassy plain; and we then turned towards the river, encamping on its banks in latitude

36 degrees 46 minutes 30 seconds South, longitude 142 degrees 39 minutes 25 seconds East. Magnetic variation 5 degrees 21 minutes 45 seconds East.

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Some natives being heard on the opposite bank, Piper advanced towards them as cautiously as possible; but he could not prevail on them to come over, although he ascertained that the name of the river was the Wimmera.

DIFFICULT PASSAGE OF ITS FIVE BRANCHES.

July 19.

On examining the Wimmera with Piper's assistance I found that it was fordable in some places; but in order to effect a passage with greater facility we took over several of the loads in one of the boats. Thus the whole party had gained what I considered to be the left bank by ten A.M. On proceeding I perceived some yarra trees before me which grew, as we soon discovered, beside a smaller branch, the bottom of which was soft. We had however the good fortune to pass the carts across this branch also. At a quarter of a mile further we came upon another flowing stream, apparently very deep and having steep but grassy banks. The passage of this occupied the party nearly two hours, one of the carts having sunk up to the axle in a soft bank or channel island. While the men were releasing the cart I rode forward and found a FOURTH channel, deep, wide, and full to the brim. In vain did Tally-ho (trumpeter, master of the horse, *etc.* to the party) dash his horse into this stream in search of a bottom; though at last one broad favourable place was found where the whole party forded at a depth of not more than 2 1/2 feet. Beyond these channels another similar one still obstructed our progress; but this we also successfully forded, and at length we found rising ground before us, consisting of an open plain which extended to the base of the mountains. On its skirt we pitched our tents at a distance of not quite one mile and a half from our last camp; a short journey certainly, but the passage of the five branches of the Wimmera was nevertheless a good day's work. I had frequently observed in the Australian rivers a uniformity of character throughout the whole course of each, and the peculiarities of this important stream were equally remarkable, it being obviously the same we had crossed in three similar channels when on our way to Mount William, twenty miles above this point. The shrubs on the banks at the two places were also similar.

ASCEND MOUNT ZERO.

July 20.

While Mr. Stapylton conducted the party across the plains in a west-south-west direction I proceeded towards Mount Zero, the most western extremity of the mountain range and distant from our camp 8 1/2 miles. I found this hill consisted also of highly micaceous sandstone; the whole being inclined towards the north-west. Having planted my theodolite on the summit I intersected various higher points to the eastward, and also a very remote, isolated hill on the low country far to the northward which I had also seen from Mount William, and from several stations on our route. Several specimens of shrubs and flowers that had not been previously seen by us were gathered on the sides



of this rocky hill. Among them was a very singular hairy Acacia covered with a profusion of the most brilliant yellow flowers. In some respects it resembled *A. lanigera*, but it proved upon examination to be undescribed.*

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(Footnote. *A. strigosa*, Lindley manuscripts; *glanduloso-hirsuta*, *phyllodiis linearibus v. lineari-oblongis obovatisque uninerviis eglandulosis apice rotundatis mucronatis obliquis*, *stipulis subulatis villosis*, *capitulis solitariis sessilibus*.)

An isolated mass appeared to the westward, having near its base a most remarkable rock resembling a mitre. Beyond this the distant horizon was not quite so level as the plains of the interior usually are and, as far as I could see northward with a good telescope, I perceived open forest land and various fine sheets of water. I observed with great satisfaction that the Grampians terminated to the westward on a comparatively low country. This was an important object of attention to me then as it comprised all that intervened between us and the southern coast; in which direction I perceived only one or two groups of conical hills. I resolved however, before turning southwards, to extend our journey to the isolated mass already mentioned, which I afterwards named Mount Arapiles. After descending from Mount Zero I proceeded towards the track of the carts and found that the plains, unlike any hitherto seen, undulated so much that in one place I could perceive only the tops of trees in the hollows. On these plains I found small nodules of highly ferruginous sandstone, apparently similar to that which occurs near Jervis Bay and in other places along the eastern coast.

CIRCULAR LAKE, BRACKISH WATER.

Reaching at length a low green ridge of black soil very different from that of the plains, I found it formed the eastern bank of another of those remarkable circular lakes of which I had seen so many near the Murray. The bed of this hollow consisted of rich black earth and was thirty-two feet below the level of the adjacent plain. It seemed nearly circular, the diameter being about three-quarters of a mile. One peculiarity in this lake was a double bank on the eastern side consisting first of a concentric break or slope from the plain, the soil not being clay as usual, but a dry red sand; and then arose the green bank of black earth, leaving a concentric fosse or hollow between. A belt of yarra trees grew around the edge of this singular hollow which was so dry and firm that the carts, in the track of which I was riding, had traversed it without difficulty. I learnt from Mr. Stapylton, on reaching the camp, that the party had previously passed near two other lakes, the largest containing salt water; and in the neighbourhood of these he had also remarked a great change of soil; so that what with the verdure upon it, the undulating surface, and clumps of casuarinae on light soil, or lofty yarra trees growing in black soil, that part of the country looked tolerably well.

THE MACKENZIE AND THE NORTON.

July 21.

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At a quarter of a mile from the camp we crossed a running stream which also contained deep and apparently permanent pools. Several pine or callitris trees grew near its banks being the first we had seen for some time. I named this mountain stream the Mackenzie. Beyond it were grassy undulating plains with clumps of casuarinae and box trees (eucalypti). At three miles and a half we crossed another chain of ponds, and at four miles we came to a deep stream, running with considerable rapidity over a bed of sandstone rock. It was overhung with mimosa-bushes; and it was not until after considerable search that I could find a convenient place for fording it. This I named the Norton. Good grassy hills arose beyond, and after crossing them we found an undulating country and sandy soil where there were shallow lagoons and but little grass.

THE WIMMERA IN A UNITED CHANNEL.

At nine miles I was aware, from the sloping of the ground, of the vicinity of a river; and we soon came once more upon the Wimmera, flowing in one deep channel nearly as broad as the Murrumbidgee, but in no other respect at all similar. The banks of this newly discovered river were not water-worn but characterised by verdant slopes, the borders being fringed with bushes of mimosae. The country was indeed fine adjacent to the Wimmera, and at the point where we came to it the river was joined by a running creek from the south which we crossed, and at two miles and a quarter further we encamped on a spot overlooking a reedy lagoon, from which some long slopes descended towards the river, distant from our camp about half a mile. When we thus again intersected the Wimmera I was travelling due west, partly with a view to ascertain its ultimate course.

LOSE THIS RIVER.

The isolated hill lay before me, and it was now to be ascertained whether the course of the stream was to the south or north of it. The appearance of the country from Mount Zero certainly afforded no prospect of our falling in with the river where we did, but at this camp Burnett, having climbed to the top of a high tree, thought he could trace the course to the southward of the hill before us, which bore nearly west. This prospect accorded with my wishes, and I hoped to trace it to the coast without deviating too far to the westward of my intended route.

July 22.

A small stream from the south crossed our way when we had proceeded about half a mile. At six miles and a half we met with another; and three miles beyond it I perceived a change in the appearance of the country. We had been for some time travelling through forest land which now opened into grassy and level plains, variegated with belts and clumps of lofty trees giving to the whole the appearance of a park. We had now the hilly mass of Mount Arapiles on our right, or north of us, but to my surprise there was no

river flowing between us and those heights as I had reason to suppose from what had been seen from the tree by

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Burnett. Turning towards the north-west therefore and at last northward, we finally encamped on a spot to the westward of the hill after a journey of sixteen miles. Much of the ground near this hill was so soft that one of the carts could not be brought in before midnight, although assisted by several teams sent back from the camp. We were now encamped on a dark-coloured soil from which arose the same peculiar smell that I had remarked at Cudjallagong (Regent's Lake of Oxley). What had become of the Wimmera I could scarcely imagine but, anxious to ascertain its course, I hastened before sunset to a western extremity of the hill; but instead of the river, of which I could see no trace, I beheld the sun setting over numerous lakes: the nearest, two miles and a half to the northward, being apparently six miles in circumference. It seemed to be nearly circular and a group of low grassy hills formed a concentric curve around the eastern margin, and from the total absence of any reeds, trees, or smoke of natives, it was too obvious that the water was salt. From the spot where I then stood I counted twelve such lakes, most of them appearing to have a crescent-shaped mound or bank on the eastern side. This certainly was a remarkable portion of the earth's surface, and rather resembled that of the moon as seen through a telescope. The eastern and principal summit of the hill was at some distance; and I returned to the camp in hopes of being able to discover from that point in the morning some indication of the further course of the Wimmera.

ASCEND MOUNT ARAPILES.

July 23.

Having ascended the highest summit I counted from that height twenty-seven circular lakes, two of the largest being about seven miles to the north-east, the direction in which I expected to see the river. Beyond these however I observed an extensive woody valley whence much smoke arose, marking, to all appearance, the course of the Wimmera which must have taken a turn in that direction, not far below the junction of the last creek crossed by the party. Beyond that supposed bed of the Wimmera the country appeared to be undulated, open, and grassy; and it was probably covered with lakes similar to those on this side, for I had observed from Mount Zero patches of water in that direction. From this summit I had a good view of the Grampians of the South and, discovering that a lofty range extended from them southward, I named it the Victoria range having also recognised and intersected Mount William, distant 53 $\frac{1}{2}$ miles. I could see no high land to the westward, and the hill on which I stood seemed to divide the singular lacustrine country from that where the character of the surface was fluvial. Mount Arapiles is a feature which may always be easily recognised both by its isolated position and by its small companion the Mitre Rock, situated midway between it and the lake to the northward, which I named Mitre Lake after the little hill, its

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neighbour. Like the mountains in the east Mount Arapiles consists of sandstone passing into quartz, the whole apparently an altered sandstone, the structure being in one part almost destroyed, in others perfectly distinct and containing pebbles of quartz. At the western extremity this rock occurs in columns, resembling, at a distance, those of basalt. (See Plate 31.) On the steep slopes grew pines, casuarinae, and a variety of shrubs among which we found a new species of *Baeckea*, forming a handsome evergreen bush, the ends of whose graceful branches were closely covered with small white delicate flowers.* This mass occupies about two square miles, its highest summit being elevated above Mitre Lake 726 feet. I ascended this hill on the anniversary of the battle of Salamanca and hence the name.

(Footnote. *B. calycina*, Lindley manuscripts; *glaberrima*, *foliis planis sparse punctatis oblongo-cuneatis acutis*, *floribus pedicellatis terminali-axillaribus*, *laciniis calycinis petaloideis petalis longioribus*. Near *B. virgata*.)

MR. STAPYLTON'S EXCURSION NORTHWARD.

July 24.

While Mr. Stapylton rode northward in search of the Wimmera I proceeded to examine and survey some of these remarkable lakes.

SALT LAKES.

On the margin of one of them, bearing 55 1/2 degrees West of North from our camp, a green hill of rather singular shape rose to a considerable height above the surrounding country. I found the water in the lake beside it shallow and quite salt. The basin was nearly circular though partially filled with firm level earth which was water-worn at the brink, its surface being about three feet higher than the water. This was surrounded by a narrow beach of soft white mud or clay in which we found no change on digging to the depth of several feet.

GREEN HILL LAKE.

The green hill was the highest of several semicircular ridges whose forms may perhaps be better understood by the accompanying plan.* There was a remarkable analogy in the form and position of all these hills; the form being usually that of a curve, concentric with the lake, and the position invariably on the eastern or north-eastern shores, a peculiarity I had previously observed not only in the lakes near the banks of the Murray but also in others on the Murrumbidgee and Lachlan where the ridge consisted of red sand. The country on the western shore of these lakes is, on the contrary, low and wooded like the surrounding country. In such hills concretions of indurated marl

frequently occur, but the earth they consist of is sometimes light-coloured, in other cases very dark, like the soil from trap-rock, and the ridges beside the lakes on the Murrumbidgee, consisted of red sand.

(Footnote. Having modelled this feature I have the satisfaction of presenting to the reader the first specimen of a plan of ground worked from a model by the anaglyptograph, an important invention recently perfected in this country by Mr. Bates and likely to be of very considerable value in the representation of the earth's surface under the skilful management of Mr. Freebairn.)

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MITRE LAKE.

The water of Mitre Lake was also salt,* but there were numbers of ducks and black swans upon it. The western shore was low, and the soil where it had been thrown up in the roots of fallen trees was nearly as white as chalk. A gray rather fine quartzose sand occurred in some places; and along the water's edge a very minute shell had been cast up in considerable quantities by the waves.** The hills to the eastward of this lake were arranged in a crescent around the basin, but this being composed of a number of hills almost separate from each other had a less regular or uncommon appearance, although they were apparently the remains of a curve equally as symmetrical as the others. The basin of this lake was very extensive but partly filled on the side next the low hills by a level tract of dry land covered with a brown bush (*Salicornia arbuscula* of Brown); and the concentric curves in which it grew, as if closing on the lake, seemed to record its progressive diminution. The breadth of this heathy-looking flat between the water and the crescent of low hills was nearly half a mile. A small rill of fresh water oozed into the lake from the sides of Mount Arapiles. The bed of this watercourse was soft and boggy near the lake, so that I could cross only by going up its channel much nearer to the hill and at a point where some rocks protruded and prevented our horses from sinking.

(Footnote. For Professor Faraday's analysis of these waters see below.)

*(**Footnote. This was a truncatella, a saltwater shell of which there are several species on the English and French coasts. The one found here has been named by Mr. J. De Carl Sowerby *T. filosa*.)*

Mr. Stapylton, in his search for the Wimmera, rode about six miles to the northward without reaching the river, although he saw the valley through which he thought it flowed; and where the river seemed likely to resume a course to the southward of west. Upon the whole I think that the estuary of the Wimmera will most probably be found either between Cape Bernouilli and Cape Jaffa, or at some of the sandy inlets laid down by Captain Flinders to the northward of the first of these capes. The country which Mr. Stapylton crossed assumed the barren character of the lower parts of the Murray. He actually passed through a low scrub of the *Eucalyptus dumosa*; but I have no doubt that the country on the immediate banks of the Wimmera continues good, whatever its course may be, even to the sea-coast.

RELINQUISH THE PURSUIT OF THE WIMMERA.

At all events I here abandoned the pursuit of that river and determined to turn towards the south-west that we might ascertain what streams fell in that direction from the Grampians; and also the nature of the country between these mountains and the shores of the Southern Ocean.

THE PARTY TRAVELS TO THE SOUTH-WEST.

July 25.

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Proceeding accordingly about south-west, we crossed at less than a mile from our camp the dry bed of a circular lake. The ground on the eastern shore was full of wombat holes which had been made in a stratum of compact tuff about a foot in thickness. The tuff was irregularly cavernous and it was loose, calcareous, or friable in the lower part where the wombats had made their burrows. On the opposite margin of this dry lake the surface was covered with concretions of indurated marl; and the burrows of the wombat were even more numerous there than in the other bank; the stratum of compact tuff occurring also and being three feet in thickness.

RED LAKE.

At 2 1/4 miles we came upon the shores of Red lake which I so named from the colour of a weed growing upon its margin. The lake was nearly a mile in length and half a mile broad; the water was so slightly brackish that reeds grew upon the borders which were frequented by many swans and ducks. A very symmetrical bank overlooked the eastern shore, the ground on the westward being low and wooded with the ordinary trees of the country. We next crossed a flat of dry white sand on which banksia grew thickly; and then we reached some low white sandhills on which were stunted ironbark trees (eucalypti). In the higher part of those hills we crossed a small dry hollow or lake which had also its bank on the eastern side.

SMALL LAKES OF FRESH WATER.

At the end of 5 1/2 miles we passed two small lakes of fresh water about half a mile to the right and, soon after, another about the same distance to the left. On completing seven miles we crossed a low ridge of white sand on which grew stunted trees of stringybark and black-butt gumtrees (both belonging to the genus eucalyptus). Beyond this we crossed a country in which wet, reedy swamps of fresh water, white sandhills, and fine flats of good forest land occurred alternately. Towards the end of our day's journey, the barren sandhills seemed to prevail, but at length we descended from them rather suddenly to a smooth firm plain, clothed with the finest grass and on the edge of this we pitched our tents for the night.

July 26.

We proceeded through a thick fog and found the plain studded with clumps of casuarinae. About a mile from the camp we came upon an extensive swamp or lake, full of grass and rushes. Turning this by the left we crossed some more good country, and then reached the banks of an extensive lagoon, also full of green rushes and water. The western bank was high and consisted of rich grassy land, very open; a small stream of water fell into the lake on the north-west side, and another on the south-east. It was surrounded by lofty gum trees and had a wood on the south and east. We met with sandhills and stunted timber beyond. They enclosed a long grassy flat covered

with water, stretching away to the south-east. We next entered on a fine flat of forest land bounded by a low ridge with *Callitris pyramidalis*, or pine trees.

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WHITE LAKE.

From this I perceived a circular lake a little to our right and on riding to it I found the water salt and of a very white colour. No trees grew on the margin and the surrounding scene was so dreary that it resembled a mountain-tarn. Two solitary ducks were upon it, apparently of a species new to us, but this I could not ascertain, having had only my rifle with me and, the cap missing fire, I lost even that chance of killing them. The bed of the lake also consisted of a very white marl. A high semicircular bank swept round the eastern shore; that opposite, or towards the west being low and swampy. On that side I saw two natives at a distance making the best of their way to the southward. We had this day noticed some of their huts which were of a very different construction from those of the aborigines in general, being large, circular, and made of straight rods meeting at an upright pole in the centre; the outside had been first covered with bark and grass and then entirely coated over with clay. The fire appeared to have been made nearly in the centre; and a hole at the top had been left as a chimney. The place seemed to have been in use for years as a casual habitation.

BASKETWORK OF THE NATIVES.

In this hut the natives had left various articles such as jagged spears, some of them set with flints; and an article of their manufacture which we had not before seen, namely, bags of the gins, very neatly wrought, apparently made of a tough small rush. Two of these also resembled reticules and contained balls of resin, flints for the spearheads *etc.* The iron bolt of a boat was likewise found in one of these huts. The natives invariably fled at our approach, a circumstance to be regretted perhaps on account of the nomenclature of my map; but otherwise their flight was preferable to the noisy familiarity of the natives of the Darling, perplexing us between their brands of defiance and treacherous invitations to dance. Indeed the two regions were as different in character as the manners of their respective inhabitants. Instead of salsolaceous deserts and mesembryanthemum we now found a variety of everything most interesting in a newly discovered country. Every day we passed over land which for natural fertility and beauty could scarcely be surpassed; over streams of unfailing abundance and plains covered with the richest pasturage. Stately trees and majestic mountains adorned the ever-varying scenery of this region, the most southern of all Australia and the best. Beyond the White lake, which may be the distinguishing name of the last mentioned, we passed over several tracts of open forest land separated by dry sandhills, and at length encamped on a rich flat.

MUDDY STATE OF THE SURFACE.

The cattle were very much fatigued from the heaviness of the draught owing to the extreme softness of the surface, especially on the more open forest lands; and one bullock-driver remained behind with a cart until we could send back a team by moonlight to his assistance.

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NATIVES AND THE BULLOCK-DRIVER.

July 27.

The cart which had fallen behind came in about three o'clock in the morning. The natives had soon been heard about the solitary driver, and four of them came up to him and demanded tomahawks; but being an old bushranger, he, on their approach, laid out all his cartridges one by one before him on a tarpaulin with his pistol and carabine, ready for action; but fortunately his visitors did not proceed to extremities. The morning was very foggy and, as this weather did not admit of my choosing a good line of route, and as the surface of the country was so soft that it was imperatively necessary to look well before us, I halted. I could thus at least bring up my maps and journals and rest the jaded cattle after so much long-continued toil in travelling through the mud.

MR. STAPYLTON'S RIDE SOUTHWARD.

I directed Mr. Stapylton to ride in the direction of 30 degrees West of South (my intended route) and ascertain whether we were approaching any river. The country we were in, being still lacustrine, I hoped to find the surface more favourable for travelling upon where it was drained by rivers; for on that amongst the salt lakes, although the land was very good in point of fertility, there was evidently a deficiency of slope and consequently much more water retained in the soil. Still the ground presented undulations, being rarely quite level like the plains except indeed in the beds of swamps. Recent experience had taught us to avoid the very level parts and to seek any kind of rising ground. The hills we occasionally fell in with consisted of white sand, and at first looked like connected ridges where we might find streams; but we ascertained that they always parted without enclosing any channels and left us in the mud. The sand itself still consisted of the same rock (decomposed) which appeared to be so generally spread over the country then between us and the eastern shores of New Holland. Mr. Stapylton did not return this evening, a circumstance which very much alarmed me as he had taken only one man with him and was to have come back before sunset.

July 28.

Supposing that Mr. Stapylton had gone past our camp in returning, the afternoon having been very rainy, I this morning sent out two parties, the one to proceed east, the other west, in search of his track which, if found by either, was to be followed until he was overtaken. Mr. Stapylton returned however before midday, having ridden twenty miles in the direction pointed out without having seen any river. He had passed a number of circular lakes similar to those already described; the seventh and most remote having appeared the largest. Just then as he turned his horse he perceived that the land beyond became higher, indicating a change of country. The party which had gone eastward heard our signal shot on Mr. Stapylton's arrival and returned, having also seen

four similar lakes; but the party sent westward did not reach the camp until some hours after the other.

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DISASTROUS ENCOUNTER OF ONE MAN WITH A NATIVE.

They had unfortunately come upon some huts of the natives, where one of them remained and who, refusing to listen to Piper's explanations, was about to hurl his spear at Pickering, when this man, at Piper's desire, immediately fired his carabine and wounded the native in the arm. I regretted this unlucky collision exceedingly and blamed Pickering for having been so precipitate; but his defence was that Piper told him unless he fired he would be instantly speared.

July 29.

We endeavoured to proceed today in a direction more to the eastward than the route of Mr. Stapylton, in the hope of finding firmer ground than he had seen, by following that which was highest and sandy. But even in this way we could not accomplish five miles and a half, although the last of the carts did not arrive at the spot where we were at length compelled to re-encamp until long after it became dark. The wheels sank up to the axles, and the cattle from wallowing in the mud had become so weak as to be scarcely able to go forward when unyoked, much less to draw the laden carts. I had with difficulty found a spot of firm ground where we could encamp, but during that evening I had reconnoitred a more favourable-looking line which I meant to try in the morning.

A TRIBE MAKES ITS APPEARANCE.

Soon after we commenced this day's journey, while I was watching in some anxiety the passage of a soft hollow by the carts, a man was sent back by the chaining party to inform me that a number of natives had come before them pointing their spears. On going forward I found they had retired, having probably with their usual quickness of perception observed the messenger sent back and guessed his errand.

JUST REMONSTRANCE OF A TRIBE.

But their conduct as I then explained it to the men was quite reasonable on this occasion. One (I was told) had spoke very loud and fast, pointing west towards where the man had been fired at the day before and then, touching his shoulder in allusion to the wound, he finally poised his spear at Blanchard as if in just resentment.

PLANT OF A NEW GENUS.

While awaiting the slow progress of the carts through the mud I found a most curious new genus allied to *Correa*, with the habit of *C. speciosa*, and with long tubular four-petaled green flowers. It had been previously observed by Mr. Cunningham, who called it *Sida correoides*; it was however not a *Sida*, nor even a Malvaceous plant, but a new form of Australasian Rutaceae, differing from *Correa* in having the petals each rolled

round a pair of stamens in its quadripartite conical calyx, and in there being constantly two seeds in each cell of the fruit.*

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(Footnote. *Didimeria aemula*, Lindley manuscripts; *undique pilis stellatis lutescentibus furfuracea*. Rami stricti. Folia subrotunda cordata obtusa opposita brevi petiolata, pellucido-punctata. Pedunculi axillares, filiformes, uniflori, supra medium bracteolis 2 subulatis acuti. Calyx conicus, membranaceus, 4-partitus: laciniis acuminatis. Petala 4, longissima, distincta, linearia, convoluta circa staminum paria, extus tomentosa intus glabra. Stamina 8, hypogyna; filamentis liberis, lineari-lanceolatis, membranaceis, alternis brevioribus; antheris sagittatis inappendiculatis. Stylus filiformis glaber. Discus 0. Capsula 4-cocca, villosissima, coccis dispermis, endocarpio solubili; seminibus uno supra alterum positis.)

MORE LAKES OF BRACKISH WATER.

July 30.

By pursuing a course towards the base of the friendly mountains I hoped that we should at length intercept some stream, channel, or valley where we might find a drier soil and so escape, if possible, from the region of lakes. We could but follow such a course however only as far as the ground permitted and, after travelling over the hardest that we could this day find for a mile and a half, I discovered a spacious lake on the left, bounded on the east by some fine-looking green hills. These separated it from a plain where I found the ground firm, and also from several smaller lakes to the right of my intended route. I accordingly proceeded along the ground between them, and I found that it bore the wheels much better than any we had recently crossed. The lakes were however still precisely similar in character to those of which we had already seen so many. The water in them was rather too brackish to be fit for use, and the ridges were all still on the eastern shores. From the highest of these ridges the pinnaced summits of the Victoria range presented an outline of the grandest character. The noble coronet of rocks was indeed a cheering object to us after having been so long half immersed in mud. We had passed between the lakes and were proceeding as lightly as we could across the plain when down went the wheel of a cart, sinking to the axle, and the usual noise of flogging (cruelty which I had repeatedly forbidden) and a consequent delay of several hours followed.

ESCAPE AT LAST FROM THE MUD.

In the meantime I rode to some grassy hills on the right, and found behind them on the south-west another extensive lake on which I saw a great number of ducks. Its bed consisted of dark-coloured mud and the water was also salt. The green hills before mentioned were curiously broken and scooped out into small cavities much resembling those on Green-hill Lake near Mount Arapiles. The plain rose gradually towards the east to some scrubby ground nearly as high as these hills and, in a fall beyond this scrub, I found at length to my great delight a small hollow sloping to the south-east and a little water running in it.

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ENCAMP ON A RUNNING STREAM.

Following it down I almost immediately perceived a ravine before me, and at a mile and a quarter from the first fall of the ground I crossed a chain of fine ponds in a valley, where we finally encamped on a fine stream flowing to the south-west over granite rocks.*

(Footnote. Consisting of white felspar and quartz and silvery mica.)

FINE COUNTRY.

Thus suddenly were we at length relieved from all the difficulties of travelling in mud. We had solid granite beneath us; and instead of a level horizon the finely rounded points of ground presented by the sides of a valley thinly wooded and thickly covered with grass. This transition from all that we sought to avoid to all we could desire in the character of the country was so agreeable that I can record that evening as one of the happiest of my life. Here too the doctor reported that no men remained on the sick-list, and thus we were in all respects prepared for going forward and making up for so much time lost.

DISCOVERY OF A GOOD RIVER. THE GLENELG.

July 31.

We now moved merrily over hill and dale, but were soon however brought to a full stop by a fine river flowing, at the point where we met it, nearly south-west. The banks of this stream were thickly overhung with bushes of the mimosa, which were festooned in a very picturesque manner with the wild vine. The river was everywhere deep and full and, as no ford could be found, we prepared to cross it with the boats. But such a passage required at least a day and, when I saw the boats afloat, I was tempted to consider whether I might not explore the further course of this river in them and give the cattle some rest. It was likely, I imagined, soon to join another where we might meet with less obstruction. During the day everything was got across save the empty carts and the boat-carriage, our camp being thus established on the left bank. One bullock was unfortunately drowned in attempting to swim across, having got entangled in the branches of a sunken tree which, notwithstanding a careful search previously made in the bottom of the stream, had not been discovered.

The river was here, on an average, 120 feet wide and 12 feet deep.

GRANITIC SOIL.

Granite* protruded in some places, but in general the bold features of the valley through which this stream flowed were beautifully smooth and swelling; they were not much wooded but on the contrary almost clear of timber and accessible everywhere. The



features were bold and round but only so inclined that it was just possible to ride in any direction without obstruction; a quality of which those who have been shut up among the rocky gullies of New South Wales must know well the value. I named this river the Glenelg after the Right Honourable the Secretary of State for the Colonies, according to the usual custom.

(Footnote. This granite varied consequently in the size of its component parts which sometimes, especially in quartz and felspar, exceeded a foot square, and in this I found distinctly imbedded friable masses, apparently of sandstone, but which proved to consist of a very fine-grained grey granite, approaching in character to mica-slate.)

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PASSAGE OF THE GLENELG.

August 1.

The first part of this day was taken up in dragging the carts and boat-carriage through the river. At one P.M. I embarked in the boats, taking in them a fortnight's provisions and leaving Mr. Stapylton in a strong position with nine men, the stores, and the cattle. We proceeded for two miles without encountering much obstruction, but we found on going further that the river ran in several channels, all of these being overgrown with bushes, so that it was not without great difficulty that we could penetrate about a mile farther by the time it had become nearly quite dark. It was no easy matter to push through the opposing branches even to reach the bank. Many similar branches had been cut during this day's navigation, Woods, Palmer and most of the other men having been more in the water than in the boats during the last mile. Every article having been at length got to land, we encamped on the side of a steep hill for the night, and I made up my mind to resume our land journey next day unless I saw the river more favourable ahead. By the banks of the Glenelg we found a stiff furze-like bush with small purple flowers, spiny branches, and short stiff spiny leaves. It proved to be a new *Daviesia* allied to *D. colletioides*.* *Bossiaea cordifolia*, a hairy shrub with beautiful purple and yellow flowers, was common.

(Footnote. *D. brevifolia*, Lindley manuscripts; *glabra*, *ramis rigidis strictis apice spinescentibus*, *foliis conicis spinosis subrecurvis*, *racemis foliis duplo longioribus*, *bracteolis obovatis cucullatis*.)

COUNTRY WELL WATERED.

August 2.

There was a noble reach a quarter of a mile below the point to which we had brought the boats, and it was terminated by a rocky fall which we had heard during the night. Beyond that point the river turned southward and, this being the direction of our intended journey, I perceived that we could more conveniently in less time pursue its course by land. The country on its banks was, as far as I could see, the finest imaginable, either for sheep and cattle or for cultivation. A little rill then murmured through each ravine:

Whose scattered streams from granite basins burst,
Leap into life, and sparkling woo your thirst.

But it was in returning along a winding ridge towards the camp that I was most struck with the beauty and substantial value of the country on the banks of this river. It seemed that the land was everywhere alike good, alike beautiful; all parts were verdant, whether on the finely varied hills or in the equally romantic vales which seemed to open



in endless succession on both banks of the river. No time was lost this morning in raising the boats out of the water and, having proceeded myself to the camp at an early hour, and led the carts round, and the carriage to take up the boats, the whole party was once more in movement by eleven o'clock. As far as I had yet

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traced the course of the river it appeared to flow towards the west-south-west, and it was thus doubtful, at that stage of our progress, whether the estuary might not be to the westward of Cape Northumberland; whereas my chief inducement in looking for a river on this side of the Grampians was the promising situation afforded by the great bay to the eastward of that cape for some harbour or estuary, and this being more likely, considering the position of the mountains. I had little doubt that under such circumstances some river would be found to enter the sea there and, having left the Wimmera flowing westward, and crossed as I imagined the highest ground that could extend from the mountain range to Cape Bernouilli, I expected to meet at length with rivers falling southward. The ultimate course of the Glenelg could only be ascertained by following it down, and to do this by land was not easy; first because it was joined by many small tributaries flowing through deep valleys and from all points of the compass; and secondly, because the general horizon was so level that no point commanding any extensive view over the country could be found. Thus while our main object was to pursue the river, we were obliged to grope our way round the heads of ravines often very remote from it, but which were very perplexing from their similarity to the ravine in which the main stream flowed. A more bountiful distribution of the waters for the supply of a numerous population could not be imagined, nor a soil better adapted for cultivation. We this day crossed various small rivulets or chains of ponds, each watering a grassy vale, sheltered by fine swelling hills. The whole country consisted of open forest land on which grew a few gumtrees (or eucalypti) with banksia and occasionally a few casuarinae.

FISHES PECULIAR TO DIFFERENT PONDS.

August 3.

The ponds where we had encamped were large and deep, and I endeavoured to ascertain whether the cod-perch (*Gristes peelii*) inhabited these waters. Neither this fine fish nor either of the two others found in the streams flowing towards the interior from the eastern coast range have ever been seen in the rivers which reach the eastern shores; and I had now ascertained that all the waters in which we had procured the fish in question belonged to the extensive basin of the Murray. We were at length on channels evidently distinct, both from those leading to the eastern coast and those belonging to the basin of the Murray. The beds of the rivers flowing to the east coast are chiefly rocky, containing much sand but very little mud, consequently no reeds grow on their banks, nor is the freshwater mussel found in them, as in rivers on the interior side, which in general flow over a muddy bed and are not unfrequently distinguished by reedy banks. Judging therefore from the nature of the soil of this southern region, the fishes peculiar to the Murray might be looked for in the rivers of the south, rather than those fishes known in the rivers falling eastward. It was important to ascertain at least what point of the coast separated the rivers containing different kinds of fish. In these

ponds we caught only some very small fry, and the question could not be satisfactorily determined, although the natives declared that none of them were the spawn of cod-perch.

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It was no easy matter now to ascertain in what direction the waters of the valley ran, but by the tendency of the hollows on each side they appeared to decline in general to the left or northward. In proceeding on our route, the heads of other similar ravines rendered our course very intricate: to have been shut in between any such ravine and the river must have been rather embarrassing, and seemed then almost inevitable. We had the good fortune however to avoid this; and at length, keeping along dry ground, a beautiful scene appeared on the left in an open valley about two miles in width where the hills sloped gradually to the confluence of two streams, brimful of water, which shone through some highly ornamental wood. Both streams came from valleys of a similar character; and beyond them I saw hills of the finest forms, all clothed with grass to their summits and many entirely clear of timber.

PIGEON PONDS.

A bronze-winged pigeon flew up just as I discovered the stream and, as this bird had not been before seen by us on that side of the mountains, I named the waters Pigeon ponds. we descended to that part of the valley which lay in our proposed course and found that some of these ponds rather deserved to be styled lakes. The soil was everywhere black and rich.

SOFT SOIL AGAIN IMPEDES THE PARTY.

August 4.

Proceeding over ground of a similar character we crossed several fine streams, some flowing in shallow channels over rocks, others in deep ravines. The ground on the higher parts was however still so soft as to yield to the wheels, and very much impeded the progress of the party, especially at one place where an extensive lake, full of reeds or rushes, appeared to the right. The drays sunk to the axles, the whole of the soil in our way having become so liquid that it rolled in waves around the struggling bullocks. The passage of some of the streams could not be accomplished until we had filled up the bed with large logs, covered them with boughs, and strewed over the whole, the earth cut away from the steep banks. Under such circumstances I considered six miles a good day's journey, and indeed too much for the cattle. I halted for the night with a small advanced party only on a fine little stream running over a rocky bed; while the main body was compelled to remain with the carts several miles behind, having broken, in the efforts made to extricate the carts and boat-carriage, many of the chains, and also a shaft. The small river I had reached ran in a bed of little width, but was withal so deep that it seemed scarcely passable without a bridge. At the junction however of a similar one, some rocks, favourably situated, enabled us to effect a passage by bedding logs between them and covering the whole with branches and earth, leaving room for the water to pass between.

HALT TO REPAIR THE CARTS AND HARNESS.

August 5.

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A halt was this day unavoidable, but the necessity was the less to be regretted as the weather was very unfavourable. Indeed we had scarcely seen one fine day for some weeks. Mr. Stapylton set out to trace the rivulet downwards, and returned in the evening after having reached its junction with the Glenelg at the distance of nine miles in a north-west direction. The course of the river thus determined to that junction appeared to be more to the westward than I had previously expected, and I began again to think its estuary might still be to the westward of Cape Northumberland, and this prospect induced me to alter our course. The carts having come up about one P.M., the blacksmith was set to work and wrought throughout the night to repair all the claw-chains.

NATIVES VERY SHY.

While other men were employed at the log-bridge some natives were heard coming along the most southern of the two streams; whereupon Piper went towards them as usual and found they were females with children; but from the moment they discovered us until they were fairly out of hearing their shrieks were so loud and incessant that it seemed, for once, our presence in that country had been unknown to the surrounding natives, a proof perhaps of the smallness of their numbers. In the evening other natives (men) were heard approaching along the creek, and we at first supposed they had come to that place as their rendezvous to meet the gins and their families whom we had unwillingly scared; but Mr. Stapylton, during his ride home along one side of the ravine, had observed four natives very intent on following the outward track of his horses' hoofs on the other; and these were doubtless the same men guided by his tracks to our camp. They could not be brought to a parley however, although Piper and Burnett at first invited them towards the camp and, when they set off, pursued them across the opposite ridge.

CHETWYND RIVULET.

On the bank of this little stream I found a charming species of *Tetratheca*, with large rich purple flowers and slender stems growing in close tufts about a foot high. It was perhaps the most beautiful plant we met with during the expedition.*

(Footnote. *T. ciliata*, Lindley manuscripts; *caulibus erectis tomentosis filiformibus, foliis oppositis verticillatisque obovatis ovatisque ciliatis subtus glabris, pedicellis setosis, sepalis ovatis concavis acutis, petalis obovatis.*)

August 6.

The passage of the rivulet which I named the Chetwynd, after Stapylton who had explored it at considerable risk, was effected with ease by the temporary bridge and we proceeded, soon crossing by similar means two other running streams, probably tributaries to this.

SLOW PROGRESS OVER THE SOFT SURFACE.

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When we had travelled four miles we came to a swamp where a considerable current of water was flowing into it through some ponds; the margin of this running water being broad, flat, and grassy, and having also lofty gumtrees (white bark and eucalypti) growing on it. Unfortunately it was so soft and rotten, as the men described it, that all the wheels sunk to the axles and, although in such cases it was usual to apply the combined force of several teams to draw each vehicle through in turn, we found that the rising ground opposite was equally soft and yielding, so that the cattle could have no firm footing to enable them to pull. It was night before we could, with the strength of all the teams united by long chains and yoked to each vehicle successively, bring the whole through, the broad wheels of each cart actually ploughing to the depth of the axle in soft earth; the labour of the cattle may therefore be imagined. We encamped on a small barren plain much resembling a heath and just beyond the swamp which had proved so formidable an impediment.

August 7.

Our progress this day was still less than that made during the preceding one for it did not much exceed a mile. To that distance we had proceeded tolerably well, having crossed two small running brooks, and all appeared favourable before us. But a broad piece of rising ground which, being sandy with banksia and casuarinae trees on it, I had considered firm proved so very soft that even my own horse went down with me and wallowed in the mud.

EXCURSION INTO THE COUNTRY BEFORE US.

There was no way of avoiding this spot, at least without delay, and I ordered the men immediately to encamp, being determined to go forward with a party on horseback and ascertain the position of some point where the ground was more favourable, and then to adopt such a mode of extricating the carts and proceeding thither as circumstances permitted. I took with me provisions for three days that I might explore the country, if necessary, to the coast.

BEAUTIFUL REGION DISCOVERED.

I had not proceeded above five miles southward when I perceived before me a ridge in bluey distance, rather an unusual object in that close country. We soon after emerged from the wood and found that we were on a kind of tableland and, approaching a deep ravine coming from our right and terminating on a very fine-looking open country below, watered by a winding river. We descended by a bold feature to the bottom of the ravine and found there a foaming little river hurrying downwards over rocks. After fording this stream we ascended a very steep but grassy mountain-side, and on reaching a brow of high land, what a noble prospect appeared! a river winding amongst meadows that were fully a mile broad and green as an emerald. Above them rose swelling hills of

fantastic shapes, but all smooth and thickly covered with rich verdure. Behind these were higher hills, all having grass on

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their sides and trees on their summits, and extending east and west throughout the landscape as far as I could see. I hastened to ascertain the course of the river by riding about two miles along an entirely open grassy ridge, and then found again the Glenelg, flowing eastward towards an apparently much lower country. All our difficulties seemed thus already at an end, for we had here good firm ground, clear of timber, on which we could gallop once more. The river was making for the most promising bay on the coast (for I saw that it turned southward some miles below the hill on which I stood) through a country far surpassing in beauty and richness any part hitherto discovered. I hastened back to my men in the mud and arrived before sunset with the good news, having found most of the intervening country fit for travelling upon. Thus the muddy hill which had before seemed unsurmountable led to the immediate discovery of the true course of the river, and prevented me from continuing my route into the great angle of its course over unfavourable ground instead of thus reaching it so much sooner by a much less deviation from the course I wished to pursue. I now hoped to extricate the carts in the morning and henceforward to accomplish journeys of considerable length.

THE PARTY EXTRICATED WITH DIFFICULTY FROM THE MUD.

August 8.

It was in vain that I reconnoitred the environs of the hill of mud for some portion of surface harder than the rest; and we could only extricate ourselves by floundering through it. Patches of clay occurred but they led only to places where the surface under the pressure of the cattle was immediately converted into white and liquid mud. It was necessary to take the loads from the carts and carry them by hand half a mile, and then to remove the empty vehicles by the same means. After all this had been accomplished the boat-carriage (a four-wheeled waggon) still remained immovably fixed up to the axle-tree in mud in a situation where the block and tackle used in hoisting out the boats could not be applied. Much time was lost in our attempts to draw it through by joining all the chains we possessed and applying the united strength of all the bullocks; but even this was at length accomplished after the sun had set; the wheels, four inches broad, actually cutting through to the full depth of the spokes. On the eastern side of the hill the ground descended into a ravine where it was grassy and firm enough; and it was a great relief to us all to feel thus at liberty, even by sunset, to start next morning towards the beautiful country which we now knew lay before us.

CHAPTER 3.10.

Cross various rivulets.
Enter the valley of Nangeela.
Native female and child.



Encamp on the Glenelg.
Cross the Wannon.
Rifle range.
Mount Gambier first seen from it.
Sterile moors crossed by the party.
Natives numerous but not accessible.

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Again arrive on the Glenelg.
Indifferent country on its banks.
Breadth and velocity of the river.
Encamp on a tributary.
Difficult passage.
The expedition brought to a stand in soft ground.
Excursion beyond.
Reach a fine point on the river.
The carts extricated.
The whole equipment reaches the river.
The boats launched on the Glenelg.
Mr. Stapylton left with a depot at Fort O'Hare.
Character of the river.
Ornithorynchus paradoxus.
Black swans.
Water brackish.
Isle of Bags.
Arrival at the seacoast.
Discovery bay.
Mouth of the Glenelg.
Waterholes dug in the beach.
Remarkable hollow.
Limestone cavern.
One fish caught in the Glenelg.
Stormy weather.
Return to the depot.
Difference in longitude.

CROSS VARIOUS RIVULETS.

August 9.

Once more in a state of forward movement we crossed green hills and running brooks until, when we had travelled nearly six miles from Muddy Camp and had crossed six fine streams or burns, we met with a more formidable impediment in the seventh. The sides of this ravine were so uncommonly steep that our new difficulty was how to move the vehicles down to the bank of the stream. In one place where a narrow point of ground projected across, a passage seemed just possible; and after we had made it better with spades we attempted to take a light cart over. The acclivity was still however rather too much, and over went the cart, carrying the shaft bullock with it, and depositing

all my instruments *etc.* under it in the bed of the stream. With travellers on roads this might have been thought a serious accident, but in our case we were prepared for joltings, and nothing was in the least degree injured; neither was the animal hurt, and we ascertained by the experiment, dangerous though it was, that still more was necessary to be done for the passage of the heavy carts and boats which were still some way behind; and I encamped on the bank beyond that the men might set about this work. No time was lost in filling up the hollow with all the dead trees that lay about and what others we could cut for the purpose; and thus before sunset the three carts and one waggon were got across. The rocks in the bed of this stream consisted of grey gneiss, and on the hills beyond it I found nodules of highly ferruginous sandstone.

ENTER THE VALLEY OF NANGEELA.

August 10.

By means of a block and tackle attached to a large tree the remaining carts and the boat-carriage were safely lowered to the bed of the stream. To draw them up the opposite bank was practicable only by uniting the strength of several teams, yet this too was effected successfully and the whole party were enabled to go forward in the morning. At a mile and a half from the camp a scene was displayed to our view which gladdened every heart. An open grassy country extending as far as we could see—hills

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round and smooth as a carpet, meadows broad, and either green as an emerald or of a rich golden colour from the abundance, as we soon afterwards found, of a little ranunculus-like flower. Down into that delightful vale our vehicles trundled over a gentle slope, the earth being covered with a thick matted turf, apparently superior to anything of the kind previously seen. That extensive valley was enlivened by a winding stream, the waters of which glittered through trees fringing each bank.

NATIVE FEMALE AND CHILD.

As we went on our way rejoicing I perceived at length two figures at a distance who at first either did not see or did not mind us. They proved to be a gin with a little boy and as soon as the female saw us she began to run. I presently overtook her, and with the few words I knew prevailed on her to stop until the two gins of our party could come up; for I had long been at a loss for the names of localities. This woman was not so much alarmed as might have been expected; and I was glad to find that she and the gins perfectly understood each other. The difference in the costume on the banks of the Wando immediately attracted the notice of the females from the Lachlan. The bag usually carried by gins was neatly wove in basketwork and composed of a wiry kind of rush. She of Wando carried this bag fastened to her back, having under it two circular mats of the same material, and beneath all a kangaroo cloak, so that her back at least was sufficiently clothed, although she wore no dress in front. The boy was supported between the mats and cloak; and his pleased and youthful face, he being a very fine specimen of the native race, presented a striking contrast to the miserable looks of his whining mother. In the large bag she carried some pieces of firewood and a few roots, apparently of tao, which she had just been digging from the earth. Such was the only visible inhabitant of this splendid valley resembling a nobleman's park on a gigantic scale. She stated that the main river was called Temiangandgeen, a name unfortunately too long to be introduced into maps. We also obtained the gratifying intelligence that the whole country to the eastward was similar to these delightful vales and that, in the same direction, as Piper translated her statement, "there was no more sticking in mud." A favourable change in the weather accompanied our fortunate transition from the land of watery soil and dark woody ravines to an open country. The day was beautiful; and the balmy air was sweetened by a perfume resembling hay which arose from the thick and matted herbs and grass. Proceeding along the valley the stream on our left vanished at an isolated rocky hill; but, on closer examination, I found the apparent barrier cleft in two, and that the water passed through, roaring over rocks. This was rather a singular feature in an open valley where the ground on each side of it was almost as low as the rocky bed of the stream itself. The hill was composed

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of granular felspar in a state of decomposition; the surrounding country consisting chiefly of very fine-grained sandstone. It is not easy to suppose that the river could ever have watered the valley in its present state and forced its way since through that isolated hill of hard rock; as to believe that the rock, now isolated, originally contained a chasm, and afforded once the lowest channel for the water before the valley now so open had been scooped out on each side by gradual decomposition. Another rivulet approached this hill, flowing under its eastern side and joining the Wando just below. According to my plan of following down the main river it was necessary to cross both these tributaries.

ENCAMP ON THE GLENELG.

In the open part of the valley the channels of these streams were deep and the banks soft; but at the base of the hill of Kinganyu (for such was its name) we found rock enough and, having effected a passage there of both streams that afternoon, we encamped after travelling about three miles further on the banks of the Glenelg once more. Our route lay straight across an open grassy valley at the foot of swelling hills of the same description. Each of these valleys presented peculiar and very romantic features, but I could not decide which looked most beautiful. All contained excellent soil and grass, surpassing in quality any I had seen in the present colony of New South Wales. The chase of the emu and kangaroo, which were both numerous, afforded us excellent sport on these fine downs. When about to cross the Wando I took my leave of the native woman before mentioned, that she might not have the trouble of fording the river, and I presented her with a tomahawk of which our females explained to her the use, although she seemed still at a loss to conceive the meaning of a present. The use of the little hatchet would be well enough known however to her tribe so, leaving her to return to it and assuring her at the same time of our friendly disposition towards the natives, we proceeded.

The left bank of the principal stream was very bold where we reached it on this occasion, but still open and covered with rich turf. The right bank was woody and this was generally its character at the other points where we had seen the Glenelg. It was flowing with considerable rapidity amongst the same kind of bushes we had met with above, but they did not appear so likely here to obstruct the passage of boats.

On the plains we found a singular acacia, the leaves being covered with a clammy exudation resembling honey-dew. It differed from *A. graveolens* in its much more rigid habit, shorter and broader leaves, and much shorter peduncles.*

(Footnote. *A. exudans*, Lindley manuscripts; *ramis crassis rigidis angulatis leviter pubescentibus, phyllodiis oblongo-lanceolatis mucronatis oblique binerviis viscido-*



punctatis basi obsolete glandulosis, capitulis 1-2 axillaribus, pedunculis lanatis, bracteolis rigidis acutis pubescentibus alabastris longioribus (capitulis echinatis).)

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August 11.

Passing along the bank of the river under the steep grassy hills which consisted of very fine-grained, calcareous sandstone, we began two miles on to ascend these heights; as well to avoid a place where they closed precipitously on the Glenelg as to gain a point from which I hoped to command an extensive view of its further course, and so cut off some of the windings. From that point, or rather on riding through the woods to some distance beyond it, I perceived that the river was joined by another coming from the south-east through an open country of the finest character. Below their junction the principal river disappeared on passing through a woody range, and turned towards the south-west.

JUNCTION OF THE WANNON.

Nothing could be seen beyond the crest which seemed a very predominant feature bounding the fine valley of the Wannon on the south. By turning round the eastern brow of the high ground on which we then were we gained a long ridge of smooth grassy land, leading by an easy descent from this height to the junction of the rivers. This high ground was thickly wooded with stringybark trees of large dimensions, and a few other eucalypti, together with banksia and casuarinae. The soil there was soft and sandy and the substratum contained masses of ironstone. The shrubs upon the whole reminded me of those in the wooded parts of the sandhills on the shores of Port Jackson. Smoke arose from various parts of the distant country before us; and we perceived one native running at prodigious speed across the plain below.

CROSS THE WANNON.

On reaching the banks of the Wannon we found it a deep flowing stream, about half as large as the river itself. We succeeded in finding a ford and crossed after cutting away some bushes and levelling the banks. Beyond the Wannon we travelled $2\frac{3}{4}$ miles over a portion of very fine country and encamped in a little vale in the bosom of a woody range, the western side of which overhung the river at the distance of two miles.

August 12.

A fine clear morning gave full effect to the beauty of the country which I now saw to the eastward from a hill near our camp. The summit of the Victoria range crowned the distant landscape; and the whole of the intervening territory appeared to consist of green hills, partially wooded. We crossed a mountain-stream by filling up its bed with logs and, as we ascended the slopes beyond, we found the country grassy until we reached the high and wooded crest. Lofty stringybark trees and other timber grew there on a white sandy soil; but we found among the bushes abundance of the anthisteria or kangaroo grass.



After travelling some miles beyond this crest we at length found the ground sloping to the southward; and some swampy hollows with reeds in them obliged us to turn to the right or south-west, as the water in these depressed parts falling eastward, or to the left, showed that we were not so very near the river, on the right, which I was endeavouring to follow. We were delayed in several of these hollows by the sinking of the carts and boat-carriage.

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RIFLE RANGE.

We next traversed an extensive moor or heath on which the rising ground was firm, and a little way beyond it some rising ground bounded our view. On ascending this highest feature which I named the Rifle range I found it commanded an extensive view over a low and woody country.

MOUNT GAMBIER FIRST SEEN FROM IT.

One peaked hill alone appeared on the otherwise level horizon and this bore 68 degrees West of South. I supposed this to be Mount Gambier near Cape Northumberland which, according to my survey, ought to have appeared in that direction at a distance of forty-five miles.

STERILE MOORS CROSSED BY THE PARTY.

I expected to find the river on reaching the lower country beyond this range; but instead of the Glenelg and the rich country on its banks we entered on extensive moors of the most sterile description. They were however firm enough for travelling upon, the surface being very level and the soil a whitish sand. These open wastes were interrupted in some parts by clumps of stringybark forest which entirely concealed from view the extent of this kind of country. Swamps full of water and containing reeds of a dark yellow colour at length became numerous; and although I succeeded in pursuing a course clear of these obstacles, we were obliged to encamp at twilight without having any immediate prospect of a better country before us. There was however abundance of grass in these wet swamps and our carts passed over one quite covered with water without sinking. Our camp was marked out on a low hill of white sand on which grew mahogany and stringybark trees of large dimensions. The ridge from which we had descended now appeared continuous as far as we could see eastward.

NATIVES NUMEROUS BUT NOT ACCESSIBLE.

Much smoke arose from this lower country when we entered upon it and after sunset the incessant calls of a native were heard near our camp as if he had lost some comrade. I sent up a rocket that he might be convinced we had not arrived by stealth as the tribes do when they insidiously make war on each other, but he only reiterated his calls the more.

August 13.

At daybreak the cries of the native were renewed. I then made Piper cooey to him whereupon he became silent and I heard him no more, the natives of that country being, as Piper expressed it "still very wild." This morning we were on the march as soon as the sun rose, all being very anxious to see the river again and a better country. At two



miles we passed along a sandy ridge between two extensive swamps; but at a mile and a half farther I found at length a small hollow and water running in it, a feature which convinced me at once that the river could not be very distant. In the bank there was a thin stratum of shelly limestone bearing a resemblance to some of the oolitic limestones of England; and in the bed were irregular concretions of ironstone containing grains of quartz, some of the concretions having externally a glazed appearance arising from a thin coating of compact brown haematite.



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AGAIN ARRIVE ON THE GLENELG.

Casuarinae and banksia growing on grassy slopes were the next marks of a different country from that of the swamps, and at less than a mile from this point we came upon the river.

INDIFFERENT COUNTRY ON ITS BANKS.

Its banks had a different character from that which they presented above but they were still fine.

BREADTH AND VELOCITY OF THE RIVER.

The river now flowed in a narrow valley, the bed being about 70 feet below the common level of the swampy flats. At sharp bends the banks consisted of cliffs of a soft limestone, composed in part of comminuted fragments of corallines, the interstices being rarely filled up; the rock contained also a few specimens of Foraminifera, most probably of recent species. In the narrow valley all was flourishing and green, attesting the rich luxuriance of the alluvial soil. The mimosa trees predominated, but still the bushes of leptospermum darkened the stream which was deep, rapid, and muddy, its breadth being about 40 yards and the bed consisting of a friable or soft calcareous sandstone. In accompanying it in its course downward we met with less difficulty than I had expected, but I perceived that the barren swampy land, or more frequently the stringybark forests, approached the higher banks on both sides the river. The few ravines falling in our way were only the drains from swamps close at hand and they were easily crossed by the party at the fall of the ground, where we found rocky strata.

ENCAMP ON A TRIBUTARY.

After tracing the river more than four miles we encamped on an elevated point overlooking a flat of good grass, so necessary for the cattle.

August 14.

Some of the bullocks were missing and we were compelled to wait an hour or two while parties went in search of them; one party being guided by Piper, the other by the two Tommies. I availed myself of the leisure afforded by this delay to measure the breadth, depth, and velocity of the river which were respectively as follows:

Average breadth: 35 yards.

Mean depth: 17 feet.

Velocity of the current: 1,863 yards per hour; the general course, as far as we had traced this portion being nearly South-East.



When most of the cattle had been brought in we proceeded and, in endeavouring to keep along the highest ground between the swamps, I unavoidably left the river at some distance on our right, a circumstance I considered of less consequence as the ground appeared to be falling on my left towards some tributary; and at four miles we came upon a small river flowing rapidly in a valley nearly as deep and wide as the main stream. The country on its immediate bank looked better than that last found on the main stream. Limestone rock appeared in the bank opposite and at the foot of some cliffs we found fossil oyster-shells. Mr. Stapylton traced this stream to its junction with the river about two miles lower down.

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August 15.

Two bullocks were still missing and I had recourse to compulsory measures with Piper and the man who lost them in order to find them again: I declared that unless they were found Piper should have no provisions for a week; and I condemned the man who lost them to be kept every second night on watch during the remainder of the journey.

DIFFICULT PASSAGE OF THE STOKES.

The passage of the little river (which named the Stokes in memory of a brother officer who fell at Badajoz) was not to be easily accomplished, owing to the depth and softness of the alluvial soil through which it flowed. One place passable on horseback was found after long search by Mr. Stapylton and myself. Out of the bed of the stream at that part we drew some dead trees and after two hours of great exertion the passage of the boat-carriage and carts was effected, the latter sinking deeper in the water than they ever had done in any river which we had previously forded.

THE EXPEDITION BROUGHT TO A STAND IN SOFT GROUND.

We found the country beyond very intricate, being so intersected with swamps draining off in all directions, and so divided by stringybark forests, that it was next to impossible to avoid the soft swampy ground or reach the riverbank again. We headed one deep ravine falling towards it, and had indeed travelled in the desired direction about four miles further on dry ground, but only by winding about as the swamps permitted when at length the ground appeared to slope towards the river, being also covered with the fine grass and the kind of trees which usually grew near it. But this ground notwithstanding its firm appearance proved to be as soft as that of Mount Mud; and it spread at length around us on all sides except that from which we had approached it by so circuitous a route.

EXCURSION BEYOND.

We had no alternative but to cross this bad ground and, after finding out by careful examination the narrowest part, we prepared to put to the nearest firm ground beyond, an undertaking infinitely more difficult and laborious to us than the passage of the broadest river. One of the carts was with much labour taken across and, being anxious to know the actual situation of the river, I rode southward into the wood taking with me the chain or measuring men, and leaving the rest of the people at work in the mud. I found much of the ground equally soft as I proceeded, but all consisted of excellent open forest land covered with good grass. I found there a woolly *Correa*, profusely covered with pink bell-shaped blossoms and small round rufous leaves;* and the beautiful *Kennedya prostrata* was climbing among the bushes and rendering them brilliant with its rich crimson flowers.

(Footnote. *C. rotundifolia*, Lindley manuscripts; ramulis rufis villosissimis, foliis subrotundis brevi-petiolatis supra scabris subtus villosis saepius emarginatis, corollis campanulatis brevibus subtetrapetalis, calyce truncato rufo villosissimo.)

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REACH A FINE POINT ON THE RIVER.

At length I approached a ravine on the left which I at first took for that of the river; but I soon perceived through the trees on my right a still greater opening, and there I at last found the valley of the Glenelg. In the ravine to the left ran another small stream rather larger than that crossed yesterday. We reached the bank of this at 2 3/4 miles from the place where we left the party and at about half a mile above its junction with the main stream. The high ground between the two streams terminated in a round grassy promontory overlooking one of the finest flats imaginable. I determined to endeavour once more to explore the river's course with the boats; provided we should succeed in transporting them over the mud to this spot; and I returned with this intention to the muddy scene where I had left the men. It was quite dark before I found it again and then they had succeeded in getting through only the three light carts. I did not despair of accomplishing the passage, at least in the course of time; but I was indeed impatient for daylight that I might carefully examine with that view all parts of the country between our camp and the place where I intended to launch the boats into the Glenelg again.

THE CARTS EXTRICATED BY PROCEEDING WITH GREAT CAUTION.

August 16.

This morning it rained heavily and there was a balmy and refreshing mildness in the air, probably owing to the vicinity of the sea. It occurred to me that, as the ground appeared to slope towards the south-east, we might reach some hollow on that side leading to the little river we discovered yesterday; and that such a hollow would afford the best chance of escape from the soft flats which now impeded us, since the drainage they afforded to the immediate banks was likely to leave them at least firm enough to be travelled upon. On this principle alone I understood why the ground on the banks of the stream seen yesterday was so firm; and I therefore hoped that the head of any ravine found near our camp would lead by a dry though perhaps circuitous route first to the tributary, and next by its bank to the point already mentioned where it joined the Glenelg. I accordingly instructed Mr. Stapylton to examine the ground in the direction proposed while I superintended the exertions of the party to drag the boat-carriage through the mud. We finally succeeded in this last effort and, just as I stood watching with joy the ascent of the carriage to the firm ground beyond, Mr. Stapylton came to me with the intelligence that he had found the head of a ravine and firm ground on its bank in the direction where he had been. One bad place alone intervened between our present position and the firm ground at the head of the ravine but this Mr. Stapylton said was very bad indeed. By 10 A.M. everything was got across the first swamp, the loads of all the carts having been carried by the men. To the new difficulty mentioned by Mr.

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Stapylton I therefore led them next, and we soon accomplished the passage of the light carts; after which I proceeded, leaving to Mr. Stapylton the management of the rest, having first brought the boat-carriage within reach of the firm ground opposite by means of blocks and tackle attached to trees and drawn by five bullocks. On going forward with the carts I was guided altogether by the course of the ravine or gully, keeping along the fall of the ground and so avoiding the softer soil above. Thus we proceeded successfully for, although another ravine came in our way, I managed to travel round its head near which I found a place where we crossed the small watercourse it contained by filling up the chasm with logs. On passing this we entered the stringybark forest which I had traversed on the day previous; and I at length recognised through the trees the hill from which I had seen the junction of the streams. A tremendous hailstorm met us in the face just as we descended to encamp in the valley near the bank of the river, but this troubled us but little while we were up to the waist in the thickest crop of grass growing on the richest black soil I had ever seen. Mr. Stapylton and Burnett came up in the evening with the intelligence that the whole party had effected a safe passage across the swampy ground; but that the wheels of the boat-carriage and some of the carts had sunk deep in the earth where I had previously crossed on horseback followed by the light carts without leaving any impression, and that consequently they had made but little progress beyond the camp.

August 17.

I sent Burnett back with some spare bullocks to assist the people in bringing on the carts and the boat-carriage, a man having been despatched from them early to inform me that the carriage had again stuck fast. Piper drew my attention to the sound of a distant waterfall which he said he had heard all night and wished now to go down the river to look at. I directed him to do so and to examine the river also still further if he could, that he might bring back information as to how the boats might get down the stream. On his return in the afternoon he stated that the river was joined just below by several large streams from the left, and by one still larger from the right which, falling on rocks, made the noise he had heard during the night; also that on climbing a high tree he had seen the river very large "like the Murray," adding that it was excellent for boats. All this news only made me the more impatient to embark in them while they were still afar on the muddy hills.

THE WHOLE EQUIPMENT REACHES THE RIVER.

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The whole day passed without any tidings of their approach, and another night had closed over us before I heard the distant calls of the bullock-drivers; but I had the satisfaction soon after of seeing the whole party and equipment again united on the banks of this promising stream. The barometer was rising, the spring advancing, and the approaching warmth might be expected to harden the ground. The cattle would be refreshed by a week's rest in the midst of the rich pasture around us, while our labours to all appearance were on the eve of being crowned by the discovery of some harbour which might serve as a port to one of the finest regions upon earth. At all events if we could no longer travel on land, we had at length arrived with two boats within reach of the sea, and this alone was a pleasing reflection after the delays we had lately experienced.

THE BOATS LAUNCHED ON THE GLENELG.

August 18.

An uncommonly fine morning succeeded a clear frosty night. The boats were hoisted out to be launched once on the bosom of the newly discovered Glenelg; and they were loaded with what the party going with them might require for ten days. I left with Mr. Stapylton instructions that the men under his charge should move up to and occupy the round point of the hill, a position which I named Fort O'Hare in memory of a truly brave soldier, my commanding officer who fell at Badajoz in leading the forlorn hope of the Light Division to the storm.

MR. STAPYLTON LEFT WITH A DEPOT AT FORT O'HARE.

At twelve o'clock I embarked on the river with sixteen men in two boats, leaving eight with Mr. Stapylton in the depot.

CHARACTER OF THE RIVER.

We met with many dead trees for the first mile or two, but none of these either prevented or delayed our passage; and the river then widened into fine reaches wholly clear of timber, so that the passage further down was quite uninterrupted. The scenery on the banks was pleasing and various: at some points picturesque limestone cliffs overhung the river, and cascades flowed out of caverns hung with stalactites; at others the shores were festooned with green dripping shrubs and creepers, or terminated in a smooth grassy bank sloping to the water's edge. But none of the banks consisted of water-worn earth; they were in general low and grassy, bounding the alluvial flats that lay between the higher points of land. Within the first three or four miles from Fort O'Hare two tributaries joined the main stream from the right or westward, and one from the left or eastward: one of the former ending in a noisy cascade at the junction. The river soon opened to a uniform width of sixty yards, its waters being everywhere smooth and unruffled and the current scarcely perceptible.

Ornithorynchus paradoxus.

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Ducks were always to be seen in the reaches before us, and very frequently the *Ornithorynchus paradoxus*, an animal which had not, I believe, been hitherto seen so near the sea. After rowing about sixteen miles we landed on the left bank near a cascade falling from under a limestone cliff and there we encamped for the night. The sun was setting in a cloudless sky while I eagerly ascended the highest cliffs in hopes of obtaining a sight of the coast, but nothing was visible beyond a gently undulating woody country, some swamps alone appearing in it to the westward. The land about the cliffs of limestone was tolerably good and grassy, but towards the end of this day's pull forests of the stringybark sort of eucalyptus, having in them trees of large dimensions, closed on the river. We endeavoured but in vain to catch fish, and whether the waters contained the cod-perch (*Gristes peelii*) or not remained a question. Our position and our prospects were now extremely interesting and throughout the night I was impatient for the light of the next day.

COURSE OF THE RIVER.

August 19.

I arose at three in order to determine the latitude more exactly by the altitude of various stars then approaching the meridian. These were Aries and Menkar; while the two feet of the Centaur, both fine circumpolar stars, were so steadily reflected in the placid stream that I obtained by that means the altitude of both **BELOW THE POLE**. It was most essential to the accuracy of my survey of the river that I should determine the latitude as frequently and exactly as possible. The sun afterwards rose in a cloudless sky and I ascertained the breadth of the river by means of a micrometer telescope to be exactly 70 yards. We continued our interesting voyage and found the river of very uniform width and that its depth increased.

The current was slower but still perceptible although we found the water had ebbed six inches during the night an indication that it was already influenced by the tide although it tasted perfectly fresh. At a place where I observed the sun's meridian altitude I found the breadth on measurement to be 71 yards and the depth on sounding, 4 1/2, 3 1/2 and 3 fathoms. The direction of the course had there however changed. To the camp of last night it had been remarkably straight towards south-south-east although full of turnings being what may be termed straight serpentine,* and I had accordingly expected to find the estuary at Portland Bay in which case it was likely to be sheltered sufficiently by Cape Nelson to form a harbour. Now however the general course was nearly west and it preserved the same general direction without much winding during the progress we made throughout the day. I had therefore every reason to suppose that it would thus terminate in the wide bay between Cape Northumberland and Cape Bridgewater. The scenery on the long reaches was in many places very fine from the picturesque character of the limestone-rock and the tints and outline of the trees, shrubs, and creepers upon the banks. In some places stalactitic grottoes covered with red and yellow creepers overhung or enclosed cascades; at other points casuarinae and

banksia were festooned with creeping vines whose hues of warm green or brown were relieved by the grey cliffs of more remote reaches as they successively opened before us.

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(Footnote. See Colonel Jackson's paper also referred to above.)

BLACK SWANS.

Black swans being numerous, we shot several; and found some eggs which we thought a luxury among the bulrushes at the water's edge. But we had left, as it seemed, all the good grassy land behind us; for the stringybark and a species of *Xanthorrhoea* (grass-tree) grew to the water's edge both where the soil looked black and rich and where it possessed that red colour which distinguishes the best soil in the vicinity of limestone rock. One or two small tributaries joined the river the principal one coming from the left bank at that point or angle where the great change takes place in its course. When the sun was near setting we put ashore on this bank and from a tree on the highest part of the country behind it we now once again saw Mount Gambier bearing 57 degrees West of North.

WATER BRACKISH.

Here the water was slightly brackish but still very good for use; the saltiness being most perceptible when the water was used for tea. The river had increased considerably both in width and depth; for here the measured breadth was 101 yards and the mean depth five fathoms. (See section on general Map.) It was upon the whole considering the permanent fulness of its stream the character of its banks and uniformity of width and depth the finest body of fresh water I had seen in Australia; and our hopes were that day sanguine that we should find an outlet to the sea of proportionate magnitude.

August 20.

This morning I found there was a rise of six inches in the river, evidently the effect of tide as the water was brackish although still fit for use. The reach on which we embarked afforded us a view for a mile further down the river; the vista being truly picturesque and with the interest attached to the scene it looked indeed quite enchanting. We pulled on through the silent waters, awakening the slumbering echoes with many a shot at the numerous swans or ducks. At length another change took place in the general course of the river which from west turned to east-south-east. The height of the banks appeared to diminish rapidly and a very numerous flock of the small sea-swallow or tern indicated our vicinity to the sea. The slow-flying pelican also with its huge bill pursued, regardless of strangers its straight-forward course over the waters.

ISLE OF BAGS.

A small bushy island next came in sight having on it some rocks resembling what we should have thought a great treasure then, a pile of flour-bags and we named it accordingly the Isle of Bags.

ARRIVAL AT THE SEACOAST.

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Soon after passing the island a few low, sandy-looking hills appeared before us; and we found ourselves between two basins where in the water was very shallow although we had sounded just previously to entering one of them in four fathoms. The widest lay directly before us but having no outlet we steered into the other on the right and on rounding a low rocky point we saw the green rolling breakers of the sea through an opening which proved to be the mouth of the river. It consisted of two low rocky points and as soon as we had pulled outside of them we landed on the eastern one. In the two basins we had seen there was scarcely sufficient water to float the boats and thus our hopes of finding a port at the mouth of this fine river were at once at an end. The sea broke on a sandy beach outside and on ascending one of the sandhills near it I perceived Cape Northumberland; the rocks outside called the Carpenters bearing 7 degrees 20 minutes South of West (variation 3 degrees 30 minutes) and being distant, as I judged, about fifteen miles. Mount Gambier bore 23 degrees 40 minutes North of West and a height which seemed near the extreme point of the coast on the eastward and which I therefore took for Cape Bridge water bore 52 degrees East of South.

DISCOVERY BAY.

These points seemed distant from each other about forty miles; the line of coast between forming one grand curve or bay which received this river at the deepest part and which I now named Discovery Bay.

MOUTH OF THE GLENELG.

There was no reef of rocks upon the bar; a circumstance to be regretted in this case for it was obvious that the entrance to this fine river and the two basins was choked merely by the sand thrown up by the sea. The river was four fathoms deep, the water being nearly fresh enough for use within sight of the shore. Unfortunately perhaps for navigation there is but little tide on that coast; the greatest rise in the lower part of the river (judging by the floating weeds) did not exceed a foot. I was too intent on the completion of my survey to indulge much in contemplating the welcome sight of old ocean; but when a plank was picked up by the men on that desolate shore and we found the initials IWB and the year 1832 carved on wood which had probably grown in old England the sea really seemed like home to us. Although it was low water a boat might easily have been got out and it is probable that in certain states of the tide and sand small craft might get in; but I nevertheless consider the mouth of this river quite unavailable as a harbour.

WATERHOLES DUG IN THE BEACH.

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Near the beach were holes dug apparently by the natives in which we found the water perfectly sweet. The hills sheltering the most eastern of the two basins were well wooded as were also those behind. The line of sandhills on the beach seemed to rise into forest hills at about five miles further eastward and all those in the west to within a short distance of the coast were equally woody. The day was squally with rain; nevertheless during an interval of sunshine I obtained the sun's meridian altitude making the latitude 38 degrees 2 minutes 58 seconds South. I also completed by two P.M. my survey of the mouth of the river and adjacent country; and we then again embarked to return a few miles up the river and encamp where wood and water were at hand. On reentering the river from the sea I presented the men with a bottle of whisky with which it was formally named the Glenelg after the present Secretary of State for the Colonies according to my previous intention.

REMARKABLE HOLLOW.

August 21.

We had encamped in a rather remarkable hollow on the right bank at the extreme western bend of the river. There was no modern indication that water either lodged in or ran through that ravine although the channel resembled in width the bed of some considerable tributary; the rock presenting a section of cliffs on each side and the bottom being broad but consisting of black earth only in which grew trees of eucalyptus. I found on following it some way up that it led to a low tract of country which I regretted much I could not then examine further. I found shells embedded in limestone varying considerably in its hardness being sometimes very friable and the surface in some places presenting innumerable fragments of corallines, with pectens, spatangi, echini, ostrea and foraminifera.

LIMESTONE CAVERN.

In the opposite bank of the river I found several thin strata of compact chert containing probably fragments of corallines, not only on the surface but embedded in the limestone. In pulling up the river this morning we observed a cavern or opening in the side of the limestone rock and having ascended to it by means of a rope we entered with lights. It proved to be only a large fissure and after penetrating about 150 yards underground we met with red earth, apparently fallen from the surface. We found at the mouth of the fissure some fine specimens of shells, coral, and other marine productions, embedded in several thin strata of a coarser structure under one of very compact limestone upwards of 20 feet thick.*

(Footnote. In the fragments brought home Mr. George Sowerby found a nucula, very much resembling some species of South America although not like any from Australia. Portions of lucinae, echinus, spatangi, and turritella or melania, were comprised in specimens from a softer stratum which was the lowest.)

ONE FISH CAUGHT IN THE GLENELG.

While the people in the boat awaited us there a fish was taken by Muirhead who had also caught the first fish in the river Darling. That of the Glenelg was a saltwater fish known at Sydney by the name of Snapper.*

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(Footnote. This was the only fish caught in the Glenelg notwithstanding the men threw in their lines whenever we encamped on its banks. The weather was too cold for it was evident the river did contain fish from the trellised work which the natives had set across it in the upper parts.)

STORMY WEATHER.

The weather was more moderate today although still showery; and the scenery as we proceeded upwards was very picturesque and full of variety. At sunset we encamped about a mile and a half short of our camp of the 18th and just as the trees were groaning under a heavy squall which obliged us to land on the first spot where sufficient room was left in the thick woods for our tents. This spot happened to be on a steep bit of bank; and in the evening I was called in haste to a new danger. The wind had suddenly changed and blew with great fury filling my tent with sparks from a large fire which burnt before it. I had placed in it according to usual custom our stock of ammunition in a keg; and notwithstanding these precautions its preservation now between the two elements of fire and water was rather doubtful. We contrived however to avert the danger and were no more disturbed during the night except by the storm.

RETURN TO THE DEPOT.

August 22.

The squally weather continued until noon when sunbeams again adorned the river-scenery. We met with no impediment in the current until within about six miles of the depot camp when dead trees in the channel began again to appear; but we passed them all without hindrance and reached Fort O'Hare at two o'clock where we found all well. Mr. Stapylton had set Vulcan to repair the broken chains *etc.*, a ford had been cleared across the stream from the north-east which I named the Crawford; and the cattle being refreshed we were once more in trim to continue the land journey. The height of the water in the river had undergone no change during our absence and was probably about its usual level there although I observed abundant marks of flood in the branches of trees where dry floated matter remained at the height of fifteen feet above the water as it stood then. The rock about this position consisted of limestone apparently similar to that seen on its banks higher up. (See August 15.) It possessed a stalactitic aspect by the infiltration of calcareous matter and in crevices below I found a reddish stalagmite containing grains of sand. Large petrified oyster shells lay loosely about the bank above these cliffs. No natives had approached the depot during our absence and we had indeed reason to believe that the adjacent country contained but few inhabitants.

DIFFERENCE IN LONGITUDE.



During the afternoon I laid down my survey of the estuary of the Glenelg and completed by 10 P.M., not only my plan of it but that of the river also. I found a considerable difference between the result of my survey and the Admiralty charts not only in the longitude but also in the relative position of the two capes with respect to Mount Gambier a solitary hill easily recognised.*



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(Footnote. At that time I supposed the difference had arisen from some error or omission in my map and took much pains to discover it; but not having succeeded my work having also closed to a mile and three-quarters on my return to the country connected by trigonometrical survey with Sydney I have been obliged to represent these parts of the coast according to this land survey.)

CHAPTER 3.11.

Leave the Glenelg and travel eastward.
Cross the Crawford.
Boggy character of its sources.
Recross the Rifle range.
Heavy timber the chief impediment.
Travelling also difficult from the softness of the ground.
Excursion southward to Portland Bay.
Mount Eckersley.
Cross the Fitzroy.
Cross the Surry.
Lady Julia Percy's Isle.
Beach of Portland Bay.
A vessel at anchor.
House and farming establishment there.
Whale fishery.
Excursion to Cape Nelson.
Mount Kincaid.
A whale chase.
Sagacity of the natives on the coast.
Mount Clay.
Return to the camp.
Still retarded by the soft soil.
Leave one of the boats, and reduce the size of the boat carriage.
Excursion to Mount Napier.
Cross some fine streams.
Natives very timid.
Crater of Mount Napier or Murroa.
View from the summit.
Return to the Camp.
Mr. Stapylton's excursion to the north-west.
The Shaw.
Conduct the carts along the highest ground.
Again ascend Murroa and partially clear the summit.
Mount Rouse.
Australian Pyrenees.



Swamps harder than the ground around them.
Again reach the good country.
Mounts Bainbrigge and Pierrepont.
Mount Sturgeon.
Ascend Mount Abrupt.
View of the Grampians from the summit.
Victoria range and the Serra.
Mud again, and a broken axle.
Mr. Stapylton examines the country before us.
At length get through the soft region.
Cattle quite exhausted.
Determine to leave them in a depot to refresh while I proceed forward.
Specimens of natural history.
Situation of depot camp at Lake Repose.

LEAVE THE GLENELG AND TRAVEL EASTWARD.

August 23.

Having at length disposed of the course of the Glenelg, my next object was to cross and examine the high ground which enclosed its basin on the east supplying those tributaries which the river received from its left bank, and evidently extending from the Grampians to Cape Bridgewater. I had named this the Rifle range in crossing that branch of it extending north-westward when I ascertained its characteristics to be lofty woods and swamps; but its ramifications in other directions and how it was connected backwards with the mountains still remained to be discovered; and from what I did know of this range I apprehended considerable difficulty in getting over it with our heavy carriages at such a season. That we might if possible escape the

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bogs, I devoted the day to an extensive reconnaissance of the country before us; my guide in this case being the river Crawford which, flowing in deep ravines, was likely to afford (so long as its general course continued to be nearly parallel to our route) one means at least of avoiding those soft swampy flats which could not possibly impede us so long as the side of such a ravine as that of the river was within reach. I had the good fortune to find that the range in general was firm under the hoof, and its direction precisely such as I wished. Extensive swamps occasionally appeared on my right; but I had on the left the deep ravines of the Crawford, and I travelled across the highest slopes of the ground. Having thus found good sound turf for twelve miles in the direction in which I wished to take the carriages, I returned on descending from a trap range where the rock consisted of granular felspar and hornblende with crystals of glassy felspar. On this hill the soil was exceedingly rich and the grass green and luxuriant. I obtained thence a most useful bearing on Mount Gambier, and saw also some heights to the eastward beyond the Rifle range. The timber grew to an enormous size on the ranges which I traversed this day; it consisted chiefly of that species of eucalyptus known as stringybark. Some of the trees we measured were 13 feet and one as much as 14 1/2 feet in circumference, and 80 feet was no uncommon height. The fallen timber was of such magnitude as to present a new impediment to our progress for we had not previously met with such an obstruction on any journey.

CROSS THE CRAWFORD.

August 24.

The carriages were taken across the Crawford without much delay considering its depth and the softness of the banks. The carts sank at least five feet in the water yet nothing was damaged for we had taken care to pack the flour and other perishable articles on the tops of the loads. We succeeded in crossing the rivulets at the heads of several ravines by filling up their channels with logs; and thus, after crossing the last of these, and ascending the steep bank beyond it, we encamped after a journey of seven miles. The weather had been stormy on both days since I crossed the Crawford, a circumstance very much against our progress. Near this camp we found a new *Correa*, resembling *C. virens* but having distinctly cordate toothed leaves with less down on their underside and a much shorter calyx.*

(Footnote. *C. cordifolia*, Lindley manuscripts; *stellato-tomentosa*, *foliis subsessilibus cordatis ovatis denticulatis obtusis planis supra glabris*, *corollis tubulosis cernuis*, *calyce truncato brevissimo*.)

BOGGY CHARACTER OF ITS SOURCES.

August 25.

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In our progress eastward we were still governed by the line of the Crawford; and the tortuous direction of the ravines connected with it required constant attention, while the very variable character of the swamps at the head of them was still more perplexing. We succeeded in finding a passage between all this day also and, on again crossing a small mountain torrent by filling up the chasm with dead timber, we encamped after another journey of seven miles. On our left to the northward lay a deep valley in which we found a broad sheet of water covered with ducks, the banks being soft and overgrown with reeds. A considerable stream flowed westward from this lake through a narrow part of the valley, so that I concluded we were still on the principal branch of the Crawford. Trees of large dimensions were abundant and the fallen timber impeded our progress even more than any unusual softness of the earth.

August 26.

After proceeding several miles without lett or hindrance, having successfully crossed some swampy rivulets all flowing to the left amidst thick scrubs, we at length arrived at a watercourse in which my horse went down, and which filled a very wide swampy bed enclosed by a thick growth of young mimosa trees, through which it was necessary to cut a passage wide enough for the carts. The scrub having been thus cleared to the extent of about 100 yards with much labour, I found only then unfortunately that although the roots grew very closely, and that water flowed over the surface, the earth was withal so soft that I could at every point with ease push a stick five feet down without reaching any firm bottom. The loose cattle were driven in, an experiment which until then we had tried with success in doubtful places, but they with difficulty got across this, for one of them sank and could not be extricated without considerable delay. While the men were busily employed there I rode to the head of the swamp which extended about a mile to the southward. On this swampy plain I at length succeeded in finding, with Mr. Stapylton's assistance, a line of route likely to bear the carts and we passed safely in that direction, not one carriage having gone down. While on this swampy surface we distinctly heard the breakers of the sea apparently at no great distance to the south-west, and I was convinced that the head of this swamp was about the highest ground immediately adjacent to Discovery Bay. On travelling a mile and a half further we reached a small rivulet, the first we had crossed flowing to the south. Beyond it the country appeared open and good, consisting of what is termed forest land with casuarinae and banksia growing upon it.

RECROSS THE RIFLE RANGE.

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We had at length reached the highest parts of the range and were about to descend into the country beyond it. We continued to travel a considerable distance further than the rivulet flowing to the south. Crossing others running northward or to the left, and leaving also on the same side a swamp, we finally came to a higher range clothed with trees of gigantic size, attesting the strength and depth of the soil, and here enormous old trunks obstructed our passage, covering the surface so as to form an impediment almost as great to us as the swampy ground had been; but this large timber so near the coast was an important feature in that country. Piper, having climbed to the top of one of these trees, perceived some fine green hills to the south-east, saying they were very near us and that the sea was visible beyond them. It was late in the afternoon when I reluctantly changed my intended route, which had been until then eastward, to proceed in the direction recommended by Piper, or to the south-east and so to follow down a valley, instead of my proposed route which had been along a favourable range.

HEAVY TIMBER THE CHIEF IMPEDIMENT.

I had still less reason to be satisfied with the change when, after pushing my horse through thick scrubs and bogs until twilight and looking in vain for a passage for the carts, I encountered at length bushes so thickly set and bogs so soft that any further progress in that direction was out of the question; and thus on the evening when I hoped to have entered a better sort of country after so successful a passage of the range we encamped where but little grass could be found for the cattle, our tents being not only under lofty trees but amongst thick bushes and bogs during very rainy weather.

TRAVELLING ALSO DIFFICULT FROM THE SOFTNESS OF THE GROUND.

August 27.

I was so anxious to get into open ground again that, as soon as daylight permitted, I carefully examined the environs of our camp, and I found that we occupied a broad flat where the drainage from the hills met and spread among bushes, so that at one time I almost despaired of extricating the party otherwise than by returning to the hill at which I had first altered my route. The track we made had been however so much cut up by our wheels that I preferred the chance of finding a passage northward which, of course, was also less out of our way. We reached an extremity of the hill (the nearest to us on that side) with much less difficulty than I had reason to apprehend and, keeping along that feature, we soon regained a range which led us east-north-east. By proceeding in this direction however we could not avoid the passage of a valley where the water was not confined to any channel, but spread and lodged on a wide tract of very soft ground, also covered with mimosa bushes and a thick growth of young saplings of eucalyptus. The light carts and the first heavy cart got over this soft ground or bog, but the others and the boat

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carriage sank up to the axles so that we were obliged to halt after having proceeded about five miles only. This was near a fine forest-hill consisting of trap-rock in a state of decomposition, but apparently similar to that of the trap-rock I had ascended on the 23rd of August; and from a tree there Burnett thought he saw the sea to the north-east, and even to the northward of a remarkable conical hill. The discovery of the sea in that direction was so different from the situation of the shore as laid down on the maps that I began to hope an inlet might exist there as yet undiscovered, the "Cadong," perhaps, of the native woman, "where white men had never been."*

(Footnote. See above.)

EXCURSION SOUTHWARD TO PORTLAND BAY.

I had now proceeded far enough to the eastward to be able to examine the coast about Portland Bay and extend my survey to the capes in its neighbourhood, the better to ascertain their longitude. I therefore determined to make an excursion in that direction and thus afford time not only for the extrication of the heavy carts still remaining in the mud but also for the repose of the cattle after their labours.

August 28.

By the survey proposed I hoped to extend my map of the country sufficiently in that direction to be at liberty, on my return to the party, to pursue a route directly homeward; not doubting that at a short distance to the northward of our camp we should again enter the beautiful open country which, when seen from the mouth of the Wannon, seemed to extend as far as could be seen to the eastward. In our ride to the south we reached, at four miles from the boggy ground, a fine green hill consisting of trap-rock and connected with a ridge of the same description which extended about two miles further to the southward.

MOUNT ECKERSLEY.

There we found it to terminate abruptly in a lofty brow, quite clear of timber and commanding an extensive view to the east and south over a much lower country. This hill had a very remarkable feature—a deep chasm separating it from the ridge behind, the sides being so steep as to present a section of the trap-rock which consisted principally of compact felspar. The hill which I named Mount Eckersley was covered, as well as the ridge to which it belonged, with a luxuriant crop of anthisterium, or kangaroo grass. Unfortunately the weather was squally but, by awaiting the intervals between clouds on the horizon, I obtained angles at length on nearly all the distant hills, the waters of Portland Bay just appearing in the south over an intervening woody ridge. From this hill I recognised a very conspicuous flat-topped hill to the northward which

had been previously included in a series of angles observed on the 12th instant from the valley of the Wannon and which I now named Mount Napier. Portland Bay was distant about fifteen miles but the intervening country seemed so low, and swamps entirely clear of timber appeared in so many

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places, that I could scarcely hope to get through it: knowing it to contain all the water from those boggy valleys where our progress had been already so much impeded. Smoke arose from various parts of the lower country—a proof that at least some dry land was there. We were provided with horses only, and therefore desperately determined to flounder through or even to swim if necessary, we thrust them down the hill. On its side we met an emu which stood and stared, apparently fearless as if the strange quadrupeds had withdrawn its keen eye from the more familiar enemies who bestrode them. In the lower country we saw also a kangaroo, an animal that seldom frequents marshy lands. I was agreeably surprised to find also, on descending, that the rich grass extended among the trees across the lower country; and I was still more pleased on coming to a fine running stream at about three miles from the hill and after crossing a tract of land of the richest description. Reeds grew thickly amongst the long grass, and the ground appeared to be of a different character from any that I had previously seen. This seemed to be just such land as would produce wheat during the driest seasons and never become sour even in the wettest, such as this season undoubtedly was.

CROSS THE FITZROY.

The timber was thin and light and, with a fine deep stream flowing through it, the tract which at first sight from Mount Eckersley I had considered so sterile and wet proved to be one likely at no distant day to smile under luxuriant crops of grain. We found the river (which I named the Fitzroy) fordable, although deep at the place where we first came upon it. Shady trees of the mimosa kind grew along the banks and the earth was now good and firm on both sides. We heard the natives as we approached this stream and cooeeyed to them; but our calls had only the effect, as appeared from the retiring sound of their voices, of making them run faster away. Continuing our ride southward we entered at two miles beyond the Fitzroy a forest of the stringybark eucalyptus; and although the anthisterium still grew in hollows I saw swampy open flats before us which I endeavoured to avoid, sometimes by passing between them and finally by turning to a woody range on the left. I ascended this range as night came on, in hopes of finding grass for our horses; but there the mimosa and xanthorrhoea alone prevailed—the latter being a sure indication of sterility and scanty vegetation. We found naked ground higher up consisting of deep lagoons and swamps amongst which I was satisfied with my success in passing through in such a direction as enabled me to regain, in a dark and stormy night, the shelter of the woods on the side of the range. But I sought in vain for the grass, so abundant elsewhere on this day's ride, and we were at length under the necessity of halting for the night where but little food could be found for our horses, and under lofty trees that creaked and groaned to the blast.

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August 29.

The groaning trees had afforded us shelter without letting fall even a single branch upon our heads,* but the morning was squally and unfavourable for the objects of the excursion, and we had still to ride some way before I could commence operations. Proceeding along the skirts of the woody ridge on the left in order to avoid swamps, we at length saw through the trees the blue waters of the sea and heard the roar of the waves.

(Footnote. The Australian woods are in general very brittle, and no experienced bushman likes to sleep under trees, especially during high winds.)

CROSS THE SURRY.

My intended way towards the deepest part of the bay and the hills beyond it did not lead directly to the shore, and I continued to pursue a course through the woods, having the shore on our left. We thus met a deep and rapid little river exactly resembling the Fitzroy and coming also from the westward. Tracing this a short distance upwards we came to a place set with a sort of trelliswork of bushes by the natives for the purpose, no doubt, of catching fish. Here we found the stream fordable though deep; a brownish granular limestone appearing in the bank. We crossed and then continuing through a thick wood we came out at length on the shore of Portland Bay at about four miles beyond the little river.

LADY JULIA PERCY'S ISLE.

Straight before us lay Laurence's Island, or rather, islands, there being two small islets of rock in that situation; and, some way to the eastward I perceived a much larger island which I concluded was one of Lady Julia Percy's Isles. At a quarter of a mile back from the beach broad broom-topped casuarinae were the only trees we could see; these grew on long ridges parallel to the beach, resembling those long breakers which, aided by winds, had probably thrown such ridges up. They were abundantly covered with excellent grass and, as it wanted about an hour of noon, I halted that the cattle might feed while I took some angles and endeavoured to obtain the sun's altitude during the intervals between heavy squalls, some of which were accompanied by hail and thunder.

BEACH OF PORTLAND BAY.

On reaching the seashore at this beach I turned to observe the face of Tommy Came-last, one of my followers who, being a native from the interior, had never before seen the sea. I could not discover in the face of this young savage, even on his first view of the ocean, any expression of surprise; on the contrary the placid and comprehensive gaze he cast over it seemed fully to embrace the grand expanse then for the first time opened to him.

A VESSEL AT ANCHOR. HOUSE AND FARMING ESTABLISHMENT THERE.

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I was much more astonished when he soon after came to tell me of the fresh tracks of cattle that he had found on the shore, and the shoemarks of a white man. He also brought me portions of tobacco-pipes and a glass bottle without a neck. That whaling vessels occasionally touched there I was aware, as was indeed obvious from the carcasses and bones of whales on the beach; but how cattle could have been brought there I did not understand. Proceeding round the bay with the intention of examining the head of an inlet and continuing along shore as far as Cape Bridgewater, I was struck with the resemblance to houses that some supposed grey rocks under the grassy cliffs presented; and while I directed my glass towards them my servant Brown said he saw a brig at anchor; a fact of which I was soon convinced and also that the grey rocks were in reality wooden houses. The most northern part of the shore of this bay was comparatively low, but the western consisted of bold cliffs rising to the height of 180 feet.

We ascended these cliffs near the wooden houses which proved to be some deserted sheds of the whalers. One shot was heard as we drew near them and another on our ascending the rocks. I then became somewhat apprehensive that the parties might either be, or suppose us to be, bushrangers and, to prevent if possible some such awkward mistake, I ordered a man to fire a gun and the bugle to be sounded; but on reaching the higher ground we discovered not only a beaten path but the track of two carts, and while we were following the latter a man came towards us from the face of the cliffs. He informed me in answer to my questions that the vessel at anchor was the Elizabeth of Launceston; and that just round the point there was a considerable farming establishment belonging to Messrs. Henty, who were then at the house. It then occurred to me that I might there procure a small additional supply of provisions, especially of flour, as my men were on very reduced rations. I therefore approached the house and was kindly received and entertained by the Messrs. Henty who as I learnt had been established there during upwards of two years. It was very obvious indeed from the magnitude and extent of the buildings and the substantial fencing erected that both time and labour had been expended in their construction. A good garden stocked with abundance of vegetables already smiled on Portland Bay; the soil was very rich on the overhanging cliffs, and the potatoes and turnips produced there surpassed in magnitude and quality any I had ever seen elsewhere.

WHALE FISHERY.

I learnt that the bay was much resorted to by vessels engaged in the whale fishery and that upwards of 700 tons of oil had been shipped that season. I was likewise informed that only a few days before my arrival five vessels lay at anchor together in that bay, and that a communication was regularly kept up with Van Diemen's Land by means of vessels from Launceston. Messrs. Henty were importing sheep and cattle as fast as vessels could be found to bring them over, and the numerous whalers touching at or fishing on the coast were found to be good customers for farm produce and whatever else could be spared from the establishment.



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Portland Bay is well sheltered from all winds except the east-south-east, and the anchorage is so good that a vessel is said to have rode out a gale even from this quarter. The part of the western shore where the land is highest shelters a small bay which might be made a tolerable harbour by means of two piers or quays erected on reefs of a kind of rock apparently very favourable for the purpose, namely amygdaloidal trap in rounded boulders. The present anchorage in four fathoms is on the outside of these reefs, and the water in this little bay is in general smooth enough for the landing of boats. A fine stream falls into the bay there and the situation seems altogether a most eligible one for the site of a town. The rock is trap consisting principally of felspar; and the soil is excellent as was amply testified by the luxuriant vegetation in Mr. Henty's garden.

EXCURSION TO CAPE NELSON.

August 30.

I proceeded with the theodolite to a height near Cape Nelson and from it I intersected that cape and also Cape Bridgewater, Cape Sir William Grant, the islands to the eastward, *etc.*

MOUNT KINCAID.

I here recognised also the high hill which appeared within these capes when first seen from the westward. It formed the most elevated part of the Rifle range at its termination on the coast and I was informed by Mr. Henty that there was a fine lake at its base. I named the hill Mount Kincaid after my old and esteemed friend of Peninsular recollections. Returning to the party at Portland Bay where I had left my sextant, I then obtained a good observation on the sun's meridian altitude. I was accommodated with a small supply of flour by Messrs. Henty who, having been themselves on short allowance, were awaiting the arrival of a vessel then due two weeks. They also supplied us with as many vegetables as the men could carry away on their horses.

A WHALE CHASE.

Just as I was about to leave the place a whale was announced and instantly three boats well manned were seen cutting through the water, a harpooneer standing up at the stern of each with oar in hand and assisting the rowers by a forward movement at each stroke. It was not the least interesting scene in these my Australian travels thus to witness from a verandah on a beautiful afternoon at Portland Bay the humours of the whale fishery and all those wondrous perils of harpooneers and whale boats of which I had delighted to read as scenes of the stormy north. The object of the present pursuit was "a hunchback" and it being likely to occupy the boats for some time I proceeded homewards.

SAGACITY OF THE NATIVES ON THE COAST.

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I understood it frequently happened that several parties of fishermen left by different whaling vessels would engage in the pursuit of the same whale, and that in the struggle for possession the whale would occasionally escape from them all and run ashore, in which case it is of little value to whalers as the removal, *etc.*, would be too tedious and they in such cases carry away part of the head matter only. The natives never approach these whalers, nor had they ever shown themselves to the white people of Portland Bay but, as they have taken to eat the castaway whales, it is their custom to send up a column of smoke when a whale appears in the bay, and the fishers understand the signal. This affords an instance of the sagacity of the natives for they must have reflected that, by thus giving timely notice, a greater number will become competitors for the whale and that consequently there will be a better chance of the whale running ashore, in which case a share must fall finally to them. The fishers whom I saw were fine able fellows; and with their large ships and courageous struggles with the whales they must seem terrible men of the sea to the natives. The neat trim of their boats set up on stanchions on the beach looked well, with oars and in perfect readiness to dash at the moment's notice into the angry surge. Upon the whole, what with the perils they undergo and their incessant labour in boiling the oil, these men do not earn too cheaply the profits derived from that kind of speculation. I saw on the shore the wreck of a fine boat which had been cut in two by a single stroke of the tail of a whale. The men were about to cast their net into the sea to procure a supply of fish for us when the whale suddenly engaged all hands.

We returned along the shore of the bay, intersecting at its estuary the mouth of the little river last crossed and which, at the request of Mr. Henty, I have named the Surry. This river enters Portland Bay in latitude 38 degrees 15 minutes 43 seconds South; longitude (by my survey) 141 degrees 58 minutes East. We encamped on the rich grassy land just beyond and I occupied for the night a snug old hut of the natives.

August 31.

Early this morning Richardson caught a fine bream and I had indeed been informed by Messrs. Henty that these streams abound with this fish.

MOUNT CLAY.

On ascending the highest point of the hill immediately behind the estuary of the Surry and which I named Mount Clay, I found it consisted of good forest land, and that its ramifications extended over as much as three miles. Beyond it we descended into the valley of the Fitzroy, and at noon I ascertained the latitude where we had before forded it to be 38 degrees 8 minutes 51 seconds South. The river had risen in the interim a foot and a half, so that we were obliged to carry the flour across on the heads of the men wading up to the neck. When we reached the summit of Mount Eckersley, the horizon being clear, I completed my series of angles on points visible from that station

by observing the Julian Island and Mount Abrupt, two of great importance in my survey which were hidden from our sight by the squally weather when I was last on this hill.

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RETURN TO THE CAMP.

We reached the camp about sunset and found all right there, the carts having been drawn out of the bogs, all the claw-chains repaired by the blacksmith, our hatchets resteeled, and two new shafts made for the heavy carts. Piper had during our absence killed abundance of kangaroos, and I now rejoiced at his success on account of the aboriginal portion of our party for whose stomachs, being of savage capacity, quantity was a more important consideration than quality in the article of food, and we were then living on a very reduced scale of rations. On my return from such excursions The Widow and her child frequently gave notice of our approach long before we reached the camp: their quick ears seemed sensible of the sound of horses' feet at an astonishing distance, for in no other way could the men account for the notice which Turandurey and her child, seated at their own fire, were always the first to give of my return, sometimes long before our appearance at the camp. Piper was usually the first to meet me and assure me of the safety of the party, as if he had taken care of it during my absence; and I encouraged his sense of responsibility by giving him credit for the security they had enjoyed. A serene evening, lovely in itself, looked doubly beautiful then as our hopes of getting home were inseparable from fine weather, for on this chance our final escape from the mud and bogs seemed very much to depend. The barometer however indicated rather doubtfully.

September 1.

Heavy rain and fog detained us in the same camp this morning and I availed myself of the day for the purpose of laying down my recent survey. The results satisfied me that the coastline on the engraved map was very defective and indeed the indentations extended so much deeper into the land that I still entertained hopes of finding some important inlet to the eastward, analogous to that remarkable break of the mountain chain at Mount William.

STILL RETARDED BY THE SOFT SOIL.

September 2.

We travelled as much in a north-east direction as the ground permitted but, although I should most willingly have followed the connecting features whatever their directions, I could not avoid the passage of various swamps or boggy soft hollows in which the carts and more especially the boat-carriage, notwithstanding the greatest exertions on the part of the men, again sank up to the axles. I had proceeded with the light carts and one heavy cart nearly nine miles while the boat-carriage fell at least six miles behind me, the other heavy carts having also been retarded from the necessity for yoking additional teams to the cattle drawing the boats. The weather was still unsettled and the continued rains had at length made the surface so soft that even to ride over it was

in many places difficult. I had reached some fine forest land on the bank of a running stream where the features were bolder, and I hoped to arrive soon at the good

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country near the head of the Wannon. I encamped without much hope that the remainder of the party could join us that night and they in fact did remain six miles behind. I had never been more puzzled in my travels than I was with respect to the nature of the country before us then. Mount Napier bore 74 degrees East of North distant about 16 miles. The little rivulet was flowing northward, and yet we had not reached the interior side of that elevated though swampy ground dividing the fine valleys we had seen further westward from the country sloping towards the sea.

LEAVE ONE OF THE BOATS, AND REDUCE THE SIZE OF THE BOAT CARRIAGE.

September 3.

This morning we had steady rain accompanied as usual by a north-west wind; I remarked also that at any rise of the barometer after such rain the wind changed to the south-east in situations near the coast, or to the north-east when we were more inland. I sent back the cattle we had brought forward to this camp to assist those behind, and in the meanwhile Mr. Stapylton took a ride along the ridge on which we were encamped in order to ascertain its direction. Towards evening Burnett returned from the carts with the intelligence that the boat-carriage could not be got out of the swamps and that, after the men had succeeded in raising it with levers and had drawn it some way, it had again sunk and thus delayed the carts, but that the latter were at length coming on, two men having been left behind with the boat-carriage. Mr. Stapylton returned in the afternoon having ascertained that a swamp of upwards of a mile in breadth and extending north and south as far as he could see lay straight before us, and he had concluded that the rivulet upon which we were then encamped turned into it. Under such circumstances we could not hope to be able to travel much further with the boats, nor even indeed with the carts unless we found ground with a firmer surface in the country before us. Ere we could reach the nearest habitations of civilised men we had yet to traverse 400 miles of a country intersected by the highest mountains and watered by the largest rivers known in New Holland.

September 4.

Although the boats and their carriage had been of late a great hindrance to us I was very unwilling to abandon such useful appendages to an exploring party, having already drawn them overland nearly 3000 miles. A promising part of the coast might still be explored, large rivers were to be crossed, and we had already found boats useful on such occasions. One however might answer these temporary purposes, since for the main object, the exploration of inland seas, they could not possibly be wanted. We had two and the outer one, which was both larger and heavier than the inner, had been shaken so much when suspended without the thwarts that she was almost unserviceable in the water, and very leaky as we had lately found in exploring the



Glenelg. She had in fact all along served as a case for the inner boat, which could thus be kept distended by the thwarts and was consequently in excellent repair and in every respect the best. I determined therefore to abandon the outer boat and shorten the carriage so that the fore and hind wheels would be brought two feet nearer each other. I expected from this arrangement that, instead of boats retarding the party, this one might thus be drawn in advance with the light carts.

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EXCURSION TO MOUNT NAPIER.

Having directed the alteration to be made during my intended absence I set out for Mount Napier and soon found the broad swamp before me. After riding up an arm of it to the left for a mile and a half I found it passable and, having crossed, we proceeded towards the hill by a rather circuitous route but over a fine tract of country although then very soft under our horses' feet.

CROSS SOME FINE STREAMS.

We next reached a deeper ravine where the land on each side was more open and also firmer, while a small rivulet flowing through it amongst bushes was easily crossed, and we ascended some fine rising ground beyond it. Rich flats then extended before us and we arrived at an open grassy valley where a beautiful little stream resembling a river in miniature was flowing rapidly. Two very substantial huts showed that even the natives had been attracted by the beauty of the spot and, as the day was showery, I wished to return if possible to pass the night there, for I began to learn that such huts with a good fire before them made very comfortable quarters in bad weather.

NATIVES VERY TIMID.

We had heard voices in the woods several times this day but their inhabitants seemed as timid as kangaroos and not more likely to come near us. The blue mass of Mount Napier was visible occasionally through the trees, but I found as we proceeded that we were not so near it as I had supposed, for at three miles beyond the little stream we came upon one of greater magnitude, a small river flowing southward with open grassy banks in which two kinds of trap-rock appeared. The edge of a thin layer of the lowest, a nearly decomposed trap, projected over the stream; the other lay in rounded blocks in the face of the hill above, and appeared to be decomposed amygdaloid, principally felspar. The river ran through a valley where the forest land was remarkably open, being sprinkled with only a few trees as in a park, and this stream appeared to fall into the head of the extensive swamp already mentioned. About a mile beyond the river (which I named the Shaw) we came upon the extremities of Mount Napier, for at least so I considered some rough sharp-pointed fragments of rock laying about in heaps, which we found it very difficult and tedious to ride over: indeed so sharp-edged and large were these rocks on the slopes of the terraces they formed that we were often obliged to dismount and lead our horses. In these fragments I recognised the cellular character of the rocks I had noticed in the bed of the Shaw. The rock here might have been taken for decomposed amygdaloid but, having found the vestiges of an old crater in the summit of the hill, I was induced to consider it an ancient lava. The reefs at Portland Bay consist of the same rock in rounded nodules, a more compact trap-rock consisting principally of felspar lying above them, as was observable in the section of the coast. In some of the fragments on Mount

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Napier these cells or pores were several inches in diameter and, unlike amygdaloidal rocks, all were quite empty. The surface consisted wholly of this stone, without any intermediate soil to soften its asperity under the feet of our horses, and yet it was covered with a wood of eucalyptus and mimosa, growing there as on the open forest land between which and this stony region the chief difference consisted in the ruggedness of surface, this being broken as already stated into irregular terraces where loose stones lay in irregular heaps and hollows, most resembling old stone quarries. We travelled over three miles of this rough surface before we reached the base of the cone.

CRATER OF MOUNT NAPIER OR MURROA.

On the sides of it we found some soft red earth mixed with fragments of lava and on reaching the summit I found myself on the narrow edge of a circular crater composed wholly of lava and scoriae. Trees and bushes grew luxuriantly everywhere except where the sharp rocks shot up almost perpendicularly. The igneous character of these was so obvious that one of the men thrust his hand into a chasm to ascertain whether it was warm.

VIEW FROM THE SUMMIT.

The discovery of an extinct volcano gave additional interest to Mount Napier, but it was by no means a better station for the theodolite on that account; on the contrary it was the worst possible for, as the trees grew on the edge of the crater, no one station could be found to afford a view of the horizon until the whole circumference was cleared of the trees, and this was too great a work for us at that visit. Mount William and the Grampian range presented a noble outline to the northward. The sun had set before I could recognise distant points in the highly interesting country to be seen from this remarkable hill. The weather was also unfavourable and I descended to pass the night at its base in hopes that the next morning might be clear.

RETURN TO THE CAMP.

On reaching the spot where I had left the horses I found that our native friend Tommy Came-last could discover no water in any of the numerous hollows around the hill and, though the superabundance of this element had caused the chief impediment to our progress through the country at that time, we were obliged to pass a night most uncomfortably from the total want of it at the base of Mount Napier. The spongy-looking rocks were however dry enough to sleep upon, a quality of which the soil in general had been rather deficient, as most of us felt in our muscles. I perceived a remarkable uniformity in the size of the trees, very few of which were dead or fallen. From this circumstance, together with the deficiency of the soil and the sharp edge of the rock

generally, some might conclude that the volcano had been in activity at no very remote period.

September 5.

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A thick fog hung upon the mountain until half-past 10 A.M. and when I ascended an extremity I could see nothing of the distance. I had however ascertained the nature of the country thus far, this having been the object of my visit and, as I had resolved from what I had seen to pass to the northward at no great distance from this hill, I returned with less reluctance, in hopes that I might have it in my power yet to revisit it during more favourable weather. The day was squally with several very heavy showers, the wind being from the south-west. We saw two natives at a fire when we were returning, and our friend Tommy readily advanced towards them but they immediately set up such loud and incessant cries that I called to him to come away. After a ride of twenty-six miles across swamps and many muddy hollows we reached soon after sunset the camp which I had directed to be moved back to near where the boats lay. I found that these had been drawn out of the swamp and one only brought forward as I wished to this camp and where I found all the carts once more ranged together. The alteration of the boat carriage required a little more time, and I accordingly determined to halt one day that we might also have our horses shod, several shoes having come off on the rough rocks near Mount Napier.

MR. STAPYLTON'S EXCURSION TO THE NORTH-WEST.

September 6.

This day I requested Mr. Stapylton to examine the country in a north-west direction. Some of the swamps crossed by me yesterday had appeared to fall westward and I wished to ascertain the situation and character of the ground dividing them from those discharging their waters eastward or towards the sea, as it was only by keeping on that dividing ground that I could hope to avoid them. Mr. Stapylton proceeded nine miles north-west, crossing many swampy flats, and at length a small rivulet, all falling westward. Beyond the rivulet he got upon some good hills connected with higher land. Our best line of route homewards was in a north-east direction, or at rightangles to the route of Mr. Stapylton.

THE SHAW.

The great swamp already mentioned, being the channel and recipient of the Shaw, was somewhat in my way, and my object now was to trace out the dividing ground as we proceeded, so as to avoid the swamps on both sides. By sunset the single boat was mounted in the shortened carriage, the whole being now so manageable and light that the boat could be lifted out by hand without block and tackle; and when on the carriage she could be drawn with ease wherever the light carts could pass. Thus we got rid of that heavy clog on our progress over soft ground, the boats, by reserving but one; and we left the larger, keel upwards, at the swamp which had occasioned so much delay.

CONDUCT THE CARTS ALONG THE HIGHEST GROUND.

September 7.

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Having chosen for a general line of route the bearing most likely to avoid the swamps according to the knowledge I had gained of the country, I proceeded as these and the soft ground permitted, and had the singular and indeed unexpected good fortune to come upon my horse's track from Mount Napier without having even seen the large swamp. The boat-carriage now travelled with the light carts, and we at length reached the first running stream at a short distance below where I had previously crossed it. The bottom was boggy and the water flowed in two channels, the ground between them being very soft. The whole party crossed it, with the exception of two carts which did not arrive, and we encamped on the bank beyond after a journey of about eight miles. Near this stream we found a pretty new species of *Dillwynia*, with plain yellow flowers, clustered on a long stalk at the end of the branches, and with curiously hairy heath-like leaves. It resembles *D. peduncularis* but proved, on examination, to be distinct.*

(Footnote. *D. hispida*, Lindley manuscripts; *ramulis hispidulis, foliis linearibus patulis verrucosis obtusis hispidulis, corymbis longe pedunculatis terminalibus laxis paucifloris, pedunculo glaberrimo, pedicellis calycibusque pubescentibus.*)

At this spot we found a very small bower of twigs, only large enough to contain a child: the floor was hollowed out and filled with dry leaves and feathers; and the ground around had been cut smooth, several boughs having been also bent over it so as to be fixed in the ground at both ends. The whole seemed connected with some mystic ceremony of the aborigines, but which the male natives who were with us could not explain. The gins however on being questioned said it was usual to prepare such a bower for the reception of a new-born child. Kangaroos were more numerous in this part of the country than in any other that we had traversed. I counted twenty-three in one flock which passed before me as I stood silently by a tree. Two of the men counted fifty-seven in another flock, and it was not unusual for them to approach our camp as if from curiosity, on which occasions two or three were occasionally caught by our dogs.

September 8.

The remainder of the heavy carts not having come up, I left the two with us to await their arrival that the men might assist the drivers with their teams in crossing this stream. On proceeding then with the light carts only I crossed several soft bad places, and one or two fine small rivulets, encamping at last where we again fell in with my horse's track, on an open space about eight miles from Mount Napier. During the day's journey we traversed some fine open forest hills near the banks of rivulets. We generally found the south-eastern slope of such heights very indistinct, and the ground soft, boggy and covered with banksias. The rock in such places consisted of the same cellular trap so common on this side of the Grampians. Our camp lay between two

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swamps for no better ground appeared on any side. I hoped however to obtain a more general knowledge of the surrounding country from Mount Napier during clear weather, and thus to discover some way by which we might make our escape to the northward. The carts did not overtake us this day, and I determined when they should arrive to overhaul them and throw away every article of weight not absolutely required for the rest of the journey.

AGAIN ASCEND MURROA AND PARTIALLY CLEAR THE SUMMIT.

September 9.

Once more I set out for Mount Napier, followed by a party of men with axes to clear its summit, at least sufficiently for the purpose of taking angles with the theodolite. The night had been clear and the morning was fine, but as soon as I had ascended the hill rain-clouds gathered in the south-west and obscured the horizon on all sides; I could only see some points at intervals, but I took as many as I could after the men had cleared a station for the theodolite. I perceived two very extensive lakes in the low country between Mount Napier and the south-eastern portion of the Grampian range, which terminated in the hill that I had previously named Mount Abrupt. Between the largest of these waters (called by me Lake Linlithgow) and the mountains there appeared an extensive tract of open grassy land.

MOUNT ROUSE.

To the eastward at the distance of twelve miles I perceived a solitary hill, somewhat resembling Mount Napier, and named it Mount Rouse; but a haze still concealed the more distant country. On reaching the camp where we arrived in the dark, I found that the carts had not even then returned; but as the barometer promised better weather I did not much regret their non-arrival as the delay would afford me another chance of having a clear day on Mount Napier.

September 10.

I again proceeded to the hill and obtained at length a clear and extensive view from it in all directions. In the north the Grampian range, on all sides grand, presented a new and striking outline on this. Far in the west I could recognise in slight breaks on a low horizon some features of the valley of Nangeela (Glenelg).

AUSTRALIAN PYRENEES.

Eastward the summits of a range I thought of naming the Australian Pyrenees were just visible over a woody horizon; and to the south-east were several detached hills and some elevated ridges of forest land, apparently near the coast. One isolated hill



resembling a haystack was very remarkable on the seashore. This I named Mount Hotspur being the only elevation near Lady Julia Percy's Isle (not Isles as laid down on the charts for there is but one, now called by whalers the Julian Island). To the southward I could just distinguish the Laurence Islands but a haze upon the coast prevented me from seeing that of Lady Julia Percy. Smoke arose from many parts of the lower country and showed that the inhabitants were very generally scattered over its surface.

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We could now look on such fires with indifference, so harmless were these natives compared with those on the Darling, and the smoke now ascended in equal abundance from the furthest verge of the horizon. It was impossible to discover the sources of streams or the direction of any ranges visible in the surrounding country; but upon the whole I concluded that the only practicable route for us homewards at that time would be through the forests and by passing as near as possible to the base of Mount Abrupt, the south-eastern extremity of the Grampians. Several forest hills stood above the extensive level country extending from our camp to Mount Abrupt, but I could trace no connection between these hills, and was rather apprehensive that a soft and swampy country intervened.

CRATER OF MOUNT NAPIER.

I had this day leisure to examine the crater on this hill more particularly and found its breadth to be 446 feet; its average depth 80 feet. The cellular rocks and lava stood nearly perpendicular around one portion of it; but there was a gap towards the west-north-west, on which side the crater was open almost to its greatest depth. (See Plate 22.) Several deep tongues of land descended from it to the west and north-west, forming the base of the hill, and had somewhat of the regularity of water-worn features. No marks of decomposition appeared in the fragments projecting from the highest points, however much exposed. On the contrary all the stringy twisted marks of fusion were as sharp and fresh as if the lava had but recently cooled. One species of moss very much resembled the Orchilla, and I thought it not impossible that this valuable weed might be found here as it occurred on similar rocks at Teneriffe. Just as I reached the highest summit this morning a bronze-wing pigeon arose from it; a circumstance rather remarkable considering that this was the only bird of that species seen on this side the mountains besides the one we saw on Pigeon Ponds on the 3rd of August. On returning to the camp I found that the carts had arrived soon after my departure in the morning; but the men had the misfortune to lose two bullocks in crossing the swampy stream where we had been previously encamped. One was suffocated in the mud, and the other having lain down in it could not be made to rise. By observing the stars alpha and beta Centauri I ascertained the magnetic variation to be 3 degrees 2 minutes 45 seconds East, and by the sun's altitude observed this day at Mount Napier I found the latitude of that hill to be 37 degrees 52 minutes 29 seconds South.

September 11.

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In order to lighten the carts as much as possible I caused the packsaddles to be placed on the spare bullocks, and various articles carried upon them; thus lightening to less than eight hundredweight each the loads of two of the heavy carts which had narrow wheels and sunk most in the ground. The old cover of the boat carriage was also laid aside, and in its place some tarpaulins which had previously added to the loads were laid across our remaining boat. A heavy jack used to raise cartwheels was also left at this camp, and some iron bars that had been taken from the boat-carriage when it was shortened. Thus lightened we proceeded once more into the fields of mud, taking a northerly direction. For several miles we encountered worse ground than we had ever crossed before yet the carts came over it; but broad swamps still lay before us.

SWAMPS HARDER THAN THE GROUND AROUND THEM.

Despairing at length of being able to avoid them, I impatiently galloped my horse into one and the carts followed, thanks to my impatience for once, for I do not think that I should otherwise have discovered that a swamp so uninviting could possibly have borne my horse, and still less the carts. After this I ventured to pursue a less circuitous route.

AGAIN REACH THE GOOD COUNTRY.

About that time a yellow flower in the grass caught my eye and, remembering that we had seen none of these golden flowers since we left the beautiful valley of the Wannon, I ventured to hope that we were at length approaching the good country at the head of that stream. Such was my anxious wish when I perceived through the trees a glimpse of an open grassy country, and immediately entered a fine clear valley with a lively little stream flowing westward through it and which I named the Grange. This was indeed one of the heads of the Wannon and we had at length reached the good country. The contrast between it and that from which we had emerged was obvious to all; even to the natives who for the first time painted themselves in the evening and danced a spirited corrobory on the occasion. This day Piper had seen two of the native inhabitants and had endeavoured to persuade them to come to me, but all to no purpose until at length, enraged at the unreasonable timidity of one of them, he threw his tomahawk at him and nearly hit him as he edged off; an act of which, as I told him in the strongest terms, I very much disapproved.

September 12.

The course of the little stream being to the northward, I proceeded along its right bank this morning until it turned to the north-west; but we soon after came to another to which the former seemed to be but a tributary. Its course was almost due west, and the valley in which it flowed was deep and boldly escarped. The stream thundered along with considerable rapidity over a rocky bottom consisting of the same sort of trap or ancient lava. I had little doubt that this was the principal head of the Wannon, a

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river crossed by us on the 11th of August. Meeting next an important branch falling into it from the south-east and being obliged to cross this, we effected the passage even with the carts, although the horses were nearly swimming. We proceeded next along a continuous ridge of fine firm ground covered with excellent grass, and soon after we saw before us a smaller stream flowing under a broad grassy vale and, having crossed it also without difficulty, we encamped in one of the valleys beyond, where this tributary appeared to originate. A finer country could scarcely be imagined: enormous trees of the mimosa or wattle of which the bark is so valuable grew almost everywhere; and several new varieties of *Caladenia* were found today. The blue, yellow, pink, and brown-coloured were all observed on these flowery plains.

MOUNTS BAINBRIGGE AND PIERREPOINT.

The sublime peaks of the Grampians began to appear above the trees to the northward, and two lower hills of trap-rock arose, one to the south-west the other north-west of our camp. That to the northward I named Mount Bainbriggs, the other on the south Mount Pierrepoint.

September 13.

We broke up our camp early this morning and on reaching the highest ground we discovered a large lake on our left: it was nearly circular, about half a mile in circumference and surrounded by high firm banks from which there was no visible outlet; I named it Lake Nivelles. At a few miles beyond this lake the cheering sight of an open country extending to the horizon first appeared through the trees; and we soon entered on these fine downs where the gently undulating surface was firm under our horses' feet and thickly clothed with excellent grass.

MOUNT STURGEON.

The cartwheels trundled merrily along, so that twelve miles were accomplished soon after midday, and we encamped near the extreme southern point of the Grampians, which I named Mount Sturgeon. The weather was very wet but this troubled us the less as we had not known a day without rain for several months.

ASCEND MOUNT ABRUPT.

September 14.

I was most anxious to ascend Mount Abrupt, the first peak to the northward of Mount Sturgeon, that I might close my survey of these mountains and also reconnoitre the country before us. This morning clouds hung upon the mountains however, and I could scarcely indulge a hope that the weather would be favourable for the purposed survey;

nevertheless I bent my steps towards the mountain, having first set the carpenter to work to make an additional width of felloe to the narrow wheels of one of the carts, that it might pass with less difficulty over soft ground. We soon came to a deep stream flowing not FROM but apparently TOWARDS the mountains; its general course being westward. It was so deep that our horses could scarcely ford it without swimming. Reeds grew about and the bottom was soft, although two kinds of rock appeared in its banks. On the right was trap, on the left the ferruginous sandstone of which all these mountains consist. We soon entered on the barren and sandy but firm ground at their base which, with its peculiar trees and shrubs, appeared so different from the grassy plains. The banksia, the casuarina, and the hardy xanthorrhoea reminded us of former toils on the opposite side of these ranges.

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VIEW OF THE GRAMPIANS FROM THE SUMMIT.

The weather turned out better than I had expected, and from the summit of Mount Abrupt I beheld a truly sublime scene; the whole of the mountains, quite clear of clouds, the grand outline of the more distant masses blended with the sky, and forming a blue and purple background for the numerous peaks of the range on which I stood, which consisted of sharp cones and perpendicular cliffs foreshortened so as to form one grand feature only of the extensive landscape, though composing a crescent nearly 30 miles in extent: this range being but a branch from the still more lofty masses of Mount William which crowned the whole. Towards the coast there was less haze than usual, for I could distinguish Lady Julia Percy's Isle which I had looked for in vain from Mount Napier, a point twenty-four miles nearer to it. Here I could also trace the course of the stream we had crossed that morning from its sources under the eastern base of the mountains to a group of lower hills twenty-seven miles distant to the westward; which hills, named by me Dundas group, formed a most useful point in my trigonometrical survey.

LAKES.

Several extensive lakes appeared in the lowest parts adjacent; but what interested me most after I had intersected the various summits was the appearance of the country to the eastward, through which we were to find our way home. There I saw a vast extent of open downs and could trace their undulations to where they joined a range of mountains which, judging by their outlines, appeared to be of easy access. Our straightest way homewards passed just under a bluff head about fifty miles distant, and so far I could easily perceive a most favourable line of route by avoiding several large reedy lakes. Between that open country and these lakes on one side and the coast on the other, a low woody ridge extended eastward; and by first gaining that I hoped we should reach the open ground in a direction which should enable us to leave all the lakes on our left.

The largest pieces of water I could see were Lake Linlithgow and its companion in the open grassy plains between the range and Mount Napier, as previously discovered from that hill. Several small and very picturesque lakes, then as smooth as mirrors, adorned the valley immediately to the westward of the hill I was upon. They were fringed with luxuriant shrubs so that it was really painful to me to hurry, as I was then compelled to do, past spots like these, involving in their unexplored recesses so much of novelty amidst the most romantic scenery. The rock consisted of a finely-grained sandstone as in other parts of that mass. The Grampians of the south consist of three ranges covering a surface which extends latitudinally 54 miles and longitudinally 20 miles. The extreme eastern and highest summit is Mount William, in height 4,500 feet above the sea. The northern point is Mount Zero, in latitude 36 degrees 52 minutes 35 seconds South, and the southern is Mount Sturgeon, in latitude 37 degrees 38 minutes 00 seconds. I here again recognised the outline of the most northern and elevated range

extending from Mount William to Mount Zero, but it was not so steep on the southern as on the northern side.

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VICTORIA RANGE AND THE SERRA.

From this hill two other ranges branch off to the south; the western being marked Victoria range on the map, the eastern, the Serra, from its serrated appearance, the broken outlines they present being highly ornamental to the fine country around. On the northern slopes of the range are some forests of fine timber but in general the higher summits are bare and rocky. The chief source of the Glenelg is between the Victoria range and the most northern, whence it soon sinks into a deep glen or ravine, receiving numberless tributaries from other dells intersecting the adjacent country. A considerable branch of the Glenelg named by the natives the Wannon has its sources in the eastern and southern rivulets from these mountains. The waters falling northward enter the Wimmera, a different river whose estuary has not yet been explored. Returning towards the camp, on approaching the stream, we met with one of the most strikingly beautiful species of the common genus *Pultenaea*; its narrow heath-like leaves were so closely covered with soft silky hairs as to have quite a silvery appearance and the branches were loaded with the heads of yellow and brown flowers now fully open. It formed a new species of the Proliferous section, allied to *Pultenaea stipularis*.*

(Footnote. *P. mollis*, Lindley manuscripts; *ramulis villosis, foliis linearibus v. linearilanceolatis obtusis v. acuminatis subtus convexis supra sulcatis sericeo-pilosis capitulis sessilibus longioribus, stipulis ovato-linearibus acutis glabris badiis, calycibus villosis*.)

PARTY IMPEDED BY THE MUD AGAIN, AND A BROKEN AXLE.

September 15.

Pursuing an easterly course in order to avoid the Wannon we again found the ground so soft and boggy that it was impossible to proceed; and after advancing with incredible labour (under which one of the poor bullocks fell to rise no more) barely four miles, I ordered the tents to be again set up, but almost in despair for having performed during the previous days several good journeys with perfect freedom from this species of impediment, and having seen no indication of any change in the surface, I had assured the men on descending from the mountains that the country before us was favourable. We were nevertheless compelled to halt again at this part by the breaking of the iron axle of one of the carts, for it was necessary to endeavour to repair it before we could proceed. The highest part of the woody ridge between us and the plains bore according to my map due east, being distant 14 miles.

MR. STAPYLTON EXAMINES THE COUNTRY BEFORE US.

I gave that bearing to Mr. Stapylton who rode forward with Burnett to ascertain how far we were from firmer ground, while I continued in my tent occupied with the map of the mountains. It was dark before Mr. Stapylton returned and brought the pleasing tidings

that the soft ground extended only to three or four miles from the camp, and that from beyond that distance to the forest hills he had found the ground tolerably firm.



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September 16.

The country which proved so soft was nevertheless stony and trap-rock projected from every higher portion; yet such rocky eminences being unconnected each was surrounded by softer ground. I was resolved to make the very most of them: but an iron axle having been broken in our struggles with the mud, the smith required more time to repair it, and I therefore determined to proceed with but half the equipment drawn by ALL the bullocks, leaving Burnett and the remaining portion of the party and equipment to come on next day by the same means, as soon as the cattle could be sent back.

AT LENGTH GET THROUGH THE SOFT REGION.

Having previously examined the ground and carefully traced out the hardest parts connecting these rocky features, I led the way with the carts and got through the first part of the journey much better than any of us had expected. After passing over four miles of soft boggy ground we came to a small running stream, the surface beyond it rising to a somewhat steep ascent. On reaching that side I found myself on a good firm ridge along which I continued for some time until we reached a swampy lagoon, the banks of which were very firm and good. Leaving this on our right we at length saw the darkly wooded hills of the ridge before mentioned; and having travelled eleven miles we encamped near a small lagoon on a spot where there was excellent grass; but it was still necessary to send back the poor cattle with their drivers that evening to where the other party still remained encamped.

CATTLE QUITE EXHAUSTED.

September 17.

This day the rest of the party came up but the cattle seemed quite exhausted. They had at length become so weak from the continued heavy dragging through mud that it was obvious they could not proceed much further until after they had enjoyed at least some weeks of repose. But our provisions did not admit of this delay as the time had arrived when I ought to have been at Sydney although still so far from it.

DETERMINE TO LEAVE THEM IN A DEPOT TO REFRESH WHILE I PROCEED FORWARD.

After mature deliberation we hit upon a plan which might as I thought enable us to escape. The arrangement proposed was that I should go forward with some of the freshest of the cattle drawing the light carts and boat, with a month's provisions, and taking with me as many men as would enable me to leave with those who should remain provisions for two months. That the cattle should rest at the present camp two weeks and then proceed while I, by travelling so far before them with so light a party,

could send back a supply of provisions and also the boat, to meet this second party following in my track on the banks of the Murray. Thus I could reach Sydney some weeks sooner, and also carry on my survey much more conveniently; the cattle, which had been sinking almost daily, would be thus refreshed sufficiently to be able to travel and the chance of the whole party suffering from famine would be much diminished. Such was the outline of the plan which our position and necessities suggested.

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September 18.

This day was passed in making preparations for setting out tomorrow with the light party as proposed.

SPECIMENS OF NATURAL HISTORY.

The catalogue of the objects of Natural History collected during the journey included several birds and animals not hitherto mentioned in this Journal. Amongst the most remarkable of these was the pig-footed animal found on June 16. It measured about ten inches in length, had no tail, and the forefeet resembled those of a pig. There was also the rat which climbs trees like the opossum; the flat-tailed rat from the scrubs of the Darling, where it builds an enormous nest of branches and boughs, so interlaced as to be proof against any attacks of the native dog. The unique specimen from the reedy country on the Murray of a very singular animal much resembling the jerboa or desert rat of Persia; also a rat-eared bat from the Lachlan. We had several new birds, but the most admired of our ornithological discoveries was a white-winged superb warbler from the junction of the Darling and the Murray, all the plumage not white being of a bright blue colour; but of this we had obtained only one specimen. I had not many opportunities of figuring the birds from life, so very desirable in ornithological subjects. The eye of the eagle and the rich crest of the cockatoo of the desert could not be preserved in dead specimens, and were too fine to be omitted among the sketches I endeavoured to snatch from nature.* Our herbarium had suffered from the continued wet weather, especially in fording deep rivers; and this was the more to be regretted as it contained many remarkable specimens. The seeds and bulbous roots comprising varieties of *Calostemma*, *Caladenia*, and *Anguillaria*, besides a number of large liliaceous bulbs, were however preserved in a very good state.**

(Footnote. See Plates 23 and 36.)

*(**Footnote. The specimens of natural history were deposited in the Museum at Sydney, according to my letter of instructions. The seeds, amounting to 134 varieties, have been brought home and distributed, with the obliging assistance of my friend Dr. Lindley, amongst the principal gardens in this country. The bulbs, 62 in number, were planted soon after my arrival in England, in the gardens of the Horticultural Society at Chiswick. It was not without regret that I left at Sydney the single specimens of the *Chaeropus* and *Dipus*, but I took drawings representing each, of the natural size, and from these the figures in Plates 37 and 38 have been very accurately reduced by Mr. Picken.)*

SITUATION OF DEPOT CAMP AT LAKE REPOSE.

The camp in which Mr. Stapylton's party was to remain two weeks was in as favourable a place for refreshing the cattle as could be found. The ground undulated and was

thickly clothed with fresh verdure; a grassy swamp also, such as cattle delight in, extended northward into a lake of fresh water which I named Lake Repose. The peaks of the Serra Range and especially Mount Abrupt were landmarks which secured the men from even the possibility of losing their way in looking after the cattle.



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Of the natives in our party it was arranged among themselves that Tommy Came-first and The Widow, who most required a rest, having sore feet, should remain with Mr. Stapylton and that Piper and Tommy Came-last should accompany me.

CHAPTER 3.12.

Parting of The Widow and her child.
We at length emerge on much firmer ground.
River Hopkins.
Mount Nicholson.
Cockajemmy salt lakes.
Natives ill disposed.
Singular weapon.
Treacherous concealment of a native.
Contents of a native's basket and store.
A tribe comes forward.
Fine country for colonisation.
Hollows in the downs.
Snakes numerous.
Native females.
Cattle tracks.
Ascend Mount Cole.
Enter on a granite country.
Many rivulets.
Mammeloid hills.
Lava, the surface rock.
Snakes eaten by the natives.
Ascend Mount Byng.
Rich grass.
Expedition pass.
Excursion towards Port Phillip.
Discover and cross the river Barnard.
Emus numerous and tame.
The river Campaspe.
Effects of a storm in the woods.
Ascend Mount Macedon.
Port Phillip dimly seen from it.
Return to the camp.
Continue our homeward journey.
Waterfall of Cobaw.
Singular country on the Barnard.
Cross the Campaspe.
An English razor found.



Ascend Mount Campbell.
Native beverage.
Valley of the Deegay.
Natives exchange baskets for axes.
They linger about our camp.
Effect of fireworks, *etc.*
Arrival at, and passage of, the Goulburn.
Fish caught.

PARTING OF THE WIDOW AND HER CHILD.

September 19.

When about to set out I observed that The Widow Turandurey, who was to remain with Mr. Stapylton's party and the carts, was marked with white round the eyes (the natives' fashion of mourning) and that the face of her child Ballandella was whitened also. This poor woman who had cheerfully carried the child on her back when we offered to carry both on the carts, and who was as careful and affectionate as any mother could be, had at length determined to entrust to me the care of this infant. I was gratified with such a proof of the mother's confidence in us, but I should have been less willing to take charge of her child had I not been aware of the wretched state of slavery to which the natives females are doomed. I felt additional interest in this poor child from the circumstance of her having suffered so much by the accident that befel her while with our party, and which had not prevented her from now preferring our mode of living so much that I believe the mother at length despaired of being ever able to initiate her thoroughly in the mysteries of killing and eating snakes, lizards, rats, and similar food. The widow had been long enough with us to be sensible how much more her sex was respected by civilised men than savages, and, as I conceived, it was with such sentiments that she committed her child to my charge, under the immediate care however of Piper's gin.

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WE AT LENGTH EMERGE ON MUCH FIRMER GROUND.

For several miles we met with soft ground at the low connecting parts of hills, but we at length gained the woody ridge so likely, as I had hoped, to favour our progress. Its turnings were intricate but, by one or two rivulets falling to my left and then by others falling to the right, I learnt how to keep on the intermediate ground until at length, after a journey of nine miles, we emerged from the woods on a firm open surface and an extensive prospect was seen before us. Leaving the party to encamp I rode to a round forest hill some miles to the eastward and obtained a comprehensive view of the Grampians, and also of the country to the northward which now appeared to be chiefly open; and I had little doubt that we should find it more favourable for travelling upon. Eastward of the forest hill the ground sank into a deep valley which turned round to the south-east after receiving the drainage from some hollows in the open country north of it.

RIVER HOPKINS.

This ravine received also the waters from the woody ridge now south of us, where the numerous deep valleys were irrigated by streams arising in swamps; the whole probably forming the head of some more important stream flowing to the coast and which I here named the river Hopkins. This eminence, which I distinguished as Mount Stavely, consisted apparently of decomposed clay-stone or felspar, having a tendency to divide naturally into regular prisms. A very beautiful and singular-looking shrub appeared on the hills we crossed this day, and also on the open ground where indeed it was most abundant. It was a species of acacia, the leaves adhering edgeways to thorny branches; many of these shrubs were in blossom, the flowers being yellow and as large and round as marbles, and those growing very thickly, they gave to the branches the appearance of garlands or festoons, the effect altogether being extremely graceful and singular. We found also a beautiful new species of acacia looking like a broad-leaved variety of *A. armata*. The branches were singularly protected by short spiny forks which proved to be the hardened permanent stipules.*

(Footnote. *A. furcifera*, Lindley manuscripts; *stipulis spinescentibus persistentibus*, *phyllodiis obliquis ovato-oblongis mucronatis uninerviis hinc venosis glabris*, *ramis hirsutis*, *capitulis solitariis foliis brevioribus*.)

With this occurred another species with hard stiff scymetar-shaped leaves and a profusion of balls of browner yellow flowers which had been previously observed (on June 22) in a more vigorous condition.* By observations from this hill I made the height of Mount William about 4,500 feet above the sea.

(Footnote. This was most nearly related to *A. hispidula*, but the leaves were quite smooth and much smaller. *A. acinacea*, Lindley manuscripts; *glaberrima*; *ramulis alato-angulatis rigidis*, *phyllodiis brevibus acinaciformibus mucronatis 1-nerviis et enerviis*:



margine superiore infra medium glanduloso, capitulis geminis axillaribus, pedunculis phyllodiorum longitudine.)

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September 20.

Our wheels now rolled lightly over fine grassy downs and our faces were turned towards distant home. Before us arose a low, thinly-wooded hill, which at first bounded our view towards the north, and afterwards proved to be the feature connecting the low woody ridge near our last camp with the hills still further to the northward. On reaching the summit I perceived that a considerable extent of open country intervened, being watered in the lower parts by several lakes.

MOUNT NICHOLSON. COCKAJEMMY SALT LAKES.

Descending northward along an offset of the same hills which had led us in that direction and which I now named Mount Nicholson, I observed that the lakes occurred at intervals in a valley apparently falling from the westward in which no stream appeared, although it was shut in by well escarped rocky banks. We encamped after a journey of ten miles at a point where another valley from the north joined the above, and I was somewhat surprised to find after encamping that the water in the adjacent lakes was extremely salt. No connection existed by means of any channel between them although they formed together a chain of lagoons in the bed of a deep and well defined valley. On the contrary the soil was particularly solid and firm between them, and the margin of the most eastern of these lakes was separated by a high bank from the bed of another valley where a running stream of pure water flowed over a broad and swampy bed fifteen feet higher than the adjacent valley containing the stagnant salt lakes. The rock enclosing these singular valleys was basalt, and from these peculiarities, considered with reference to the ancient volcano and the dip of a mountain strata to the north-west, it was evident that some upheaving or subsidence had materially altered the levels of the original surface.

I could find no brine-springs in or about these lakes, and as it was evident that a stream had once washed the bed of the ravine now occupied by them, I may leave the solution of the problem to geologists.

(Footnote. Having submitted specimens of the water from these and other salt lakes of the interior to my friend Professor Faraday, I have been favoured with the following particulars respecting their contents: "All of them are solutions of common salt much surpassing the ocean or even the Mediterranean in the quantity of salt dissolved. Besides the common salt there are present (in comparatively small quantity) portions of sulphates and muriates of lime and magnesia: the waters are neutral and except in strength very much resemble those of the ocean. That labelled Greenhill Lake 24th July had a specific gravity of 1049.4 and three measured ounces gave on evaporation 97 grains of dry salts. That labelled Mitre Lake 24th July had a specific gravity of 1038.6, and three measured ounces of it yielded 77 grains of dry saline matter. The water labelled Cockajemmy Lake Camp 20th September had a specific gravity of 1055.3 and the amount of dry salts from three measured ounces was 113 grains.")

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NATIVES ILL DISPOSED.

As we proceeded over the open ground before we reached the spot where we finally encamped several natives appeared at a great distance in a valley eastward of Mount Nicholson, and Piper went towards them supported by Brown whom I sent after him on horseback. They proved to be three or four gins only, but Piper continued to pursue them to the top of a hill, when a number of men armed with spears suddenly started from behind trees and were running furiously towards Piper when Brown rode up. On presenting his pistol they came to a full stop, thereby showing that they had some idea of firearms, although they refused to answer Piper's questions or to remain longer. In the evening, four of them approaching our camp, Piper went forward with Burnett to meet them. They advanced to the tents apparently without fear, and I obtained from them the names of various localities. On being questioned respecting Cadong, they told us that all these waters ran into it, and pointed to the south-east, saying that I should by-and-bye see it. When I found we could obtain no more information I presented the most intelligent of them with a tomahawk, on which they went slowly away, repeatedly turning round towards us and saying something which, according to Piper, had reference to their tribe coming again and dancing a corrobory, a proposal these savage tribes often make and which the traveller who knows them well will think it better to discourage.

SINGULAR WEAPON.

These men carried a singular kind of malga, of a construction different from any Piper had ever seen. The malga is a weapon usually made in the form of Figure 2, but that with which these natives were provided somewhat resembled a pick-axe with one half broken off, and was of the form of Figure 1, being made so as to be thickest at the angle. The blow of such a formidable weapon could not be easily parried from the uncertainty whether it would be aimed with the thick heavy corner or the sharp point. All the weapons of this singular race are peculiar and this one was not the least remarkable.

TREACHEROUS CONCEALMENT OF A NATIVE.

At dusk while Woods was looking after the cattle near the camp he surprised a native concealed behind a small bush, who did not make his escape until Woods was within two yards of him.

CONTENTS OF A NATIVE'S BASKET AND STORE.

How many more had been about we could not ascertain, but next morning we found near the spot one of the bags usually carried by gins and containing the following samples of their daily food: three snakes; three rats; about 2 pounds of small fish, like white bait; crayfish; and a quantity of the small root of the cichoraceous plant tao,

usually found growing on the plains with a bright yellow flower. There were also in the bag various bodkins and colouring stones, and two mogos or stone hatchets (Figure 5). It seemed that our civility had as usual inspired these savages with a desire to beat our brains out while asleep, and we were thankful that in effecting their cowardly designs they had been once more unsuccessful.

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A TRIBE COMES FORWARD.

September 21.

Early in the morning a tribe of about forty were seen advancing toward our camp preceded by the four men who had been previously there. Having determined that they should not approach us again, I made Piper advance to them and inquire what they wanted last night behind the bush, pointing at the same time to the spot. They returned no answer to this question, but continued to come forward until I ordered a burning bush to be waved at them and, when they came to a stand without answering Piper's question, I ordered a party of our men to charge them, whereupon they all scampered off. We saw them upon our encamping ground after we had proceeded about two miles, but they did not attempt to follow us. Whether they would find a letter which I had buried there for Mr. Stapylton or not, we could only hope to discover after that gentleman's return to the colony. It was understood between us that, where a cross was cut in the turf where my tent had stood, he would find a note under the centre of the cross. This I buried by merely pushing a stick into the earth and dropping into the hole thus made the note twisted up like a cigar. The letter was written chiefly to caution him about these natives. Basalt appeared in the sides of the ravine which contained the salt lakes and in equal abundance and of the same quality in that which enclosed the living stream where it lay in blocks forming small cliffs. Finding at length a favourable place for crossing this stream, we traversed the ravine and resumed our direct course towards the southern extremity of a distant range named Mammala by the natives, the bluff head previously seen from Mount Abrupt (see above).

FINE COUNTRY FOR COLONISATION.

We now travelled over a country quite open, slightly undulating, and well covered with grass. To the westward the noble outline of the Grampians terminated a view extending over vast plains fringed with forests and embellished with lakes. To the northward appeared other more accessible-looking hills, some being slightly wooded, some green and quite clear to their summits, long grassy vales and ridges intervening: while to the eastward the open plain extended as far as the eye could reach. Our way lay between distant ranges which in that direction mingled with the clouds. Thus I had both the low country, which was without timber, and the well wooded hills within reach, and might choose either for our route, according to the state of the ground, weather, *etc.* Certainly a land more favourable for colonisation could not be found. Flocks might be turned out upon its hills, or the plough at once set to work in the plains. No primeval forests required to be first rooted out, although there was enough of wood for all purposes of utility and as much also for embellishment as even a painter could wish.

HOLLOWS IN THE DOWNS.



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One feature peculiar to that country appeared on these open downs: it consisted of hollows which, being usually surrounded by a line of yarra gumtrees or whitebark eucalyptus, seemed at a distance to contain lakes, but instead of water I found only blocks of vesicular trap, consisting apparently of granular felspar, and hornblende rock also appeared in the banks enclosing them. Some of these hollows were of a winding character, as if they were the remains of ancient watercourses; but if ever currents flowed there the surface must have undergone considerable alteration since, for the downs where these hollows appeared were elevated at least 900 feet above the sea and surrounded on all sides by lower ground. There was an appearance of moisture among the rocks in some of these depressions; and whether by digging a few feet permanent wells might be made may be a question worth attention when colonisation extends to that country. We found on other parts of this open ground large blocks composed of irregular concretions of ironstone, covered with a thin coating of compact brown haematite. The purple-ringed *Anguillaria dioica*, first seen on Pyramid Hill, again appeared here; and in many places the ground was quite yellow with the flowers of the cichoraceous plant *tao* whose root, small as it is, constitutes the food of the native women and children. The cattle are very fond of the leaves of this plant and seemed to thrive upon it. We also found a new bulbine with a delicate yellow flower being perfectly distinct from both the species described by Brown.*

(Footnote. This has been planted with the others in the Horticultural Gardens at Chiswick and was the first to flower there, a head having been sent to me on the 8th May last by Dr. Lindley who describes it thus: Bulbine suavis; radice fasciculata, foliis longissimis attenuatis semiteretibus basi canaliculatis glaucis, racemo erecto multifloro, petalis oblongis subundulatis sepalis duplo latioribus, staminibus ascendentibus, filamentis apice stuposis petalinis patentibus sepalinis erectis apice incurvis brevioribus.)

SNAKES NUMEROUS.

The genial warmth of spring had begun to show its influence on these plants and also brought the snakes from their holes, for on this day in particular it was ascertained that twenty-two had been killed by the party. These were all of that species not venomous I believe which the natives eat. We encamped near a small clump of trees for the sake of firewood.

September 22.

This day's journey lay chiefly across open downs with wooded hills occasionally to the left. On the southward these downs extended to the horizon: and several isolated hills at great distances, apparently of trap, presented an outline like the volcanic Mount Napier. All the various small rivulets we traversed in our line of route seemed to flow in that direction. Having crossed three of these we encamped on the right bank of the fourth. The hills on our left were of granite and as different as possible in appearance

from the mountains to the westward which were all of red sandstone. In the afternoon there was a thunderstorm but the sky became again perfectly serene in the evening.

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September 23.

This morning a thick fog hung over us; but having well reconnoitred the country beyond I knew that I might travel in a straight line over open ground for several miles. When the fog arose some finely wooded hills appeared on our right; but after advancing seven miles on good firm earth we again came upon very soft ground which obliged us to turn and wind and pick our way wherever the surface seemed most likely to bear us.

NATIVE FEMALES.

The fog was succeeded by a fine warm day, and as we proceeded we saw two gins and their children at work separately on a swampy meadow; and, quick as the sight of these natives is, we had travelled long within view before they observed us. They were spread over the field much in the manner in which emus and kangaroos feed on plains, and we observed them digging in the ground for roots. All carried bags and when Piper went towards them they ran with great speed across the vast open plains to the southward.

CATTLE TRACKS.

This day we perceived the fresh track of several bullocks, a very extraordinary circumstance in that situation. The beautiful yellow-wreathed acacia was not to be seen after we quitted the open country. The ground was becoming almost hopelessly soft, when we reached a small run of water from the hills and, by keeping along its bank, we had the good fortune to reach an extremity of the range where the solid granite was as welcome to our feet as a dry beach is to shipwrecked seamen.

ASCEND MOUNT COLE.

We had at length arrived under Mammala, the bluff hill which had been my landmark from the time I left Mr. Stapylton. I found this was the southern extremity of a lofty range which I lost no time in ascending after I had fixed on a spot for the camp. It consisted of huge blocks of granite,* and was crowned with such lofty timber that I could only catch occasional peeps of the surrounding country: nevertheless I obtained, by moving about among the trees with my pocket sextant, almost all the angles I wanted; and I thus connected the survey of the region I was leaving with that I was about to enter. My first view over this eastern country was extensive, and when I at length descended to a projecting rock I found the prospect extremely promising, the land being variegated with open plains and strips of forest, and studded with smooth green hills of the most beautiful forms. In the extreme distance a range much resembling that on which I stood declined at its southern extremity in the same manner as this did, and thus left me a passage precisely in the most direct line of route homewards.

(Footnote. Consisting of pink felspar, white quartz and silvery mica.)

ENTER ON A GRANITE COUNTRY.

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The carts had still however to cross the range at which we had arrived and which, as I perceived here, not only extended southward but also broke into bold ravines on the eastern side, being connected with some noble hills, or rather mountains, all grassy to their summits, thinly wooded and consisting wholly of granite. They resembled very much some hills of the lower Pyrenees in Spain, only that they were more grassy and less acclivitous, and I named this hill Mount Cole. To the southward the sea-haze dimmed the horizon: but I perceived the eastern margin of a large piece of water bearing south-south-east, and which I supposed might be Cadong. It was sheltered on the south-east by elevated ground apparently very distant, but no high range appeared between us and that inlet of the sea. On the contrary the heights extending southward from this summit, being connected with the highest and most southern hills visible from it, seemed to be the only high land or separation of the waters falling north and south. With such a country before us I bade adieu to swamps and returned well pleased to the camp, being guided to it only by the gushing torrent, for I had remained on the hill as long as daylight lasted.

MANY RIVULETS.

September 24.

The morning was rainy and our way having to be traced up the ravines and round the hills was very tortuous for the first three miles. We then reached the dividing part of the range and descended immediately after into valleys of a less intricate character. Having passed over the swampy bed of a rivulet flowing southward, and having also crossed several fine bold ridges with good streams between them, we at length encamped near a round hill which, being clear on the summit, was therefore a favourable station for the theodolite. This hill also consisted of granite and commanded an open and extensive view over the country to the eastward.

September 25.

One bold range of forest land appeared before us and after crossing it we passed over several rivulets falling northward, then over a ridge of trappean conglomerate with embedded quartz pebbles, and descended into a valley of the finest description. Grassy hills clear of timber appeared beyond a stream also flowing northward. These hills consisted of old vesicular lava. We next entered a forest of very large trees of ironbark eucalyptus, and we finally encamped in a grassy valley in the midst of this forest.

September 26.

We first crossed more hills of the trappean conglomerate on which grew ironbark eucalypti and box. The rock consisted of a base of compact felspar with embedded grains of quartz, giving to some parts the character of conglomerate, and there were



also embedded crystals of common felspar. By diverging a little to the right we entered upon an open tract of the most favourable aspect, stretching away to the south-west among similar hills until they were lost in the extreme distance. The whole surface was green as an emerald and on our right for some miles ran a fine rivulet between steep grassy banks and over a bed of trap-rock.

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MAMMELOID HILLS.

At length this stream was joined by two others coming through similar grassy valleys from the south; and when we approached two lofty smooth round hills, green to their summits, the united streams flowed in an open dell which our carts rolled through without meeting any impediment. I ascended the most western of these hills as it was a point which I had observed from various distant stations, and I enjoyed such a charming view eastward from the summit as can but seldom fall to the lot of the explorers of new countries. The surface presented the forms of pristine beauty clothed in the hues of spring; and the shining verdure of these smooth and symmetrical hills was relieved by the darker hues of the wood with which they were interlaced; which exhibited every variety of tint, from a dark brown in the foreground to a light blue in extreme distance.

LAVA, THE SURFACE ROCK.

The hills consisted entirely of lava and I named them from their peculiar shape the Mammeloid hills, and the station on which I stood Mount Greenock. In travelling through this Eden no road was necessary, nor any ingenuity in conducting wheel-carriages wherever we chose. The beautiful little terrestrial orchidaceous plants *Caladenia dilatata* and *Diuris aurea* were already in full bloom; and we also found on the plains this day a most curious little bush resembling a heath in foliage, but with solitary polypetalous flowers resembling those of *Sollya*.* When we had completed fourteen miles we encamped on the edge of an open plain and near a small rivulet, the opposite bank consisting of grassy forest land.

(Footnote. This has been ascertained to be a new species of the genus Campylanthera of Hooker, or Pronaya of Baron Hugel, of which two species were found by the latter botanist and the late Mr. Frazer at Swan River. Campylanthera ericoides, Lindley manuscripts; erecta, fruticosa, glabra, foliis oblongo-cuneatis mucronatis margine revolutis, floribus solitariis terminalibus erectis, antheris subrotundis.)

ABORIGINAL IMITATIONS.

September 27.

I was surprised to hear the voice of a Scotchwoman in the camp this morning. The peculiar accent and rapid utterance could not be mistaken as I thought, and I called to inquire who the stranger was, when I ascertained that it was only Tommy Came-last who was imitating a Scotch female who, as I then learnt, was at Portland Bay and had been very kind to Tommy. The imitation was ridiculously true through all the modulations of that peculiar accent although, strange to say, without the pronunciation of a single intelligible word. The talent of the aborigines for imitation seems a peculiar trait in their character. I was informed that The Widow could also amuse the men occasionally by enacting their leader, taking angles, drawing from nature, etc.

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While the party went forward over the open plains with Mr. Stapylton I ascended a smooth round hill, distant about a mile to the southward of our camp, from which I could with ease continue my survey by means of hills on all sides, the highest of them being to the southward. I could trace the rivulets flowing northward into one or two principal channels, near several masses of mountain: these channels and ranges being probably connected with those crossed by us on our route from the Murray. In these bare hills and on the open grassy plains, old vesicular lava abounded; small loose elongated fragments lay on the round hills, having a red scorified appearance and being also so cellular as to be nearly as light as pumice. We this day crossed several fine running streams and forests of box and bluegum growing on ridges of trappean conglomerate. At length we entered on a very level and extensive flat, exceedingly green and resembling an English park. It was bounded on the east by a small river flowing to the north-west (probably the Loddon) and abrupt but grassy slopes arose beyond its right bank. After crossing this stream we encamped, having travelled nearly fifteen miles in one straight line bearing $60\frac{1}{2}$ degrees east of north. This tract was rather of a different character from that of the fine country of which we had previously seen so much, and we saw for the first time the *Discaria australis*, a remarkable green leafless spiny bush and resembling in a most striking manner the *Colletias* of Chili. Sheltered on every side by woods or higher ground, the spring seemed more advanced there than elsewhere, and our hard wrought cattle well deserved to be the first to browse on that verdant plain. The stream in its course downwards vanished amongst grassy hills to water a country apparently of the most interesting and valuable character.

September 28.

The steep banks beyond the river consisted of clay-slate having under it a conglomerate containing fragments of quartz cemented by compact haematite.

SNAKES EATEN BY THE NATIVES.

The day was hot and we killed several large snakes of the species eaten by the natives. I observed that our guides looked at the colour of the belly when in any doubt about the sort they preferred; these were white-bellied, whereas the belly of a very fierce one with a large head, of which Piper and the others seemed much afraid, was yellow. On cutting this snake open two young quails were found within: one of them not being quite dead. The country we crossed during the early part of the day was at least as fine as that we had left. We passed alternately through strips of forest and over open flats well watered, the streams flowing southward; and at nine miles we crossed a large stream also flowing in that direction: all these being evidently tributaries to that on which we had been encamped. Beyond the greater stream, where we last crossed it, the country presented more of the mountain character, but

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good strong grass grew among the trees, which consisted of box and lofty bluegum. After making out upwards of eleven miles, we encamped in a valley where water lodged in holes and where we found also abundance of grass. We were fast approaching those summits which had guided me in my route from Mount Cole, then more than fifty miles behind us. Like that mountain these heights also belonged to a lofty range, and like it were beside a very low part of it, through which I hoped to effect a passage. Leaving the party to encamp I proceeded forward in search of the hill I had so long seen before me, and I found that the hills immediately beyond our camp were part of the dividing range and broken into deep ravines on the eastern side. Pursuing the connection between them and the still higher summits on the north-east, I came at length upon an open valley enclosed by hills very lightly wooded. This change was evidently owing to a difference in the rock which was a fine-grained granite, whereas the hills we had recently crossed belonged chiefly to the volcanic class of rocks, with the exception of the range I had traversed that evening in my way from the camp, which consisted of ferruginous sandstone. With the change of rock a difference was also obvious in the shape of the hills, the quantity and quality of the water, and the character of the trees. The hills presented a bold sweeping outline and were no longer broken by sharp-edged strata but crowned with large round masses of rock. Running water was gushing from every hollow in much greater abundance than elsewhere; and lastly the timber, which on the other ranges consisted chiefly of ironbark and stringybark, now presented the shining bark of the bluegum or yarra and the grey hue of the box. The *Anthisteria australis*, a grass which seems to delight in a granitic soil, also appeared in great abundance, and we also found the aromatic tea, *Tasmania aromatica*, which represents in New Holland the winter's bark of the southern extremity of South America. The leaves and bark of this tree have a hot biting cinnamon-like taste on which account it is vulgarly called the pepper-tree.

ASCEND MOUNT BYNG.

I could ride with ease to the summit of the friendly hill that I had seen from afar, and found it but thinly wooded so that I could take my angles around the horizon without difficulty. Again reminded by the similar aspect this region presented of the lower Pyrenees and the pass of Orbaicetta, I named the summit Mount Byng.

RICH GRASS.

A country fully as promising as the fine region we had left was embraced in my view from that point. I perceived long patches of open plain interspersed with forest hills and low woody ranges, among which I could trace out a good line of route for another fifty miles homewards. The highest of the mountains lay to the south and evidently belonged to the coast range, if it might be so called; and on that side a lofty mass arose above the rest and promised a view

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towards the sea, that height being distant from the hill on which I stood about thirty miles. A broad chain of woody hills connected the coast range with Mount Byng, and I could trace the general course of several important streams through the country to the east of it. Northward I saw a little of the interior plains and the points where the various ranges terminated upon them. The sun was setting when I left Mount Byng but I depended on one of our natives, Tommy Came-last, who was then with me, for finding our way to the camp; and who on such occasions could trace my steps backwards with wonderful facility by day or night.

EXPEDITION PASS.

September 29.

The range before us was certainly rather formidable for the passage of carts, but home lay beyond it, while delay and famine were synonymous terms with us at that time. By following up the valley in which we had encamped I found early on this morning an easy way through which the carts might gain the lowest part of the range. Having conducted them to this point without any other inconvenience besides the overturning of one cart (from bad driving) we descended along the hollow of a ravine after making it passable by throwing some rocks into the narrow part near its head. The ravine at length opened, as I had expected, into a grassy valley with a fine rivulet flowing through it, and from this valley we debouched into the still more open granitic country at the foot of Mount Byng. The pass thus auspiciously discovered and opened, over a neck apparently the very lowest of the whole range, I named Expedition-pass, confident that such a line of communication between the southern coast and Sydney must, in the course of time, become a very considerable thoroughfare. The change of soil however introduced us to the old difficulty from which we had been happily relieved for some time, for we came once more upon rotten and boggy ground. We met with this unexpected impediment in an open-looking flat near a rivulet I was about to cross, when I found the surface so extremely soft and yielding that from the extreme resistance a bolt of the boat-carriage gave way, a circumstance which obliged us immediately to encamp although we had travelled only four miles.

EXCURSION TOWARDS PORT PHILLIP.

September 30.

Compelled thus to await the repair of the boat-carriage I determined to make an excursion to the lofty mountain mass which appeared about thirty miles to the southward, in order that I might connect my survey with Port Phillip, which I hoped to see thence. The horses were not found as soon as they were required, but when we at last got upon their backs we were therefore less disposed to spare them.

DISCOVER AND CROSS THE RIVER BARNARD.

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We crossed some soft hollows during the first few miles, and then arrived on the banks of a small and deep river with reeds on its borders, and containing many broad and deep reaches. It was full and flowed, but not rapidly, towards the north-east, and it was not until we had continued along the left bank of this stream for a considerable way upwards that we found a rapid where we could cross without swimming. The left bank was of bold acclivity but grassy and clear of timber, being very level on the summit; and I found it consisted of trap-rock of the same vesicular character which I had observed in so many other parts of this southern region. Beyond the river (which I then named the Barnard) we first encountered a hilly country from which we emerged rather unexpectedly; for after crossing a small rivulet flowing in a deep and grassy dell where trap-rock again appeared, and ascending the opposite slope, we found that the summit consisted of an open level country of the finest description. It was covered with the best kind of grass and the immediate object of our ride, the mountain, was now visible beyond these rich plains. Some fine forest-hills arose in various directions to the right and left, and indeed I never saw a more pleasing or promising portion of territory. The rich open ground across which we rode was not without slight undulations; and when we had traversed about four miles of it we came quite unawares to a full and flowing stream, nearly on a level with its grassy banks; the bottom being so sound that we forded it without the least difficulty.

EMUS NUMEROUS AND TAME.

Emus were very numerous on the downs and their curiosity brought them to stare at our horses, apparently unconscious of the presence of the biped on their backs whom both birds and beasts seem instinctively to avoid. In one flock I counted twenty-nine emus, and so near did they come to us that, having no rifle with me, I was tempted to discharge even my pistol at one, although without effect. Kangaroos were equally numerous. Having proceeded three miles beyond the stream we came to another flowing to the westward between some very deep ponds, and it was probably a tributary to the first.

THE RIVER CAMPASPE.

At twenty-two miles from the camp, on descending from some finely undulating open ground, we arrived at a stream flowing westward, which I judged to be also a branch of that we had first crossed. Its bed consisted of granitic rocks and on the left bank I found trap. We had this stream afterwards in sight on our left until, at two miles further, we again crossed it and entered a wood of eucalyptus, being then only five miles distant from the mountain, and we subsequently found that this wood extended to its base.

EFFECTS OF A STORM IN THE WOODS.

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The effects of some violent hurricane from the north were visible under every tree, the earth being covered with broken branches, some of which were more than a foot in diameter; the withering leaves remained upon them, and I remarked that no whole trees had been blown down, although almost all had lost their principal limbs and not a few had been reduced to bare poles. The havoc which the storm had made gave an unusual aspect to the whole of the forest land, so universally was it covered with withering branches. Whether this region is subject to frequent visitations of a like nature I could not of course then ascertain; but I perceived that many of the trees had lost some of their top limbs at a much earlier period in a similar manner. Neither had this been but a partial tempest, for to the very base of the mountain the same effects were visible. The trees on its side were of a much grander character than those in the forest, and consisted principally of black-butt and bluegum eucalypti measuring from six to eight feet in diameter. The rock was syenite, so weathered as to resemble sandstone.

ASCEND MOUNT MACEDON.

I ascended without having been obliged to alight from my horse, and I found that the summit was very spacious, being covered towards the south with tree-ferns, and the musk-plant grew in great luxuriance. I saw also many other plants found at the Illawarra, on the eastern coast of the colony of New South Wales. The summit was full of wombat holes and, unlike that side by which I had ascended, it was covered with the dead trunks of enormous trees in all stages of decay.

PORT PHILLIP DIMLY SEEN FROM IT.

I had two important objects in view in ascending this hill; one being to determine its position trigonometrically as a point likely to be seen from the country to which I was going, where it might be useful to me in fixing other points; the other being to obtain a view of Port Phillip, and thus to connect my survey with that harbour. But the tree-fern, musk-plant, brush, and lofty timber together shut us up for a long time from any prospect of the low country to the southward, and it was not until I had nearly exhausted a fine sunny afternoon in wandering round the broad summit that I could distinguish and recognise some of the hills to the westward; and when I at length obtained a glimpse of the country towards the coast the features of the earth could scarcely be distinguished from the sky or sea, although one dark point looked more like a cape than a cloud and seemed to remain steady. With my glass I perceived that water lay inside of that cape and that low plains extended northward from the water. I next discovered a hilly point outside of the cape or towards the sea; and on descending the hill to where the trees grew less thickly I obtained an uninterrupted view of the whole piece of water. As the sun went down the distant horizon became clearer towards the coast and I intersected at length the two capes; also one at

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the head of the bay and several detached hills. I perceived distinctly the course of the Exe and Arundell rivers and a line of mangrove trees along the low shore. In short I at length recognised Port Phillip and the intervening country around it at a distance afterwards ascertained to be upwards of fifty miles from Indented Head, which proved to be the first cape I had seen; that outside (at A) being Point Nepean on the east side of the entrance to this bay. At that vast distance I could trace no signs of life about this harbour. No stockyards, cattle, nor even smoke, although at the highest northern point of the bay I saw a mass of white objects which might have been either tents or vessels. I perceived a white speck, which I took for breakers or white sand, on the projecting point of the north-eastern shore. (B.) On that day nine years exactly I first beheld the heads of Port Jackson, a rather singular coincidence. Thus the mountain on which I stood became an important point in my survey, and I gave it the name of Mount Macedon, with reference to that of Port Phillip.* It had been long dark before I reached the base of the mountain and picked out a dry bit of turf on which to lie down for the night.

(Footnote. Geboor is the native name of this hill, as since ascertained by my friend Captain King, and it is a much better one, having fewer letters and being aboriginal.)

October 1.

The morning was cloudy with drizzling rain, a circumstance which prevented me from re-ascending a naked rock on the north-eastern summit to extend my observations over the country we were about to traverse. I found decomposed gneiss at the base of this hill.

RETURN TO THE CAMP.

While returning to the camp we saw great numbers of kangaroos but could not add to our stock of provisions, having neither dogs nor a rifle with us. I found on my arrival at the camp that the boat-carriage having been made once more serviceable, the party was quite ready to move forward in the morning.

October 2.

The day being Sunday and the weather unfavourable, as it rained heavily, the barometer having also fallen more than half an inch, I made it a day of rest for the benefit of our jaded horses, notwithstanding our own short rations. I was also very desirous to complete some work on the map.

CONTINUE OUR HOMEWARD JOURNEY.

October 3.

A clear morning: I buried another letter for Mr. Stapylton, informing him how he might best avoid the mud; and then we proceeded along the highest points of the ground, thus keeping clear of that which was boggy, and we found the surface to improve much in this respect as we receded from the base of the higher range. We crossed some fine valleys, each watered by a running stream; and all the hills consisted of granite. The various rivulets we crossed fell southwards into one we had seen in a valley on our right which continued from the base of the mountain,

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and this rivulet at length entered a still deeper valley in which there was very little wood, the hills on the opposite side being uncommonly level at the top. In this valley a fine stream ran northward, being undoubtedly the Barnard, or first river crossed by us on our way to Mount Macedon. We succeeded in finding a ford, but although it was deep a greater difficulty to be overcome was the descent of our carts to it, so abrupt and steep-sided was the ravine in which the Barnard flowed.

WATERFALL OF COBAW.

When we had effected at length a descent and a passage across, having also established our camp beyond this stream, I rode up the bank towards a noise of falling water, and thus came to a very fine cascade of upwards of sixty feet. The river indeed fell more than double that height, but in the lower part the water escaped unseen, flowing amongst large blocks of granite. I had visited several waterfalls in Scotland, but this was certainly the most picturesque I had witnessed; although the effect was not so much in the body of water falling, or the loud noise, as in the bold character of the rocks over and amongst which it fell. Their colour and shape were harmonized into a more complete scene than nature usually presents, resembling the finished subject of an artist, foreground and all. The prevailing hues were light red and purple-grey, the rocks being finely interlaced with a small-leaved creeper of the brightest green. A dark-coloured moss, which presents a warm green in the sun, covered the lower masses and relieved and supported the brighter hues, while a brilliant iris shone steadily in the spray, and blended into perfect harmony the lighter hues of the higher rocks and the whiteness of the torrent rushing over them. The banks of this stream were of so bold a character that in all probability other picturesque scenery, perhaps finer than this, may yet be found upon it.

SINGULAR COUNTRY ON THE BARNARD.

The geological character of the adjacent country was sufficiently striking—the left bank consisted of undulating hills and bold rocks of granite; the right of trap-rock in the higher part, and presented a remarkable contrast to the other, from the perfectly level character of the summits of adjacent hills, as if the whole had been once in a fluid state. Some of these table hills were separated by dry grassy vales of excellent soil. Further back the rugged crests of a wooded range of a different formation rendered the level character of this ancient lava or vesicular trap more obvious. The hills behind consisted in the higher parts of a felspathic conglomerate and clay-slate dipping to the eastward.

The country looked fine to the south and also northward, or down the stream. By keeping along a winding valley we ascended without inconvenience between these curiously scarped trap hills.

October 5.

We found the trees on the low range much broken like those near Mount Macedon, and the ground strewn here also with withering boughs, the result apparently of the same storm, the destructive effects of which we had noticed on the trees there.

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CROSS THE CAMPASPE.

Beyond the clay-stone range we entered on another open and grassy tract where trap-rock again appeared; and at four miles and a half we descended into a grassy ravine in which we found another river flowing northward; this being apparently the second river crossed in my ride to Mount Macedon and which I now named the Campaspe. It was difficult to find in this stream any fordable place where the banks could be approached by the carts, one side or the other always proving too steep; but at length we succeeded. Strata of clay-slate inclined almost perpendicularly to the horizon projected at parts of the left bank, and over this clay-slate I found trap-rock. Beyond the Campaspe we crossed plains and much open land. At length on descending a little from a sort of table the trap was no longer to be seen, and we entered a wood where sandstone seemed to predominate, the strata dipping to the south-west. Fine grassy slopes extended through this forest, which was also so open that we could see each way for several miles. A rich variety of yellow flowers adorned the verdure among which the *Caladenia* and *Diuris aurea*, and also a large white *Anguillaria*, were very abundant.

AN ENGLISH RAZOR FOUND.

Piper found at an old native encampment a razor, and I had the satisfaction of reading on the blade the words "Old English" in this wild region, still so remote from civilised man's dominion! In the afternoon a remarkable change took place in the weather, for we had rain with an easterly wind, the thermometer being at 68 degrees. We encamped on a chain of deep ponds falling to the northward; reeds grew in them and we endeavoured to catch cod-perch but without success, probably because the natives of the country were too expert fishers to leave any in such holes.

ASCEND MOUNT CAMPBELL.

October 6.

At two miles on we reached the summit of the range near Mount Campbell which had partly bounded my view eastward from Mount Byng. A slight scrub grew on this range but not so thickly as to be impervious to carts; and after crossing it, as well as a succession of lower ridges, a good valley at length appeared on the left, while another which was very wide and green lay before us. At the further side of this and under another range ran a deep mountain stream which was joined a little lower down by one from the valley on the left: thus by following this stream I might have turned the range, but it was not too steep to be crossed, and I required some angles with the surrounding hills and the country before us. We ascended it therefore and comparatively with ease; and from amongst the trees on a hill I saw and intersected more points than I expected to see; even Mount Macedon was visible and, to the eastward, summits which I was almost certain lay beyond the river Goulburn. The descent from this ridge to the

eastward was rather steep; but we immediately after entered an open forest in a valley which led very nearly in the direction of my intended route.

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NATIVE BEVERAGE.

The adjacent forest consisted of large trees of ironbark, the first of that species of eucalyptus that we had seen for a considerable time. This tree was then in flower, and we found in a large canoe at an old native encampment a considerable quantity of the blossoms, which had not been long cut. Piper explained the purpose for which these flowers had been gathered by informing me that, by steeping them a night in water, the natives make a sweet beverage named bool.

VALLEY OF THE DEEGAY.

October 7.

The whole of this day's journey (fourteen miles) was along the same valley that we had entered yesterday. The deep bed of a stream, then containing a chain of ponds only, pursued a meandering course through it. We saw in this valley a pair of cockatoos with the scarlet and yellow top-knot. (Plate 23.) We had not been long encamped when intelligence was brought me by Piper that a party of natives were following our track, and soon after, Burnett and he having gone out to encourage them to come up, seven, including an old man and two boys, approached and I hastened out to meet them that they might not sit down too close to our camp. They told us the creek watering this long valley was named Deegay.

NATIVES EXCHANGE BASKETS FOR AXES.

Three of them carried very neatly-wrought baskets, and I gave two tomahawks in exchange for two of the baskets, and then making signs that it was time to sleep I returned to my tent, hoping that they would go to their tribe.

THEY LINGER ABOUT OUR CAMP.

On looking out however some time after, I found that two had walked boldly up to our fires, while the others continued to cower over a few embers at the spot where I left them; the evening being very cold and stormy. Piper, who at first seemed much disposed to make friends of these people, had found that his endeavours to conciliate strange natives were as usual in vain, and was now going about sword in hand, while three of the strangers seemed desirous to assuage his anger by telling him a long yarn. The other, who was the old man, was casting a covetous eye on all things around the camp. When I went out they retired to the group, but long after it had become quite dark there they still sat, having scarcely any fire and evidently bent on mischief.

EFFECT OF FIREWORKS, ETC.

I really was not sorry then to find that they still continued, for I had made arrangements for having a little amusement in that case, although their object in lingering there was

nothing less than to kill us when asleep. Accordingly at a given signal Burnett suddenly sallied forth wearing a gilt mask and holding in his hand a blue light with which he fired a rocket.* Two men concealed behind the boat-carriage bellowed hideously through speaking trumpets, while all the others shouted and discharged their carabines in the air. Burnett marched solemnly towards the astonished

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natives who were seen through the gloom but for an instant as they made their escape and disappeared forever; leaving behind them however rough-shaped heavy clubs which they had made there in the dark with the new tomahawks we had given them, and which clubs were doubtless made for the sole purpose of beating out our brains as soon as we fell asleep. Thus their savage thirst for our blood only afforded us some hearty laughing. Such an instance of ingratitude was to me however a subject of painful reflection. The clubs made in the dark, during a very cold night, with the tomahawks I had given them, enabled me to understand better what the intentions of the natives had been in other similar cases; and I was at length convinced that no kindness had the slightest effect in altering the disposition and savage desire of these wild men to kill white strangers on their first coming among them. That Australia can never be explored with safety except by very powerful parties will probably be proved by the treacherous murder of many brave white men.**

(Footnote. The use of these masks, which I on several occasions displayed with success, was first suggested to me by Sir John Jamison.)

*(**Footnote. A distressing instance of this hostility towards the whites on the part of the aborigines has since occurred not far from the very spot where I wrote the above portion of my journal. Our line of route soon became the high road from Sydney to Port Phillip, and it appears by the Sydney newspapers (see Appendix 2.3) that the natives attacked a party of fifteen men proceeding with cattle into these recently explored regions. Although the whites had firearms the blacks killed seven of them, leaving another so severely wounded that his recovery was deemed hopeless. The winding swamp where this sudden attack by aboriginal natives took place is marked Swampy River on the map, and from the assembling of such a number at that point, exactly midway between the Murrumbidgee and Port Phillip, therefore the most remote from settled parts, and especially from the SUDDENNESS of that attack, the reader may imagine the perilous situation of my party on the Darling and the lower part of the Murray where, had any such attack but commenced successfully, it is extremely improbable that any white man would have returned to the settled districts.)*

October 8.

The windings of the creek were this day more in our way as we proceeded along the valley and, when in doubt whether it would be best for our purpose to cross this channel or one joining it there from the south, I perceived a small hill at no great distance beyond, upon which I halted the party and ascended, when I saw that several ranges previously observed were at no great distance before us. In these ranges a gap to the south-east seemed to be the bed of the river which I knew we were approaching, and which I therefore concluded we should find in the low intervening country. Westward of

the gap or ravine stood a large mass which I thought might be the Mount Disappointment of Mr. Hume.



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ARRIVAL AT, AND PASSAGE OF, THE GOULBURN.

On returning to the party we crossed the channel of the Deegay; but at less than a mile further we were obliged to pass again to the right bank at a point where its course tended northward. Soon after recrossing it we met with a broad dry channel or lagoon, with lofty gum trees of the yarra species on its borders, a proof that the river was at hand; and on advancing three-quarters of a mile further we made the bank of the Goulburn or Hovell, a fine river somewhat larger than the Murrumbidgee.* Its banks and bed were firm; the breadth 60 yards; the mean depth as ascertained by soundings being somewhat more there than two fathoms. The velocity was at the rate of 100 yards in three minutes, or one mile and 240 yards per hour; the temperature of the water 54 degrees Fahrenheit. After having ascertained that this river was nowhere fordable at that time I sought an eligible place for swimming the cattle and horses across and immediately launched the boat. All the animals reached the opposite bank in safety; and by the evening every part of our equipment except the boat-carriage was also across.

(Footnote. This river has been unfortunate in obtaining a variety of names and therefore less objection can be made to my preference of the aboriginal which I ascertained through Piper to be Bayunga. We already have a river Goulburn in New South Wales.)

FISH CAUGHT.

In this river we caught one or two very fine cod-perch, our old friends
Gristes peelii.

CHAPTER 3.13.

Continue through a level forest country.

Ascend a height near the camp, and obtain a sight of snowy summits to the eastward.

Reach a swampy river.

A man drowned.

Pass through Futter's range.

Impeded by a swamp among reeds.

Junction of the rivers Ovens and King.

Ascend granitic ranges.

Lofty mass named Mount Aberdeen.

Reach the Murray.

The river very difficult of access.

A carriage track discovered.

Passage of the river.



Cattle.

Horses.

Party returning to meet Mr. Stapylton.

A creek terminating in a swamp.

Mount Trafalgar.

Rugged country still before us.

Provisions nearly exhausted.

Cattle tracks found.

At length reach a valley leading in the desired direction.

Cattle seen.

Obliged to kill one of our working bullocks.

By following the valley downwards, we arrive on the Murrumbidgee.

Write my despatch.

Piper meets his friends.

Native names of rivers.

CONTINUE THROUGH A LEVEL FOREST COUNTRY.

October 9.

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Having buried on the left bank another letter of instructions for Mr. Stapylton according to certain marks as previously arranged with him, we mounted our boat on the carriage (which had been brought across early in the morning) and continued our journey. I expected to find a ford in this river but, considering the swollen state in which it then was, I instructed Mr. Stapylton to remain encamped on the left bank until the boat should return from the Murray, as beyond that river we were not likely to have further occasion for it. Our way on leaving the Bayunga was rather intricate, being amongst lagoons left by high floods of the river. Some of them were fine sheets of water, apparently much frequented by ducks and other aquatic birds.

LEVEL FOREST COUNTRY.

At exactly 2 1/2 miles from the river we reached the outer bank or berg, and resumed at length the straight course homewards, for I there found a level forest country open before me, through which we travelled about eight miles in a south-east direction. We then encamped near some waterholes which I found on our right, in the surface of a clay soil and close to a plain extending southward. The wood throughout the forest consisted of the box or goborro species of eucalyptus and we crossed, soon after first entering it, a small plain. At 3 1/2 miles from the last camp on this line, the low alluvial bed of the river with a deep lagoon in it as broad as the river itself appeared close to us on the left; and as I had seen some indications of the Bayunga on the other side also, or to our right, it was obvious that we had just met with this river at one of its most western bends, an object I had in view in following down the Deegay from the westward. The forest country traversed by the party this day was in general grassy and good and, as it was open enough to afford a prospect of about a mile around us, we travelled on in a straight line with unwonted ease and facility.

October 10.

We continued our journey homeward through a country of the same character as that seen yesterday, at least for the first five miles, when we came at length to a chain of deep ponds, the second we had encountered that morning. In the bank of this I found a stratum of alluvium; but beyond it the soil was granitic, and banksia was seen there for the first time after crossing the river. At 7 1/4 miles we met with another chain of large ponds, and at 9 miles a running stream flowing to the north-west. After passing over various other chains of ponds we encamped at the end of 14 1/2 miles near the bank of a running stream in which were also some deep pools and which, from some flowers growing there, were named by the men Violet Ponds.

October 11.

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Having turned my course a little more towards the east in order to keep the hills in view, chiefly for the more convenient continuance of the survey, we passed through a country abundantly watered at that time, the party having crossed eight running streams besides chains of ponds in travelling only 14 miles. Towards the end of the day's journey we found ourselves once more on undulating ground, and I at length perceived on my right that particular height which, at a distance of 80 miles back, I had selected as a guiding point in the direction which then appeared the most open part of the horizon, this being also in the best line for reaching the Murrumbidgee below Yass. It was the elevated northern extremity of a range connected with others still more lofty which arose to the south-east. We crossed some undulating ground near its base on which grew trees of stringybark, a species of eucalyptus which had not been previously seen in the forests traversed by us in our way from the river. We next entered a valley of a finer description of land than that of the level forest; and we encamped on the bank of a stream which formed deep reedy ponds, having travelled 14 miles.

As soon as I had marked out the ground for the party I proceeded towards a hill which bore east-south-east from our camp and was distant from it about 5 1/2 miles. On our way an emu ran boldly up, apparently desirous of becoming acquainted with our horses; when close to us it stood still and began quietly to feed like a domestic fowl so that I was at first unwilling to take a shot at the social and friendly bird. The state of our flour however, and the recollection of our one remaining sheep already doomed to die, at length overcame my scruples, and I fired my carabine but missed. The bird ran only to a little distance however, and soon returned at a rapid rate again to feed beside us when, fortunately perhaps for the emu, I had no more time to spare for such sport and we proceeded.

ASCEND A HEIGHT NEAR THE CAMP, AND OBTAIN A SIGHT OF SNOWY SUMMITS TO THE EASTWARD.

The top of the hill was covered thickly with wood, but I saw for the first time for some years snowy pics far in the south-east beyond intermediate mountains also of considerable elevation. There was one low group of heights to the northward, but these were apparently the last, for the dead level of the interior was visible beyond them to the north-west. Further eastward a bold range extended too far towards the north to be turned conveniently by us in our proposed route; but under its high southern extremity (a very remarkable point) its connection with the mountains on the south appeared very low, and thither I determined to proceed. One isolated hill far in the north-western interior had already proved a useful point and was still visible here. I also saw the distant ranges to the eastward beyond the proposed pass just mentioned, and some of these I had no doubt lay beyond the Murray. The hill and range I had ascended consisted of granite, and the country between it and our camp of grassy open forest land.

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October 12.

We passed over a country of similar description and well watered throughout the greater portion of this day's journey. In some parts the surface consisted of stiff clay retaining the surface water in holes, and at ten miles we crossed an undulating ridge of quartz rock; two miles beyond which we encamped near a stream running northward.

REACH A SWAMPY RIVER.

October 13.

At 3 1/4 miles we came to a river of very irregular width and which, as I found on further examination, spread into broad lagoons and swamps bordered with reeds. Where we first approached it the bank was high and firm, the water forming a broad reach evidently very deep. But both above and below that point the stream, actually flowing, seemed fordable and we tried it in various places, but the bottom was everywhere soft and swampy.

A MAN DROWNED.

The man whom I usually employed on these occasions was James Taylor who had charge of the horses and who, on this unfortunate morning, was fated to lose his life in that swampy river. Taylor, or Tally-ho, as the other men called him, had been brought up in a hunting stable in England, and was always desirous of going further than I was willing to allow him, relying too much, as it now appeared, on his skill in swimming his horse, which I had often before prevented him from doing. I had on this occasion recalled him from different parts of the river, and determined to use the boat and swim the cattle and horses to the other side, when Tally-ho proposed to swim over on a horse in order to ascertain where the opposite bank was most favourable for the cattle to get out. I agreed to his crossing thus wherever he thought he could; and he rode towards a place which I conceived was by no means the best, and accordingly said so to him. I did not hear his reply, for he was just then riding into the water, and I could no longer see him from where I stood on the edge of a swampy hole. But scarcely a minute had elapsed when Burnett, going on foot to the spot, called out for all the men who could dive, at the same time exclaiming "the man's gone!" The horse came out with the bridle on his neck just as I reached the water's edge, but of poor Tally-ho I saw only the cap floating on the river. Four persons were immediately in the water—Piper, his gin, and two whites—and at six or eight minutes at most Piper brought the body up from the bottom. It was quite warm and immediately almost all the means recommended in such cases were applied by our medical attendant (Drysdale) who, having come from Newcastle-upon-Tyne, had seen many cases of that description. For three hours the animal heat was preserved by chafing the body, and during the whole of that time the lungs were alternately inflated and compressed, but all without success. With a

sincerity of grief which must always pervade the breasts of men losing one of their number under such circumstances, we consigned the body of poor

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Taylor to a deep grave, the doctor having previously laid it out between two large sheets of bark. I was myself confounded with the most heart-felt sorrow when I turned from the grave of poor Tally-ho, never to hear his bugle blast again.* It was late before we commenced the passage of this fatal river which, although apparently narrow, we could only cross in the same manner in which we had passed the largest, namely, by swimming the cattle and horses, and carrying every article of equipment across in the boat. We effected even thus however the passage of the whole party before sunset; and then encamped on the opposite bank.

(Footnote. How this man could have died in the water in so short a time we did not understand, but it was conjectured that he had received some blow from the horse, until we were subsequently informed when on the Murrumbidgee by a person there who knew Taylor that he was subject to fits, a fact which satisfied us all as to the sudden manner of his death.)

October 14.

As we proceeded the broad swampy bed of this river or morass appeared on our right for a mile, the country being still covered by an open forest of box, having also grass enough upon it. At eight miles we approached some low hills of clay-slate, and I ascended one to the southward of our route from which I recognised a sufficient number of previously observed points to enable me to determine its relative position and theirs. On this hill I found the beautiful *Brownonia* which we had seen before only on Macquarie range beside the Lachlan. We here also met with the rare *Spadostylis cunninghamii*, whose heart-shaped glaucous leaves so much reminded us of the European euphorbias that it would have been mistaken for one of them if it had not been for its shrubby habit and bright yellow pea flowers.

PASS THROUGH FUTTER'S RANGE.

The country crossed beyond this hill was first undulating then hilly, and at length became so much so that it was necessary to pick a way for the carts with much caution. Nevertheless we at length succeeded in crossing this range also at its lowest part where the hill to the northward of it, already mentioned as the end of a range, bore nearly north. On reaching the head of this pass the prospect before us, after winding through such a labyrinth of hills, was agreeable enough. One fertile hollow led to an open level country which appeared to be bounded at a great distance by mountains; and I concluded that I should find in this extensive valley the rivers King and Ovens. Keeping along the verdant flat (which was watered by a good chain of ponds) we encamped about a mile and a half beyond the pass, and I then named that feature above it Futter's range after a successful and public-spirited colonist of New South Wales.

IMPEDED BY A SWAMP AMONG REEDS.

October 15.

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We had not proceeded more than half a mile in the general direction I proposed for our route when a reedy swamp compelled me to turn northward and, after travelling in that direction about a mile and a half, we found the swamp on our right had produced a small stream running nearly on a level with the plain. Its banks were soft and boggy, and beyond it we saw through the trees extensive tracts covered with reeds. I was soon compelled by the rivulet to deviate from my intended route even to the westward of north until, at 10 1/2 miles, on meeting with a chain of ponds falling to the eastward, I turned north-east, which bearing, at less than a mile forward, again brought us upon the stream running from the swamp but which was here flowing between firm banks and forming ponds of some magnitude. We forded it with difficulty by crossing at two points, that we might not break too much the soft earth over which it flowed by the passage of all in one place.

JUNCTION OF THE RIVERS OVENS AND KING.

At two miles further on we met with another stream of less magnitude flowing also to the north-west and at about a mile beyond it we reached the bank of the Ovens, fortunately just below the junction of a rather smaller stream which I took to be King's river.

The two united formed a noble stream finely breaking up the dead levels of the surrounding plains which indeed, where we approached it, formed its highest bank and were there twenty-three feet above the water.

No time was lost in launching our boat, and we effected a passage and encamped on the opposite bank before sunset, having driven all the cattle and horses safely across also, although with considerable difficulty from the steepness of the banks and softness of the soil at the water's edge on the side where they got to land.

October 16.

This morning the river had fallen three inches; its temperature was 59 degrees (of Fahrenheit) the current flowing at the rate of 1 1/4 miles per hour; the mean depth two fathoms; and the width, where measured, 47 yards; the breadth of the river King at the junction being nearly as much. The right bank to the distance of a mile and a half from the river was low and alluvial, and intersected by narrow watercourses and lagoons. On the alluvial flat where we crossed it stood a small isolated hill, between which and the higher ground still farther back water was running, apparently from a swamp, but as soon as we crossed this we reached firm ground and travelled on an open forest plain for nearly eight miles.

ASCEND GRANITIC RANGES.

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We then came upon a hill of granite, and from its summit I perceived that we were already on the northern extremities of the high ranges we had seen from the westward. After travelling some miles along the summits of ridges in order to reach their connection with another range more to the northward, I ascertained, on crossing the highest part of a second ridge, that its northern slopes were very steep and rocky. A hill of considerable height lay before us and therefore, as soon as I had selected a spot for our camp in a little intervening valley, I hastened to it, certainly in doubt how we should extricate the carts from the rocky fastnesses before us. That summit afforded a commanding view of the country beyond the granitic range, and I perceived that it was low to a considerable distance northward, while the ranges beyond that extensive basin seemed of no great elevation to the westward or north-west, and all terminated on the level interior country where the horizon was broken by only one remarkable hill which, as I afterwards learnt, was named Dingee. In that direction I saw also open plains along which I thought I could trace the line of the Ovens. In the lower country before me I hoped to find the Murray, according to the map of Messrs. Hovell and Hume, which in the two rivers we had recently passed seemed wonderfully correct.

LOFTY MASS NAMED MOUNT ABERDEEN.

I again recognised in the south and south-east some of the snowy peaks formerly noticed, and I named the most lofty mass Mount Aberdeen. Beyond what I considered to be the course or bed of the Murray there appeared some steep ranges, to avoid which I chose a course more to the northward than I should otherwise have pursued in my way towards Yass. Before I returned to the camp I sought and succeeded in finding and marking out, a line of route by which the carts could be conducted across these rocky ranges and down to the lower country beyond them. On that range we found a handsome blue flower which I had previously seen growing abundantly on Bowral range near Mittagong within the present colony. We found in these valleys abundance of good grass.

October 17.

We descended from the higher range without difficulty, and then crossed several low ridges of quartz and clay-slate extending westward; some flats of good land lay between these ridges and, at about 6 miles, we met with a creek or chain of ponds. At 13 1/2 miles we entered a rich plain terminating northward at a low but remarkable hill which I had observed from the mountains.

REACH THE MURRAY.

The grass grew luxuriantly on this plain and after crossing and passing through the forest beyond it I recognised with satisfaction the lofty yarra trees and the low verdant alluvial flats of the Murray. No one could have mistaken this grand feature; for the vast extent of verdant margin with lofty trees and still lakes could belong to no other

Australian river we knew of. On descending the berg or outer bank which was sloping and grassy, I found the still lagoons so numerous that I could not, without very great difficulty and after a ride of nearly an hour, obtain a sight of the flowing river. I found it at length running bank-high and still of greater width than any other known Australian river.

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THE RIVER VERY DIFFICULT OF ACCESS.

The water was then just beginning to pour over its borders into the alluvial margins by which I had approached it; and on the opposite side the border consisted of a reedy swamp, evidently impassable and unfit for a landing-place. In no direction could I find access for our carts to the running stream. Deep and long winding reaches of still water shut me out, either from the high berg or bank at one part, or from the flowing stream at another. Returning from the river in a different direction I found, in a situation where I had nearly gained as I imagined the high bank after riding a mile, that a deep reach still separated me from that high bank which I then saw was beyond it, so that in order to return to the carts I was obliged to retrace my steps for several miles. Having got round at length I ascended the hill before mentioned for the purpose of taking some angles, and I found that it consisted of granite, the component parts being white quartz and felspar and black mica. I named this remarkable feature, probably the lowest hill of granite on the Murray, Mount Ochertyre. I had sufficient daylight left to conduct the party over part of this hill to a portion of the riverbank accessible then to carts by fording only one lagoon. The velocity of the Murray at the spot where we could thus approach its border exceeded that of any other river we had previously crossed, being at the rate of 2 1/2 miles per hour.

October 18.

At daylight this morning the boat was sent across with Burnett and Piper, who landed to examine the ground within the reeds on that bank; and they ascertained it was so intersected by various deep lagoons that we could no longer hope to pass that way. I next went down the river in the boat and found at about a mile and a half below our camp a place where I thought we might effect a passage. This point was under a steep bank of red earth on the opposite shore where the river seemed to be encroaching.

A CARRIAGE TRACK DISCOVERED.

We landed and endeavoured to ascertain by looking for cattle marks whether any stations were near; and having heard that the flocks of the settlers already extended to the Murray we proceeded northward, eager to discover the tracks of civilised men. The wheels of a gig drawn by one horse and accompanied by others were traced by Piper, but the impressions were several months old. We walked as far as a spacious plain at some distance from the river without seeing any more recent tracks; and we were at length convinced that no station extended then in the immediate neighbourhood. The left bank between the spot where our camp then was and the crossing-place which I had selected was low though apparently firm; but on landing and returning along it I met with several narrow channels into which water was then flowing from the river and which afterwards cost us considerable trouble to cross with our carts.

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PASSAGE OF THE RIVER.

That part of the bank which I had selected for driving the cattle into the river, that they might swim over, was soft and boggy, but in the opposite shore where they were to go out we cut in the firm clay at the base of the red cliff before mentioned a landing-place and path with picks and spades, so that the cattle on reaching that side could pass along the foot of the cliff to a lower part of the bank adjacent. After all other obstacles had been surmounted and the best portion of the day had been spent in conducting the party to within a short distance of this place my horse unexpectedly sunk in what had appeared to be firm ground.

CATTLE.

This impediment the party however overcame by cutting down some brush and small trees, and opening a lane through which we at length contrived to bring the cattle forward to the bank. It was near sunset before they could be driven into the water; yet we finally succeeded in forcing the whole to swim to the other side that evening with the exception of one bullock which, having got bogged, was smothered in the mud on the first rush of the others into the water. The landing of some of these animals on the opposite bank was attended with difficulty for they did not all make for the proper place, some turning towards the bank they had left and endeavouring to re-ascend it much lower down where the banks were either too soft or inaccessible: others swimming straight down the stream turned to parts of the opposite bank which they could not climb. With these last I was prepared to contend, having taken my station in the boat to watch such contingencies; and by dragging the foremost of those who had swum back across the river by the horns, and those which had arrived at the wrong place out with ropes; we succeeded at length in forcing all that had floated too far down to land on the right bank. But the greater number had got out higher up the river upon some fallen portions of the red cliff instead of taking the path we had cut under it; and the footing there was so slight that, as they crowded on each other, groups fell, from time to time, back into the river. The last part of the operation was therefore to row towards these, when Woods, who was in the boat, soon induced one of the bullocks well-known to him to take the path, upon which all the rest followed until they reached the grassy flat where others more fortunate than themselves were already feeding. At the close of this laborious day I encamped on the right bank, leaving still on the other side however a small party in charge of the horses and carts. The day was extremely hot and the full and flowing river gave an unusual appearance of life and motion to the desert whose wearisome stillness was so unvarying elsewhere. Serpents were numerous and some were seen of a species apparently peculiar to this river. Here they invariably took to it, and one beautiful reptile in particular, being of a golden colour with red streaks, sprang from under my horse's feet and rode upon the strong current of the boiling stream, keeping abreast of us and holding his head erect, as if in defiance and without once attempting to make off, until he died in his glory by a shot from Roach.

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HORSES.

October 19.

The first half of this day was required for the passage of the horses one by one; and for taking the carts across. We left the boat carriage on the left bank and sunk the boat in a deep lagoon on the right bank, to remain there until the party should return to the spot with a stock of provisions for Mr. Stapylton. Here the last mountain barometer, which had been carried in excellent order throughout the journey, lost mercury so copiously that I could not hope to use it any more, time being then too valuable to admit of delay; and thus my list of observations terminated on the Murray. I supposed that the intense heat of the sun to which the instrument had been exposed when tied to a tree for some hours after the tents had been struck had contracted the leathern bag so much as to loosen it from the edges of the cylinder, and thus formed openings through which the mercury had escaped. The breadth of the Murray was 80 yards at the place where we crossed it and the mean depth was 3 1/2 fathoms. At length I saw with great satisfaction my party on the right bank of this great river; having now no other stream to cross until we reached the Murrumbidgee where we might consider ourselves at home.

PARTY RETURNING TO MEET MR. STAPYLTON.

Just at this time Archibald McKane, a carpenter, came forward and proposed to return with any two of the men and the native Tommy to meet the party coming after us upon the Goulburn; and to construct there such rafts of casks and other gear as might enable Mr. Stapylton to cross that river and the Ovens and so come forward to the Murray; an arrangement which would render it unnecessary for me to send back any cattle or the boat as intended. I was much pleased with the proposal of McKane and, Tommy Came-last being also willing to return, I appointed John Douglas, a sailor and most handy man, and Charles King, a man who feared nothing, to accompany McKane. Full rations were issued to the four and, having given them a letter for Mr. Stapylton, the little party returned towards the houseless wilds, when we left the Murray to continue our journey homewards. Although we did not set off before one o'clock we this day travelled fourteen miles, but did not encamp till long after sunset. The scarcity of water compelled us to travel thus far, for none had been seen except one small muddy pool until I reached the valley where we encamped, and even there we found little more than enough for ourselves and cattle.

October 20.

After travelling five miles over tolerable land we crossed a range of very fine-grained granite consisting of felspar, quartz, and small particles of mica and having a very crystalline aspect. This range was a branch from a higher mass on our right. At seven miles we crossed the shoulder of a hill whence I intersected others to the right. This

also consisted of fine-grained granite, similar to that of the other hill, but it was not so red and had fewer spangles of mica.

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A CREEK TERMINATING IN A SWAMP.

At eight miles we came to a chain of deep ponds which seemed a tributary to some greater water, as indicated by the yarra trees and flats before us, apparently covered with verdure. On advancing into these flats however we found them soft and swampy, being so very wet and so covered with dead trees that we were obliged to retrace our steps and turn eastward, thus crossing to a higher bank altogether east of the chain of ponds; and along this we proceeded without seeing any further continuance of the deep serpentine channel, full of water, which appeared to terminate there. That woody swamp seemed very extensive and was the only instance met with in the course of our travels of the termination of a stream in a swamp, although I understood subsequently that this was the fate of various minor brooks descending towards that part of the interior plains. We found there a curious black-headed grass which proved to be of the *carex* genus. At 11 1/2 miles we arrived at a running stream, its course being northward; and at 15 1/2 miles we reached a very fine little rivulet flowing between grassy banks twenty-five feet high, the soil consisting of a red earth similar to that on the interior plains and the banks of the Murray.

MOUNT TRAFALGAR. RUGGED COUNTRY STILL BEFORE US.

October 21.

At five miles we were abreast of a pointed hill which I ascended and named Mount Trafalgar in honour of that memorable day. From it I obtained a view of the country before us, and I perceived in the direction of our intended route some high cone-shaped hills. A ridge extended from them to the westward, but its height seemed gradually to diminish in that direction, although it presented two very abrupt and remarkable hills whose steepest side being towards the north overlooked as I supposed the spacious basin of the Murrumbidgee. One solitary mount appeared much farther to the westward and was also steep-sided towards the north. On descending I shaped my course towards the hollow where the ridge could be most easily crossed. At 8 3/4 miles we met with some good ponds of water and beyond them the winding channel of a smaller watercourse falling southward from the range already mentioned. After crossing and recrossing this channel and its various branches we at length gained the crest of the range, and I directed the party to halt while I hastened to a conical summit on the left, apparently the highest and most pointed of those previously observed. It consisted of syenite and from it I obtained a very extensive view to the northward, but yet could not see any favourable opening in the direction in which I wished to reach the Murrumbidgee: on the contrary as we reduced our distance from home the obstacles to our reaching it seemed to increase.

PROVISIONS NEARLY EXHAUSTED.

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Our provisions had been counted out to a day, and any delay beyond the time required to cross that country at our usual rate of travelling might have been attended with great inconvenience. Mr. Stapylton's party, then so far behind, were depending upon us for supplies; while a labyrinth of mountains, entirely without roads or inhabitants, was to be crossed in a limited time with carts before any such supplies could be obtained and sent back. Some high and distant mountains appeared to the eastward, and in the west I intersected the hills I had previously seen which were now much nearer to us. On returning from the hill to the party we descended from the range into some flats of good open land where a solitary kangaroo became an object of intense interest now that our provisions were exhausted. The week was out for which the last of our stock had been issued in very small rations; and although most of the men had endeavoured to make this very reduced week's allowance to last them nine days no mutton remained, nor could it well have been preserved during such hot weather. This kangaroo would have been therefore a most welcome addition to our store; but we had no dogs and I was so anxious as to venture a shot at too great a distance and to our great disappointment it escaped. We finally encamped in a valley which fell to the right or eastward, near some good ponds, and after performing a journey of upwards of 15 miles. I found near the hill I first ascended in the morning a new kind of grass with large seeds.*

(Footnote. *Danthonia eriantha*, Lindley manuscripts; *panicula subcoarctata lanceolata*, *spiculis sub-4-floris gluma laevi multo brevioribus*, *palea exteriori laevigata basi apiceque villosissima*, *aristis lateralibus subulatis debilibus intermedia brevioribus*, *foliis setaceis vaginisque patentim pilosis*, *collo barbato*.)

October 22.

Soon after we set out this morning we approached a range of barren hills of clay-slate on which grew the grass tree (*xanthorrhoea*) and stunted eucalypti. On ascending this range I perceived before me a deep ravine, and beyond it hills less promising than even these which were sufficiently repulsive to travellers with wheel-carriages. Turning therefore from that hopeless prospect towards the eastward, we crossed the head of a valley falling to the right, and after a somewhat tortuous course we gained the highest part of a range beyond it, from which a grassy vale descended on the opposite side towards the north-east. This vale turned to the left after we had followed it 2 1/4 miles and we next crossed a ridge of quartz rock.

CATTLE TRACKS FOUND.

Beyond the ridge the natives found some old cattle tracks and this intelligence very much pleased and encouraged the men.

BURNETT'S RIVULET.

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At two miles farther on we came upon a little rivulet flowing to the westward through a good grassy valley, and it was joined about the place where we came upon it by one coming from the south. The stream washed the base of a lofty mountain which I ascended while the people were passing our carts, cattle, and equipment across the rivulet which I named after my trusty follower Burnett.* The mountain consisted of granite and was so smooth that I could ride to its summit. The weather was boisterous and the country which that height presented to my view seemed quite inaccessible, at least in the direction of the colony where:

Hills upon hills and alps on alps arose.

(Footnote. See figure with the fowling-piece in Plate 17 Volume 1.)

IMPEDIMENTS IN THE ROUTE.

The only valley of any extent which could be seen was that watered by the rivulet below, and this extended, as I have stated, to the westward, a direction in which we could not follow it with any prospect of either getting nearer home or reaching a cattle station. Our provisions were exhausted, while the rocky fastnesses of a mountain region still threatened to shut us out from the Murrumbidgee, a river on whose banks we hoped to meet with civilised people once more and which, according to the map, was almost within our reach. Again and again I examined the mountains with my glass, and only discovered that they were numerous and all ranging towards the north-west, a direction right across our way to the Murrumbidgee. I could indeed trace among the hills in the north the grand valley through which the river flowed, but the intervening ranges seemed to deny any access to it from this side. I was determined however to find some valley likely to lead us into that of the Murrumbidgee, and although it could only be looked for beyond that mountain range, our route had been so good and so direct thus far, from the very shores of the southern ocean, that I could not despair of crossing the comparatively small space occupied by these mountains; and I descended the hill firmly resolved to continue our course in the same direction as we best could. I found on reaching the foot that, to the delight of the men, more cattle marks had been discovered in the valley, and in one place Piper pointed out a spot where a bullock had been eaten by the natives. Following the little stream upwards I at length placed our camp in a grassy valley near its head and then, on riding forward, I found that no obstruction existed to our progress with the carts on the following day for at least several miles.

October 23.

The hills we ascended offered much less impediment than I had reason to apprehend when I surveyed them at a distance, but they became at length so steep-sided and sharp-pointed that to proceed further, even by keeping the crests of a range, seemed a very doubtful undertaking: to cross such ranges was still more difficult while the

principal chain, which led to the south-east, appeared equally impracticable even had its direction been more favourable.

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AT LENGTH REACH A VALLEY LEADING IN THE DESIRED DIRECTION.

Drizzling rain came on and prevented me from seeing far beyond the point we had reached when I at length halted the party and, taking Piper with me, descended into a valley before us in order to ascertain its general direction and whether the carts might not pass along it. We found in this valley the tracks not of cattle only but of well shod horses: we also discovered that it opened into extensive green flats and, its direction being northerly, I hastened back and conducted the party into it by the best line of descent I could find, although it was certainly very steep. Having got safe down with our carts we found excellent pasturage, the cattle marks being very numerous and at length quite fresh, even the print of young calves' feet appeared, and all the traces of a numerous herd.

WILD CATTLE SEEN.

In short cattle tracks resembling roads ran along the banks of the chain of ponds which watered this valley; and at length the welcome sight of the cattle themselves delighted our longing eyes, not to mention our stomachs which were then in the best possible state to assist our perceptions of the beauty of a foreground of fat cattle. We were soon surrounded by a staring herd consisting of at least 800 head, and I took a shot at one; but my ball only made him jump, upon which the whole body, apparently very wild, made off to the mountains.

OBLIGED TO KILL ONE OF OUR WORKING BULLOCKS.

Symptoms of famine now began to show themselves in the sullenness of some of the men, and I most reluctantly allowed them to kill one of our poor working animals, which was accordingly shot as soon as we encamped and divided amongst the party.

BY FOLLOWING THE VALLEY DOWNWARDS, WE ARRIVE ON THE MURRUMBIDGEE.

The valley preserved a course somewhat to the westward of north, and I now felt confident that by following it downwards we should reach the Murrumbidgee without meeting further impediment. This unexpected relief from the hopeless prospects of the drizzling morning was infinitely more refreshing to me than any kind of food could possibly have been, even under such circumstances.

October 24.

As we continued our journey downwards the waterholes in the chain of ponds became small and scarce, while we found the cattle-tracks more and more numerous. No change took place in the character of the valley for nine miles; but I recognised then at no great distance the hills which on the 22nd I had supposed to lie beyond the



Murrumbidgee. On riding to a small eminence on the right I perceived the dark umbrageous trees overshadowing that noble river, and close before me the rich open flats with tame cattle browsing upon them, or reclining in luxuriant ease, very unlike the wild herd. The river was flowing westward over a gravelly bottom, its scenery being highly embellished by the lofty casuarinae, whose sombre masses of darkest

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green cover the water so gracefully and afford both coolness and shade. Now we could trace the marks of horsemen on the plain; and as we travelled up the river horses and cattle appeared on both banks. At length we discovered a small house or station and a stockyard. On riding up to it an old man came to the door, beating the ashes from a loaf nearly two feet in diameter. His name was Billy Buckley and the poor fellow received us all with the most cordial welcome, supplying us at once with two days' provisions until we could send across the river for a supply. Just then several drays appeared on the opposite side, coming along the ROAD from Sydney, and these drays contained a supply from which Mr. Tompson the owner accommodated me with enough to send back to meet Mr. Stapylton on the banks of the Murray.

WRITE MY DESPATCH.

Having pitched my tent close by the house of my new friend Billy, I wrote a brief account of our proceedings to the government while my horses were permitted to rest two days preparatory to my long ride to Sydney.

PIPER MEETS HIS FRIENDS.

Piper's joy on emerging from the land of Myalls (or savages) was at least as great as ours, especially when he met here with natives of his acquaintance—"CIVIL blackfellows," as he styled them, bel (not) Myalls. He was at least a Triton among the minnows, and it was pleasant to see how much he enjoyed his lionship among his brethren. Little Ballandella had been taken great care of by Mrs. Piper and was now feasted with milk and seemed quite happy.

NATIVE NAMES OF RIVERS.

I learnt from the natives we found here their names for the greater rivers we had passed, and of some of the isolated hills. Everywhere the Murray was known as the Millewa; but I was not so sure about Bayunga, a name which I had understood to apply to the Goulburn, Hovell or Ovens.

A STOCK-KEEPER'S HOSPITALITY.

When Billy Buckley, who was only a stockkeeper at that station, saw my party arrive and was at length aware who we were, he came to me when enjoying a quiet walk on the riverbank at some distance from his house, carrying in his hand a jug of rich milk and a piece of bread which I afterwards learnt, with dismay, had been baked in butter. I felt bound in civility to partake of both, but the consequence was an illness which very much interfered with my enjoyment of that luxuriant repose I had anticipated in my tent, under the shade of the casuarinae on the brink of the living stream.



CHAPTER 3.14.

Agreeable travelling.
Appearance of the country on the Murrumbidgee.
Jugion Creek.
Brunonia abundant.
Yass plains.
The Gap, an inn.
Bredalbane plains.
Lake George.
Soil and rocks.
The Wollondilly.
Goulburn plains.
A garden.
Public works.
Shoalhaven river.
Limestone caverns there.
County of St. Vincent.

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Upper Shoalhaven.
Carwary.
Vast subsidence on a mountain there.
Goulburn township.
Great road.
Towrang hill.
The Wollondilly.
Wild country through which it flows.
The Nattai.
Moyengully.
Arrive at the line of great road.
Convict workmen.
Berrima bridge.
Berrima.
Trap range.
Sandstone country.
The Illawarra.
Lupton's inn.
The Razorback.
Ford of the Nepean.
Campbelltown.
Liverpool.
Lansdowne bridge.
Arrive at Sydney.
General remarks on the character of the settled country.
Fires in the woods.
Necessity for cutting roads.
Proportion of good and bad land.
Description of Australia Felix.
Woods.
Harbours.
The Murray.
Mr. Stapylton's report.
The aboriginal natives.
Turandurey.
My mode of communicating with Mr. Stapylton.
Survey of the Murrumbidgee.
Meteorological journal.
Arrival of the exploring party at Sydney.
Piper.



The two Tommies.
Ballandella.
Character of the natives of the interior.
Language.
Habits of those of Van Diemen's Land the same.
Temporary huts.
Mode of climbing trees.
Remarkable customs.
Charmed stones.
Females excluded from superstitious rites.
Bandage or fillet around the temples.
Striking out the tooth.
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Raised scars on arms and breast.
Cutting themselves in mourning.
Authority of old men.
Native dogs.
Females carrying children.
Weapons.
Spear.
Woomera.
Boomerang.
Its probable origin.
Shield or Hieleman.
Skill in approaching the kangaroo.
Modes of cooking.
Opossum.
Singeing.
Vegetable food.
The shovel.
General observations.

AGREEABLE TRAVELLING.

October 27.

Brightly shone the sun, the sky was dressed in blue and gold and "the fields were full of star-like flowers, and overgrown with joy,"* on the first day of my ride homeward along the green banks of the Murrumbidgee, having crossed the river in a small canoe that morning. Seven months had elapsed since I had seen either a road or a bridge although during that time I had travelled over two thousand four hundred miles. Right glad was I, like Gilpin's horse, "at length to miss the lumber of the wheels," the boats, carts, specimens, and last but not least, Kater's compasses. No care had I now whether my single step was east or north-east, nor about the length of my day's journey, nor the hills or dales crossed, as to their true situation, names, or number, or where I should encamp. To be free from such cares seemed heaven itself, and I rode on



without the slightest thought about where I should pass the night, quite sure that some friendly hut or house would receive me and afford snugger shelter and better fare than I had seen for many a day.

(Footnote. Remains of Peter Corcoran. Blackwood's Magazine.)

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APPEARANCE OF THE COUNTRY ON THE MURRUMBIDGEE.

We had arrived on the Murrumbidgee seventy-five miles below the point where that river quitted the settled districts and ceased to form a county boundary. I found the upper portion of this fine stream fully occupied as cattle-stations, which indeed extended also, as I was informed, much lower down the river; and such was the thoroughfare in that direction that I found a tolerable cart road from one station to another. I passed the night at the house of a stockman in charge of the cattle of Mr. James Macarthur, and I was very comfortably lodged.

October 28.

With the Murrumbidgee still occasionally in view we pursued the road which led towards Sydney. Each meadow was already covered with the lowing herds for which it seemed to have been prepared; and the traces of man's industry were now obvious in fences, and in a substantial wooden house and smoking chimney, usually built in the most inviting part of each cattle run. All the animals looked fat and sufficiently proved the value of the pasturage along this river. Steep and rugged ridges occasionally approached its banks and, in following the beaten track, I this day crossed acclivities much more difficult for the passage of wheel-carriages than any we had traversed throughout those uncultivated wastes, where even the pastoral age had not commenced.

The scenery at various points of the river seen this day was very beautiful; its chief features consisting of noble sheets of water, umbrageous woods, flowery meadows, enlivened by those objects so essential to the harmony of landscape, cattle of every hue.

The gigantic and luxuriant growth of the yarra eucalyptus everywhere produced fine effects; and one tree in particular pleased me so much that I was tempted to draw it, although the shades of evening would scarcely permit; but while thus engaged I sent my servant forward to look for some hut or station that I might remain the longer to complete my drawing.

JUGION CREEK.

I arrived long after dark at a cattle-station occupied by a superintendent of Mr. Henry O'Brian, near Jugion Creek on the right bank of the Murrumbidgee, and there passed the night. Two considerable rivers join this creek from the mountainous but fine country to the southward, one being named the Coodradigbee, the other the Doomot. The higher country there is granitic although, on both rivers, limestone also abounds in which the corals seem to belong to Mr. Murchison's Silurian system. Favosites, Stromatopora concentrica, Heliopora pyriformis, and stems of crinoidea are found loosely about the surface. There is also a large rock of haematite under Mount Jellula.



BRUNONIA ABUNDANT.

October 29.

The road led us this day over some hilly country of a rather poor description, but the beautiful flower Brunonia grew so abundantly that the surface exhibited the unusual and delicate tint of ultramarine blue. I was tempted once more to forsake the road in order to ascend a range which it crossed in hopes of being able to see, from some lofty summit thereof, points of the country I had left, and thus to connect them by means of my pocket sextant with any visible points I might recognise of my former trigonometrical survey. It was not however in my power to do this satisfactorily, not having been able to distinguish any of the latter.



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YASS PLAINS.

Towards evening I drew near Yass Plains and was not a little struck with their insignificance as compared with those of the south. A township had been marked out here, and the comfortable establishments of various wealthy colonists evinced, by their preference of these plains, that they considered them the best part of a very extensive district.

THE GAP, AN INN.

Mr. Cornelius O'Brien had invited me to his house and afterwards furnished me with a supply of provisions for my party; but I carried my own despatches, and a much shorter route led to the left by which I could divide the way better in continuing my ride to the Gap, a small inn where I arrived at a very late hour, the road having been soft, uneven, and wholly through a dreary wood.

The noise and bustle of the house was quite refreshing to one who had dwelt so long in deserts, although it seemed to promise little accommodation, for there had been races in the neighbourhood and horses lay about the yard. Nevertheless the waiter and his wife cleared for my accommodation a room which had been full of noisy people, and my horses were soon lodged snugly in the stable. There indeed I perceived more room than the house afforded, for while the guests were regaling within their horses were allowed to lay about to starve outside, as if so many gypsies had been about the place; no uncommon circumstance in Australia.

October 30.

In the course of my ride this morning I recognised the poor scrubby land about the southern boundary of the county of Argyle, which I had surveyed in 1828. The wood on it is rather open, consisting of a stunted species of eucalyptus, the grass, apparently a hard species of poa, affording but little nourishment. Sandstone and quartz are the predominant rocks although some of the most remarkable hills consist of trap.

BREDALBANE PLAINS.

Passing at length through a gap in a low ridge of granular quartz, we entered upon Bredalbane plains, consisting of three open flats of grassy land circumscribed by hills of little apparent height, and extending about twelve miles in the direction of this road, their average width being about two miles. Deringullen ponds arise in the most southern plain, and are among the most eastern heads of the Lachlan. The plains are situated on the high dividing ground or water shed between the streams falling eastward and westward, and had probably once been lagoons of the same character as those which still distinguish other portions of this dividing ground.

LAKE GEORGE.

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The most remarkable of these is Lake George, about fourteen miles further to the south, and which in 1828 was a sheet of water seventeen miles in length and seven in breadth. There is no outlet for the waters of this lake although it receives no less than four mountain streams from the hills north of it, namely Turallo creek, whose highest source is fourteen miles from the lake, Butmaro creek which arises in a mountain sixteen miles from it, Taylor's creek from the range on the east, six miles distant, and Kenny's creek from hills five miles distant. The southern shore of this lake presents one continuous low ridge, separating its waters from the head of the Yass river which would otherwise receive them. The water was slightly brackish in 1828 but quite fit for use, and the lake was then surrounded by dead trees of the eucalyptus measuring about two feet in diameter, which also extended into it until wholly covered by the water. In that wide expanse we could find no fish, and an old native female said she remembered when the whole was a forest, a statement supported pro tanto by the dead trees in its bed as well as by the whole of the basin being in October 1836 a grassy meadow not unlike the plains of Bredalbane.

It would be well worth the attention of a man of leisure to ascertain the lowest part in the country around Lake George, at which its waters, on reaching their maximum height, would overflow from its basin.

Several lagoons, apparently the remains of more extensive waters, occur between Lake George and Bredalbane plains in the line of watershed as already observed. These are named Tarrago, Mutmutbilly, and Wallagorong, the latter being apparently a residuum of the lake which probably once covered the three plains of Bredalbane.

SOIL AND ROCKS.

The quality of the soil now found in the patches of grassy land on the margins of these lakes and lagoons depends on the nature of the high ground nearest to them. The hills to the eastward of Lake George are chiefly granitic. Ondyong point on its northern shore consists of sandstone resembling that of the coal-measures; and the rock forming the range above the western shores is of the same quality. The hills at the source of Kenny's creek consist of trap, of which rock there is also a remarkable hill on the southern side of Bredalbane plains; and these plains are bounded on the north by a ridge of syenite, which here forms the actual division between the sources of the rivers Lachlan and Wollondilly.

The water in the smaller lagoons westward of Lake George is perfectly sweet, and the pasturage on the plains adjacent being in general very good, the land is occupied by several extensive grazing establishments.

THE WOLLONDILLY.



On entering the valley of the river Wollondilly which waters Goulburn plains, I was surprised to see its waters extremely low and not even flowing. The poor appearance of the woods also struck me, judging by comparison with the land in the south; and although the scantiness of grass, also observable, might be attributed to the great number of sheep and cattle fed there, I was not the less sensible of the more parched aspect of the country generally.

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GOULBURN PLAINS.

Goulburn Plains consist of open downs affording excellent pasturage for sheep and extending twenty miles southward from the township, their breadth being about ten.

A GARDEN.

I reached at twilight the house of a worthy friend, Captain Rossi, who received me with great kindness and hospitality. The substantial improvements which he had effected on his farm since my last visit to that part of the colony evinced his skill and industry as a colonist; while an extensive garden and many tasteful arrangements for domestic comfort marked the residence of a gentleman. Under that hospitable roof I exchanged the narrative of my wanderings for the accumulated news of seven months which, with my friend's good cheer, rendered his invitation to rest my horses for one day quite irresistible.

October 31.

A walk in the garden; a visit to the shearing shed; the news of colonial affairs in general; fat pullets cooked a la gastronome and some good wine; had each in its turn rare charms for me.

PUBLIC WORKS.

I had arrived in a country which I had myself surveyed; and the roads and towns in progress were the first fruits of these labours. I had marked out in 1830 the road now before me, which I then considered the most important in New South Wales as leading to the more temperate south, and I had now completed it as a line of communication between Sydney and the southern coasts. This important public work on which I had bestowed the greatest pains by surveying the whole country between the Wollondilly and Shoalhaven rivers, had been nevertheless retarded nearly two years on the representations of some of the settlers, so that the part most essential to be opened continued still in a half finished state.*

(Footnote. A petition had been got up in favour of another line said to be more direct; and it is a remarkable fact that numerous signatures were obtained even to such a petition, although it was found at last that the line laid down after a careful survey was not only twelve chains shorter than the other proposed but also avoided the steepest hills.)

SHOALHAVEN RIVER.

The Shoalhaven river flows in a ravine about 1500 feet below the common level of the country between it and the Wollondilly. Precipices consisting at one part of granite and at another of limestone give a peculiar grandeur to the scenery of the Shoalhaven river.

LIMESTONE CAVERNS THERE.

The limestone is of a dark grey colour and contains very imperfect fragments of shells. We find among the features on these lofty riverbanks many remarkable hollows not unaptly termed hoppers by the country people, from the water sinking into them as grain subsides in the hopper of a mill. As each of these hollows terminates in a crevice leading to a cavern in the limestone below, I descended into one in 1828 and penetrated without difficulty to a considerable depth

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over slimy rocks, but was forced to return because our candles were nearly exhausted. A current of air met us as we descended and it might have come from some crevice probably near the bed of the river. That water sometimes flowed into these caverns was evident from pieces of decayed trees which had been carried downwards by it to a considerable depth. I looked in vain there for fossil bones, but I found projecting from the side of the cavern at the lowest part I reached a very perfect specimen of coral of the genus *favosites*.

COUNTY OF ST. VINCENT.

The country to the eastward of the Shoalhaven river, that is to say between it and the sea-coast, is very wild and mountainous. The higher part including Currocilly and the Pigeon house (summits) consists of sandstone passing from a fine to a coarse grain, occasionally containing pebbles of quartz, and in some of the varieties numerous specks of decomposed felspar. The lower parts of the same country, according to the rocks seen in Yalwal creek, consist of granite, basalt, and compact felspar. Nearer the coast a friable whitish sandstone affords but a poor soil, except where the partial occurrence of decomposed laminated felspar and gneiss produced one somewhat better. This country comprises the county of St. Vincent, bounded on one side by the Shoalhaven river and on the other by the sea-coast. The southern portion of that county affords the greatest quantity of soil available either for cultivation or pasture; although around Bateman Bay, which is its limit on the south, much good land cannot be expected as Snapper Island at the entrance consists of grey compact quartz only, with white veins of crystalline quartz.

UPPER SHOALHAVEN.

The country on the upper part of the Shoalhaven river comprises much good land. The river flows there nearly on a level with the surface and resembles an English stream. The temperature at the elevation of about 2000 feet above the sea is so low even in summer that potatoes and gooseberries, for both of which the climate of Sydney is too hot, grow luxuriantly. A rich field for geological research will probably be found in that neighbourhood.

CARWARY.

In a hasty ride which I took as far as Carwary in 1832, I was conducted by my friend Mr. Ryrrie to a remarkable cavern under white marble where I found trap; a vein of ironstone of a fused appearance; a quartzose ferruginous conglomerate; a calcareous tuff containing fragments of these rocks; and specular iron ore in abundance near the same spot.

But still further southward and on the range separating the country at the head of the Shoalhaven river from the ravines on the coast, I was shown an antre vast which, for aught I know, may involve in its recesses more of the wild and wonderful than any of the deserts idle which I have since explored.

VAST SUBSIDENCE ON A MOUNTAIN THERE.

A part of the surface of that elevated country had subsided, carrying trees along with it to the depth of about 400 yards, and left a yawning opening about 300 yards wide resembling a gigantic quarry, at the bottom of which the sunken trees continued to grow. In the eastern side of the bottom of this subsidence a large opening extended under the rock and seemed to lead to a subterraneous cavity of great dimensions.



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GOULBURN TOWNSHIP.

November 1.

Taking leave of my kind host at an early hour, I continued my ride, passing through the new township in which, although but few years had elapsed since I had sketched its streets on paper, a number of houses had already been built. The Mulwary Ponds scarcely afford sufficient water of the supply of a large population there; but at the junction of this channel with the Wollondilly there is a deep reach not likely to be ever exhausted.

GREAT ROAD.

The road marked out between this township and Sydney led over a country shut up, as already stated, between the Wollondilly and the Shoalhaven rivers. These streams are distant from each other at the narrowest part of the intervening surface about ten miles; and as each is bordered by deep ravines the middle portion of the country between them is naturally the most level, and this happens to be precisely in the direction most desirable for a general line of communication between Sydney and the most valuable parts of the colony to the southward.

TOWRANG HILL.

At a few miles from Goulburn the road passes by the foot of Towrang, a hill whose summit I had formerly cleared of timber, leaving only one tree. I thus obtained an uninterrupted view of the distant horizon, and found the hill very useful afterwards in extending our survey from Jellore into the higher country around Lake George. This hill consists chiefly of quartz rock. At its base the new line leaves the original cart track which here crossed the Wollondilly twice. I now found an intermediate road in use between the old track and my half-formed road which was still inaccessible at this point for want of a small bridge over Towrang Creek.

THE WOLLONDILLY.

The Wollondilly pursues its course to the left, passing under the southern extremity of Cockbundoon range, which extends about thirty miles in a straight line from north to south, and consists of sandstone dipping westward. Near the Wollondilly and a few miles from Towrang a quarry of crystalline variegated marble has been recently wrought to a considerable extent, and chimney-pieces, tables, *etc.* now ornament most good houses at Sydney. This rock occurs in blocks over greenstone, and has hitherto been found only in that spot.

WILD COUNTRY THROUGH WHICH IT FLOWS.

The channel of the Wollondilly continues open and accessible for a few miles lower down than this, but after it is joined by the Uringalla near Arthursleigh it sinks immediately into a deep ravine and is no longer accessible as above, the country to the westward of it being exceedingly wild and broken. The scene it presented when I stood on the pic of Jellore in 1828 and commenced a general survey of this colony was of the most discouraging description.* A flat horizon to a surface cracked and hollowed out into the wildest ravines, deep and inaccessible; their sides, consisting of perpendicular rocky cliffs, afforded

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but little reason to suppose that it could be surveyed and divided as proposed into counties, hundreds, and parishes; and still less was it likely ever to be inhabited, even if such a work could be accomplished. Nevertheless it was necessary in the performance of my duties that these rivers should be traced, and where the surveyor pronounced them inaccessible to the chain, I clambered over rocks and measured from cliff to cliff with the pocket sextant. Thus had I wandered on foot by the murmuring Wollondilly, sometimes passing the night in its deep dark bed with no other companions than a robber and a savage. I could now look back with some satisfaction on these labours in that barren field. I had encompassed those wild recesses; the desired division of the rocky wastes they enclosed had really been made; and if no other practical benefit was derived we had at least been enabled to open ways across them to better regions beyond.

(Footnote. My predecessor in office had declared the operation to be impracticable in such a country; but to this general survey I was pledged on accepting my appointment in London. Two other commissioners for the division of the territory were each receiving a guinea a day, but yet could do nothing until this survey was accomplished; and I therefore set about the work with the resolution necessary for the performance of what was deemed almost impossible. Universal wood, impassable ravines, a total absence of artificial objects, and the consequent necessity for clearing summits as stations for the theodolite were great impediments; but I made the most of each station when it had once been cleared by taking an exact panoramic view with the theodolite of the nameless features it commanded. The accompanying facsimile of a page of my field book includes the view between north and north-west, taken for the above purpose from the summit of Jellore, and extends over the ravines of the Nattai to the crest of the Blue Mountains. Plate 38.)

THE NATTAI. MOYENGULLY.

In the numerous ravines surrounding Jellore the little river Nattai has its sources, and this wild region is the haunt and secure retreat of the Nattai tribe whose chief, Moyengully, was one of my earliest aboriginal friends. (See Plate 39.)

Marulan, the highest summit eastward of Jellore, consists of ferruginous sandstone, but in the country to the northward we find syenite and trap-rock. Of the latter, Nattary, a small hill north-east from Towrang and distant about four miles from it, is perhaps the most remarkable. The elevation of the country there is considerable (being about one thousand five hundred feet above the sea on the level part) and, except near the Shoalhaven and Wollondilly rivers, not much broken into ravines. It contains not only fine pasture land but also much good wheat land, especially towards the side of the Shoalhaven river.

ARRIVE AT THE LINE OF GREAT ROAD. CONVICT WORKMEN.

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At fourteen miles from Goulburn I came upon that part of my new line of great road where the works had not been impeded by those for whose benefit the road was intended;* and here I found that the iron-gangs had done some good service. I had now the satisfaction of travelling along a road every turn of which I had studied previous to marking it out after a most careful survey of the whole country.

(Footnote. One of the most palpable consequences of the interruption my plan experienced was that it interfered with the prospects of an innkeeper whose inn had already been half built of brick in anticipation of the opening of the new line.)

BERRIMA BRIDGE.

On Crawford's creek I found that a bridge with stone buttresses had been nearly completed. I had endeavoured to introduce permanent bridges of stonework into this colony instead of those of wood, which were very liable to be burnt and frequently required repair. We had among the prisoners some tolerable stonecutters and setters but, until I had the good fortune to find among the emigrants a person practically acquainted with the construction of arches, their labours had never been productive of much benefit to the public. The governor had readily complied with my recommendation to appoint Mr. Lennox superintendent of such works; and on entering the township of Berrima this evening I had the satisfaction at length of crossing at least one bridge worthy of a British colony.

BERRIMA.

This town is situated on the little river Wingecarrabee, and was planned by me some years before when marking out the general line of road. The eligibility of the situation consists chiefly in the abundance and purity of the water, and of materials for building with the vicinity of a small agricultural population. I found here, on my return now, Mr. Lambie of the road branch of my department, under whose immediate superintendence the bridge had been erected. The walls of a gaol and courthouse were also rising, and a site was ready for the church.

TRAP RANGE.

November 2.

A remarkable range consisting chiefly of trap-rock traverses the whole country between the Wollondilly and the sea in a south-east direction extending from Bullio to Kiama. The highest part is known as the Mittagong range and, in laying down the new line of road, it was an object of importance to avoid this range. Bowral, the highest part, consists of quartz or very hard sandstone.

SANDSTONE COUNTRY.



On leaving Berrima the road traverses several low ridges of trap-rock and then turns to the south-east in order to avoid the ravines of the Nattai; for we again find here that ferruginous sandstone which desolates so large a portion of New South Wales and, to all appearance, New Holland, presenting in the interior desert plains of red sand, and on the eastern side of the dividing range, a world of stone quarries and sterility. It is only where trap or granite or limestone occur that the soil is worth possessing, and to this extent every settler is under the necessity of becoming a geologist; he must also be a geographer, that he may find water and not lose himself in the bush; and it must indeed be admitted that the intelligence of the native youth in all such matters is little inferior to that of the aborigines.

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The barren sandstone country is separated from the seashore by a lofty range of trap-rock connected with that of Mittagong, and we accordingly find an earthly paradise between that range and the seashore. The Illawarra is a region in which the rich soil is buried under matted creepers, tree-ferns and the luxuriant shade of a tropical vegetation nourished both by streams from the lofty range and the moist breezes of the sea. There a promising and extensive field for man's industry lies still uncultivated, but when the roads now partially in progress shall have connected it with the rest of the colony it must become one of the most certain sources of agricultural produce in New South Wales.

THE ILLAWARRA.

The sandstone on the interior side extends to the summit of the trap range and its numerous ravines occasion the difficulties which have hitherto excluded wheel-carriages from access to the Illawarra.

LUPTON'S INN.

To cross a country so excavated is impossible except in certain directions, but the best lines these fastnesses admit of have been ascertained and marked out in connection with that for the great southern road, which ought to leave the present line at Lupton's Inn. I consider this the most important public work still necessary to complete the system of great roads planned by me in New South Wales; but I have not had means at my disposal hitherto for carrying into effect this portion of the general plan.

From Lupton's Inn Sydney bore north-east, yet I was obliged to turn with the present road towards the north-west and to travel eleven miles over unfavourable ground in a direction to the westward of north.

Having been engaged this day in examining the bridges and the work done along the whole line, Mr. Lambie accompanying me, I did not reach the house of my friend Macalister at Clifton until it was rather late, but at any hour I could be sure of a hearty welcome.

THE RAZORBACK.

November 3.

The Razorback range is a very remarkable feature in this part of the country. It is isolated, extending about eight miles in a general direction between west-north-west and east-south-east, being very level on some parts of the summit, and so very narrow in others, while the sides are also so steep, that the name it has obtained is descriptive enough.

FORD OF THE NEPEAN. CAMPBELLTOWN.



Around this trap-range lies the fertile district of the Cowpastures, watered by the Nepean river. On proceeding along the road towards Campbelltown we cross this river by a ford which has been paved with a causeway, and we thus enter the county of Cumberland. Here trap-rock still predominates, and the soil is good and appears well cultivated, but there is a saltiness in the surface water which renders it at some seasons unfit for use. The line of great road as planned by me would pass by this township (now containing 400 inhabitants) and the town might then probably increase by extending towards George's river, a stream which would afford a permanent supply of good water.

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LIVERPOOL. LANSDOWNE BRIDGE.

Passing through Liverpool, which has a population of 600 inhabitants and is situated on the left bank of George's river, I arrived at three miles beyond that town at Lansdowne bridge, where the largest arch hitherto erected in Australia had been recently built by Mr. Lennox. The necessity for a permanent bridge over Prospect Creek arose from the failure of several wooden structures, to the great inconvenience of the public, this being really a creek rising and falling with the tide. The obstacle, and the steepness of the left bank, which was considerable, have been triumphantly surmounted by a noble arch of 110 feet span which carries the road at a very slight inclination to the level of the opposite bank. The bridge is wholly the work of men in irons who must have been fed, and must consequently have cost the public just as much if they had done nothing all the while; and it may be held up as a fair specimen of the great advantage of convict labour in such a country when applied to public works. The creek is navigable to this point and, stone being abundant and of good quality on the opposite side of George's river, one gang was advantageously employed in the quarry there while another was building the bridge. Mr. Lennox ably seconded my views in carrying these arrangements into effect. He contrived the cranes, superintended the stone cutting, and even taught the workmen; planned and erected the centres for the arches and finally completed the structure itself which had been opened to the public on the 26th of January.

Before venturing on so large a work I had employed Mr. Lennox on a smaller bridge in the new pass in the ascent to the Blue Mountains, and the manner in which he completed that work was such as to justify the confidence with which I suggested to the government this larger undertaking.

ARRIVE AT SYDNEY.

At length I arrived at Sydney and had the happiness on terminating this long journey to find that all the members of my family were well, although they had been much alarmed by reports of my death and the destruction of my party by the savage natives of the interior.

...

GENERAL REMARKS ON THE CHARACTER OF THE SETTLED COUNTRY.

Released from the necessity for recording each day's proceedings I may now add a few general remarks on the character of the country traversed in these various expeditions.

FIRES IN THE WOODS.



It has been observed that the soil in New South Wales is good only where trap, limestone, or granite rocks occur. Sandstone however predominates so much as to cover about six-sevenths of the whole surface comprised within the boundaries of nineteen counties. Wherever this is the surface rock little besides barren sand is found in the place of soil. Deciduous vegetation scarcely exists there, no vegetable soil is formed for, the trees and shrubs being very inflammable, conflagrations take place so frequently and extensively

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in the woods during summer as to leave very little vegetable matter to return to earth. On the highest mountains and in places the most remote and desolate I have always found on every dead trunk on the ground, and living tree of any magnitude also, the marks of fire; and thus it appeared that these annual conflagrations extend to every place. In the regions of sandstone the territory is, in short, good for nothing, and is besides very generally inaccessible, thus presenting a formidable obstruction to any communication between isolated spots of a better description.

Land near Sydney has always been preferred to that which is remote, though the quality may have been equal; yet throughout the wide extent of twenty-three millions of acres only about 4,400,000 have been found worth 5 shillings per acre, and the owners of this appropriated land within the limits have been obliged to send their cattle beyond them for the sake of pasturage.

EMPLOYMENT OF CONVICTS.

From the labour necessary to form lines of communication across such a country, New South Wales still affords an excellent field for the employment of convicts; and although some of the present colonists may be against the continuance of transportation, it must be admitted that the increase and extension of population and the future prosperity of the country depends much on the completion of such public works. The dominion of man cannot indeed be extended well over nature there without much labour of this description. The prisoners should be worked in gangs and guarded and coerced according to some well organised system. It can require no argument to show how much more pernicious to the general interests of mankind the amalgamation of criminals with the people of a young colony must be than with the dense population of old countries, where a better organised police and laws suited to the community are in full and efficient operation, both for the prevention and detection of crime; but the employment of convicts on public works is not inseparable from the question of allowing such people to become colonists; and whoever desires to see the noble harbour of Sydney made the centre of a flourishing country, extending from the tropic to the shores of the Southern Ocean, rather than one only of several small settlements along the coast, will not object to relieve the mother country by employing her convicts even at a greater expense than they cost the colonists at present. Thus the evil would in time cure itself by preparing the country for such accessions of honest people from home as would reduce the tainted portion of its inhabitants to a mere caput mortuum.

NECESSITY FOR CUTTING ROADS.

With a well arranged system of roads radiating from such a harbour even the sandstone wastes, extensive though they be, might be overstepped and, the good parts being

connected by roads, the produce of the tropical and temperate regions might then be brought to one common market.

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PROPORTION OF GOOD AND BAD LAND.

Where there is so much unproductive surface the unavoidable dispersion of population renders good lines of communication more essentially necessary, and these must consist of roads, for there are neither navigable rivers nor in general the means of forming canals. This colony might thus extend northward to the tropic of Capricorn, westward to the 145th degree of east longitude, the southern portion having for boundaries the Darling, the Murray and the seacoast. Throughout the extensive territory thus bounded one-third, probably, consists of desert interior plains; one-fourth of land available for pasturage or cultivation; and the remainder of rocky mountain or impassable or unproductive country. Perhaps the greater portion of really good land within the whole extent will be found to the southward of the Murray, for there the country consists chiefly of trap, granite, or limestone. The amount of surface comprised in European kingdoms affords no criterion of what may be necessary for the growth of a new people in Australia. Extreme differences of soil, climate, and seasons may indeed be usefully reconciled and rendered available to one community there; but this must depend on ingenious adaptations aided by all the facilities man's art can supply in the free occupation of a very extensive region. Agricultural resources must ever be scanty and uncertain in a country where there is so little moisture to nourish vegetation. We have seen, from the state of the Darling where I last saw it, that all the surface water flowing from the vast territory west of the dividing range, and extending north and south between the Murray and the tropic, is insufficient to support the current of one small river. The country southward of the Murray is not so deficient in this respect for there the mountains are higher, the rocks more varied, and the soil consequently better; while the vast extent of open grassy downs seems just what was most necessary for the prosperity of the present colonists and the encouragement of a greater emigration from Europe.

DESCRIPTION OF AUSTRALIA FELIX.

Every variety of feature may be seen in these southern parts, from the lofty alpine region on the east, to the low grassy plains in which it terminates on the west. The Murray, perhaps the largest river in all Australia, arises amongst those mountains, and receives in its course various other rivers of considerable magnitude. These flow over extensive plains in directions nearly parallel to the main stream, and thus irrigate and fertilise a large extent of rich country. Falling from mountains of great height, the current of these rivers is perpetual, whereas in other parts of Australia the rivers are too often dried up and seldom indeed deserve any other name than chains of ponds.

Hills of moderate elevation occupy the central country between the Murray and the sea, being thinly or partially wooded and covered with the richest pasturage. The lower country, both on the northern and southern skirts of these hills, is chiefly open, slightly undulating towards the coast on the south, and is in general well watered.

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The grassy plains which extend northward from these thinly wooded hills to the banks of the Murray are chequered by the channels of many streams falling from them, and by the more permanent and extensive waters of deep lagoons. These are numerous on the face of the plains near the river, as if intended by a bounteous Providence to correct the deficiencies of too dry a climate. An industrious and increasing people may always secure an abundant supply by adopting artificial means to preserve it and, in acting thus, they would only extend the natural plan according to their wants. The fine climate is worthy of a little extra toil, especially in those parts at a distance from the surplus waters of the large rivers, and in places considered favourable in other respects either for the rearing of cattle or for cultivation.

In the western portion small rivers radiate from the Grampians an elevated and isolated mass presenting no impediment to a free communication through the fine country around its base. Hence that enormous labour necessary to obtain access to some parts, and for crossing continuous ranges to reach others by passes like those so essential to the prosperity of the present colony, might be in a great degree dispensed with in that southern region.

Towards the south coast on the south and adjacent to the open downs between the Grampians and Port Phillip, there is a low tract consisting of very rich black soil, apparently the best imaginable for the cultivation of grain in such a climate.

WOODS.

On parts of the low ridges of hills near Cape Nelson and Portland Bay are forests of very large trees of stringybark, ironbark, and other useful species of eucalyptus, much of which are probably destined yet to float in vessels on the adjacent sea.

HARBOURS.

The character of the country behind Cape Northumberland affords fair promise of a harbour in the shore to the westward. Such a port would probably possess advantages over any other on the southern coast; for a railroad thence, along the skirts of the level interior country, would require but little artificial levelling and might extend to the tropical regions or even beyond them, thus affording the means of expeditious communication between all the fine districts on the interior side of the coast ranges and a sea-port to the westward of Bass Strait.

THE MURRAY.

The Murray, fed by the lofty mountains on the east, carries to the sea a body of fresh water sufficient to irrigate the whole country, which is in general so level even to a great distance from its banks that the abundant waters of the river might probably be turned

into canals for the purpose either of supplying deficiencies of natural irrigation at particular places, or of affording the means of transport across the wide plains.

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The high mountains in the east have not yet been explored but their very aspect is refreshing in a country where the summer heat is often very oppressive. The land is in short open and available in its present state for all the purposes of civilised man. We traversed it in two directions with heavy carts, meeting no other obstruction than the softness of the rich soil and, in returning over flowery plains and green hills fanned by the breezes of early spring, I named this region Australia Felix, the better to distinguish it from the parched deserts of the interior country where we had wandered so unprofitably and so long.

This territory, still for the most part in a state of nature, presents a fair blank sheet for any geographical arrangement whether of county divisions, lines of communication, or sites of towns *etc. etc.* The growth of a colony there might be trained according to one general system with a view to various combinations of soil and climate and not left to chance as in old countries or, which would perhaps be worse, to the partial or narrow views of the first settlers. The plan of a whole state might be arranged there like that of an edifice before the foundation is laid, and a solid one seems necessary where a large superstructure is likely to be built. The accompanying sketch of the limits which I would propose for the colony of New South Wales is intended to show also how the deficiencies of such a region might be compensated and the advantages combined for the convenience and accommodation of a civilised and industrious people. The rich pasture land beyond the mountains is already connected by roads with the harbour of Sydney and the system, though not complete, has been at least sufficiently carried into effect to justify the preference of that town and port as a capital and common centre not only for the roads, but for steam navigation around the coasts extending in each direction about 900 miles. The coast country affords the best prospects for the agriculturist, but the arable spots therein, being of difficult access by land, his success would depend much on immediate means of communication with Sydney by water and, on the facility his position would thus afford of shipping his produce to neighbouring colonies.*

(Footnote. A new market for cattle and sheep has just opened on the interior side by the establishment of the new colony of South Australia, an event more fortunate for New South Wales than the most sanguine friend of that colony could have foreseen. It is to be regretted however that the colonists are so slow in availing themselves of such a market by the direct line of road already traced by my wheels along the right banks of the rivers Lachlan, Murrumbidgee and Murray, by which flocks and herds may be driven to the new colony without any danger of their wanting water or the necessity for their crossing any rivers of importance.)

It would be establishing a lasting monument of the beneficial influence of British power and colonisation thus to engraft a new and flourishing state on a region now so desolate and unproductive; but this seems only possible under very extensive arrangements and by such means as England alone can supply:

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"Here the great mistress of the seas is known, By empires founded, not by states o'erthrown." Sydney Gazette, January 1, 1831.

MR. STAPYLTON'S REPORT.

Mr. Stapylton met no difficulty in following my track through Australia Felix with heavy wheel-carriages and worn out cattle, as appears by his own account of his progress in the following report, which he forwarded to me on his arrival at the Murrumbidgee.

Camp near Guy's Station,

Murrumbidgee, November 11.

Sir,

I have the honour to inform you that in compliance with your directions of the 18th of September last I quitted the depot near Lake Repose on the 3rd of October, and that I arrived at this station today. Our journey towards the located country has been most prosperous. On the 17th of October I reached the Goulburn, the numerous streams which intercepted our progress thither having been overcome with rapidity and excellent management on the part of the bullock-drivers. On the 23rd of the same month the three men whom you sent back to me from the Murray arrived at our encampment on the left bank of the Goulburn, and on the 25th the passage was effected across it without an accident of any kind whatsoever. On the 30th we encamped on the right bank of the Swampy river having been again successful in the transit of stores and cattle, and on the 2nd of November the party was established on the right bank of the King. Here we unfortunately lost one bullock, a weak and lame animal. On the 4th of November I made the Murray, and on the 5th, the provision party not being arrived, I directed that the boat, which we found in the contiguous backwater, should be got afloat, and on the evening of that day we took up our position on the right bank of the river; the cattle, horses, and equipment having been passed across in safety and in a manner highly creditable to all the men employed. The boat-carriage (which as well as the boat appeared to have remained untouched by the natives) was brought off on the following morning which being Sunday I halted. On the 7th I resumed our journey and arrived as above-mentioned, the cattle and horses having been got safely over the Murrumbidgee the same afternoon. I duly received your several communications numbers one, two, three and four; your letter by McKane and that by Burnett. Turandurey has grown enormously fat which should speak well of the care we had taken of her, and to the best of my belief no improprieties with her as a female have ever taken place. She was married last night to King Joey and she proceeds with him to her friends. Having a superfluity of government blankets I have taken the liberty of giving her one now and one formerly at the last depot.

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I have to acknowledge the receipt of the letter containing your instructions of the 26th ultimo which was delivered to me by Overseer Burnett on the 5th of this month, who arrived at the moment the first boatload from the camp reached the opposite bank of the Murray. By means of casks we floated the drays over the three rivers and, after two experiments with a raft, both partial failures, and while a third raft was in progress, of a more solid and better construction, we discovered that a canoe, of very large dimensions and paddled by the native boy Tommy, would prove the most expeditious as well as a safe mode of shipment for the boxes of value, equipment, *etc.* I therefore caused a canoe to be used for this purpose and it answered admirably. I have to mention the loss of three of the cattle. One by death at the depot in consequence of previous over-exertion, and two by accidents of a most provoking and unlucky nature, but which could not have been foreseen or prevented.

I have the honour to be, *etc.*

...

THE ABORIGINAL NATIVES.

This was one of the best proofs how valuable the services of the aborigines who accompanied the party were to us on some occasions. They could strip from a tree in a very short time a sheet of bark large enough to form a canoe; and they could propel the light bark thus made through the water with astonishing ease and swiftness. By this means alone most of our effects were transported across broad rivers without an accident even to any of my papers or dried plants.

TURANDUREY.

I was now anxious to convince them how much I appreciated that assistance, but felt in some degree at a loss, especially in the case of The Widow. It was therefore not the least satisfactory part of the intelligence subsequently received from Mr. Stapylton that she was married on her arrival to Joey, the King of the Murrumbidgee.

MY MODE OF COMMUNICATING WITH MR. STAPYLTON.

Mr. Stapylton had also received my several communications Numbers 1, 2, 3, and 4, which he dug from the earth at various camps; thus we had for once eluded the keen eye of the aborigines in this kind of correspondence, although on my first journey we had not been so successful. My original plan on this expedition was to bury the letter under the ashes of my fire; cutting at the same time a cross in the turf where my tent had stood, as the mark by which Mr. Stapylton was to know that something was so deposited. But I subsequently improved on this plan and buried my letter in the centre of the cross by merely making a hole with a stick in the soft earth where the turf had been cut and dropping the letter into it.

SURVEY OF THE MURRUMBIDGEE.

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In my instructions to Mr. Stapylton, sent by Burnett, I directed him to survey the course of the Murrumbidgee upwards from Guy's station until he connected our interior survey with the map of the colony. This he accomplished by measuring to the junction of the Doomot, a river he had himself previously surveyed. The direct distance between that junction and the point at which we first arrived on the Murrumbidgee was ascertained by Mr. Stapylton's measurement to be $34 \frac{3}{4}$ miles, but according to my map of the interior country $36 \frac{1}{2}$ miles; making an error of only $1 \frac{3}{4}$ miles + or westward in a chain-measurement continued from the station at Buree, where the journey commenced, to the Darling, thence to the southern coast, and back to this point on the Murrumbidgee. The measurement was checked by latitudes determined nightly from observations of several stars, the difference between several amounting to a few seconds only. I availed myself of trigonometrical measurements also with a good theodolite wherever this was possible, in which case such a survey engaged my whole attention, and my route was often directed according to the position of good points.

METEOROLOGICAL JOURNAL.

The meteorological journal was kept more carefully during this journey than on the two preceding; and with the kind assistance of my friends Captain King and Mr. Dunlop it affords, in some parts at least, materials for comparing the atmospheric changes in the regions explored with those occurring simultaneously on the eastern coast.

ARRIVAL OF THE EXPLORING PARTY AT SYDNEY.

It was long before the party arrived in Sydney for, when it reached the Murrumbidgee and the apprehension of famine no longer existed, rest was so necessary for the cattle that it was indulged in for their sake chiefly, to an extent much beyond the wishes of the men. The oxen looked tolerably well therefore when the party did reach Sydney, although from so long a journey; and my men enjoyed at length the triumph among their fellows, to which they had long looked forward, on conducting the boat and boat-carriage safely once more into the yard of my office.

PIPER AND THE MEN REWARDED.

But Piper seemed to relish his share of triumph most, and certainly he well deserved the kindness he met with on all sides. I clothed him in my own red coat and I gave him also a cocked hat and feather which had once belonged to Governor Darling. His portrait thus arrayed soon appeared in the print shops; an ingenious artist (Mr. Fernyhough) having drawn his likeness very accurately. Piper was just the sort of man to enjoy superlatively all his newly acquired consequence. He carried his head high for (as he now found) everybody knew him and not a few gave him money. With these donations he purchased silk handkerchiefs and wore them in his breast, gowns for his gins, for he at last had TWO, and to his great credit he abstained from any indulgence in

intoxication, looking down, apparently with contempt, on those wretched specimens of his race who lead a gipsy life about Sydney.

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The men, after having been examined in my presence by the Council composed of the governor, his secretary, and the bishop, respecting the events of 27th May, were rewarded according to the standing and condition of each. The government granted every indulgence I asked in their behalf. Burnett, Muirhead, Woods, and Palmer obtained absolute pardons. Woods receiving besides a gratuity of 10 pounds, and several, specially noticed in my report, 5 pounds each. Those who had tickets of leave were rewarded with conditional pardons, and tickets of leave were awarded to the rest with one or two exceptions. Among those excluded was Drysdale, a most trustworthy man and in whose behalf I was therefore much interested. He had not been long enough in the colony to be entitled by the regulations to any indulgence; and all I could do was to obtain for him a very laborious place in the general hospital by holding which he avoided the hulk.

Piper was impatient to return to his own country near Bathurst, and I fulfilled all the conditions of my contract with him by allowing him an old firelock, blankets, *etc.*, decorating him also with a brass plate on which he was styled not as usual “King,” for he said there were “too many kings already,” but “Conqueror of the Interior”—surely a sufficient passport for him among those most likely to read it, the good people of Bathurst. But when he came to bid me farewell he was accompanied much against his will by the murderer of Mr. Cunningham, Bureemal, who had been placed under his protection by Mr. Ferguson to be conducted back to his tribe. This fellow had grown so stout that I could perceive no resemblance in him to the youth he appeared when captured by Lieutenant Zouch, and he had acquired an impudent air very unlike that of other natives. According to his own confession he had put Mr. Cunningham to death in cold blood, and Mr. Ferguson had in return clothed and fed him for one year, and taught him the Lord’s Prayer and Ten Commandments.

THE TWO TOMMIES.

The two Tommies still remained to be provided for, and they were both desirous of accompanying me to England. I had seriously intended to take one with me but, so docile and so much attached to my service were both of these youths, that I felt much difficulty in choosing between them. Meanwhile they remained at Sydney while official cares and troubles so thickened about me that I at length abandoned my intention, however reluctantly and, when they were about to return at last to their own country, I gave to each what clothes I could spare and they both shed tears when they left my house. They were to travel through the colony under the protection of Charles Hammond, one of my steadiest men who, having obtained his freedom in reward for his services with me, was proceeding towards Bathurst in charge of the teams of a Parcel Delivery Company.

BALLANDELLA.



The little Ballandella, child of The Widow, was a welcome stranger to my children among whom she remained and seemed to adopt the habits of domestic life *con amore*, evincing a degree of aptness which promised very favourably. The great expense of the passage home of a large family obliged me at last to leave her at Sydney under the care of my friend Dr. Nicholson who kindly undertook the superintendence of her education during my absence in England.

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CHARACTER OF THE NATIVES OF THE INTERIOR.

My experience enables me to speak in the most favourable terms of the aborigines whose degraded position in the midst of the white population affords no just criterion of their merits. The quickness of apprehension of those in the interior was very remarkable, for nothing in all the complicated adaptations we carried with us either surprised or puzzled them. They are never awkward, on the contrary in manners and general intelligence they appear superior to any class of white rustics that I have seen.

LANGUAGE.

Their powers of mimicry seem extraordinary, and their shrewdness shines even through the medium of imperfect language and renders them in general very agreeable companions.

On comparing a vocabulary of the language spoken by the natives on the Darling with other vocabularies obtained by various persons on different parts of the coast I found a striking similarity in eight words, and it appears singular that all these words should apply to different parts of the human body. I could discover no term in equally general use for any other object as common as the parts of the body, such for instance as the sun, moon, water, earth, *etc.* By the accompanying list of words used at different places to express the same meaning,* it is obvious that those to which I have alluded are common to the natives both in the south-eastern and south-western portions of Australia; while no such resemblance can be traced between these words and any in the language spoken by natives on the northern coast. Now from this greater uniformity of language prevailing throughout the length of this large island, and the entire difference at much less distance latitudinally, it may perhaps be inferred that the causes of change in the dialect of the aborigines have been more active on the northern portion of Australia than throughout the whole extent from east to west. The uniformity of dialect prevailing along the whole southern shore seems a fact worthy of notice as connected with any question respecting the origin of the language, and whether other people or dialects have been subsequently introduced from the northern or terrestrial portion of the globe. These words although few may be useful to philologists as specimens of the general language and, as the names of parts of the body can be obtained by travellers from men the most savage by only pointing to each part, comparisons may be thus extended to the natives of other shores.

(Footnote. See Appendix 2.1)

I am not aware that any affinity has been discovered, at least in single words, between the Australian language and that of the Polynesian people;* but with very slight means of comparison I may perhaps be excused for noticing the resemblance of Murroa, the name of the only volcanic crater as yet found in Australia to Mouna-roa, the volcano of the Sandwich Islands; and that tao, the name of the small yam or root eaten by

Australians, is similar to taro, the name of thirty-three varieties of edible root and having the same meaning in the Friendly and Society Isles and also in the Sandwich Islands. (See Cook's Voyages and Polynesian Researches by William Ellis.)

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(Footnote. Mr. Threlkeld has detected in it a similarity of idiom to the languages of the South Sea islanders and the peculiarity of a dual number common to all. See his Australian Grammar, Sydney 1834.)

HABITS OF THOSE OF VAN DIEMEN'S LAND THE SAME.

The natives of Van Diemen's Land, the only inhabited region south of Australia, are said to have been as dark as the negro race and to have had woolly hair like them. Little is known of the language and character of the unfortunate Tasmanian aborigines, and this is the more to be regretted considering how useful a better knowledge of either might have been in tracing the progressive extension of the Australasian people. The prevailing opinion at present is that the natives of Van Diemen's Land were also much more ferocious than the natives of Australia. But, brief as the existence of these islanders has been on the page of history, these characteristics are very much at variance with the descriptions we have of the savages seen by the earliest European visitors, and especially by Captain Cook who thus describes those he saw at Adventure Bay in 1777: "Their colour is a dull black, and not quite so deep as that of the African negroes. It should seem also that they sometimes heighten their black colour by smoking their bodies, as a mark was left behind on any clean substance, such as white paper, when they handled it." Captain Cook then proceeds to describe the hair as being woolly, but all the other particulars of that description are identical with the peculiarities of Australian natives; and Captain King stated, according to the editor of the Northern Voyage of Cook, that "Captain Cook was very unwilling to allow that the hair of the natives seen in Adventure Bay WAS woolly." The hair of the natives we saw in the interior and especially of the females had a very frizzled appearance and never grew long; and I should rather consider the hair of the natives of Tasmania as differing in degree only from the frizzled hair of those of Australia.

HABITS AND CUSTOMS OF THE ABORIGINES.

Instead of the ferocious character latterly attributed to the natives of Van Diemen's Land we find on the contrary that Captain Cook describes them as having "little of that fierce or wild appearance common to people in their situation;" and a historian* draws a comparison, also in their favour, between them and the natives of Botany Bay, of whom THREE stood forward to oppose Captain Cook at his first landing. The ferocity subsequently displayed by natives of Van Diemen's Land cannot fairly be attributed to them therefore as characteristic of their race, at least until extirpation stared them in the face and excited them to acts of desperate vengeance against all white intruders.

(Footnote. The History of New Holland by the Right Honourable William Eden, 1787 page 99.)

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The habits and customs of the aboriginal inhabitants are remarkably similar throughout the wide extent of Australia, and appear to have been equally characteristic of those of Van Diemen's Land: geological evidence also leads us to suppose that this island has not always been separated from the mainland by Bass Strait. The resemblance of the natives of Van Diemen's Land to those of Northern Australia seemed indeed so perfect that the first discoverers considered them "as well as the kangaroo, only stragglers from the more northern parts of the country;" and as they had no canoes fit to cross the sea, that New Holland, as it was then termed, "was nowhere divided into islands, as some had supposed."

TEMPORARY HUTS. MODE OF CLIMBING TREES.

Their mode of life, as exhibited in the temporary huts made of boughs, bark, or grass,* and of climbing trees to procure the opossum by cutting notches in the bark, alternately with each hand as they ascend, prevails not only from shore to shore in Australia but is so exactly similar in Van Diemen's Land and at the same time so uncommon elsewhere that Tasman, the first discoverer of that island, concluded "that the natives either were of an extraordinary size, from the steps having been five feet asunder or THAT THEY HAD SOME METHOD which he could not conceive of climbing trees by the help of such steps." It is strong presumptive evidence therefore of the connection of the inhabitants of Van Diemen's Land with the race in Australia that a method of climbing trees, now so well known as peculiar to the natives of Australia, should have been equally characteristic of those of Tasmania. The notches made in climbing trees are cut by means of a small stone hatchet and, as already observed, with each hand alternately. By long practice a native can support himself with his toes on very small notches, not only in climbing but while he cuts other notches, necessary for his further ascent, with one hand, the other arm embracing the tree. The elasticity and lightness of the simple handle of the mogo or stone hatchet employed (see Figure 5 above) are well adapted to the weight of the head and assist the blow necessary to cut the thick bark with an edge of stone. As the natives live chiefly on the opossum, which they find in the hollow trunk or upper branches of tall trees and, as they never ascend by old notches but always cut new ones, such marks are very common in the woods; and on my journeys in the interior I knew, by their being in a recent state, when I was approaching a tribe; or when they were not quite recent how long it was since the natives had been in such parts of the woods; whether they had any iron hatchets or used still those of stone only; *etc.*

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(Footnote. Many usages of these rude people much resemble those of the wandering Arabs. Dr. Pococke mentions some open huts made of boughs raised about three feet above the ground which he found near St. John D'Acre. He observes: "These materials are of so perishing a nature, and trees and reeds and bushes are so very scarce in some places that one would wonder they should not all accommodate themselves with tents but we find they do not in fact." Volume 2 page 158. "And that they should publish and proclaim in all their cities and in Jerusalem saying, Go forth unto the mount and fetch olive branches and pine branches and myrtle branches and palm branches and branches of thick trees to make booths as it is written." Nehemiah 8:15.)

REMARKABLE CUSTOMS.

The men wear girdles usually made of the wool of the opossum, and a sort of tail of the same material is appended to this girdle, both before and behind, and seems to be the only part of their costume suggested by any ideas of decency. The girdle answers besides the important purpose of supporting the lower viscera, and seems to have been found necessary for the human frame by almost all savages.

CHARMED STONES. FEMALES EXCLUDED FROM SUPERSTITIOUS RITES.

In these girdles the men, and especially their coradjes or priests, frequently carry crystals of quartz or other shining stones, which they hold in high estimation and very unwillingly show to anyone, taking care when they do that no woman shall see them.*

(Footnote. Genesis 28:18. "From this conduct of Jacob and this Hebrew appellative, the learned Bochart, with great ingenuity and reason, insists that the name and veneration of the sacred stones called Baetyli, so celebrated in all Pagan antiquity, were derived. These baetyli were stones of a round form, they were supposed to be animated, by means of magical incantations, with a portion of the Deity; they were consulted on occasions of great and pressing emergency, as a kind of divine oracles, and were suspended either round the neck or some other part of the body." Burder's Oriental Customs volume 1 page 40.)

BANDAGE OR FILLET AROUND THE TEMPLES.

The natives wear a neatly wrought bandage or fillet round the head and whiten it with pipe-clay as a soldier cleans his belts.* They also wear one of a red colour under it. The custom is so general, without obvious utility, at least when the hair is short, that we may suppose it is also connected with some superstition.

(Footnote. See illustration Cambo Volume 1.)

STRIKING OUT THE TOOTH.

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But still more remarkable is the practice of striking out one of the front teeth at the age of puberty, a custom observed both on the coast and as far as I penetrated in the interior. On the western coast also Dampier observed that the two fore-teeth were wanting in all the men and women he saw. According to Piper certain rites belong to this strange custom. The young men retire from the tribe to solitary places, there to mourn and abstain from animal food for many days previous to their being subjected to this mutilation. The tooth is not drawn but knocked out by an old man, or coradje, with a wooden chisel, struck forcibly and so as to break it. It would be very difficult to account for a custom so general and also so absurd, otherwise than by supposing it a typical sacrifice, probably derived from early sacrificial rites. The cutting off of the last joint of the little finger of females seems a custom of the same kind; also boring the cartilage between the nostrils in both sexes and wearing therein, when danger is apprehended, a small bone or piece of reed.*

(Footnote. The aborigines of Australia seem to resemble more, although at so great a distance, those of the Sandwich Islands than the natives of any other of the numerous isles so much nearer to them. According to Cook this strange custom of striking out the teeth prevails also there. "The knocking out their fore teeth," says that navigator, "may be, with propriety, classed among their religious customs. Most of the common people and many of the chiefs had lost one or more of them; and this we understood was considered as a propitiatory sacrifice to the Eatooa to avert his anger; and not like the cutting off a part of the finger at the Friendly Islands to express the violence of their grief at the death of a friend." Cook's Voyage.)

PAINTING WITH RED.

To paint the body red seems also a custom of the natives in all parts that I have visited: but the most constant use of colours both white and red appears on the narrow shield or hieleman (see below) which is seldom to be found without some vestiges of both colours about the carving with which they are also ornamented.*

(Footnote. "A German pays no attention to the ornament of his person; his shield is the object of his care; and this he decorates with the liveliest colours." Tacitus de Mor. Germ. c.6.)

RAISED SCARS ON ARMS AND BREAST.

The "large punctures or ridges raised on different parts of their bodies, some in straight and others in curved lines" distinguish the Australian natives wherever they have been yet seen and, in describing these raised scars, I have quoted the words of Captain Cook as the most descriptive although having reference to the natives of Adventure Bay, in one of the most southern isles of Van Diemen's Land, when first seen in 1777.

CUTTING THEMSELVES IN MOURNING.

It is also customary for both men and women to cut themselves in mourning for relations. I have seen old women in particular bleeding about the temples from such self-inflicted wounds.*

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(Footnote. *"We often read of people cutting themselves, in Holy Writ, when in great anguish; but we are not commonly told what part they wounded. The modern Arabs, it seems, gash their arms which with them are often bare: it appears from a passage of Jeremiah that the ancients wounded themselves in the same part, 'Every head shall be bald, and every beard clipt; upon all hands shall be cuttings and upon the loins sackcloth.'* Chapter 48:37." Harmer volume 4 page 436.)

AUTHORITY OF OLD MEN.

Respect for age is universal among the aborigines. Old men, and even old women, exercise great authority among assembled tribes and "rule the big war" with their voices when both spears and boomerangs are ready to be thrown.* Young men are admitted into the order of the seniors according to certain rites which their coradjies, or priests, have the sagacity to keep secret and render mysterious.

(Footnote. *Leviticus 19:32. "Thou shalt rise up before the hoary head, and honour the face of the old man."* The Lacedemonians had a law that aged persons should be revered like fathers. See also Homer *Iliad* 15:204 et 23:788. *Odyss.* 13:141.)

LAW AGAINST EATING EMU FLESH.

No young men are allowed to eat the flesh or eggs of the emu, a kind of luxury which is thus reserved exclusively for the old men and the women. I understood from Piper, who abstained from eating emu when food was very scarce, that the ceremony necessary in this case consisted chiefly in being rubbed all over with emu fat by an old man.

Richardson, one of our party, was an old man and Piper reluctantly allowed himself to be rubbed with emu fat by Richardson; but from that time he had no objection to eat the flesh of that bird. The threatened penalty was that young men, after eating it, would be afflicted with sores all over the body.

NATIVE DOGS.

The native dog, so common in Australia, is not found in Tasmania; while on the other hand two animals, the *Dasyurus ursinus* and *Thylacynus*, exist in Tasmania but have not been found hitherto in Australia. Have these been extirpated in Australia by the dog on his introduction subsequently to the opening of the straits? It may be observed that this is the more likely as the above-mentioned species found in Van Diemen's Land only, consist of those two unable to climb and avoid such an enemy. The Australian natives evince great humanity in their behaviour to these dogs. In the interior we saw few natives who were not followed by some of these animals, although they did not appear of much use to them. The women not unfrequently suckle the young pups and so bring them up, but these are always miserably thin so that we knew a native's dog from a wild one by the starved appearance of the former. The howl of a native dog in the desert wilds is the most melancholy sound imaginable, much resembling that of a tame dog

when he has lost his master. We find no remains of this genus among the fossils and it seems therefore probable that the dog accompanied the native, wherever he came from.

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FEMALES CARRYING CHILDREN.

We trace a further resemblance between this rude people and the orientals in their common method of carrying children on their shoulders; and the sketch of Turandurey with Ballandella so mounted (Plate 24) affords the best illustration of a passage in Scripture which has very much puzzled commentators.* But the savage tribes of mankind as they approach nearer to the condition of animals seem to preserve a stronger resemblance to themselves and to each other. The uniform stability of their manners seems a natural consequence of the uncultivated state of their faculties; and it is satisfactory to discover such direct illustrations of ancient history among these rude and primitive specimens of our race.

(Footnote. "Was the custom anciently the reverse of this? So it might be imagined from Isaiah 49:22. 'They shall bring thy sons in their arms and thy daughters shall be carried upon their shoulders'!" Harmer's Oriental Customs.)

WEAPONS. THE SPEAR. WOOMERA.

The weapons used by the natives are not more remarkable and peculiar in their construction than general in their use on every shore of New Holland. The spear is thrown by means of a woomera which is a slight rod about three feet long having at one end a niche to receive the end of the spear. The missile is shot forward by this means with great force and accuracy of direction; for by the peculiar method of throwing the spear the woomera affords a great additional impetus from this most ingenious lengthening of the arm to that extent.*

(Footnote. For the shape of the woomera see Moyengully Plate 49 above; and the manner of throwing the spear may be seen in Plate 8 Volume 1.)

THE BOOMERANG. ITS PROBABLE ORIGIN.

The boomerang, a thin curved missile, can be thrown by a skilful hand so as to rise upon the air and thus to deviate from the ordinary path of projectiles, its crooked course being nevertheless equally under control. It is of the form here represented, being about two feet four inches long. These weapons are cut according to the grain from the curved parts of acacia or other standing trees of compact hard wood. They usually weigh about 9 1/2 ounces. One side, which is the uppermost in throwing, is slightly convex, and is sometimes elaborately carved. The lower side is flat and plain. The boomerang is held, not as a sabre, but sickle-wise, or concave towards the thrower and, as a rotatory motion is imparted to it when sent off, the air presents so much resistance to the flat side and so little to the sharp edge as it cuts forward, that the long-sustained flight of the whirling missile seems independent of the common effect of gravitation.



The native, from long practice, can do astonishing things with this weapon. He seems to determine with great certainty what its crooked and distant flight shall be, and how and where it is to end. Thus he frequently amuses himself in hurling the formidable weapon to astonishing heights and distances from one spot to which the missile returns to fall beside him. Sometimes the earth is made a fulcrum to which the boomerang descends only to resume a longer and more sustained flight, or to leap, perhaps, over a tree and strike an object behind it.

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The contrivance probably originated in the utility of such a missile for the purpose of killing ducks where they are very numerous, as on the interior rivers and lagoons and where, accordingly, we find it much more in use than on the seacoast and better made, being often covered with good carving.* (See Cambo, Volume 1, also small figures in Plate 28 above.)

(Footnote. That Dampier saw this weapon also on the western coast in latitude 16 degrees 50 minutes is evident from the following observation. "These swords were afterwards found to be made of wood and rudely shaped something like a cutlass.")

SHIELD OR HIELEMAN.

There is also much originality in the shield or hieleman of these people. It is merely a piece of wood of little thickness and 2 feet 8 inches long, tapering to each end, cut to an edge outwards and having a handle or hole in the middle behind the thickest part. This is made of light wood and affords protection from missiles, chiefly by the facility with which it is turned round the centre or handle.

SKILL IN APPROACHING THE KANGAROO.

Great ingenuity is necessary and is as cleverly practised by the natives in approaching the kangaroo. This they display in creeping, stalking with bushes, advancing behind trees, etc. and to such a degree are their wits sharpened by their appetites that they can even distinguish when the kangaroo kills a fly; and they consider in their proceedings, from the habit of the kangaroo to kill flies and smell the blood, whether the animal may discover from the blood the fly contains that men are near.

FOOD OF THE NATIVES. MODES OF COOKING.

The natives are accustomed to cook such animals by digging a hole in the ground, making a fire in it, and heating the stones found about. The kangaroo is placed in this hole with the skin on, and is covered with heated embers or warm stones.

OPOSSUM. SINGEING.

The opossum which constitutes the more ordinary food of the native is not cooked so much, but only singed, so as to have a flavour of the singed wool; but it is nevertheless palatable enough even to a white man.

VEGETABLE FOOD. THE SHOVEL.

The young natives of the interior usually carry a small wooden shovel (see foreground figure, Plate 12 Volume 1) with one end of which they dig up different roots, and with the other break into the large anthills for the larvae, which they eat: the labour necessary to obtain a mouthful even, of such indifferent food, being thus really more than would be

sufficient for the cultivation of the earth according to the more provident arrangements of civilised men. Yet in a land affording such meagre support the Australian savage is not a cannibal: while the New Zealander, who inhabits a much more productive region, notoriously feasts on human flesh.

GENERAL OBSERVATIONS.

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Were it expedient to enter here into further details, or upon a longer description of the natives of Australia, I might quote largely from Captain Cook's account of those he saw at Adventure Bay, Van Diemen's Land, as being more detailed and descriptive, both of the natives in the interior, and of those also around the whole circumference of Australia, than any I could give. In the descriptions by Dampier and other navigators who have touched on any part of these shores we recognise the same natives with all their characteristics, and are led to conclude that they are derived from the same stock and, as the judicious compiler of the first History of New Holland considered it most probable from this and other circumstances "that the number is small, and that the interior parts of the country are inhabited,"* I may observe that I have had no reason to entertain a contrary opinion from what I saw of the interior country beyond the Darling. The native population is very thinly spread over the regions I have explored, amounting to nearly a seventh part of Australia. I cannot estimate the number at more than 6000; but on the contrary I believe it to be considerably less. They may increase rapidly if wild cattle become numerous; and as an instance I may refer to the number and good appearance of the Cudjallagong tribe near Macquarie range where they occasionally fell in with a herd of wild cattle.

(Footnote. History of New Holland pages 31 and 232.)

DESTRUCTION OF THE KANGAROO.

The kangaroo disappears from cattle runs, and is also killed by stockmen merely for the sake of the skin; but no mercy is shown to the natives who may help themselves to a bullock or a sheep. Such a state of things must infallibly lead to the extirpation of the aboriginal natives, as in Van Diemen's Land, unless timely measures are taken for their civilisation and protection. I have heard some affecting allusions made by natives to the white men's killing the kangaroo. At present almost every stockman has several strong kangaroo dogs; now it would be only an act of justice towards the aborigines to prohibit white men by law from killing these creatures which are as essential to the natives as cattle are to the Europeans. The prohibition would be at least a proof of the disposition of the strangers to act as humanely as they possibly could towards the natives. If wild cattle on the contrary become numerous the natives also might increase in number and, if not civilised and instructed now, might become formidable and implacable enemies then, as no absolute right to kill even wild cattle would be conceded to them. The evils likely to result from such circumstances were apparent both in the commencement and termination of my first journey; but although the desert character of the interior renders such a state of things less likely to happen, at least on a larger scale, the unfortunate race whom we have found on the shores of Australia are not the less entitled to our protection.

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CIVILISATION OF THE ABORIGINES.

Some adequate provision for their civilisation and maintenance is due on our part to this race of men, were it only in return for the means of existence of which we are depriving them. The bad example of the class of persons sent to Australia should be counteracted by some serious efforts to civilise and instruct these aboriginal inhabitants. That they are capable of civilisation and instruction has been proved recently in the case of a number who were sentenced for some offence to be confined with a chaingang on Goat Island in Sydney harbour. By the exertions of Mr. Ferguson, who was I believe a missionary gentleman, these men were taught in five months to read tolerably well, and also to explain in English the meaning of the Lord's Prayer and Ten Commandments. During that time they had been initiated in the craft of stone-cutting and building so as to completely erect a small house. They grew fat and muscular and appeared really stronger men, when well fed, than the white convicts.

The natives have also proved very good shepherds when any of them have been induced, by proper encouragement and protection, to take charge of a flock. Tommy Came-first, one of the lads who travelled with me, had previously tended sheep for a year and had given great satisfaction.

My experiment with the little native girl, Ballandella, will be useful I trust in developing hereafter the mental energies of the Australian aborigines for, by the last accounts from Sydney, I am informed that she reads as well as any white child of the same age.

CHAPTER 3.15.

Geological specimens collected.
Connection between soil and rocks.
Limestone.
Granite.
Trap-rocks.
Sandstone.
Geological structure and physical outline.
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Genus Phalangista.
Genus Phascolomys.
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Accompanying marks of disruption.
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And of violent action of the sea.
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Cape Solander.
Port Jackson.
Broken Bay.
Newcastle.
Tuggerah Beach.
Bass Strait.

GEOLOGICAL SPECIMENS COLLECTED.

As any geological information respecting a country so little known as the eastern coast of Australia may be acceptable to the public, I venture to subjoin a few observations on some of the more prominent subjects of my researches, and I do so with the more confidence because it will appear how largely I am indebted for the interest they possess to the kindness of my scientific friends in England.

CONNECTION BETWEEN SOIL AND ROCKS.

During the surveys and expeditions I carefully collected specimens at every important locality, and I have thus been enabled since my return to England to mark upon my maps the geological structure of the country. By this means also I have been able to determine the relative value of the land in the districts recently explored and to compare it with that of the country previously known.

By a little attention to the geological structure of Australia we learn how much the superficial qualities of soil and productions depend upon it, and where to look for arable spots amid the general barrenness. The most intelligent surveyors of my department have on several occasions contributed considerably to my collection.

Curiosity led me to investigate some of the fossil remains of those lately discovered regions while my public duties obliged me to study also the external features of the

country; and I have thus been enabled to draw some inferences respecting various changes which have taken place in the surface and in the relative level of sea and land.

The following are the principal rocks which I noticed in the country.

LIMESTONE.

Limestone occurs of different ages and quality presenting a considerable variety.

1. A light-coloured compact calcareous rock resembling mountain limestone; at Buree and Wellington, rising, at the former place, to the height of about 1500 feet above the sea.
2. A dark grey limestone appears at perhaps a still greater height on the Shoalhaven river; in immediate contact with granite.
3. A crystalline variegated marble is found in blocks a few miles westward of the above, near the Wollondilly.
4. Another variety of this rock is very abundant in the neighbourhood of Limestone plains on the interior side of the Coast ranges and near the principal sources of the Murrumbidgee. This contains corals belonging to the genus favosites; crinoideae are also found abundantly in the plains and distinguish this limestone from the others above-mentioned.

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These rocks present little or no appearance of stratification.

A remarkably projecting ridge on the banks of Peel's river contained limestone of so peculiar an aspect as to resemble porphyry, and it was associated with a rock having a base of chocolate-coloured granular felspar. (See Volume 1.)

A yellow highly calcareous sandstone, apparently stratified, occurs near the banks of the Gwydir. Large rounded boulders of argillaceous limestone have been denuded in the bed of Glendon brook; and an impure limestone is found in the neighbourhood of William's river, both belonging to the basin of the Hunter and not much elevated above the sea. Calcareous tuff or grit may be observed in various localities, and calcareous concretions abound in the blue clay of almost all the extensive plains on both sides of the mountains.

A soft shelly limestone, most probably of recent origin though slightly resembling some of the oolites of England, occurs extensively on the southern coast between Cape Northumberland and Portland bay where it forms the only rock with the exception of amygdaloidal trap.

GRANITE.

Granite or granitic compounds are more or less apparent at or near the sources of the principal rivers; but with the exception of the Southern Alps and some patches in the counties of Bathurst and Murray this fundamental rock is visible in Australia only where it appears to have cracked a thick overlying stratum of ferruginous sandstone. Thus near the head of the river Cox where the latter attains its greatest elevation, and from the character of the valley has evidently been violently disturbed, we find granite in the valley near the bed of the stream.

Observation 1. Such is the character of the country where the waters separate, or in the line of greatest elevation which we are accustomed to term the Coast Range. The general direction of this range is north-north-east and accords perfectly with the hypothesis of Dr. Fitton, founded on the general parallelism observed in the range of the strata, even on the north-western coast, as noticed in his interesting little volume, the first ever devoted to Australian Geology.* The parallelism so remarkable in the range of strata in that portion, the general tendency of the coastlines to a course from the west of south to the east of north on the mainland, and even in the islands west of the Gulf of Carpentaria, and a general elevation of the strata towards the south-east, as deduced from Flinders' remarks, are all facts which should be studied in connection with the direction of the granite along this part of the eastern coast.

(Footnote. An account of some Geological specimens from the coasts of Australia by William Henry Fitton, M.D., F.R.S., V.P.G.S., etc. 1826.)

Observation 2. It may be also observed that the sandstone reposing on the rock eastward of this division or watershed is slightly inclined towards the sea, whereas all the sandstone on the interior side, or westward of it, dips to the north-west.

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TRAP-ROCKS.

Trap-rocks are displayed in a great variety of situations. They often occur connected with limestone in valleys, sometimes constitute lofty ranges as on the north or left bank of the Hunter, and along the seashore at the Illawarra; they likewise cap the summit of isolated hills, but no particular place can be assigned to them with reference to the position of any other rocks. Trap forms a good soil on decomposition as is shown in the rich districts of the Illawarra, Cowpastures, Valley of the Hunter, Liverpool Plains, Wellington Valley, and Buree.

Vesicular lava and amygdaloid are the chief ingredients of some of the best parts of Australia Felix. In that region volcanic phenomena are more apparent than in other parts of Eastern Australia, especially where the Grampians, consisting of a mass of sandstone 4000 feet thick, seem a portion of the great formation covering the districts of the north. The strata in these mountains are inclined to the north-west, as if in obedience to the upheavings of Murroa or Mount Napier, an extinct volcano in the very line of their outcrop.

Observation. We found in the interior, hills of sandstone only, but at this extremity of the great Coast range granite is extensively exposed in ridges, between which, in one extensive district, are round heights of mammeloid form, consisting of pure lava, and in another, tabular masses of trap reposing on granite occupy one side of a valley.

GRAVEL.

Beds of gravel are not common in these parts of Australia; but occur partially in the basins of the larger streams on the interior side of the Coast range where the pebbles in general consist of quartz.

SANDSTONE.

The prevailing geological feature in all Eastern Australia is the great abundance of a ferruginous sandstone in proportion to any other rocks. The sterility of the country where it occurs has been frequently noticed in these volumes. It is found on the coast at Port Jackson and it was the furthest rock seen by me in the interior beyond the Darling.

A deposit upwards of 1200 feet thick forms the Blue Mountains west of Sydney, ranging thence, with the intersection of no other rock of importance, to the Hawkesbury; and although declining towards the sea at the rate of only 100 feet per mile, or 1 in 52, or at an angle of about 1 degree with the horizon; yet it is traversed by ravines which increase in depth in proportion as the sandstone attains a greater elevation, and present perpendicular crags and cliffs of a very remarkable character.

A region consisting of a sandstone deposit of so great thickness and so slightly inclined necessarily presents a monotonous aspect in all directions; and when it is compared with European countries composed of many formations and presenting great diversity of scenery it proves how much geological structure influences pictorial and physical outlines. (See Plate 10 Volume 1, also Plate 38 above.)

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In the eastern part of Australia the geologist will certainly find sections in abundance but they are nearly all of sandstone for, with few exceptions no other rocks have been denuded in situations similarly exposed.

GEOLOGICAL STRUCTURE AND PHYSICAL OUTLINE. VALLEYS OF EXCAVATION. EXTENT OF THAT OF THE COX.

The ravines which discharge their waters into the little river Cox occupy an area of 1,212 square miles, or one-half of the county of Westmoreland on the right or south side of that river, and one-fourth of the county of Cook on the other. Of this area 796 square miles, equal to one-half of the county of Westmoreland, are on the right or south side of that river, and 416, or one-fourth of the county of Cook, on the left. The whole extent comprises the basin of this mountain stream, and is bounded by heights rising very gradually from about 1000 feet at the gorge or outlet of the Cox, to 3,400 feet on the north side at Blackheath, and on the south to Murruin and Werong, summits of still greater elevation; the lowest part of the ridge bounding this basin on the west or interior side being nearly 3000 feet above the level of the sea. Cox's river flows over a bed of water-worn rocks which, in the upper part of the valley, is 2,150 feet above the sea, and on the road to Bathurst this bed consists of trap and granite. The river falls rapidly on leaving the granite of the vale of Clwyd to a level not much above that of the sea, and it escapes near its junction with the Warragamba from this spacious basin through a gorge about 2,200 yards wide and flanked on each side by points about 800 feet high.

QUANTITY OF ROCK REMOVED.

Supposing but two-thirds of the enclosed area of sandstone to have been excavated to the depth of 880 feet only, which I allow as the mean thickness of the stratum thus broken into, and considering the inclination of the Cox and other valleys, then 134 CUBIC MILES of stone must have been removed from this basin of the Cox alone.

VALLEY OF THE GROSE.

The valley of the Grose, whose basin is contiguous to that of the Cox on the north, is of less extent but enclosed by cliffs of greater perpendicular height. That river has been already described in the journal, and the general character of the valley through which it flows is represented in Plate 10 Volume 1.* We now perceive but slight indications of the action by which the great area of stone in the valley of the Cox, the Grose *etc.* has been removed. There are no accumulations of sand but huge blocks of rock, scarcely worn by attrition, occur in great abundance in the bed of the stream; neither do we find in the larger channels of the rivers below any sand deposits, but on the contrary the very rich alluvium which distinguishes the banks of the Hawkesbury.

(Footnote. This book is already almost too full of plates and I beg to refer the geological reader to my three-sheet map of the Colony for the superficial forms and extent of these valleys.)

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WELLINGTON VALLEY.

In the year 1830, after I had traced out the new line of descent from the Blue Mountains to the interior country by the pass which I then named Mount Victoria, I extended my survey to the heights beyond Wellington Valley. This includes a rich alluvial tract watered by the river Bell, one of the principal tributaries of the Macquarie, and is about 170 miles to the westward of Newcastle. It is bounded on each side by a compact calcareous rock resembling the mountain limestone of England and rising on the east side to about 100 feet above the Bell.

On the west side of this valley hills of greater elevation, consisting of a red sandstone and conglomerate, extend parallel to the limestone; and on the east side of it is another range composed of trap-rocks. The basis of a tract still further eastward, dividing the watershed of the interior from that which sends its streams to the sea is, as has been already observed, of granite.

The limestone presents a naked and rugged surface composed of pointed, weather-worn blocks between which are small crevices leading to caves and fissures. From these crevices a warm air ascends, accompanied by a smell peculiar to the caves. The worn aspect of the external rock, resembling half-dissolved ice, is very remarkable, particularly near the largest caverns.

An account of the survey of these caves was communicated to the Geological Society in a paper read on the 13th of April 1831, of which an abstract was published in its Proceedings, but the particulars respecting the animal remains found by me have derived great additional importance from the discoveries made by Professor Owen since my return to England. I may be excused therefore for again calling attention to the situation of those curious caves respecting which the following details are now published with the consent of the Council of the Society.

LIMESTONE CAVERNS.

The entrance to the caves of Wellington Valley is in the side of a low hill and 65 feet above the adjacent alluvial flat. It consists of two crevices between large blocks of limestone in one side of a hollow about 12 feet deep; and which has evidently been widened by water. (Plate 41.)

DESCRIPTION AND VIEW OF THE LARGEST.

We first descended the fissure at the mouth of the large cave, and then clambered over great rocks until, at 125 feet from the entrance, we found these inequalities to be covered by a deep bed of dry, reddish dust, forming an even floor. This red earth lay also in heaps under lateral crevices, through which it seemed to have been washed down from above. On digging to a considerable depth at this point, we found a few



fragments of bone, apparently of the kangaroo. At 180 feet from the mouth is the largest part of the cavern, the breadth being 25 feet and the height about 50 feet. The floor consisted of the same reddish earth, but a thick stalagmitic crust extended for a short distance from a gigantic stalactite at the further end of the cavern. On again digging several feet deep into the red earth here we met with no lower layer of stalagmite nor any animal remains.

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On a corner of the floor behind the stalactite and nearly under a vertical fissure we found a heap of dry white dust into which one of the party sunk to the waist.* (G. Plate 44.)

(Footnote. The dust when chemically examined by Dr. Turner was found to consist principally of carbonate of lime with some phosphate of lime and animal matter. Proceedings of the Geological Society for 1831.)

Passing through an opening to the left of the stalactite we came upon an abrupt descent into a lower cavern. Having reached the latter with some difficulty, we found that its floor was about 20 feet below that of the cavern above. It was equally level and covered to a great but unascertained depth with the same dry red earth which had been worn down about five feet in a hollow or rut.

A considerable portion of the farthest part of the floor (at H) was occupied with white dust or ashes similar to that found in the corner of the upper floor (at G).

This lower cavern terminated in a nearly vertical fissure which not only ascended towards the external surface but descended to an unascertained depth beneath the floor. At about 30 feet below the lowest part of the cavern it was found to contain water, the surface of which I ascertained was nearly on a level with that of the river Bell. Having descended by a rope I found that the water was very transparent but unfit to drink, having a disagreeable, brackish flavour.

This lower cavern is much contracted by stalactites and stalagmites. After having broken through some hollow-sounding portions (at O and N) we entered two small lateral caverns and in one of these, after cutting through (at I) about eight inches of stalagmitic floor, we discovered the same reddish earth. We dug into this deposit also, but discovered no pebbles or organic fragments; but at the depth of two and a half feet met with another stalagmitic layer which was not penetrated. This fine red earth or dust seems to be a sediment that was deposited from water which stood in the caves about 40 feet below the exterior surface; for the earth is found exactly at that height both towards the entrance of the first cavern and in the lateral caverns. (See Plate 44.)

That this cave had been enlarged by a partial sinking of the floor is not improbable, as broken stalagmitic columns, and pillars like broken shafts, once probably in contact with the roof, are still apparent. (See the view of the largest cavern Plate 43.)

OF THAT CONTAINING OSSEOUS BRECCIA.

Eighty feet to the westward of this cave is the mouth of another of a different description. Here the surface consists of a breccia full of fragments of bones; and a similar compound, confusedly mixed with large blocks of limestone, forms the sides of the cavity. This cave presents in all its features a striking contrast to that already

described. Its entrance is a sort of pit, having a wide orifice nearly vertical, and its recesses are accessible only

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by means of ladders and ropes. Instead of walls and a roof of solid limestone rock we found shattered masses apparently held together by breccia, also of a reddish colour and full of fragments of bones. (Plate 45.) The opening in the surface appears to have been formed by the subsidence of these rocks at the time when they were hurled down, mixed with breccia, into the position which they still retain. Bones were but slightly attached to the surface of this cement, as if it had never been in a very soft state, and this we have reason to infer also from its being the only substance supporting several large rocks and at the same time keeping them asunder. On the other hand we find portions of even very small bones, and also small fragments of the limestone, dispersed through this cementing substance or breccia.

FIRST DISCOVERY OF BONES.

The pit had been first entered only a short time before I examined it by Mr. Rankin, to whose assistance in these researches I am much indebted. He went down by means of a rope to one landing-place and then, fixing the rope to what seemed a projecting portion of rock, he let himself down to another stage where he discovered, on the fragment giving way, that the rope had been fastened to a very large bone, and thus these fossils were discovered. The large bone projected from the upper part of the breccia, the only substance which supported as well as separated several large blocks, as shown in the accompanying view of the cave (Plate 45) and it was covered with a rough tuffaceous encrustation resembling mortar. No other bone of so great dimensions has since been discovered within the breccia. (See Figures 12 and 13, Plate 51.)

From the second landing-place we descended through a narrow passage between the solid rock on one side and huge fragments chiefly supported by breccia on the other, the roof being also formed of the latter and the floor of loose earth and stones.

SMALL CAVITY AND STALAGMITIC CRUST.

We then reached a small cavern ending in several fissures choked up with the breccia. One of these crevices (K. Plate 44) terminated in an oven-shaped opening in the solid rock (Plate 50) and was completely filled in the lower part with soft red earth which formed also the floor in front of it and resembled that in the large cavern already described. Osseous breccia filled the upper part of this small recess and portions of it adhered to the sides and roof adjoining, as if this substance had formerly filled the whole cavity. At about three feet from the floor of this cavity (Plate 50) the breccia was separated from the loose earth below by three layers of stalagmitic concretion, each about two inches thick and three apart; and they appeared to be only the remains of layers once of greater extension, as fragments of stalagmite adhered to the sides of the cavity as shown in Plate 50. The spaces between what remained of these layers were filled with red ochreous matter and bones embedded partially in the stalagmite. Those



in the lower sides of the layers were most thickly encrusted with tuffaceous matter; those in the upper surfaces on the contrary were very white and free from the red ferruginous ochre which filled the cavities of those in the breccia, although they contained minute transparent crystals of carbonate of lime.

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TEETH FOUND IN THE FLOOR.

On digging (at K) into the soft red earth forming the floor of this recess, some fragments of bone, apparently heavier than those in the breccia, were found, and one portion seemed to have been gnawed by a small animal. We obtained also in this earth the last phalange of the greatest toe of a kangaroo, and a small water-worn pebble of quartz. By creeping about 15 feet under a mass of solid rock which left an opening less than a foot and a half above the floor, we reached a recess about 15 feet high and 12 feet wide (L). The floor consisted of dry red earth and, on digging some feet down, we found fragments of bones, a very large kangaroo tooth (Figure 6 Plate 47) a large tooth of an unknown animal (Figures 4 and 5 Plate 51) and one resembling some fragments of teeth found in the breccia. (See Figures 6, 7, 8, and 9, Plate 51.)

A THIRD CAVERN.

We next examined a third cave about 100 yards to the westward of the last described. The entrance, like that of the first, was tolerably easy, but the descent over the limestone rocks was steeper and very moist and slimy. Our progress downwards was terminated by water which probably communicated with the river Bell, as its level was much lower when the cave was first visited during a dry season. I found very pure iron ochre in some of the fissures of this cavern but not a fragment of bone.

BRECCIA ON THE SURFACE.

Perceiving that the breccia, where it occurred below, extended to the surface, I directed a pit to be dug on the exterior about 20 feet from the mouth of the cave and at a part where no rocks projected. (N, Plate 44.) we found that the hill there consisted of breccia only; which was harder and more compact than that in the cave and abounded likewise in organic remains.

Finally I found on the summit of the same hill some weathered blocks of breccia from which bones protruded, as shown in the accompanying drawing of a large and remarkable specimen. (Plate 46.)

SIMILAR CAVERNS IN OTHER PARTS OF THE COUNTRY.

Other caverns containing breccia of the same description occur in various parts within a circuit of 50 miles, and they may probably be found throughout the limestone country not yet examined.

AT BUREE.

On the north bank of the Macquarie, 8 miles east from the Wellington caves, and at Buree, about 50 miles to the south-east of them, I found this breccia at considerable depths, having been guided to it by certain peculiar appearances of subsidence and

disruption, and by yawning holes in the surface, which previous experience had taught me to consider as indications of its existence.

On entering one of these fissures from the bed of the little stream near Buree and following, to a considerable distance, the subterraneous channel of the rivulet, we found a red breccia containing bones as abundantly as that of Wellington Valley. It occurred also amidst masses of broken rocks, between which we climbed until we saw daylight above and, being finally drawn out with ropes, we emerged near the top of a hill from a hole very similar in appearance to the mouth of the cave at Wellington, which it also resembled in having breccia both in the sides of the orifice and in the surface around it.



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AT MOLONG.

At Molong, 36 miles east of Wellington Valley, I found some concreted matter within a small cavity of limestone rock on the surface and, when broken, this proved to be also breccia containing fragments of bone.

SHATTERED STATE OF THE BONES.

It was very difficult to obtain any perfect specimens of the remains contained in the breccia—the smallest of the various portions brought to England have nevertheless been carefully examined by Professor Owen at the Hunterian Museum, and I have received from that distinguished anatomist the accompanying letter containing the result of those researches and highly important determinations by which he has established several points of the greatest interest as connected with the Natural History of the Australian continent.

IMPORTANT DISCOVERIES BY PROFESSOR OWEN.

Royal College of Surgeons, May 8th, 1838.

Dear Sir,

I have examined, according to your request, the fossil remains which you discovered in Wellington Valley, Australia, and which are now deposited in the Museum of the Geological Society; they belong to the following genera:

GIGANTIC FOSSIL KANGAROOS.

MACROPUS Shaw.

Sp. 1. *Macropus atlas*. O. This must have been at least one-third larger than *Macropus major*, the largest known existing species: it is chiefly remarkable for the great size of its permanent spurious molar; in which respect it approaches the subdivision of Shaw's genus, called *Hypsiprymnus* by Illiger. The remains of this species consist of a fragment of the right ramus of the lower jaw. (I*) Figure 1 Plate 47.

(Footnote. The numbers and letters within a parenthesis in this letter refer to labels on the specimens.)

Sp. 2. *Macropus titan*. O. I gave this name to an extinct species, as large as the preceding, but differing chiefly in the smaller size of the permanent spurious molar; which in this respect more nearly corresponds with the existing *Macropus major*. The remains of this species consist of a fragment of the right ramus of the lower jaw. (II) Figure 3 Plate 47.

In both the above specimens the permanent false molar is concealed in its alveolus, and was discovered by removing part of the substance of the jaw, indicating the nonage of the individuals.

A portion of cranium with the molar series of teeth of both sides. (II) Figures 4 and 5 Plate 47. This specimen I believe to belong to *Macropus titan*.

The permanent false molar, which is also concealed in this upper jaw, is larger than that of the lower jaw of *Macropus titan*, but I have observed a similar discrepancy in size in the same teeth of an existing species of *Macropus*.

To one or other of the two preceding gigantic species of kangaroo must be referred:

II.a. Crown of right inferior incisor, Figure 6 Plate 47.

II.b. Lower extremity of right femur.

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II.c. Lower extremity of right femur, with the epiphysis separated, showing its correspondence in age with the animals to which the fossil jaws belonged.

II.d. 5th Lumbar vertebra, Figure 8 Plate 47.

II.e. 10th or 11th Caudal vertebra. The proportion of this bone indicates that these great kangaroos had a relatively stouter and perhaps shorter tail than the existing species.

Macropus sp. indeterminate. Agrees in size with *Macropus major*, but there is a difference in the form of the sacrum: the second vertebra of which is more compressed—to this species which cannot be determined till the teeth be found, I refer the specimens marked:

III. Sacrum.

III.a. Proximal end of left femur.

III.b. Proximal end of left tibia, in which the anterior spine sinks more gradually into the shaft than in *Macropus major*. As this is the only species with the skeleton of which I have been enabled to compare the preceding fragments, I am not able to pronounce as to their specific distinctness from other existing species of equal size with the *Macropus major*.

Macropus sp. indeterminate. From want of skeletons of existing species of kangaroo, I must also leave doubtful the specific determination of a species smaller than *Macropus major*, represented by the left ramus of the lower jaw (IV) in which the permanent false molar is in place together with four true molars, and which would therefore be a species of *Halmaturus* of Fred. Cuvier.

Macropus.

(V.) Part of the left ramus of the lower jaw, with two grinders in place, and a third which has not quite cut through the jaw.

(V.a.) Sixth and seventh grinders according to the order of their development, right side, upper jaw, of a kangaroo not quite so large as *Macropus major*.

Several other bones and portions of bone are referable to the genus *Macropus*, but they do not afford information of sufficient interest or importance to be specially noticed.

GENUS HYPsipRYMNUS.

Hypsiprymnus, sp. indeterminate.

(VI.) Figures 1 and 2 Plate 48. A portion of the upper jaw and palate with the deciduous false molar and four true molars in place on each side; the fifth or posterior molar is concealed in the alveolus, as also the crown of the permanent false molar.

Hypsiprymnus.

(VI.a.) Figure 3 Plate 48. Part of the right ramus of the lower jaw, exhibiting a corresponding stage of dentition.

Observation. This species is rather larger than any of the three species with the crania of which I have had the opportunity of comparing them: there is no evidence that it agrees with any existing species.

GENUS PHALANGISTA.

(VII.) Cranium, coated with stalactite.

(VII.a.) Part of right ramus, with spurious and 2nd molar.

(VII.b.) Right ramus, lower jaw.

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Observation. The two latter specimens disagree with *Phalangista vulpina* in having the spurious molar of relatively smaller size, and the 2nd molar narrower: the symphysis of the lower jaw is also one line deeper in the fossil. As the two latter specimens agree in size with the cranium, they probably are all parts of the same species, of which there is no proof that it corresponds with any existing species. But a comparison of the fossils with the bones of these species (which are much wanted in our osteological collections) is obviously necessary to establish the important fact of the specific difference or otherwise of the extinct Phalanger.

GENUS PHASCOLOMYS.

Sp. *Phascolomys mitchellii*, a new species.

(VIII.) Figure 4 Plate 48. Mutilated cranium.

(VIII.a.) Figure 5 Plate 48. Part of lower jaw belonging to the above.

(VIII.b.) Figure 6 Plate 48. Right series of molar teeth in situ.

(VIII.c.) Right ramus of the lower jaw.

Observation. These remains come nearer to the existing species than do those of any of the preceding genera; but after a minute comparison I find that there is a slight difference in the form of the grinders which, in the fossil, have the antero-posterior diameter greater in proportion than the transverse; the first grinder also is relatively larger, and of a more prismatic form; the upper incisors are less compressed and more prismatic; this difference is so well marked that, once appreciated, anyone might recognise the fossil by an incisor alone. There is a similar difference in the shape of the lower incisor. The fossil is also a little larger than the largest wombat's cranium in the Hunterian Collection. From these differences I feel no hesitation in considering the species to which these fossils belong as distinct; and propose to call it *Phascolomys mitchellii*.

NEW GENUS DIPROTODON.

I apply this name to the genus of *Mammalia* represented by the anterior extremity of the right ramus, lower jaw, with a single large procumbent incisor.

(IX.) Figure 1 Plate 49. This is the specimen conjectured to have belonged to the Dugong, but the incisor resembles the corresponding tooth of the wombat in its enamelled structure and position. See Figure 2 Plate 49 and a section of the wombat's teeth in Figure 7 Plate 48. But it differs in the quadrilateral figure of its transverse section, in which it corresponds with the inferior incisors of the hippopotamus.



To this, or to some distinct species, of equal size, have belonged the fragments of bones of extremities marked X., X.a., X.b.

GENUS DASYURUS.

Dasyurus lanarius, O. A new species. I apply this name to the species to which the following remains belong.

(XI.) Figures 3 and 4 Plate 49. Portions of the left side of the upper jaw.

(XI.a.) Figure 5 Plate 49. Portions of the left side of the upper jaw.

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(XI.b.) Figure 6. Left ramus lower jaw, with last grinders.

(XI.c.) Figure 7. Anterior part of the right ramus of lower jaw.

This species closely resembles *Dasyurus ursinus*, but differs in being one-third larger, and in having the canines, or laniaries, of proportionately larger size.

The position of the teeth in the specimen marked XI.c. Figure 7, which are wider apart; leads me to doubt whether it is the lower jaw of *Dasyurus laniarius*, or of some extinct marsupial carnivore of an allied but distinct species.

GENERAL RESULTS OF PROFESSOR OWEN'S RESEARCHES.

The general results of the above examination are:

1. That the fossils are not referable to any known extra-Australian genus of mammals.
2. That the fossils are not referable, from the present evidence, to any existing species of Australian mammal.
3. That the greater number certainly belong to species either extinct or not yet discovered living in Australia.
4. That the extinct species of *Macropus*, *Dasyurus*, *Phascolomys*, especially *Macropus atlas* and *Macropus titan* are larger than the largest known existing species.
5. That the remains of the saltatory animals, as the *Macropi*, *Halmaturi*, and *Hypsiprymni*, are all of young individuals; while those of the burrowing Wombat, the climbing *Phalanger*, and the ambulatory *Dasyure*, are of adults.

I remain, dear Sir, *etc.*

(Signed) Richard Owen.

AGE OF THE BRECCIA CONSIDERED.

Nothing could be discovered in the present state of these caverns at all likely to throw any light on the history or age of the breccia, but the phenomena they present seem to indicate more than one change in the physical outline of the adjacent regions, and probably of more distant portions of Australia; at a period antecedent to the existing state of the country.

STATE OF THE CAVERNS.



Dry earth occurred in the floor of both the caverns at Wellington Valley and in the small chamber (Plate 28) of the breccia cave it was found, as before stated, beneath the three lines of stalagmite and the osseous breccia. It seems probable therefore that this earth once filled the cave also to the same line, and that the stalagmite then extended over the floor of red earth. Moreover I am of opinion that the interval between the stalagmite and the roof was partly occupied by the bone breccia of which portions remain attached to the roof and sides above the line of stalagmite. It is difficult to conceive how the mass of red earth and stalagmitic floors could be displaced, except by a subsidence in the original floor of the cave. But the present floor contains no vestiges of breccia fallen from the roof, nor any remains of the stalagmitic crust once adhering to the sides, which are both therefore probably deposited below the present floor.

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In the external or upper part of the same cave, as shown in Plate 45, the floor consisted of the red dust, and was covered with loose fragments of rock, apparently fallen from conglomerated masses of limestone and breccia which also however extended under the red earth there. Thus it would appear that traces remain in these caverns: First, of an aqueous deposit in the red earth found below the stalagmite in one cavern, and beneath breccia in the other. Secondly, of a long dry period, as appears in the thick crust of stalagmite covering the lowest deposit in the largest cavern, and during which some cavities were filled with breccia, even with the external surface. Thirdly, of a subsidence in the breccia and associated rocks and, lastly, of a deposit of red earth similar to the first.

TRACES OF INUNDATION.

The present floor in both caves bears all the evidence of a deposition from water which probably filled the interior of the cavern to an unknown height. It is clear that sediment deposited in this manner would, when the waters were drawn off, be left in the state of fine mud, and would become, on drying, a more or less friable earth.

STALAGMITIC CRUST.

Any water charged with carbonate of lime which might have been subsequently introduced would have deposited the calcareous matter in stalactites or stalagmites; but the general absence of these is accounted for in the dryness of the caves. This sedimentary floor contained few or no bones except such as had previously belonged to the breccia, as was evident from the minuter cavities having been still filled with that substance.

I do not pretend to account for the phenomena presented by the caverns, yet it is evident, from the sediments of mud forming the extensive margins of the Darling, that at one period the waters of that spacious basin were of much greater volume than at present, and it is more than probable that the caves of Wellington Valley were twice immersed under temporary inundations. I may therefore be permitted to suggest, from the evidence I am about to detail of changes of level on the coast, that the plains of the interior were formerly arms of the sea; and that inundations of greater height have twice penetrated into, or filled with water, the subterraneous cavities, and probably on their recession from higher parts of the land, parts of the surface have been altered and some additional channels of fluvial drainage hollowed out. The accumulation of animal remains very much broken and filling up hollow parts of the surface show at least that this surface has been modified since it was first inhabited; and these operations appear to have taken place subsequently to the extinction, in that part of Australia, of the species whose remains are found in the breccia; and previously to the existence, in at least the same districts, of the present species.

STATE OF THE BONES.

No entire skeleton has been discovered, and very rarely were any two bones of the same animal found together. On the contrary even the corresponding fragments of a bone were frequently detected some yards apart (as for instance those in Figures 2 and 1 Plate 49).

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PUTREFACTION HAD ONLY COMMENCED WHEN FIRST DEPOSITED.

On the other hand it would appear from the position of the teeth in one skull (Figure 4 Plate 48) that they were only falling out from putrefaction at the time the skull was finally deposited in the breccia, and from the nearly natural position of the smaller bones in the foot of a dasyurus (Figure 2 Plate 51) it can scarcely be doubted that this part of the skeleton was imbedded in the cement when the ligaments still bound the bones together. The united radius and ulna of a kangaroo (Figure 1 Plate 51) are additional evidence of the same kind; and yet if the bones have been so separated and dispersed and broken into minute fragments, as they now appear in this breccia, while they were still bound together by ligaments, it is difficult to imagine how that could take place under any natural process with which we are acquainted.

ACCOMPANYING MARKS OF DISRUPTION. EARTHY DEPOSITS.

It may however be observed that the breccia is never found below ground without unequivocal proofs in the rocks accompanying it of disruption and subsidence, and that the best specimens of single bones have been found wedged between huge rocks, where the breccia occurs like mortar between them, in situations eight or ten fathoms underground.

THESE PHENOMENA COMPARED WITH OTHER EVIDENCE OF INUNDATION.

That changes have taken place in the relative level of land and sea is evident from the channel of the Glenelg which is worn in the rock to a depth of five fathoms below the sea level. The sea must have either risen, or the earth must have subsided, since that channel was worn by any current of water for it is now as still as a canal, the tide making a difference of only a few inches.

The features on the shores of Port Jackson extend underwater, preserving the same forms as they have above it; while the bays and coves now subject only to the ebb and flow of a tide present extensive ramifications, and can only be considered the submerged valleys of a surface originally scooped out by erosion at a period when the land stood higher above the sea.

SALT LAKES IN THE INTERIOR.

The hills on the margins of the Australian salt lakes are always on the north-east side, or opposite that of the prevailing south-west winds. The formation of these hills is probably due to the action of the wind, the growth and decomposition of small shells, the carbonate of lime disengaged by evaporation, and the concretion of calcareous matter and friable tuff so common in these ridges.



In two of the most remarkable, Mitre Lake and Greenhill Lake, a portion of the basin of each, between the hilly curves and the water, was filled by a dark-coloured perfectly level deposit, apparently of vegetable mould. This being of a quality different from that of the hills, it would appear that any process by which these heights may have originated through the agency of the water adjacent and the wind could not continue after this different formation had accumulated between them. Accordingly where this dark-coloured deposit is most extensive the curved hill concentric with the outer margin seems less perfect; but whether worn by time or sweeping inundations I cannot pretend to say.

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That some affinity exists between such accumulations and the salt water in the lakes is the more probable from the present state of those of Cockajemmy, which occur in the bed of a former current, and between the rocky sides of a kind of ravine. Even in such a situation a mound of very firm ground has been formed on the eastern bank of each, and was found very convenient for the passage of the ravine by the carts of the party. (See above.)

In those hills beside salt lakes on the plains a tendency to regular curvature was the chief feature: the relative situation with respect to the water and the wind was always the same; while in some cases, where grassy flats had once been lakes, crescent-shaped green mounds were still apparent on the north-eastern sides of each. If these remains of salt water are of less volume than they have been formerly, as may be presumed from these circumstances; and if the waters according to Professor Faraday's analysis "are solutions of common salt and, except in strength, very much resemble those of the ocean,"* we cannot have much difficulty in believing that the sea deposited the water in these situations at no very remote period.

As a dark-coloured soil is also found in the ridges about some of these lakes we must look deeper for the original cause of such depressions in those extensive plains; and may attribute them either to cavities or protuberances in the lower rocks, which may not have been sufficiently filled or covered by the superincumbent deposits: or they may be due to partial subsidences in a thin stratum of limestone.

CHANGES ON THE SEACOAST. PROOFS THAT THE COAST WAS ONCE HIGHER ABOVE THE SEA THAN IT IS AT PRESENT. PROOFS THAT IT WAS ONCE LOWER. AND OF VIOLENT ACTION OF THE SEA.

The sea, probably when higher relatively to the land than it is at present, appears to have acted with some violence in isolating various points along the eastern coast; most of which we now find curiously analogous, in their situation on the southern sides of inlets, and in being now united to the mainland by mounds of sand.

AT WOLLONGONG.

The point of Wollongong was formerly an island and is now only connected by drifted sandhills with the site of the township.

CAPE SOLANDER.

Cape Solander, the south head of Botany Bay, on which Captain Cook first landed, was evidently once an island though at present connected with the mainland by the neck of sand which separates Botany Bay from Port Hacking.

PORT JACKSON.

The south head of Port Jackson has also been isolated but is again connected with the shore of Bellevue between Bondi Bay and Rose Bay, by drifted hills of sand. The north head appears to have been likewise isolated.

BROKEN BAY.

Barrenjoey, the south head of Broken Bay, is connected only by a low beach of sand.

NEWCASTLE.

The Beacon head of Newcastle was once an island; and the drifted sand forming the hills on which the town is built has since been thrown up by the sea.



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TUGGERAH BEACH.

Brisbane Water, Tuggerah beach, and Lake Macquarie are also striking proofs of change of the same character as those at Port Jackson, especially as they occur in a country possessing no inland lakes, and along a coastline which is very even and straight in other respects.

BASS STRAIT.

The line of rocky islets extending across Bass Strait seems to be the remains of land once continuous between the two shores, probably when the current was still active in the channel of the Glenelg, and before the sea had penetrated far within the heads of Port Jackson.

Thus it would appear that the Australian continent bears marks of various changes in the relative height of the sea; on its shores and in the interior; and that the waters have been at some periods much higher and at another period lower with respect to the land than they are at present.

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(APPENDIX 2.1.

VOCABULARY OF WORDS HAVING THE SAME MEANING IN DIFFERENT PARTS
OF
AUSTRALIA.

APPENDIX 2.2.

METEOROLOGICAL JOURNAL KEPT DURING THE JOURNEY INTO THE INTERIOR
OF NEW
SOUTH WALES IN 1836.)

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APPENDIX 2.3.

EXTRACT FROM THE SYDNEY HERALD OF MAY 21, 1838.

The murder of Mr. Faithful's servants by the blacks having created a more than ordinary sensation among the settlers in the interior, we have obtained the following authentic particulars of that desperate outrage. It appears that on the morning of the 11th ultimo, a party of men in charge of Mr. Faithful's sheep on the route to Port Phillip were



preparing to proceed from the Winding Swamp, about 30 miles beyond the Ovens River, on their way to the Goulburn, where it was understood that good sheep stations might be had; and while the bullocks were being yoked the men with the drays heard the shouts of the shepherds crying out for help. These men, who were at a short distance from the encampment collecting the sheep, were presently seen running with great speed towards the dray, pursued by a body of blacks throwing spears after them. Their companions near the encampment, three of whom were armed with guns, immediately ran to their assistance, and if possible to drive off the blacks, who by that time were within 300 or 400 yards of the camp. One of these men, named Bentley, fired his gun in the air, thinking that such a display would intimidate them, but it had no effect. The blacks still came forward, cautiously sheltering themselves behind the trees in their path until, when within near approach of the adverse party, one came forward and was in the act of deliberately poisoning his spear when Bentley shot him dead and was himself immediately after pierced with three spears. This unfortunate man was last seen desperately fighting with the butt-end of his musket. The combat now became general —spears

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flew in all directions and several shots were fired without effect, owing to the caution exercised by the blacks of interposing the trees between themselves and the defensive party, but still gradually closing upon the latter. It was now seen that further resistance would be of no avail, and that in flight lay the only chance of safety, as the blacks continued to increase in numbers as they advanced. There was fifteen in all of Mr. Faithful's servants, out of which seven in number were killed by the blacks, and one other so severely wounded that his recovery is considered hopeless. When attempting to make their escape a line was opened by the blacks, consisting of about 150 in number, who thus appeared at the fugitives' right and left as they passed. At about 100 yards distance from the scene of this outrage, another strong party of armed blacks was drawn up, doubtless as a reserve, but they took no part in the contest. There could not, we are assured, have been fewer than 300 fighting men present—not an old man was seen among them. The party in charge of the sheep and cattle had remained at this particular place from the Saturday previous, waiting the arrival of Mr. George Faithful, who was only a day's stage behind, and was then momentarily expected. During their stay every precaution was taken by the overseer and the rest to keep on friendly terms with the natives, who constantly hovered about the encampment in groups of 10 or 20 at a time. So friendly did they appear, that neither the overseer nor any of the men, save Bentley, anticipated any hostile intention; but his suspicion was excited by the fact of no women appearing at any time among the blacks, and by finding, while going his rounds as guard, the night preceding the attack, a large number of spears, at a short distance from the camp, which he concealed. All the sheep, except 130, we understand, have been recovered, and some of the cattle; the remainder, it is expected, may also be recovered when a party sufficiently strong to protect themselves from the blacks can be formed to go in search of them.

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(APPENDIX 2.4.

AN ACCOUNT OF THE NUMBER OF POUNDS OF WOOL IMPORTED FROM NEW SOUTH WALES
AND FROM VAN DIEMEN'S LAND FROM 1820 TO 1837, DISTINGUISHING EACH YEAR.

APPENDIX 2.5.

AN ACCOUNT OF THE NUMBER OF SHIPS, AND THEIR TONNAGE, CLEARED OUT TO NEW SOUTH WALES AND VAN DIEMEN'S LAND FROM 1820 TO 1837, DISTINGUISHING EACH YEAR.

APPENDIX 2.6.

AN ACCOUNT OF THE NUMBER OF SHIPS, AND THEIR TONNAGE, REPORTED INWARDS FROM NEW SOUTH WALES AND VAN DIEMEN'S LAND FROM 1820 TO 1837, DISTINGUISHING EACH YEAR.)