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Major J. L. Mitchell del. A. E. Ken lith.

CRAATIE OF MURROA - OR NI-NAPIER.

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THE HISTORY OF THE DISCOVERY  
 AND THE INTERIOR OF  
 THE EASTERN PART OF AUSTRALIA,  
 WITH A DESCRIPTION OF THE CENTRAL PART OF THE  
 AUSTRALIAN CONTINENT,  
 AND OF THE PRESENT COLONY OF  
 NEW SOUTH WALES,  
 BY  
 CAPTAIN JAMES COOK, R.N. & JAMES  
 KING, R.N.



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# EXPEDITION

TO

## THE RIVERS DARLING AND MURRAY,

IN THE YEAR 1836.

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### CHAPTER I.

Route proposed—Equipment—List of the Men—Agreement with a native guide—Live stock—Corrobory of the natives—Visit to the Limestone caves—Osseous breccia—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.

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 point 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 by the first convenient opportunity, thus proceed upwards by water, as far as practicable, and regain the colony somewhere about Yass Plains.

The preparations for this journey were made chiefly in the lumber-yard at Paramatta as on the former occasion, and under the superintendance of the same officer, Mr. Simpson. Much of the equipment used for the last expedition was again available on 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.

Serviceable horses and bullocks were at that time scarce, in consequence of a long continued drought, 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 which I had fixed as the place of rendezvous near the Canobolas; 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 river Lachlan was dried up:

On the following day I organized the party, and armed the men. I distributed to each a suit of new clothing; consisting of grey trowsers 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:—

Alexander Burnett, . . .	<i>Overseer and store-keeper.</i>
Robert Muirhead, . . .	} <i>Bullock drivers.</i>
Charles Hammond, . . .	
William Thomas, . . .	
Richard Lane, . . .	
James McLellan, . . .	
Charles Webb, . . .	
John Johnston, . . .	} <i>Blacksmiths.</i>
Walter Blanchard, . . .	
William Woods, . . .	} <i>Horse carters.</i>
Charles King, . . .	
John Gayton, . . .	
John Drysdale . . . .	<i>Medical attendant.</i>
John Roach, . . . .	<i>Collector of birds.</i>
John Richardson . . .	<i>Collector of plants.</i>
John Palmer, . . . .	} <i>Sailors.</i>
John Douglas, . . . .	
Joseph Jones, . . . .	<i>Shepherd.</i>
James Taylor, . . . .	<i>Groom and trumpeter</i>
Edward Pickering, . . .	} <i>Carpenters.</i>
Archibald McKean, . . .	
James Field, . . . .	<i>Shoemaker.</i>
Anthony Brown, . . . .	<i>Cook.</i>

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 already with me on two 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. 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 just then.

In this camp of preparation I was visited by our old friends the blacks; 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, &c.; all which I immediately agreed to.

*March 17.*—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 a fine cool breeze whispered through the open forest, as we bounded over hill and dale, and this 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 then was on this the first morning of mine, which was also Saint Patrick's day, and in riding through the bush I had again leisure to recal past scenes and times connected with this anniversary. I remembered that exactly on that morning, twenty-four years before, I had 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”) to meet us. At Buree I rejoined my friend Rankin, who had accompanied me to the camp from Bathurst, and Captain Raine, who occupied this place with his cattle. A hundred sheep and five fat oxen were to be furnished by this gentleman, to complete my commissariat supplies. In the evening the blacks, having assembled in some numbers, entertained us with a “corrobory,” their universal and highly original dance. Like all the rest of the habits and customs of this singular race of wild men, the “corrobory” is peculiar, and seems essential to their character. This amusement always takes place at night, and by the light of blazing boughs. They dance to beaten time accompanied by a song.\* The dancers paint themselves white, in such remarkably varied ways, that no two individuals are at all alike. The surrounding darkness seems necessary to the effect of the whole, all these dances being more or less dramatic; the painted figures coming forward in mystic order from the obscurity of the back-ground 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 the most graceful motions both of arms and legs, while others

\* 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. 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 has 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 I., 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*, Vol. I.

one by one drop in, until each imperceptibly warms into the truly savage attitude of the "corrobory" jump; the legs striding to the utmost, the head turned over one shoulder, the eyes glaring, and fixed with savage energy in one direction, the arms raised and inclined towards the head, the hands usually grasping waddies, bommerengs, or other warlike weapons. The jump now keeps time with each beat, and at each leap the dancer takes six inches to one side, all being in a connected line led by the first dancer. The line is doubled or tripled according to space and numbers; and this gives great effect, for, when the front line 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, laying half asleep perhaps, as they usually are when not intent on game; set him to this dance, and he is fired with sudden energy, every nerve is strung to such a degree, that he is no longer to be recognized as the same individual, until he ceases to dance, and comes to you again. There can be little doubt but that the corrobory is the medium through which the delights of poetry and the drama are enjoyed, in a limited degree, even by these primitive savages of New Holland.

*March 18.*—As it was necessary to grind some wheat with hand-mills, in order 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 the Buree country. The whole district consists of trap and limestone, the former appearing in ridges, which belong to the lofty mass of the Canobolas. The limestone occurs chiefly in the sides of vallies in different places, and still contains many unexplored caves. The orifices of these are to be found in small fissures of the rock, although they escape 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 were to be found in the deepest crevices and subterranean recesses of the limestone rock. How they got there was a question which had puzzled me for some time, 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.

The first limestone we examined this day 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, viz. a perpendicular crevice with red tuff about the sides. Being provided with candles and ropes, we descended, first about six fathoms perpendicularly to one stage, then obliquely, about half as much to a sort of floor of red earth ; Mr. Rankin, although a large man, always leading the way into the smallest openings. We penetrated thus to several recesses by crawling through narrow crevices, until Mr. Rankin found some masses of breccia and osseous matter wedged in beneath the limestone rock, so that some digging was necessary before they could be extracted. 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, with the exception of one or two vertebræ 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 *Dasyurus*, the teeth being however very well preserved. This was, doubtless, an unvisited cave ; for the natives have an instinctive (or super-

stitious) dread of all such places, and it is not, therefore, probable, that mortal man had ever before breathed in that cavern. With all our ropes it cost some of us enough of 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 that pursuit there, 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.

*March 19.*—Our stores being completed we proceeded on our journey by following the little rivulet of Buree in its course 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 in its general course, towards the low country more to the southward. I had long thought that it might be possible to ascertain from that hill, whether any range extended westward, of sufficient magnitude to separate the basins of the Murray and the Darling. I wished to have visited this hill last year, when 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 had seen last year, 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 moving towards its banks, now in a season 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 this creek from Buree; 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 it, I could find no water, although I followed it two miles down. There I found a cattle station, named Toogang, where there was water. It was nothing to the old hands of the Darling, to have to go only *two* miles for water. We suffered no inconvenience from this; but it was deplorable to see the bed of a fine little stream so completely dry and dusty. This day we met with a new species of *Psoralea*.\* At this camp I ascertained the magnetic variation to be  $9^{\circ} 10' 15''$  east, by an observation of the star  $\beta$  Centauri.

*March 20.*—We proceeded, crossing the creek near the cattle station, where I learnt, that it was joined immediately below by the creek which I had named King's creek on my last journey; and that water was abundant in it below that 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 creek or river is, that bad places for the carts may be avoided, and the doubles of the stream cut off by the easiest routes. In crossing a gully entering the creek near another station, called Chilberengaba, we broke a wheel after travelling about seven miles, and here, therefore, we were obliged to encamp, and remain until the carpenter and the smith could repair it. In the mean time I set out with

\* 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 carries the number inhabiting Australia to 4; all of which are remarkable for their resemblance to the North American form of the genus. That which we observed on this occasion was a small spreading herbaceous plant. *P. patens*, Lindl. MSS.; 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.



the native guide for the summit of Marga, which proved to be one of my old fixed points, being 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 him in, and in laying the yoke on his neck for another visit to the banks of the Darling; he was fatter than any other of our working bullocks. I added a second *Psoralea* to that discovered yesterday, a small graceful plant with racemes of purplish minute flowers elevated far above the leaves, on slender stalks so tough as to be broken only with some difficulty.\*

*March 21.*—According to arrangements made with Captain King, and Mr. Dunlop, the King's astronomer at the Paramatta Observatory, I halted the party this day, in order to make hourly observations of the barometer, thermometer, the sky, &c. This plan had been strongly recommended by Sir John Herschell; 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, corresponded in these simultaneous observations. On 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.

*March 22.*—We continued our journey along the left bank of the creek, but with considerable difficulty and delay, occasioned by the rocky escarpment of the above-mentioned extremities of Marga closing on the creek bank, so that we had to break away rocks, and move the carts one by one, all

\* *P. tenax*, Lindl. MSS. ; herbacea, depressa, perennis, glabra, foliis glandulosis palmatim 5-foliolatis, foliolis linearibus vel lineari-oblongis obtusis, racemis cylindraccis longissimè pedunculatis erectis, leguminibus ovatis scabris glabris.

hands assisting. We at length gained a pleasant track of land on which the grass was green and luxuriant from some partial rain; and on this place I encamped with the intention of next day ascending Marga. In the creek we now found ponds, deep and clear like canals; their borders being reedy and their margins green. In these ponds the natives speared several fish, which had, however, a muddy flavour. Among them was one, apparently the eel-fish of my first expedition, as caught in the Nammoy and upper Darling.\* This circumstance was rather in favour of the supposition, that the streams unite; but still the fish seemed somewhat different. On this day's journey we saw several large snakes; one, a large black snake, 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 it very fierce and dangerous, saying, he 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, and also large fangs hooked inwards, which the natives particularly pointed out. It had also two articulations with something like a toe and joint on each near the tail, such as I had not observed before in any other kind of snake. A smaller snake 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 "Cüenbla."

*March 23.*—Set off, accompanied by my black guide mounted, for the top of Marga, which we reached 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, a circumstance of more serious inconveni-

\* *Plotosus Tandanus*, (see page 95.) Vol. 1.

ence, as all were of extremely difficult access, very steep, extending all in the direction of  $10^{\circ}$  and  $12^{\circ}$  E. of N., and consisting of the sharp edges of strata of purple-coloured clay-slate, much inclined, sharp and hard at the out-cropping. 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 fixed in my late journey, and more which I had observed then only from the Canobolas, but which angles observed from this station now enabled me to fix. The most important point visible besides the Canobolas, was Mount Lachlan, by means of which I truly determined the situation of this point, and its brother hill Nangàr, which is rather higher, but more wooded, and  $2\frac{1}{2}$  miles distant towards the south-east. These two form the summits of an isolated mountain mass on the left bank of our present creek. Màrga was elevated about 1,000 feet above our camp on its banks. I took outlines, (according to my usual custom), of all the hills on the horizon before us, observing also angles on these 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 these points had been truly fixed from the Canobolas, and other points 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 also establishing there a good base for extending the survey southward.

*March 24.*—Our guide was now joined by some older natives, and one of these had been examining the country a-head, anxious about the safe passage of our carts. His reconnoissance 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 being an impediment 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, with pine trees, (or *callitris*), and evi-

dently belonged geologically to the ridge, crossed by us on the second day after leaving Buree, on our last journey. A luxuriant crop of grass covered the country hereabouts, and 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. 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 plains seen on our last journey, but having, what seemed so singular to our unwonted sight, a coating of green herbage upon it. 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.‡ Travelling four miles more across level forest land, we reached the banks of the "Waagan,"§ a cattle sta-

\* 1. *Tr. alopecuroideum*, Lindl. MSS. ; caule ramoso glabro, foliis lanceolatis glabris subtus scabriusculis, spicis cylindræis elongatis, bracteis rotundatis, calycibus herbæis sursum calvis acutis, rachi pilosâ, cyatho staminum dentato.

2. *Tr. parviflorum*, Lindl. MSS. ; foliis ovatis acutis petiolatis subtus et caule furfuraceo-tomentosis, spicis gracilibus elongatis, bracteis acuminatis scariosis, calycibus lanatis, rachi lanatâ, staminibus inæqualibus distinctis.

3. *Tr. sessilifolium*, Lindl. MSS. ; foliis oblongis obtusis sessilibus et caule furfuraceo-tomentosis, spicis oblongis, bracteis rotundatis lanatis, calycibus longè tubulosis lanatis sursum pilosis, rachi tomentosâ, staminibus inæqualibus distinctis.

† *S. corrugata*, Lindl. MSS. ; incana, prostrata, pusilla, foliis subrotundis angulatis cordatis palminerviis serratis, pedunculis 2-3 filiformibus petiolis longioribus, fructu disciformi corrugato, coccis monospermis commissuris muricatis.

‡ This proved to be a very distinct undescribed species. *A. leucophylla*, Lindl. MSS. ; gracilis, ramulis filiformibus angulatis albido-sericeis, phyllodiis lineari-lanceolatis falcatis apice uncinatis obscure 2-nerviis appressè et densissimè sericeis : margine superiore basi subglanduloso, racemis umbellatis axillaribus phyllodio multo brevioribus.

§ *Waagan* means a crow in the native language.

tion, a mile and a half below the junction of Byrne's creek of Oxley, which we had just traced in its course from Buree.

I beheld in the Lachlan all the features of the Darling, but on a somewhat smaller scale. The same sort of large gum-trees, steep, soft, muddy banks; and, even in this place, a margin and an outer bank. But its waters were gone, with the exception of a few small ponds, which still remained 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 whale boats 1,600 miles over land 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 II.

Continue the journey—Acacia pendula—Ascend Mount Amyot—Field's Plains—Cracks in the plains—Ascend Mount Cunningham—Mr. Oxley's tree—Rain—Goobang Creek Large fishes—Heavy rain—Ascend Mount Allan Natives from the Bogan—Prophecy of a Coradjè—Poisoned water-hole—Ascend Hurd's peak—Snake and Bird—Ride to Mount Granard—Scarcity of water there—View from the summit—Encamp there—Ascend Bolloon 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.

*March 25.*—FOLLOWING the direction of the general course of the Lachlan, as laid down by Mr. Oxley, I made a dry reach at five miles, after crossing a fine tract of open forest land. Soon after we passed "Billàbugan," a cattle station on the river, where the dry branch joined it, and at three miles further we passed the southern skirts of a plain, and finally made a bend of the Lachlan, on which we encamped in latitude 33° 24' 28" S. In the course of this day's journey we came upon a bush resembling the European dwarf elder, but with yellow flowers and fruit with scarcely any pulp upon it.\*

\* This proves to be a new genus of Caprifoliaceæ, § Sambuceæ. *Tripetelus australasicus*, Lindl. MSS. (τριπετηλος 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. Antheræ tres, fauce sessiles. Ovarium 3-loculare; ovulis solitariis pendulis; stigmata 3, sessilia. Fructus subexsuccus, 3-quetor, 3-pyrenus, putamine chartaceo.—Caulis herbaceus. Folia opposita, glabra, pinnata, 2-juga cum impari, laciniis lanceolatis acuminatis serratis; glandulis 2 verruciformibus loco stipularum. Flores laxè paniculati.

*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 surface, the *acacia pendula*, and the pigeons, which usually abound about such places. 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 Gulleròng, which extends about eight miles from east to west, and three north 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 only succeeded in reaching a bend of the river containing water, after travelling  $18\frac{1}{4}$  miles; latitude  $33^{\circ} 23' 21''$  S.

*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 had laid down his points on this river, 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 Paramatta by actual measurement, as mine was. His latitudes, however, agreed with mine very exactly.

*March 28.*—Continued our journey, and, at only a mile and a half from our camp, I found myself to my surprise, at the foot of Mount Amyot, better known to stockmen by its native name of “Càmerberdàng.” I gave the party a bearing to follow, and lost no time in ascending this 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 feature I had taken an angle from their summit last season. It was valuable now, enabling me to determine the true

place of this hill, from which I was to extend my angles further westward. I easily recognised Marga and Nangàr; and a very useful and remarkable point of my former survey to the northward of these hills, and several still more conspicuous in the country beyond the Lachlan. 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, &c. &c. on all which, as far as I could see, I took angles, and then descending, overtook the party about six miles on. I met at the foot of this hill a colonist, native of the country,\* who said he had been 70 miles down the river in search of a run for his cattle. He had found none, and assured me that, but for the blacks who were with him on horseback, he could not have found water.

Mount Amyot had the appearance of granite from the plains, but I found 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 this day at a bend of the river on the border of a small plain, named "Merumbà," in latitude  $33^{\circ} 19' 16''$  S. Variation  $8^{\circ} 54' 15''$  E.



Mount Melville from Merumbà.

On encamping here we were disturbed by herds of cattle running towards our spare cattle, 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

\* Mr. James Collits of Mount York.



indigo, with white flowers and pods like those of the prickly liquorice (*Glycyrrhiza echinata*).\*

*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. This was our straightest course, but we had to keep along the river bank 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 river bank, which we did, and 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 point of Mount Cunningham, which is the northern shoulder. The distance was full five miles from the camp; but we could not proceed direct for this point, even on horseback, so full of deep wide cracks were these scorched plains, that horses could not travel safely across them, and this compelled us to take a circuitous route nearer the river. There our guide called up three savage looking natives with spears, who accompanied us to the top, he describing them as the natives of the hill. 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

\* *I. acanthoscarpa*, Lindl. MSS.; caule herbaceo erecto ramisque angulatis scabriusculis, foliis pinnatis 5-jugis viscido-pubescentibus; foliolis lineari-lanceolatis mucronulatis margine scabris, racemis folio æqualibus, leguminibus subrotundo-ovalibus compressis mucronatis eclinatis monospermis.

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 Cudjällagong—no doubt “ Regent’s Lake” of Oxley—and a peak they called “ Tolga” I took to be “ Hurd’s peak” of the same traveller. Still I saw nothing on the horizon in the direction of Mount Grarnard, and in no direction any hill of magnitude, except in the quarter whence I came, where I still discerned my old friends Marga and Nangàr, with Nyororong and Berabidjal, high hills more to the southward.



Nyororong from Mount Cunningham.

This hill also consisted of ferruginous sandstone. The sun had reached the horizon before I left the summit, which I did not do until I obtained an angle on every visible point. We reached the camp soon after seven o'clock. Latitude, by an observation of Cor Leonis,  $33^{\circ} 15' 27''$  S.

*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, across the arm of the river. On this tree were still legible the initials 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 cut 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 forms 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)  $33^{\circ} 15' 34''$  S. which gives a difference of seven seconds for the 250 yards between the tree and my camp. The variation of the needle had altered, but not much, for nineteen years. Mr. Oxley found it to be here, in 1817,  $7^{\circ} 0' 8''$  E. and I had made it at the last camp (Merimbah)  $8^{\circ} 54' 15''$  E. or nearly two degrees more. The longitude of this point, as now ascertained by trigonometrical measurement from Paramatta, was  $147^{\circ} 33' 50''$  E., or  $17' 50''$  of longitude (equal on this parallel to  $17\frac{1}{4}$  miles), nearer to Sydney than it is laid down by Mr. Oxley.

We proceeded from this camp towards the southern extremity of Mount Cunningham, under which a small arm of the Lachlan passes so close that the party was occupied some

time in removing rocks so as to open a passage for the carts. This work occasioned a delay of an hour and a half; we then got into an open country, but soon saw the same dry arm 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 shewn on Mr. Oxley's map; but a small water-course, then dry, and named Billibang, skirts the eastern side of the hill, and then enters that branch of the Lachlan which we were upon.

Yesterday and this day had been so excessively hot (82° in the shade), that I confidently anticipated a fall of 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 the northern bank of this pond, sheltered by a grove of *callitris* trees; for the wind began to blow and the sky was at length wholly overcast, to my great delight, as affording a promise of rain enough to fill the streams and water-holes, and 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 under side with numerous reddish minute drops of resin.\* The *Pittosporum angustifolium* we also recognized here, loaded with its singular orange-coloured bivalved fruit.

\* This is allied in some respects to *A. verniciflua* and *exudans*, but is a very distinct and well marked species. *A. salicina*, Lindl. MSS.; 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 triplò brevioribus.

*March 31.*—It rained during the night, and this morning the sky seemed as if it would continue, and as the mercury in the barometer was falling, we halted. On this dry sand hill, with wood and water at hand, we were well prepared to await the results of a flood; especially as some good grass also was found for the cattle at the distance of about two miles. “Mount Allan,” (“Wollar” of the natives) lay north-east by north, at a distance of  $3\frac{3}{4}$  miles from our camp. 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 Goobang creek of our former journey, to all appearance here as great a river as the Bogan, and indeed this Goobang 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 it much resembled that river in its depth of bed and the character of its banks: indeed its sources and tributaries must be exactly similar. 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 of it where a tributary of such importance joined it, the floods of this stream laying the country below Mount Cunningham under water, and being 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 of this stream is here the Billi-

bang; Goobang being considered but one of its sources. Its appearance here rendered the analogy between the rivers and plains on each side more remarkable, and the supposed ultimate evaporation of the Lachlan still more doubtful.

*April 1.*—The rain continuing, the party remained encamped. The mercurial column fell, 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° (of Fahrenheit.)

On dragging our net through the muddy pond we found in it two solitary fishes of monstrous size, one weighing 17 lbs., the other about 12 lbs. Although very different in shape, I recognised in them two of the three kinds of fish we formerly caught in the Nammoy. The fish of the perch kind with large scales,\* and the eel-fish.† But the former, when caught in the Nammoy, was coarse and tasted of mud, whereas this ruffe, although so large, was not coarse, and of excellent flavour—and yet 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 the swallow kind, about the size of a snipe, of a leaden colour with dark head and wings.

*April 2.*—The rain continued through the night and this morning 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 any longer to the muddy pool. The barometer began to rise slowly from seven in the morning, when it had reached its minimum. 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

\* *Cernua Bidyana.*

† *Plotosus tandanus.*

species of *Trichinium*, with spiky feathered pale yellow flowers, sometimes as much as six inches long.\*

*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 this morning from the soft state of the plains, however desirable it might have been to proceed. After twelve I rode to the summit of Wollar (Mount Allan), with the theodolite, and from thence I intersected most of the hills seen from Mounts Amyot and Cunningham. A small wart on the horizon, very distant, was still conspicuous in the east, and I found it was 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 which prevails in the geology of this country, seems to accord with that of its surface. All the hills I have ascended below the junction of Byrne's creek, consist of ferruginous sandstone, like 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, its bed exactly resembling that of the Bogan. The remains of floated weeds on the trees, and the uniformity of channel, show 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  $33^{\circ} 8' 55''$  S.

At the camp we recognized 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

\* *Tr. nobile*, Lindl. MSS.; foliis caulinis obovatis cuspidatis subundulatis ramisque corymbosis angulatis glabris, spicâ cylindraccâ: rachi lanatâ, calycis laciniis 3 acutis 2 retusis, bracteis puberulis. Differs from *Tr. densum*, *Cunn.* 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.

† *Procyon*, in *Canis Minor* and *Regulus* in *Leo*. The latter being also called *Hercules* and *Cor Leonis*.

tomahawks formerly distributed by us, left no room to doubt whether we were wrong about their faces. One, an old man, was a *Coradje*, the other a boy. I found that they had disappeared this evening, but it was so far civil of the *Coradjè* 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 never return.

*April 4.*—The surface having got sufficiently dry to enable us to travel, we accordingly continued our journey, crossing the Goobang at  $5\frac{1}{4}$  miles, and keeping 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 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 doubtful plains of the Lachlan may be thus avoided, while the valley affords both grass and water more conveniently for the passage of cattle.

We finally encamped on the Lachlan, at the junction of the Goobang, in latitude  $33^{\circ} 5' 20''$ ; longitude E.  $147^{\circ} 13' 10''$ . There the river contained some deep pools, and we expected to have caught 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 such deep ponds, and thus killing the whole, and I need not add that none of us got a bite here. All these holes were full of recently cut boughs of the *eucalyptus*, so that the water was tinged black.

*April 5.*—As soon as the party had started, I gave the overseer the bearings and distances to be followed while I proceeded to the cone, named Hurd's peak by Oxley, and of which the native name is *Tòlga*. It was distant about four miles from our line of route. A low ridge (of quartz rock) extends from this peak to the junction of the Goobang; the



base of the hill consists of chlorite slate, its summit of squarish pebbles of quartz, with the angles rounded and also of fragments of chlorite slate. There was just convenient room on it for the theodolite, and it afforded a most satisfactory and commanding view, and seemed aptly named after a geographer, being so well suited for the purpose of surveying. 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 points, and 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  $33^{\circ} 4' 38''$  S, longitude  $147^{\circ} 00'$  E. Judging by the relative position of Hurd's peak, &c., I supposed it might have been about this place where Oxley's party had 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 A. M. the heat was oppressive. 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 on the plain, 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 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 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 seemed, as the men believed, scarcely able to make its escape.

On our journey to-day, when near where 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, when he crossed the Lachlan; the hill was named by this native Gobberguyn. We encamped a little higher than that, where a favourable bend of the river met my line of route. The cattle were much fatigued this day, although the distance travelled did not exceed eleven miles. I had it now in my power, however, to give them rest for a day or two, as the grass was tolerably good on that part of the river bank, and I was now 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 was one species which I had not previously seen, and which proved to be a new species of *Danthonia*.\*

*April 7.*—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°, and reached the foot of the hill a little before sunset. We had ridden across thirty miles of soft red sand, in which the horses sank up to their fetlocks. Throughout that extent we neither saw a single water-course, nor could discover the least indication of water having lodged there at 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 also because, in a crevice of this granite, our aboriginal guide found some water. The desert tract we crossed, was in other respects unvaried, save only that in one place we passed through four miles of a kind of scrub, which presented difficulties of a new character. The whole of this scrub consisted of bushes of a dwarf species of *eucalyptus*, doubtless *E. dumosa* of R. C., which grew so that it

\* *Danthonia pectinata*, Lindl. MSS. ; spicâ simplici secundâ pleiostachyâ pectinatâ foliis multo longiore, paleâ inferiore villosissimâ ; laciniis lateralibus membranaceis aristæ æqualibus.

was 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, and seemed 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 water-course coming from them, but nothing of the kind appeared, and after crossing 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 finding 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. Meanwhile I proceeded to the summit with one of the men and the native. There I obtained an uninterrupted view of the western horizon, just before the sun went down, but the scene was still inconclusive as to the existence of such a dividing range as I hoped to have seen. 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 extending my angles in that direction. To the eastward I saw Hurd's Peak and Bolloon, recognising also Goulbourn's and Macquarie's ranges, Mount Torrens, and Mount Aiton of Oxley. The latter hill appearing alone on the horizon, in a south-south-east direction, as shewn in his map. But the most commanding point was Yerraràr, the highest apex of Goulburn range, which formed 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 table-land, 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 Yerraràr. Having completed my work as the sun was setting, I hastened to the valley, and learnt that the party had neither discovered water nor grass. Barney, the native, had nevertheless obtained both when with me at the top of the mountain, and therefore, although it was then 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 in the rock, 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 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*.

Next morning, the 8th, I had thus an opportunity of surveying the hills around me more at leisure, noting 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, his home that lonely mountain!

I learnt, that the only water in these deserts was to be found in the crevices of rocks, on such hills as this, and as most of them are rocky, I thus understood the cause of the smoke I observed arising last year 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 its situation, on the bare top of a mountain, was certainly one of the last 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 ever again ascend; I may, however add, for the information of those who may be disposed to do so, that the well is situated 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, intending 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 remained at the tents, as well to rest the horses, as for the purpose of observing equal altitudes of the sun, and protracting my survey.

*April 10.*—Crossed the Lachlan, and rode eight miles due south to “Bolloon,” which proved to be the highest cone of a low ridge, 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, &c. are all visible. We passed some lower hills belonging to the same chain, and of which the basis seemed to be the same ferruginous sandstone. On my return to the camp I found the dogs had killed an emu. It is singular that none of the natives would eat of this bird; 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.

Late in the night I was awoken by the report of the pistol of one of the watch, firing at a native dog which had got close to the sheep-fold. At the same moment a sheep leapt out, and having been at the first alarm, pursued by the dogs, was worried by them in the bed of the river. The native dog having howled as it made its escape, was supposed to have been wounded. Immediate measures were taken for skinning the sheep, and for preventing such occurrences in future, by placing the fires of two of the tents in such positions as threw a light round the sheep-fold, which was of canvass, fastened to portable stakes and pegs.

*April 11.*—Left this camp, (named “Camarba,”) and continued our journey, which was this day round the great bend

of the Lachlan, at which point ( $4\frac{1}{2}$  miles from our camp), the low ridge of Kalingalùngaguy closed on the river. This is a remarkable feature, extending north and south, and I expected to have seen some tributary entering the river here, from the north; but we crossed only a wide and grassy hollow on the east side of the ridge, which was however evidently the channel of a considerable body of water in times of flood, as appeared by the marks on the trees which grew on 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 Kalingalùngaguy, I found quartz rock.

We had not proceeded far beyond Kalingalùngaguy, when Mr. Stapylton overtook the party, having travelled in great haste from Sydney to join us, as second in command, in obedience to my letter of instructions sent from Buree. Mr. Stapylton was accompanied by two stockmen, having left his own light equipments at Cordòwe, a station above Mount Cunningham. On the plains which we crossed this day, grew in great abundance those beautiful lilies found in the expedition of 1831, and already mentioned under the name of *Calostemma candidum*,\* and also that of *Calostemma luteum* of Ker, with yellow flowers.

At nine miles we crossed some rocks of granite, evidently a part of the ridge of Tarràtta, thus exhibiting an uniformity in the granite with the general direction of other ridges, which is about north-north-east. The strike is in some direction between north and north-east, dipping in some places to the west, in others to the east, at great inclinations. The ridge of Kalingalùngaguy consists of quartz, clay-slate, and the fer-

\* Vol. I. page 54.—*C. candidum*; floribus centralibus subsessilibus, articulo infra medium in pedicellis longioribus, coronâ integerrimâ.

ruginous sandstone, but I observed in the bed of the river, a trap dyke connecting it with the Bolloon ridge. Of the few low hills about the Lachlan, it may be observed that they generally run in lines crossing the bed of that river. Mount Amyot is a ridge of this sort, intersected by the river; but otherwise connected to the southward with Nyororong, a high hill in that direction; 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. Mount Cunningham, Mount Melville, and the small hills about them, on each bank, belong to another ridge of similar character, but more broken up; and the ridges of Kalingalungaguy and Bolloon form a third, also intersected by the river. The plains appear to be divided into several stages by these cross ridges, which, before the deposition of the plains, may have shut up the water of high floods in extensive lakes until the deposits gained their present height, and took the character of plains. Loose red sand is constantly found forming low hills on the borders of these plains. This seems derived from the decomposition of the sand-stone, and may be a diluvial deposit. Blue clay appears in the lowest parts of the basin, with concretions of marl in thin beds. This has every appearance of mud deposited; its depth being greater than the lowest channel of the river. The parallel course of small tributaries joining such rivers, which seem to be now only the middle drain of extensive plains, may have been marked out in the first deposits of sedimentary matter, as tributaries on entering the channel of greater streams immediately become a portion of them, and it is more probable, that their course should then conform to that of the greater stream, or parallel to its course, the general inclination being common to both, than that it should cross the *plains*, or as I have supposed, the sediments of floods, in order to join the main channel or river now remaining. Thus the Goobang, on entering the valley of the Lachlan, pursues a parallel

course without joining it, 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, may be said to belong to the basin of the Macquarie, although it never joins that river, but merely skirts the plains, which may be supposed to form its original bed. 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 Macquarie. The basin of the Macquarie, as shewn by its course near Mount Harris and Morrisset's ponds, falls northward, that of the Darling to the south-west. It is not at all surprising, therefore, that the course of a tributary, so much opposed 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 now to be the channel, by which the floods of the Macquarie join the Darling in a course much more direct than that through the marshes, and less opposed to that of the Darling. 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 stream flowing 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  $12\frac{1}{4}$  miles we met and crossed a dry and shallow arm of the river, and at  $14\frac{1}{2}$  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 or Peel's 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 now to be encamped 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. 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, as laid down by Mr. Oxley. This we accomplished, and more; for we were obliged to prolong our journey several miles further than I intended along the bank of the river, because no water remained in its bed, until, at length, Mr. Stapylton found a good pond in it lower down, where we encamped after a journey of  $16\frac{1}{4}$  miles. Notwithstanding such an alarming want of water in the river, we saw on this day's journey abundance on the plains in hollows of the surface; a circumstance plainly evincing that this river, as Mr. Oxley has truly stated, is not at all dependent on the rains falling here for its supply. The deep cracks, so abundant as to impede the traveller on the plains, seemed capable of absorbing not only the water falling upon them, but also any which may descend from the low hills around. On a part of the plains 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 hot, so much so, that the thermometer stood all night at  $76^{\circ}$  (the usual noon day heat), and so parching was the air, that none could sleep. A hot wind blew from the north-east, and the

barometer fell  $\frac{4}{10}$  of an inch. In the morning the sky was overcast, with slight showers. Leaving Mr. Stapylton in charge of the camp, I rode with a small party on horseback to "Cudjallagong" (Regent's Lake) which I found to be nine miles to the east-south-east of our camp. We passed by the place where Cudjallagong creek first leaves the river, and by which this lake is supplied from it.

The uniformity of depth and width in this miniature arm of the river, and its tortuous course were curious, especially as it leads the waters of the river almost straight back from their general course, to supply a lake. Thus the fluviate process seemed to be reversed here, and it was difficult to understand why this part of the surface still remained under water, unless it could be supposed that the lake or hollow existed before the river began to flow. 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. However that may be, 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 part, but in no part was this more than a foot deep. Innumerable ducks took refuge there, and also a great number of black swans and pelicans, all standing high upon their legs, above the shallow water. Unlike the water of Lake George, which is brackish, that of Regent's Lake was perfectly sweet even in its shallow state. It abounds with the large fresh water muscle, which was the chief food of the natives at the time we visited it. On its northern margin and a good way within the line of the water, stood dead trees of a full grown size, apparently killed by too much water, too plainly shewing, like the trees similarly situated in Lake George and Lake Bathurst, to what long periods the extremes of drought and moisture may extend in this singular country.

That the lake is sometimes a splendid sheet of water was obvious enough in the line of beach along the 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 about the middle, these hills were 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; this north-east side being very different from the other, which was free from sand, and bore no such marks of chafing waves.

At two different places on the shore these banks are so low that in high floods the water must flow over from the lake, and thus supply, as I supposed, Campbell's lake and that also to the northward of Regent's lake, named "Goorongully." But the occurrence of trap-rock on the shore and in a part of the bed of the lake, induces me to consider this a feature of no very ordinary character. Trap-rock did not appear in any of the hills I had till then seen on the Lachlan, and as it seems the chief disturber of that sameness of feature so prevalent in Australia, I was always glad to find it, especially as it afforded a good grassy soil. The calcareous conglomerate here was also unlike any rock I had seen elsewhere, part of it consisting of tuff resembling the matrix of the fossil bones found in limestone fissures. It is also worthy of note that the hills composed of this kind of tuff extend from the lake to the river, that they are altogether different from the common red sand-hills seen elsewhere, and that the channel conveying the river-waters to the lake rises in a hollow between them.

On first approaching this lake we saw the natives in the midst of the watery portion gathering the fresh water muscles (*unio*). I sent Piper forward to tell them who we were, and thus, if possible, prevent any alarm at our ap-

proach. 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. Their huts or *gunyas*, consisted of a few green boughs, which they had just put up for shelter from the rain then falling. The tribe consisted of about a hundred. The females and children were sheltered in a group of huts at some distance from those of the men. They sat cowering down with their skinny limbs folded before their bodies, so that the head rested upon the knees, a great number being huddled together under each *gunya*. Among them some faces, 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 on the spot while they 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 besides a wet jacket. The men were in general strong, healthy, and muscular, and among them was one who measured six feet four inches. My chief object in visiting this lake, was to cultivate a good understanding with these natives, in 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, shewed that their dialects are not so varied as is usually believed ; and I had little doubt but that Piper would be understood even on the banks of the Darling. He ascertained from one of these natives of Regent's lake, that after eight of our journeys down the Lachlan, the bed of this river contained no water, and that we must go to the right across “the middle,” as he termed it, reaching in four days more a lagoon, called “Burrabidgin,” or “Burrabadimba :” that there I should leave the carts, and go with him on horseback ; and that in

two days' travelling, at the rate we could then go, we should reach "Oolawambiloa," a hill near a very great water. They also said that water could be found in the bush at the end of each of these 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 for a day or two in our present camp notwithstanding, awaiting the light cart. It rained heavily during the whole afternoon; nevertheless a body of these natives accompanied us on riding back, keeping pace with our horses, and carrying each a burning torch of the resinous bark of the callitris, with the blaze of which they seemed to keep their dripping bodies warm, while they ran on, laughing heartily, and passing their own jokes upon us, our horses, and particularly upon our two guides of their own race, Piper and Barney, who seemed any thing but at home on horseback with wet clothes dripping about them. 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.

*April 14.*—Mr. Stapylton proceeded with a surveying party to make a survey of Regent's lake and Cudjallagong creek, an operation which could be accomplished with less inconvenience, as that gentleman's equipment, for which I had sent back, could not come up to us until the 16th. Mr. Stapylton extended his survey to the smaller lake, also mentioned by Mr. Oxley, as situated to the north-east of Regent's lake. The opening from this lake led the party to the situation where Mr. Oxley had seen another, but it was found that the spot had become a verdant plain, without any appearance of water about it. As Mr. Oxley gave no name to this, it may be necessary to preserve the local name, which is Godrongully. The other lake (first of the three seen by Mr. Oxley, and to which he gave the name of "Campbell's Lake,") was found by a party I sent to examine it, to be then a grassy plain also without a drop of water.

*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. The surveying party from the lake came in by mid-day, 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 cloak, and various presents that had been given to Piper with her. How he contrived to settle this important matter with the 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.

*April 16.*—The morning was beautifully clear, and I set out for the summit of Goulburn range, named Yerraràr, 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. At exactly half way 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. On the summit I found hornstone and granular felspar. Goulburn range consisted also of the same rock to the summit. It was rather light in colour, partially decomposed, and lay in rounded nodules and boulders, set however in ridges across the slopes of the ground, the direction of them tending in general 12 or 14 degrees E. of N. The hills were everywhere rocky, so that the ascent cost us nearly an hour leading our horses, but it was well worth the pains, for the summit afforded a very extensive prospect. The most interesting feature in the country below 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, 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 made me imagine the Lachlan might have some channel in that direction. Of the Mount Granard range I could only see and intersect that remarkable cape-like point, which was also the high land visible to the westward from Mount Granard itself, being named "Wàrranary," 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. I recognized many of my stations, such as Mount Cunningham, Bolloon, Hurd's Pic, Mount Granard, &c. 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.

\* Resembling *C. rupicola* of Cunningham, but with larger and shorter flowers, and differently shaped leaves. The young shoots were covered with a white down which easily rubbed off.

*C. leucoclada*, Lindl. MSS. ; ramulis albo-tomentosis gracilibus, foliis ovato-oblongis obtusissimis petiolatis suprâ glabris scabriusculis subtùs tomentosus, floribus sessilibus, corollâ campanulatâ quadrifidâ, calyce cupulari truncato.

† *Calostemma carneum*, Lindl. MSS. ; foliis . . . . , tubo perianthii limbo subæquali, coronâ truncatâ dentibus sterilibus nullis, umbellis densis, pedicellis articulatis exterioribus longioribus. Flowers pink.

### CHAPTER III.

North arm of the Lachlan—Quawys—Wallangomè—Wild cattle hunt—Ascend Moriattu—Leave the Lachlan to travel westward—No water—Natives from Warranary—Resume our course down the Lachlan—Extensive ride to the westward—Night without water—Continue westward and south-west—Sand hills—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 in the Lachlan—Character of the different kinds of trees—Return to the party—Dead body found in the water—Ascend Buradorgang—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—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 Cudjalla-gong visits the camp in my absence—Caught following my steps—Piper questions them.

*April 17.*—PROCEEDED along the right bank of the Lachlan, crossing at five miles a small arm returning to the river from above, an ana-branch\* which had been seen leaving the river, and flowing towards the north-west, by Mr. Oxley. The local name of it is Yamorrina. Beyond this water-course Cannil plains extend, these plains being more grassy than plains in general. I observed a small undulation of trap-rock near the river. We crossed soon after the base of Mount Torrens, also a hill of the trap formation: this

\* See note to page 90.



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

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 sweet 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 Goonigùldury. I found from the old native guide who now accompanied us from Regent's lake, that they name those ponds of the river which never dry up, "Quawy," a word likely 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  $8^{\circ} 56' 15''$  E.

April 18.—We continued to travel along the river bank, passing *quawys* of various names, as they were pointed out by our guide. We crossed the skirt of an extensive plain, (Eeöàppa), which brought in view, just a-head of us, a low ridge named Wallàngomè. At  $8\frac{1}{2}$  miles we found the river close under the southern extremity of this hill, its rocks obstructing our passage so that we were delayed an hour in clearing the way. I ascended that point which was nearest the river, and determined its position by taking angles on various heights already laid down on my map, such as Granard, Yarrarar, Mount Torrens, &c. This hill itself consisted chiefly of quartz rock, but at its base the water-worn stones of quartzose sandstone, containing pebbles of quartz, seemed the principal rock in the bed of the Lachlan.

As we proceeded, a low rocky ridge or extremity from Wallàngomè, extended upwards of a mile along the river. Soon after we had passed a river bend called Taralágo, we

\* *X. typhina*, Lindl. MSS. ; acaulis, foliis longissimis angusto-linearibus margine lævibus filamentosis basi laceris, capitulis omnibus cylindraceis lanatis fœmineis simplicibus masculis interruptis.

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 Moriàttu. After passing successively two similar points of the river, we reached that of Gòoda where we encamped, the latitude observed being  $33^{\circ} 23' 3''$  S.

Mr. Stapylton, with overseer Burnett and the natives, had gone forward early in the morning towards the hills near this, in pursuit of wild cattle, which were said to abound in this quarter. The tracks we perceived were old, and although the party sent forward 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 a short way only a-head 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 Wallàngomè. Its colour surpassed any azure I had ever seen in flowers, the tinge being rather deeper than that of the turquois. We also obtained the seed, so that I hoped this plant, which seemed hardy enough, might become a pleasing addition to our horticultural treasures, for if we discovered nothing else, I could imagine with the poet that

“ The flowers are nature's jewels.”†

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

\* *Lappago racemosa*, W. and *Aristida ramosa*, R. Br.

† Croly's Gems.

‡ See page 39.

upright, giving to the whole an uncommon appearance, the flower having a very pleasant perfume.

*April 19.*—Mr. Stapylton conducted the party forward, while I went to the summit of Moriàttu, with the theodolite. From thence I saw Mount Granard, Yarrarar, and Mount Torrens, also the various features which I had intersected from Wallàngomè. A level plain appeared to extend southward in the midst of the groups of ridges composing Macquarie and Peel's ranges. "Cocopara," 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, of which the local name is Willin.\* To the northward the most remarkable feature was a line of plains similar to those along the main channel of the river, and apparently bordering a branch from it, that seemed to extend in a western direction under the base of a small hill, named Murràngong, and far beyond it. The hill on which I stood was the most perfectly isolated and unconnected with any other feature that I had ever seen, low level ground surrounding it on every side. It consisted of a variety of the same rock as Wallàngomè, containing 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.

We overtook the party after it had crossed some extensive plains, and on them we observed a species of solanum, the berries of which our native guides gathered and ate.† Overseer Burnett made another search this day on Cocopara range for the wild bullocks; but although the party fell in with a herd, they kept at a great distance and got off into scrubs. Their bedding places and paths were numerous, and

\* Willi—*an opossum.*

† *S. esuriale*, Lindl. MSS.; caule humili suffruticoso, aculeis subulatis tenuibus in apice ramulorum et costà, foliis lineari-oblongis obtusis subrepandis utrinque cinereis stellato-pilosis, pedunculis subtrifloris, calyceibus campanulatis pentagonis 5-dentatis stellato-pilosis corollis tomentosis multò brevioribus.

it thus appeared, that the number of these animals was considerable. We gathered on Cocopara 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 Burrabudimba, after travelling fifteen miles.

*April 20.*—After proceeding some miles on this day's journey, our Cudjallagong guide pointed in a west-north-west direction, as the way to "Oolawàmbiloä." Leaving therefore the Kalàre 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 guide, as it was precisely in the direction by which I had all along 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. At sunset we halted full twenty miles short of that hill, on 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. The stream or water-course, as he informed me, was the same which I had seen passing by Murràngong, but he said it did not return its waters to the Lachlan, a circumstance which I could not understand. Booraràn was the name he gave it. He went with some of our people and found in the dark, a few quarts of water some two miles beyond it, but our cattle were

\* This proved to be the rare *A. quadrilateralis* of De Candolle.

obliged to pass the night without any. The barometer had been going down for several days, and the wind arising suddenly at 9 P.M., brought a misty mass of cloud over our heads, and this 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, which appeared to be related to *E. pilularis* and *amygdalina*.

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). These natives were grave and important looking old men, each carrying 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, and he still seemed in doubt about the scarcity; but it was necessary to be certain 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 encamped beside a pond or quawy, named “Buree.” I considered this day’s journey 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 which I should have traversed was not without water, our guide having suggested it as our way to “Oolawambiloä” (a hill near a great water). I considered it necessary now to endeavour to ascertain, and, if possible, before the heavy part of our equipment moved further, whether the Lachlan actually joined the Murrumbidgee near where Mr. Oxley saw its waters covering the country;

\* *S. fibulifera*, Lindl. MSS.; incano-tomentosa, pusilla, diffusa, foliis ovato-oblongis obtusis dentatis basi cordatis, stipulis longissimis setaceis, pedunculis axillaribus aggregatis filiformibus petiolis longioribus, calycibus lanatis corollâ parùm brevioribus, fructu disciformi convexo tomentoso, coccis monospermis.

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 roselle appeared amongst the birds, and several were shot as specimens.

*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 extended beyond that very remarkable feature, resembling a cape or promontory, and named Wàrranary, which marked the extent of our sight and knowledge at that time. That 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 it 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' riding 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. Had I succeeded in reaching the Lachlan at about sixty miles west of my camp, I might have been satisfied that it was this river which Captain Sturt took for the Darling, and then I might have sought the Darling by crossing the range on the north. Whereas, had I found sufficient reason to believe that the Darling would join the Murray, I might have continued my journey down the Lachlan until I reduced the distance across to the Darling as much as the scarcity of water might render necessary.





Major F. L. Mitchell del

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COCKATOO of the AUSTRALIAN COAST. (Cacatua alba)



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 seen; also a curious woolly plant with two-spined fruit, belonging to the genus *Sclerolæna* 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 as we proceeded, and then sunk so as to be just visible behind us, bearing then 31° E. of N., where we lay down for the night. The continuation of the range extended from it as we now saw, and receded to the north-west; so that on these plains the horizon continued still unbroken, save only by that cape-like point before mentioned as Warranary.

A flight of the cockatoo of the Darling, with scarlet and yellow top-knot, flew 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: but neither appeared, and the sun went down on a still unbroken horizon; nor could the native discern from the top of the highest tree any other objects besides the lofty river-trees ("yarra") of the Lachlan, at a vast distance to the south-west by south. During this day's 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 still to gaze on our advancing party, from a little distance on the plain. In a strip of scrub, consisting of *acacia longifolia* and *lanceolata*, and some other graceful shrubs, I found a new species of

\* *S. bicornis*, Lindl. MSS.; caule lanato ramoso, foliis linearibus succulentis glabris, calycibus solitariis bispinosis lanâ albâ involutis.

correa, remarkable for its small green bell-shaped flowers and the almost total absence of hairiness from its leaves.\* Near this scrub we saw also many pigeons and parrots; all these strengthening 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 lay down on a few boughs for the night.

*April 23.*—Dew had providentially fallen during the night, and 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 Cocopara (Macquarie's range) appeared above the horizon, and enabled me to determine our distance from thence 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.

This may require explanation. The course of rivers is usually analogous to the direction of ranges, or position of hills which bound the valley or basin, however extensive, in which they flow. By the range tending 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 rather approached, or had even continued to extend parallel to it.

I was, however, 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

\* *C. glabra*, Lindl. MSS.; ramulis incanis, foliis ovalibus obtusis in petiolum angustatis glabris subtus punctatis, corollâ brevi campanulatâ tomentosâ 4-dentatâ calyce truncato cupulari triplo longiore.

level plain, whose extent westward, we neither knew nor could discover; and for some hours on this day's ride, scarcely even a bush was visible. Clumps of trees of the flooded box, or "Marúra" of the natives, appeared occasionally in and about many hollow parts of the surface; and, on the isolated eminences of red sand, callitris trees grew, and they are always hopeless objects to persons in want of water. These patches of sand however were few, and never rose more than a few feet above the common surface, which in other parts consisted of clay more or less tenacious. Parts of it were quite naked; others bore a crop of grass about three years old, that had probably sprung up after the last thorough drenching of the surface, now so parched that it yawned in cracks so deep, in those parts especially which bore no vegetation, that I could not reach to the bottom with my sabre added to the length of my arm from the shoulder. Where the ground was best for travelling it was of a reddish colour, glossy and firm with tufts of a species of atriplex upon it, and on this sort of ground a dwarf kind of grass with large seeds, such as had not been seen elsewhere by me, was springing up, apparently the effect of the late rains. This new vegetation did not grow near the old grass, and was too thin and low to give any tinge to the surface.\* Nothing could look more dreary than the old grass in other parts, decayed and blackened to the colour of lead; roots and stalk being all dead like rotten timber. Every blade drooped towards the north-east, and shewed 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 drooping of those blades of grass all towards the north-east.

After travelling ten miles south-west without perceiving any indications of the river, I directed my course southward, and after proceeding seven miles in that direction, we came upon a hollow of *polygonum junceum*, so full of wide and deep

\* *Panicum flavidum* of Retz.

cracks, that our horses were not got across without some difficulty. It extended in a south-west direction towards some flooded box-trees. Beyond that the country was better wooded, and at 11 miles we at length approached a creek, for 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 had accompanied such waters; and, although we certainly found there the channel of a considerable current, it was shallow, quite dry, and full of *polygonum junceum*.

I could hardly consider this an arm of the river, but rather thought that I had seen its head in some hollows which I crossed on the plains the day before. After passing this, however, we descried the 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 proceed in that direction which was 30° E. of S. 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, 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 rain water in a hole to refresh our horses, but it was shallow and surrounded with such tempting grass, that the animals partook but sparingly of the water, preferring the verdure. 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. The first line of trees we next crossed enclosed only a shallow channel, overgrown with *polygonum*; and we in vain sought the natives, although we saw where their fire had been recently dropped.

Three miles beyond this we perceived a more promising line of trees, and smoke arising from them. 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 without the inhabitants. Green bushes grew luxuriantly here, and amongst them, in a romantic looking spot, three separate graves had been recently erected. Still we could neither perceive any 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 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 channel above, but, in every other respect, it was the same. In vain we looked for a water-hole even in this channel, and we hastened therefore towards another line of trees still before us, and which we reached by sunset. The trees were of the “yarra” kind also, but they overhung what was only a hollow in the midst of a plain, although evidently subject to inundation. To find water there then, was quite out of the question; but there we were nevertheless obliged to alight, for the sun had by that time set. Late in the night, as we lay burning with thirst and dreaming of water, a duck flew over our heads, of a species which from its peculiar note, I knew I had previously heard on the Darling. It was flying towards the south-west.

*April 24.*—Proceeded on the bearing of  $80^{\circ}$  east of south, towards the nearest bend of another line still of river-trees, which also consisted of the “yarra.” There we found, after riding two miles, another diminutive Lachlan, precisely like the former, but rather less: it was very sinuous in its course, and full of holes surrounded by chirping birds and green bushes; but it was too obvious, that these holes had been long long dry. From thence I pursued a course  $24^{\circ}$  N. of E. 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 calcu-

lation, 43 miles in direct distance higher up the river. 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. We found that this belt of river-trees enclosed a dry swamp covered with dead reeds, and amongst these stood a forest of dead trees, also of the "yarra" kind, and bearing well defined marks of water in dark stained rings on their barkless trunks to the height of about four feet. 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 reedy swamp was nearly a mile broad, and beyond it we found firm open and good ground; some very large trees of the "yarra" species of *eucalyptus* growing between it and the edge of the reeds. 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 about 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 had therefore to dismount and drag them on, for I hoped by taking the direction of Mr. Oxley's line of route as shewn on the map, to find the river soon in a united channel. We found it, at four miles, and as broad and deep as usual, but the bed being still every where 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, and still I saw no appearance of water, nor even of any having recently dried up. 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 at this a full quarter of an hour ; and just then a duck dropt into the pond amongst them. The poor bird appeared to have been as much overcome by thirst as we were ; for, on the inconsiderate native throwing his bommereng, it was scarcely able to fly to the top of the opposite bank. As the grass was good, I was obliged to halt here for the day, for the sake of our horses, although the delay subjected us to another night in the bush ; and I made the men sit down, out of sight of the pond, for a reason which I did not choose to tell them ; namely, 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 large patch of bark, I chalked out 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 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 here, a quantity of dry fibre, resembling hemp in small balls, and I at first supposed it to be a preparation for making nets, having seen such on the Darling. Barney, the native, however, soon set me right respecting these, by taking up the root of a large reed or bulrush, growing in a dry lagoon hard by, and shewing 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 a ready and wholesome food for the natives at all times. It struck me that this food, 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 other part of the Lachlan that I had visited.

*April 25.*—We continued our route upwards along the right bank of the Lachlan, on a bearing of  $36^{\circ}$  E. of N. taken from Mr. Oxley's map, and thus we again came to the river, at nine miles, and again watered our horses, and rested them for they were very weak. After travelling on fifteen miles, one of them rode by Woods with the theodolite knocked up when we were far from the river. With some difficulty we however got him on until we reached it, and finding water we encamped after a ride of twenty-one miles.

The scenery was rather grand at that part of the banks of the Lachlan, notwithstanding the dreary level of the naked plains back from it. The "yarra," a species of the *eucalyptus* inhabiting the immediate banks of the Lachlan, grew here, as on the Darling, to a gigantic size; and what with the huge gnarled trunks, and wild romantic forms of the branches often twisting in coils, the bark being of a shining white or light red colour, together with the towering height of the tree which sometimes exceeds 100 feet, the dark masses of foliage, and the consequent streaks of shadow below, grand and picturesque effects are often produced, fully equal to the wildest forest scenery of Ruysdael or Waterloo. Often as I hurried along, have I taken my last look with reluctance, of scenes forming the most captivating studies, but of which I had no time to make good sketches. The "yarra" is certainly a pleasing object, in various respects; its shining bark and lofty height inform the traveller at a distance of the presence of water, or at least the bed of a river or lake; and being visible over all other trees, those of that description usually mark the course of rivers so well, that in travelling along the Darling and Lachlan, I could with ease keep an eye on the general course of the river without approaching its banks until I wished to encamp. The nature and character of several other trees, although also of



the genus eucalyptus were nevertheless very different and peculiar. The small kind of tree covered with a rough bark, and never exceeding the size of fruit trees in an orchard, and which Mr. Oxley, I believe, terms the dwarf-box, grows only on plains subject to inundation, and usually bears on the lower part of the trunk, the mark of the water by which it is at times surrounded. Between these trees ("goborro") and the yarra, there is this difference: the yarra grows only on the banks of rivers, lakes, or ponds, so that the roots derive nourishment from the water; although when the trunk itself is too long immersed in water, 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 only ascertained after examining many a hopeless hollow, where grew the "goborro" only; and after I had found my sable guides eagerly scanning the "yarra" from afar, when in search of water, and condemning any view of the "goborro" as hopeless during that dry season. In describing the trees which ornament river scenery, I must not omit to mention a long-leaved acacia, whose dark stems and sombre foliage, drooping over the bank, present a striking and pleasing contrast to the "yarra" trunks, and the light soil of the water-worn banks. The "bimbel" (or spear-wood) growing on dry forest land, the cypress (*callitris pyramidalis*) growing on red sand-hills, and a variety of acacias in the scrubs, generally present groups of the most picturesque description.

April 26.—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 Cocopara 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 have hemmed them in, by driving them to the foot of the range ; but as soon as the cattle found themselves beset, they, apparently without much difficulty, climbed the abrupt rocky face of the hills, throwing down on their ascent the large fragments of rock and loose stones that lay in their way, and which, rolling down the declivities, checked their pursuers, until the wounded bullock and all got off.

The working cattle had little good grass at the camp, and another reason I had for quitting it now was the state of the water-hole, which had even at first been small, the water having a slightly putrid taste, and the cause of this having been discovered rendered it still less palatable. Piper, our native interpreter, in diving for fish on the previous day, had brought up on his spear to his horror, instead of a fish, the putrid leg of a man ! Our guide (to the "Boororan") had left the camp during my absence, and it was said that he was aware of the circumstance of the body of a black man having been thrown into that hole, and had abstained from drinking any of the water.

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 arrange our further journey accordingly.

*April 27.*—I rode to Burradorgàng, a saddle-backed hill bearing 117° from our camp and distant 19 miles. This hill I found to be the most western and last, of all the hills between the Murrumbidgee and the Lachlan. I only reached its base with tired horses an hour before dusk ; and it began to rain just as I had left my horse below, and begun to climb the rocks. The rain came on in a drizzling way, in a dense mass of stratus from the north-west, in which direc-

tion it unfortunately first obscured the portion of the horizon which I was most anxious to see. To the northward, eastward, and southward, however, it continued clear, and the points visible in these 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 summit of Yerraràr. Granard, and the principal summits of Peels and Macquarie's ranges were visible; and, as the sky cleared, I could see Warranary, that southwestern extremity of the 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 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  $20^{\circ}$  W. of S.

This last of hills consisted of ferruginous sandstone, like all the others that I had seen further in the interior on the former journey. I descended from Burradorgang, and reached its base just as darkness came on, and we were forced to pass the night exposed to the wind and rain, at a place where we could not find nevertheless any water for our horses.

*April 28.*—The rain ceased some time before day-break, but the weather continued cloudy with fogs hanging on the distant horizon, so that 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, on which grew the cypress (*callitris*), acacia

and the “Bimbel,” or spear-wood.\* It seemed to consist of a very low undulation, extending from the hill 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 to the distance of about three miles, on which grew yarra trees, bearing the marks of occasional floods, to the height of about a foot above the common surface. This ground was probably partially under water when Mr. Oxley passed it, as he represents a swamp or morass on his map, within this bend of the river. I found on this low tract a curious new species of solanum, so completely covered with yellow prickles, that its flowers and leaves could scarcely be seen.† 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 early junction 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.*—Moved forward down the Lachlan, travelling in the track of our horses, until we came near the place where I had slept on the 26th, the cattle not having been able to go further, from the softness of the ground after the rain.

*April 30.*—Following the same track, the party reached,

\* 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, bommerengs, waddies, &c.

† *S. ferocissimum*, (Lindl. MSS.); cauli herbaceo erecto: aculeis confertissimus pugioniformis arcuatis, foliis linearibus obtusis utrinque præsertim subtus furfuraceo-tomentosis aculeatissimis, pedunculis subtrifloris foliorum longitudine, calycibus inermibus.

at the distance of twelve miles, an angle of the river, named Geeroàdaly, at which there was a good pond, and here we encamped, obtaining from this point a bearing on Burradorgàng. This was the lowest station on the river which could be connected with my survey of the hills, and when Burradorgàng sunk at length below the eastern horizon, a perfectly level line, bounded our earthly view on all sides.

*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 back 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, as these animals are always inclined to do. This circumstance was rather unfortunate, for our guide soon after fell behind, alleging to the party that he was ill. I knew, however, where to find water that day, and we proceeded to that fine pond which I was so fortunate as to discover on the 24th ult., 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 us water for two journeys beyond this pond, where I had previously passed a very agreeable afternoon. Now again, besides plenty of excellent water, the men caught in this friendly pool some 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 when it was boiled we found it a very good vegetable.

*May 2.*—We pursued a course nearly west for some miles, having the Lachlan on our left, until at seven miles we were stopped by a water-course, or arm of the river crossing our intended route at right angles. It had steep banks, so that the passage of our waggons was 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, 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 water-course, but, in following this, by turning northward, by the advice of the natives, we found that it soon branched into shallow hollows of *polygonum*, all of which we could pass over without delay or difficulty. Soon after we had resumed our course by heading these hollows, we came upon the main channel, which very much resembled other parts of the Lachlan, only that it was smaller. Piper's gin came to tell us that there was water a-head, and that natives were there. We therefore approached with caution, and having found two ponds of water we encamped beside them, the local name of that situation being Combèdyega. A fire was burning near the water, and at it sat a black child of about seven or eight years old, quite blind. All the others 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, had nevertheless lingered about the bushes, and at length took her seat beside the blind boy. A large supply of the balyan root lay beside 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 water-holes between that place and the Murrumbidgee, but could not be prevailed on to guide us. Subsequently, however, a gin who was a widow with a little girl aged about four years, was persuaded by him to accompany us as a guide.

At this camp, just after I had inspected the horses, and particularly noticed one, as the second best draught horse we had, I was requested by the overseer to look at him again with

both bones of his near thigh broken by a kick from an unlucky mare! That 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 like the emu 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 principal food of these inhabitants of the Kalàre appeared to be “balyan,” the rhizoma as already stated of a monocotyledonous plant or bulrush, growing amongst the reeds. This contains so much gluten, that one of our party made in a short time some excellent cakes of it, and they seemed to me lighter and sweeter than those made of common flour. The natives gather the roots and carry them in great bundles, within a piece of net, on their heads. The old man came thus loaded to the fire where the blind child was seated, and indeed this was obviously their chief food among these marshes.

*May 3.*—We proceeded nearly west, according to the suggestion of our female guide. Thus we crossed, at a few miles from Combèdyega, my track in the afternoon of April 23; and soon after 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.”

We saw, however, the river-line of trees on our left, and late in the day we approached it. Here I recognized the Lachlan again united in a single channel, which looked as capacious as it had been 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, resembling linen on a hedge, and which on examination 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

shew that the current of the river here loses its force, and that the floods are consequently slower in subsiding there, than at higher levels. 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  $33^{\circ} 52' 59''$ , which was so near that of Mr. Oxley's lowest, according to his book, that I concluded we must be very near the situation, and fortunately we found some natives at this water-hole, who told us, that a long while ago, white men had been encamped on the opposite side of the "Kalàre," and that the place where they had marked a tree was not very far distant, but that it had recently been burnt down. This day, we saw for the first time on the Kalàre, the red top cockatoo (*Plyctolophus Leadbeateri*.)

*May 4.*—This morning it rained, and considering the long journey of yesterday, I gave the cattle rest. Here the natives told us of Oölawambiloa, near a great river coming from the north, which was only five days' journey from where we should make the Murrumbidgee, and that this latter river was joined by another coming from the south, before it reached Oölawambiloa.

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.

*May 5.*—The ground being very heavy, the cattle in the carts could proceed 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, and soon came to Mr. Oxley's last camp, which was not above a mile from that we had left. On my way I crossed a bed of gravel, a circumstance the more remarkable, not only be-



cause it was so uncommon on these muddy plains, but that Mr. Oxley had seen no stone of any kind within five miles of the place. This gravel consisted of sand and small 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 shewed me the spot where Mr. Oxley's tent had stood, and the root and 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. Several trees around had been cut with a saw, and on two, about thirty yards west from the burnt stump, were cut the letters [W W] and [I W  
1817] The tree bearing the last letters was of the "goborro" 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 about sixteen inches. We immediately set about digging round the burnt stump, in search of the bottle deposited there by Mr. Oxley, but without success. The gins said that he had rode forward some way beyond, and had marked another tree at the furthest place he reached. I accordingly went there with them, and they showed me a tree marked (but in the bark only), on each side, the cuttings being 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 his men was nearly drowned in trying to cross but that they got him out. They positively assured me that this was the farthest point Mr. Oxley reached down the river, 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  $33^{\circ} 41' 10''$  S.; longitude  $145^{\circ} 9'$  E. The natives

further informed me that three gentlemen on horseback, who had canoes (boats) on the Murrumbidgee, had visited the Lachlan thereabouts since, and that after crossing it and going a little way beyond, they had returned.

In the evening, while a heavy shower fell, the natives who had come with me gave the alarm that a powerful tribe was advancing towards us, with scouts a-head, 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 before us, lighting their fire and making huts, without saying a word, and on Piper going up to them, we soon came to a good understanding with these people. 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 was sufficient to save us all further search, although it had been my intention to have halted next day, and sent back six men with spades to dig for the bottle, and to have promised them a full one in exchange for it, if they had found it.

*May 6.*—The chief of the tribe before our camp had ordered a man to accompany us as guide, but this man after going a mile or two fell back and left us, and we were thus compelled again to depend on the information of the gin for the situation of water.

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. At about seven miles from our camp, the river, whose general course had been several days about south-west, turned southward, and we came in sight of Waljeers, which must be a splendid sheet of water in other seasons, although then quite dry. 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. As we approached its bank I observed a remarkable change in the surface, which was somewhat elevated above the country nearer the river, and 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. The whole expanse of this 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 that plant, resembling clover, which we found so excellent as a vegetable on the former journey.\* A young crop of this grew in scanty patches near the shores of the lake, and I recognised it with delight as the most interesting of Australian plants. The natives here called it *Càlomba*, and told us that they eat it. Barney said it grew abundantly at *Murroägin* after rain. It seems to spring up only on the richest of alluvial deposits in the beds of lagoons during that 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 Leuwin 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.

In the bed of *Waljeers* we again found the *Agrostis virginica* of Linnæus,‡ and an *Echinochloa* allied to *E. crusgalli*,

\* *Trigonella suavissima*, (Vol. 1. page 253.)

† 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, having been discovered there, as stated in Vol. 1. page 253.

‡ See Vol. I. page 315.

two very rich kinds of grass. But most of the verdure in the middle 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 fresh-water muscle; and under a canoe (which I took on in the carts), were several large cray-fish dead in their holes. Dry and parched as the bed of the lake then was, the natives could nevertheless find live fresh-water muscles, by digging to a substratum of sand. I understood that, by digging in the same manner in the dry bed of the Lachlan, they also find this shell-fish alive.

This lake is surrounded by the yarra trees similar to those on the banks of that river: within them is a narrow belt of slender reeds, but no bulrushes. On the western shore was a small beach of sand; the banks were in height about eight feet above the borders or ordinary water line of the lake, the greatest depth in the centre being about sixteen feet below that border line. The yarra trees distinguishing the margin continued to form a dense line extending westward from the northern shore of this lake, 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 this also consisted of firm red soil, with high bushes of *atriplex*, &c. 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, more

\* The third species of *Psoralea* before referred to (March 19th). *P. cinerea*, Lindl. MSS.; 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 pellucidè pauci-punctatis, caule ramisque strictis.

scarce 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.

*May 7.*—The grass was green and abundant, and dew had fallen upon it during the night, so that our cattle had not fared so badly as on similar nights of privation; and were, therefore, able to proceed. After we had left our former encampment, and our guide 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 he get one 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 poor fellow as an intelligent native, I thought it necessary to send him back this morning in company with another young savage who belonged to Cudjällagong. 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 widow maintained that there was a water-hole some miles onward at Pòmabil, and we accordingly proceeded in that direction, regaining first the firm plains outside the trees growing on the river margin. We reached that part of it to which she had pointed, and

\* The "two Tommies" obtained new historical surnames, being known in the party as *Tommy Came first* and *Tommy Came last*.

she went forward to look for the water, but on her calling out soon after to tell us that natives were there, we advanced into the wood, when we observed smoke arising, and natives running away, pursued by the widow. At length when we perceived that she stood talking to them, we went up. The strangers consisted of a family just come over from the Murrumbidgee, presenting 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, had his face, head and breast so bedaubed with white, that he resembled a living skeleton; being in mourning as I was told for the death of a brother. The others, with large sticks, and bearing snakes and other reptiles in their hands, and perfectly naked, crowded around him, and presented a strange assemblage. 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. The formality was very remarkable on this occasion between the old man and Piper. In vain I desired Piper to ask him a question; they both 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 she addressed herself to Piper, on which he raised his voice a little louder; still, however, with his head averted, and the other answered him in the same way, until they, at length, by slow degrees got into conversation. We were then informed that water was to be found a mile or two on, and the 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  $2\frac{1}{2}$  miles I heard a shot from Burnett, announcing his arrival at the water; I accordingly proceeded with the party in that direction, and encamped near the river, amid the finest verdure that we had yet seen, and after a journey





Major F. L. Mitchell del.

G. Foggo & G. Barnard lith.

J. G. P. Printer to her Majesty

TURANDUREY AND BALLANDELLA.

(Scenery of the Lachlane)

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of nine miles. We were informed that the Murrumbidgee was not far to the southward, and that the Lachlan contained water in more abundance one or two days' journey lower down.

*May 8.*—The day being Sunday I gave the cattle a rest, while Mr. Stapylton went down the river with two men, to make sure of water at our next stage. They found a pond about eleven miles down, the way to it being over a fine hard plain, covered with mesembryanthemum and sal-solas. 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 muscles, the object, as I understood, of his journey from the Murrumbidgee.

*May 9.*—We moved to the pond above-mentioned, named Yambarènga, and found near it a number of large huts similar to those of the Darling. The water in this pond 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 Quandàng bushes\* having their branches covered with a parasitical plant, whose bright crimson flowers were very ornamental.† South of the spot where we now encamped the ground gradually rose, being of firm red clay; and from a tree there, overseer Burnett observed the tall yarra trees of the Murrumbidgee, which appeared to be distant eight miles. The latitude observed was  $34^{\circ} 14' 37''$  S. longitude  $144^{\circ} 25'$  E.

*May 10.*—A thick fog prevented the men from getting the cattle together as early as usual, but 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

\* *Fusanus acuminatus*.

† *Loranthus Quandang*, (Lindl. MSS.); *incanus*, foliis oppositis lineari-oblongis obsolete triplinerviis obtusis, pedunculis axillaribus folio multò brevioribus apice divaricato-bifidis 6-floris, floribus pentameris æqualibus, petalis linearibus, antheris linearibus basi insertis.—Next. L. Gaudichaudi.

part of this day's journey was over a kind of rising ground, on leaving which it seemed as if we descended westward into a lower basin, so that I took the river Lachlan, which lay below, to be already the Murrumbidgee. 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 æquilaterale* 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 tints; of bright green, light red, purple and scarlet, 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 them at length growing on ground which was intersected by hollows full of reeds; other parts of the surface bearing a green crop of grass. The banks of the river here bore a very different aspect from any parts that 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.

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 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, which was enclosed by three small ridges, the surface within the artificial area having been made very level and smooth.† I had little doubt that

\* *Röpera aurantiaca*, Lindl. MSS.; foliolis linearibus obtusis succulentis petiolo æqualibus, petalis obovatis obtusissimis, fructibus orbiculatis.

† See wood-cut of this kind of tomb at page 112.

this was a tomb, but on looking through a crevice I perceived that the floor of the hut was covered with a bed of rushes, that had been recently occupied. On removing a piece of bark and lifting the rushes, I perceived, on thrusting my sabre into the hollow loose earth under them, that this bed covered a grave. Tommy Came-first who was with me, at first pronounced it 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, telling him that it was a grave, after which I could not prevail on him to approach it. I carefully replaced the bark, anxious that no disturbance of the repose of the tomb 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 or friend of the deceased, (most frequently 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 other places of shelter, had ever been made in that solitary hut, the abode alike of the living and the dead, although recent remains of several fires appeared on the heath outside.

In the afternoon we came upon the river, where rich weeds and lofty reeds enveloped a soft luxuriant soil. The yarra, or blue gum trees, not only grew on the banks, but spread also over the reedy flats, and I remarked that where the reeds grew thickest most of them were dead, and that almost all bore on their trunks the marks of inundation. These dead trees among the 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 to formerly?

I was returning with the overseer from examining the country some miles before 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 this, I took them three miles further on to Bidyégoga, which we did not reach until it became dark. Water was found again in the bed of the Lachlan, on our penetrating through a broad margin of reeds towards some lofty yarra trees. Latitude  $34^{\circ} 12' 17''$  S.; longitude  $144^{\circ} 18'$  E.

*May 11.*—Some rising ground appeared on the horizon, distant about four miles to the north-west; a plain of firm clay covered with atriplex and salsolæ intervened, and appeared to rise towards that higher ground from the very margin of the reedy basin of the river. Although anxious to see the junction of the Lachlan and Murrumbidgee, irresistible curiosity led me to the rising ground, while Mr. Stapylton traced the supposed line of the Lachlan, and the overseer conducted the carts. 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. It was connected with other low hills, which extended in a north-western direction, into a finely undulated country, 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 hollow immediately north of the hills on which I stood. A few trees of stunted appearance alone grew in the hollow. On this hill 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. Southward I could see no trace of the Lachlan, and I hastened toward the highest trees, where I thought it turned southward. I thus met the track of the carts at right angles 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 that day seen the Lachlan. A row of lofty yarra trees now appeared to the southward, among which I expected to find the Murrumbidgee, and thither I accordingly directed my course, 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-winged 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, bearing a fruit resembling a cherry in size and taste, the stone being more elongated.

After descending into what I had thought the bed of a river, we found unequal ground, and saw at a distance patches of reeds, the lofty "yarra" trees growing all about. On reaching the reeds we found they only filled very slight hollows in the surface, and after passing through them we crossed another firm plain with atriplex and salsolæ. No river was to be seen but another line of trees bounded this plain, exactly like those which usually grew on the banks of streams, and on reaching them I felt confident of finding water; but I found there, on the contrary, an open forest of goodly trees, without the least indication of it. 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 trees, resembling those by which all the interior rivers I had yet seen were distinguished, but I penetrated their shades with no better success than before. 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 at least wet enough before we regained the camp. Mr. Stapylton had arrived there before me, with-

\* A *Poa* near *P. australis*, R. Br. and *Bromus australis* of R. Br.

out having seen either river 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 to be loosened to feed at the earliest dawn.

*May 12.*—It had rained heavily during the night, so that water was no longer scarce. The canoe, brought from Waljeers, had been placed so as to receive the rain and conduct it into a cask, which was thus filled. 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 in the morning, 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 at length about to start, that six of the bullocks had got away; these, however, Piper managed to trace and bring back. The weather then cleared up and we proceeded in a south-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 that we had so often met before. 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. This bearing, however, I continued to follow, 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 river 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 this noble stream could be nothing less than the Murray; which, like the Darling, might have been laid down for aught I knew, 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 of the river 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 bank of the Murrumbidgee.

Piper, with that keenness of vision peculiar to 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 cooy to them—they answered the call, and, in a short time, made their appearance on the opposite bank. What took place at our first interview with these sons of the woods was highly creditable to them. They advanced in a numerous group, 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 that part of the river bank. It was now that we knew 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 for some time. At length they proposed swimming over to us, and we invited them to do so. 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, while those animals were being removed according to their wish. The warriors of the Murrumbidgee were about to "plunge into the angry flood," desirous, no doubt, of showing off like so many Cæsars 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 one of the strangers first swam across, bearing in one hand a piece of burning wood, and also a green branch. He was no sooner landed on the bank than he converted his embers into a fire to dry himself. Immediately after him followed a grey-haired chief (of whom I had heard at 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. We learnt that the Murrumbidgee joined a much larger river, named the "Milliwà," a good way lower down, and that these united streams met, at a still greater distance, the "Oölawambiloa," a river from the north, which received a smaller one, bringing with it all the waters of "Wambool," (the



Macquarie.) These natives proposed to amuse us with a corrobory, to which I did not object, but they postponed it until the following evening.

*May 13.*—Having been very anxious to complete my survey of the Kalàre, 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 twenty miles. We lay down by the river-side, and although entirely without either food or shelter, determined to prosecute our search at day-light next morning.

*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 Kalàre, and being then on a bend of the Murrumbidgee from 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 of trees joined the Murrumbidgee, chiefly out of consideration for the men who were with me. And well was it 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 in no part of the long course of the river Lachlan, is its course 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.

On my arrival at the camp I found that six of the party mounted, had set out in search of me at mid-day. A strong tribe had arrived soon after my departure, and, in conjunction with those natives whom we found there, had been molesting the camp during the whole of the night. On first coming up they boldly approached our fires and took their seats, demanding something to eat. 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 Kalàre with so few people, and gave a very unfavourable account of the tribe at that place. This alarmed Mr. Stapylton, and when he observed this tribe set off in the morning back along the cart track, he dispatched the party on horseback under Burnett with orders to observe the movements of this tribe, and to look for my track and if possible join us. They had found our track after making a considerable circuit, at about five or six miles from the camp; and, as they were tracing my steps homewards, on perceiving some natives running along it, they concluded that we were just before them, and sounded the bugle, when it 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. They would not allow Piper to go up to 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. This 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 had dispatched two men to recall them as soon as I returned.

During the nights passed by the party 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 to be, 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 "*Bel gammon soldiers.*"\* They left the neighbourhood of our camp on my return, and we saw no more of the tribe which had followed me.

\* Meaning, "Soldiers are no joke!"

## CHAPTER IV.

The Murrumbidgee compared with other rivers—Heaps of stones used for cooking—High reeds on the river bank—Lake Werombà—Native encampment—River banks 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 the cattle—High wind, dangerous in a camp under trees—Serious accident; a cart-wheel passes over the widow's child—Graves of the natives—Choose a position for the depôt—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 fire-arms—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.

*May 15.*—THE night had been stormy with rain, so that I had not yet ascertained 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 this day 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 quite the reverse of what I had seen elsewhere. Whatever reeds or *polygonum* might be outside, a certain space along the river was almost everywhere clear, probably from the constant occupation by the natives. One artificial feature, not observed by me elsewhere, distinguishes the principal seats of the native

tribes, which may soon be recognised by lofty mounds of 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 the better or harder, the more it is used. Hence the accumulation of heaps resembling small hills.\* Some I observed 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. I saw the first of these heaps when near the end of our 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 of these parts, is prepared in those kilns when a family or tribe are together. I ascertained the name of this place to be Wéyeba; its latitude  $34^{\circ} 21' 34''$  S.—longitude  $143^{\circ} 56' 27''$  E.

*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 experienced some difficulty occasionally 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

\* "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 xxxi. 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.

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, the water appearing to have reached several feet up on their trunks. At length I came on a native path leading westward ; but as it led to rising ground, with *atriplex halimoides*, &c. I bent our course to the south, and so made the river at sunset. Burnett and Piper had 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 the name of it was Werombá. Mr. Stapylton also discovered a small lake of the same sort, near our route and south of the other. Both these lakes, like Waljeers, were surrounded by a ridge of rising ground, consisting of the red earth of the dry plains, and 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 left me no opportunity of seeing it. As we drew near the river I perceived the huts of a native tribe, with fires smoking before each. I sent back for the gins, but before they could come up and speak to the natives whom we saw there, they 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.

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 one place where the cattle could approach the water, the banks being almost every where water-worn and perpendicular, and consequently inaccessible and dangerous to the cattle in descending to drink. To this I had sent the sheep,

and the men were leading the horses also towards it, when the foremost horse, which unfortunately was also the best, made a rush at 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 in swimming, he had put his foot into a short rein which was attached to the collar. This horse was of the Clydesdale breed, and had drawn the cart containing my instruments, throughout the journey along the Darling last year. His name was "Farmer"—an unfortunate name for surveying horses;—Farmer's creek in the new line of road to Bathurst, being named after another horse which fell there and broke his neck, while I was marking out that line of road.

The land adjacent to the river here was of the richest quality; 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 now the chief support of the aboriginal inhabitants.

*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 of it, 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 sand-hills, and extensive tracts covered with that most displeasing of shrubs to a traveller, the *eucalyptus dumosa*, and the prickly grass mentioned by Mr. Oxley. We traversed ridges of sand, arising, perhaps, sixty feet above the country nearer the river, and when viewed from trees the same kind of country seemed unlimited in all directions; I therefore turned to travel south-south-west, and afterwards southward, when 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 the most unpromising description, and it was a relief to get even amongst common scrubs, thus to escape from those of the *eucalyptus dumosa*, this species growing, not as a tree, but as a lofty bush, with a great number of stems, each two or three inches in diameter. The bushes grow thickly together, and between them grows the prickly grass in large tufts, and nothing else. These bushes approached to the very river where we encamped, without leaving any intermediate plain, such as we had always found to intervene on the Lachlan. In this kind of country, however dreary it appeared, we found a beautiful grevillea, not previously seen by us. This day we saw also a great many kangaroos, and killed two of them.

Notwithstanding every precaution that we could think of in watering the cattle, 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, was safely got out again. The abundance of water, though a novelty to us, was thus attended with a new source of 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 danger was so imminent, that in the morning it was thought most prudent to water all the horses with a bucket, and not to risk the bullocks by suffering them to drink at all.

*May 18.*—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 along the base of a second bank, which seemed to divide the yarra-tree flats from the scrubby ground behind. We came thus upon some rain-water, lodging on thec lay of the plains, and being sufficient to satisfy the bullocks, we gladly availed ourselves of the opportunity thus afforded, of watering them there without unyoking them. After pro-



ceeding about three miles further, we saw a lagoon between us and the river. It resembled a bend of it, and contained abundance of water, on which were three pelicans and a number of ducks. When we had travelled nearly far enough to be ready 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 encamp 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 the different bends of a river, yet we saw each end of both, and passed on firm ground between them. It was evident, however, that they could only be supplied from the inundations of the river. On this day we killed a kangaroo.

*May 19.*—During the night the weather was tempestuous, and at 3 A. M. it blew a hurricane, the rain falling heavily afterwards. I was not sorry when the wind abated, for we were so confined for room at this camp between the two lagoons, that my tent had been pitched, and most of our encampment placed, unavoidably under a large yarra-tree, (a most unusual circumstance with me, and very unsafe during high winds,) but fortunately for us 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 taking a turn to the right, and thus gaining the higher ground above the level of floods. We continued along this higher land, thus crossing two small plains; but soon after, being apprehensive of going too far from the river, we again entered the open forest of yarra trees, which marked so distinctly its immediate margin. At  $3\frac{1}{2}$  miles we passed by a bend of the river, where it was full of dead trees, the banks being quite perpendicular and loose. After reaching another bend, some three miles further on, we noticed two lagoons, apparently the remains of an ancient channel of the river, and at ten miles we came upon a creek, full of large ponds of water, and as capacious as

the Lachlan. This creek seemed to come from the north ; but, on Mr. Stapylton examining it some way up, he found it came from the north-east, and on finding a favourable place, I crossed with the party and encamped, the day having been very rainy and cold. We soon found that this channel was only a branch of one from the north, and this being very deep, I determined to halt next day that its course might be explored, while the men were employed in making a fit passage across it for the carts.

*May 20.*—This morning the weather appeared beautifully serene, the barometer having risen higher than I had ever seen it on this side of the mountains. Mr. Stapylton, who had left the camp in the morning, returned about sunset, after exploring the creek before us, 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 into the river, of which he in fact considered it only an arm : 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 passage way having been made, we crossed the water-course, and proceeded towards Lake Stapylton, as I understood that there we might easily recross. On the way we crossed 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. Here an unfortunate accident befel the little native child “Ballandella,” who fell from a cart, one of the wheels passing over and breaking 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 thing that circumstances would allow, and she bore the pain with admirable patience, though but an infant only four years old.

I found the ground near the lake afforded so good a position for a depôt, 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 such a depôt 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 more frequented by the natives, such a place as this seemed more convenient and secure for a temporary depôt. On the rising ground near our camp, were several graves, all inclosed in separate parterres of exactly the same remarkable form, consisting of the same kind of 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, apparently the most recent, the ashes of a hut still 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, not for females; and that the ashes over one of the graves 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.

*May 22.*—This morning the bullock-drivers gave so favourable an account of the pasture, that I determined to leave a depôt here, and set out next morning with the rest of the party for the Darling. The day was, therefore, passed in making the arrangements necessary for that purpose. I proposed leaving Mr. Stapylton here with eight trusty men, and to take with me the rest, consisting of fifteen with Burnett and Piper. I calculated on being absent four weeks at most, and rations for the supply of such a 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, &c. &c. with the full equipment.

*May 23.*—Before I got up this morning I was informed that the same unlucky mare which had already killed one of the horses, had just broken the thigh of my own horse, and thus it became necessary to shoot him, when he was in better condition than usual, having been spared from working much for some time that he might be fresh for this excursion. Such an inauspicious event on the morning of my departure for the Darling was by no means encouraging. I left the widow at the depôt camp, having given directions that she should have rations, and that every care should be taken of the child with the broken thigh, which had been set, and bound to a board in such manner, that the child 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 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 put up for

the cattle, that they might be brought up there every night during our absence, and the men appointed to remain at the depôt, were told off in watches for the cattle and camp. 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, which increased prodigiously, so as at length to resemble 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 of it, passing along the edge of a slight fall, which looked like the berg of the main stream. At  $7\frac{1}{2}$  miles we crossed ground of a more open character than we had seen for some days, and which 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 Arrowsmith's map, we had reached the Murray, and our depôt 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.

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, with sand, and a slight rapid was occasioned in the stream by a dyke of ironstone.

*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 obliged to feel our way, just as cautiously as if we had been upon a river still unexplored. The ground was indeed a tolerable guide, especially after we found that this river also had bergs, and that these 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 on. Soon after, we entered a small plain bounded on the west by

\* 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 Geological 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.

*Bank*—That part washed by the stream.

*Border*—The vegetation at the water’s edge, forest trees, or quays of granite, &c.

*Brink*—The water’s edge.

*Margin*—The space between the brinks and the bergs.

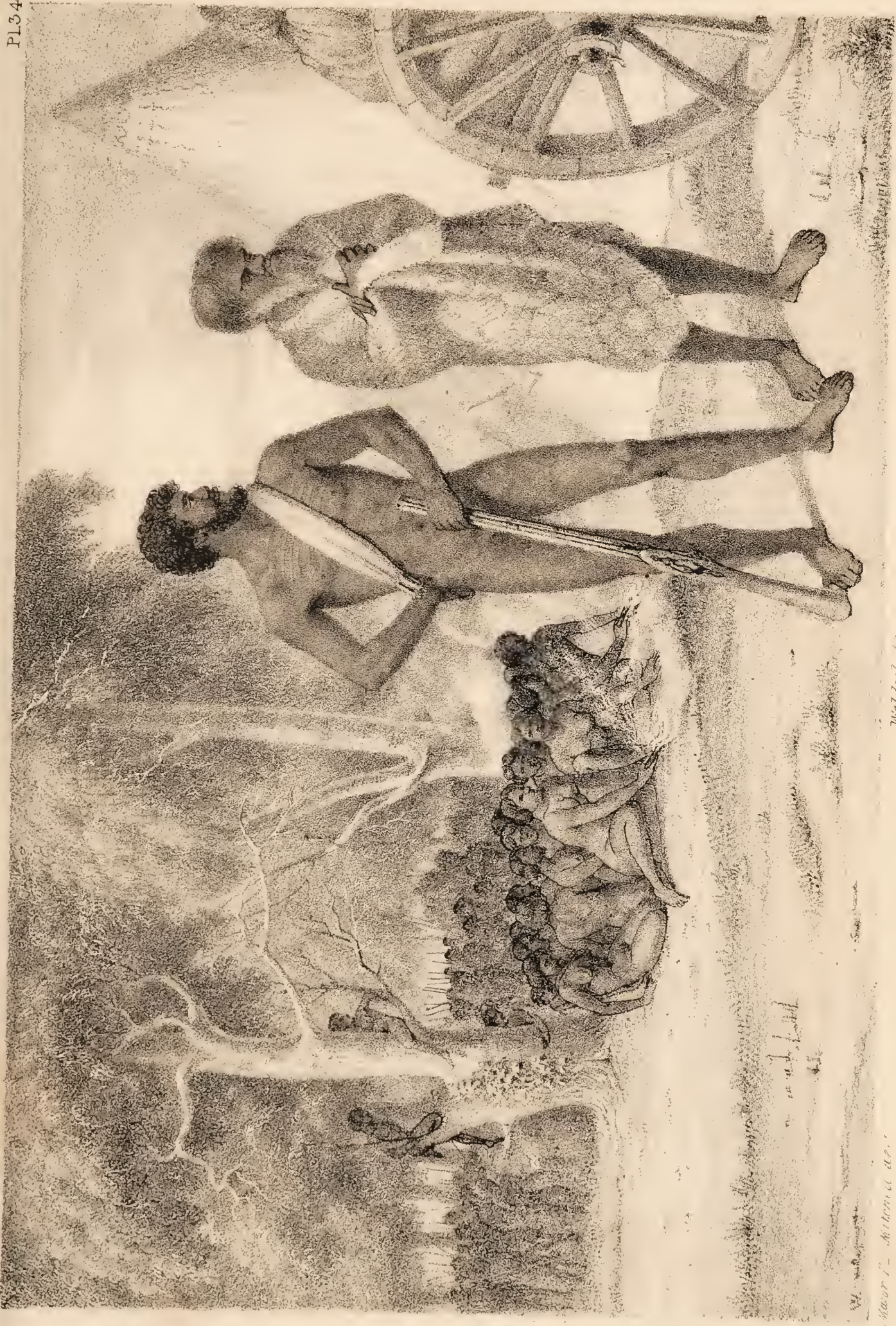
*Mountains*—The ossature of the earth.

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, just as we perceived smoke at some distance beyond the other bank. To this smoke Piper had hastened forward, and when I reached a plain beyond the creek, I saw him carrying on a flying conversation with an old man and some gins, who were retiring in a north-west direction to some wood about a mile distant. This wood we also at length reached, and 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 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 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 and 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 following it three-quarters of a mile, that a passage in that direction seemed quite out of the question. Many of the natives had followed us in a body from the lake, and at length overtook us here. They assured Piper that we were near the junction of this piece of water with the "Millewà" (Murray), and that in the opposite direction or towards the lake, they could shew us a ford. We accordingly turned, and thus guided we came to a narrow place where the natives had a fish-net set across. On seeing us preparing to cross by the ford, they told Piper that at a point still higher up we might cross where the channel was dry, and we therefore went still

onward, while the natives accompanied us in considerable numbers, 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 savage tribes. These aged chiefs from time to time beckoned to us, repeating very often and fast at the same time, "gowày, gowày, gowày," which, strange to say, means, "come, come, come." Their accompanying gesture and action being also precisely such as we should use in calling out to any one "go away!" Having gone still higher along the channel according as they led the way, we crossed it at length where the bed was quite dry, and pitched our tents on the opposite side. 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. 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 to be at by all this uncommon civility. In the course of the afternoon they got together all their women and children in groups before our camp, exactly as this tribe 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 on their part. We now ascertained through Piper that the tribe had fled precipitately from the Darling last year, to the country westward, and did not return





Waldseeck u. u.

J. Graf, Printer to her Majesty.

P I P E R A T B H N A I I E E

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until last summer, when they found our two bullocks left there, which, having become fat, had been killed and eaten by them. We also ascertained that some of the natives then in the camp still wore the teeth of the slaughtered animals, and that they had much trouble in killing one of the bullocks, he was so remarkably fierce. This we knew so well to be the character of one of the animals, that we had always supposed he would baffle every attempt of these savages to take him.

There were two daughters of the gin that had been killed, who were pointed out sitting in the group then before me, together with a little boy, a son. The girls bore an exact resemblance to each other, and at once 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 my eye lingered upon her for a moment, while deeply regretting the fate of her mother, the brother of the dead chief, whose hand had more than once been laid upon my cap as if to feel if it were proof against the blow of a waddy, begged me to accept of her in exchange for a tomahawk!

The evening was one of much anxiety to the whole party. The fiendish expression of some of these men's eyes shone horribly, and could not be disguised 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 old man was brought forward, and particularly pointed out to me by the tribe. I accordingly shewed 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

\* Instead of handing a chair, the equivalent 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.

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 I have already 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 had thrown the two spears at Muirhead last year; while on their part, they evidently knew again Charles King, who on that occasion had fired at the native who threw so many spears at Jones.

Night had closed in, and these groups hung still about us, having also lighted up five large fires, forming a cordon around our camp. Still I had not interfered 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 also took the alarm, and came to me, inquiring apparently with a thoughtful sense of responsibility, what the Governor had said 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 P.M.—and saw one fellow who had always been very forward, posted behind our carts, and speaking to the gin (Piper's wife). I ordered him away, then drew up the men in line, and when, as preconcerted, I sent up a rocket, the men gave three cheers, upon which 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 come. 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 then venture to hope for was, that a collision might not take place before daylight.

*May 25.*—The night passed without further molestation on the part of the natives; but, soon after day-break, 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 our 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 willing that the barbarians should come again close up, and anxious to act on the defensive as long as possible without coming to extremities; 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 of mine, and retired. I then ordered eight men to advance towards the native camp, and to hold up their fire-arms, but not to fire unless they were attacked, and to return at the sound of the bugle. 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 had at least the effect of giving us time to take breakfast, as Muirhead observed on coming back to the camp; and we afterwards left it, and moved forward on our journey as usual. 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, the fellow with the cloak, carrying a heavy bundle of spears before him.

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

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 for the river itself. It was most painful and alarming to me now 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 with the most hostile intentions, for this was now past all doubt. We had endeavoured to prevent them by the demonstration of sending the men advancing with fire-arms, 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 tribe 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 foe was between the two portions; a more desperate situation, therefore, than this half of the 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 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

\* See page 90.

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 sand-hills and the *eucalyptus dumosa*, I continued to travel westward, not doubting but that I should at length hit 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. Not a spike of grass could be seen, and the soil, a soft red sand, was in most places covered with a scrub like a thickset 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 had travelled from an early hour in the morning until darkness and a storm appeared to be simultaneously drawing over us. I hastened to the top of a small sand-hill, in doubt whether there was any open space around where even our tents might be pitched, and I cannot easily describe the dreariness of the prospect that hill then afforded. No signs of the river were visible, unless it might be near a few trees, which then 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. A heavy squall set in, and the rain poured in torrents, so as to supply the men with water enough, and indeed this was by no means the only occasion on the journey

when we had been thus 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 two or 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. We yoked up our groaning cattle and proceeded, although the rain continued for some time. I pursued by compass the direction of the higher trees I had seen, though they were somewhat to the northward of west, and exactly at five miles, a green bank and, immediately after, the broad expanse of the Murray, with the luxuriant verdure of its margins, came suddenly in view, without any indication of its proximity appearing 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 stream. The green hill I had first seen afforded an excellent position for our camp, and as the grass was good I halted there for the rest of the day, the better to refresh the cattle. Towards evening the natives were heard coming along our track, and seven came near the camp, but remained on the river margin below, which from our position on the hill, we overlooked, as if we had been in a castle. Piper went to speak with these natives, in order to ascertain if they were our enemies from the lake. He recognized several whom he had seen there, and 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 whom 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 informed us that they were the same tribe that intended to kill another white man in a canoe at the junction of the rivers lower down. They also informed us, on my inquiring about him, that the old man



who had behaved so well to Captain Sturt on that occasion 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 that man also. I then 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, making a noise about our camp, that I could not allow any natives to sit down beside us at night.

## CHAPTER V.

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—Their treacherous behaviour—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.

*May 27.*—IN the scrub adjoining our camp, we found a new and remarkably beautiful shrub, bearing a fruit of which



*Eucarya Murrayana (mih)*.

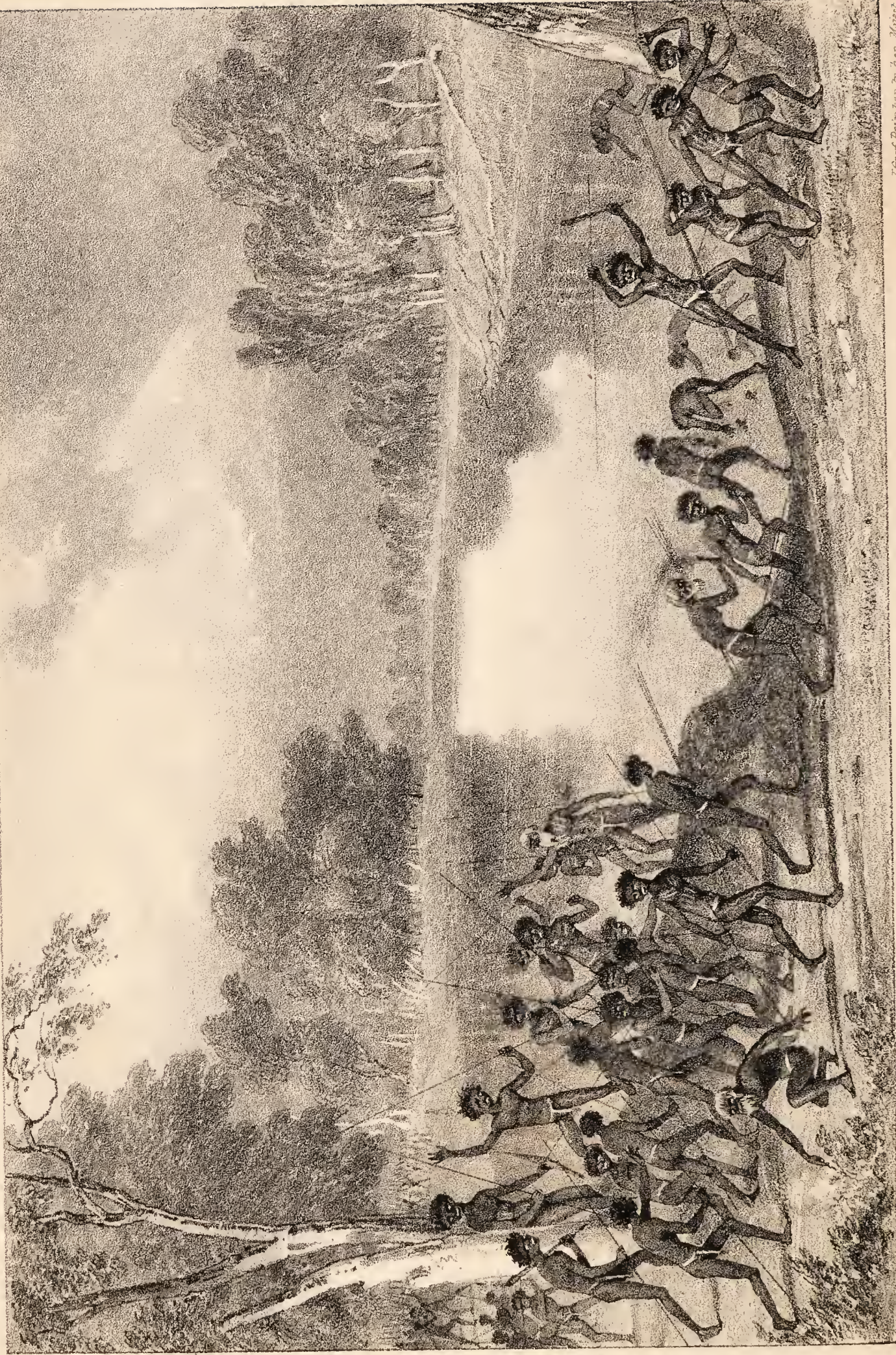
the stone resembled very much that of the quandang (*Fusanus acuminatus*), although neither the tree itself nor the flower bore any resemblance to it. This shrub or tree resembled more the weeping willow, the branches drooping with the fruit, which grew only at the extremity of each twig. The form of the fruit resembled a pear, having a black ring at the broad end. The crop then on the tree was not at all ripe, and was probably a second one, the flower was also budding, and we hoped to see it out on our return. Three or four trees only of this kind were seen, and all on this hill. Here also grew a new shrubby Xerotes, with hard rush-like leaves, related to *X. gracilis*.\*

We proceeded on our journey as usual, but had not gone far, when the voices of a vast body of blacks were heard following our track, with prodigious shouting and 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 what these natives threatened had taken place, and they had actually again thrown their spears, 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 by some attack, which might 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 assemble in our rear, for in that season of drought these people could only live on the banks of these large rivers. But, in order to ascertain first whether this was the hostile tribe, I sent overseer Burnett with Piper and half the party back into the scrub which skirted our line of route. This was along the berg of the river, a feature which not only afforded the best defensive position, but also guided me in tracing the river's course. It

\* *X. effusa*, Lindl. MSS.; acaulis, foliis linearibus longissimis semiteretibus margine scabris dorso striatis: apice dentato tabescente, paniculâ masculâ effusâ abbreviatâ bracteis acuminatis scariosis pedicello brevioribus.

was also in many parts the only ground clear of timber or bushes, and therefore the best for travelling upon. I directed these men to allow the natives to pass on along my track towards me, as I intended to halt with the carts after crossing the low hill. Piper recognized from this scrub the same people he had seen at Benanee, and they immediately discovered the presence of our party in ambuscade there, by the howling of one of their dogs. On this they halted, poising their spears, and one of our men (King) having inconsiderately fired his carbine, the natives, as usual, made for their citadel the river, pursued and fired upon by the party from the scrub. The firing had no sooner commenced there 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, of course, then aware what accidental provocation had brought on this attack without my orders, but it was no longer time for inquiring, 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 they were posted was about a quarter of a mile distant from the river, and towards it very steep, while on the intervening space or *margin* below, lofty gum trees grew, as elsewhere in similar situations. By the time I had also got down, the whole party lined the river bank, 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 swam down the stream. The sound of so much firing must have been terrible to them, and it was not without effect, for if we may credit the information of Piper, seven, as he afterwards ascertained, had been shot in swimming across 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, duly considering the cir-





*Aboriginal People in the Interior*

*J. Brandford & Barnard del.*

*Major T. L. Mitchell del.*

THE MURRAY.

cumstances, for the result was the permanent deliverance of the party from imminent danger. The men composing it were liable to be exposed, in their turns, singly, when following 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 my orders to fire longer than might have been consistent with the safety of all my men. Such was the fate of the barbarians, who a year before, had commenced hostilities by attacking treacherously a small body of strangers, who had they been sent from heaven, could not have done more to minister to their wants than they did then, nor endured more for the sake of peace and good-will. The men had then been compelled to fire upon them in their own defence, at the risk of my displeasure. The hostility of these savages had then prevented me from dividing my party, and obliged me to retire sooner from the Darling than I might otherwise have done. It now appeared that they had discovered this, judging from their conduct on this occasion, and unappalled by the effects of fire-arms, to which they were no longer strangers, they had boastingly invaded the haunts of other tribes, more peaceably disposed than themselves, with the avowed object 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 were on the alert to kill any stragglers, having already, as they acknowledged, killed two of our cattle.

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

The day's journey was still before us. On leaving the river we soon met a small creek, or ana-branch;\* and I was desirous of avoiding all such obstructions by going round, rather than crossing them, but in the present case,

\* See page 90.

finding that this would have taken me too far northward, I was compelled at length to cross it. Soon after, we approached a lagoon full of water, and during the whole day, turn wherever we would, we were met by such deep lagoons, or, as I considered them, the turnings and windings of some ana-branch, formed by 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 some deep ponds which lay in the channel of a broad water-course. I was anxious this day to avoid, if possible, being between such ana-branches and the river, lest, as the river seemed rising, I might have been 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, without commanding, 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, being grassy land under an open forest, containing both goborro and yarra; trees 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 cypress, (*callitris pyramidalis*.)

May 28.—A thick fog hung over us in the morning, but did not, however, impede our progress. For the first three miles our way was along the bank of the channel or lagoon, beside which we had passed the night. Then we crossed a polygonum-flat and several dry hollows, until 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 on which we were travelling abruptly terminated. We had cut off a great bend of the Murray, by our intricate journey among the lagoons, and had again reached this river precisely at the point most desirable. 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 these 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 inside was covered with dry grass on which lay some pieces of wood. There was a third grave with coverings of the same kind, but not so neatly finished, nor was it covered with net.\* There were also graves without any covering; also one, where the covering appeared to have been burnt, and two old-looking graves, open, empty, and about three feet deep.

We had not proceeded far through the scrub on the top of the precipice overhanging the river, when the usual alarm of "the natives" was passed up 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 a-head 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 came up while the rest were following among the bushes behind. I recognised two men whom I had seen 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 last year, 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, when I was informed that 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." Of the evil tendency of giving these people

\* Isaiah lxxv. 4. *Who remain amongst the graves.*] "The old Hebrews had an idolatrous custom among them of going among the tombs to receive dreams, by which they judged of events, and how to manage their affairs; for they are charged by the prophet Isaiah with *remaining among the graves and lodging in the monuments*, which is rendered by the LXX. *with sleeping in the tombs upon the account of dreams.*"—*Lewis's Origines Hebrææ*, vol. iii. p. 381.

presents I was now convinced, and fully determined not to give more than, and this determination the natives discovered very acutely; their ring-leaders vanished like phantoms down the steep cliffs, and we heard no more of the rest. It seemed, that this portion of the tribe had not then received intelligence of what had befallen the others, or they would never have advanced so boldly up. Be that as it may, they followed us no more, having probably heard in the course of that day from the division of the tribe we had driven across the Murray. The river taking a turn to the southward, we again entered the *dumosa* scrub, which I found more open than I had seen it elsewhere. The soil consisted of barren sand; no grass, but tufts of a prickly bush which tortured the horses, and tore the men's clothes to rags about their ancles. I observed, that this bush and the *eucalyptus dumosa*, grew only where the sand seemed too barren and loose for the growth of anything else; so loose, indeed, was it, that, but for these two, viz. the dwarf tree, and prickly grass, the sand must have drifted so as to overwhelm vegetation, 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, a few branches only 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 of this dwarf tree, and the prickly grass, together occupy the ground between each bush, and prevent them from growing very close together; while the stems being leafless except at the top, and also thus isolated, this kind of eucalyptus is almost proof against the running fires of the bush. The prickly plant 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, offering real annoyance to men and horses, as they shoot out from each bush in all directions. No animal eats these tufts,

for, however young, they are completely armed. Neither will any one tread on them, and, growing singly, the fire which checks all other Australian vegetation, cannot touch them; consequently, these two plants flourish undisturbed, and seem intended to bind down the sands of the vast interior deserts of Australia.

On ascending a small sand-hill about three o'clock, I perceived that I could not hope to reach the river in the direction I was pursuing, and accordingly turned to the left, entering a rather extensive valley, bounded on the south by the river-bergs, at a distance of three or four miles, and we encamped on the immediate bank of the Murray a little before sunset. There was little grass about the river there, and the ferruginous finely grained sand-stone was still the rock in the river bank, this rock being exactly similar to that on the eastern coast. 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 Pealii*), 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 we had also the satisfaction of overlooking from it the friendly river at a greater or less distance on the left. It meandered between the opposite bergs of a valley or basin which was here about four miles wide. From a hill situated between the river and the scrub, I this day saw, for the first time since we left the Lachlan, a distant ridge on the horizon. This appeared to the northward, the west end being distant about seven miles. The ridge was long, flat, and not much higher than the common horizon. An extensive plain reminded us of those on the Darling, and in the more hollow part of that plain I perceived the dry bed of a lake bordered by some verdure. On proceeding I perceived that the bergs fell off, and we descended into a valley where a line of yarra trees enveloped a dry creek very much resembling that seen by us last on the Darling, and then

named Clover-creek. Crossing this we soon regained the berg of the river, and found it still as favourable to our progress as before, but being of red sand, I at length led the party along the more firm clay at the base.

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 for savages they were well painted, broad white patches marked out the larger muscles of the breast, thighs, and arms, giving them exactly the appearance of savages as represented in theatres. Their hair was of a reddish hue, and they were altogether men of a different fashion from the tribe of the Darling. We accordingly allowed them to remain with us at 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 Bengállo, 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 the Bogan sometimes came to the Murray by the banks of that creek; that the name of a river to the southward was "Perräinga;" and (if we understood each other right 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*. During that night it rained heavily, and the savages 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 natives.

*May 30.*—We heard our new acquaintance cooying 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 such as I had seen only on the Darling. At length the berg terminated altogether in a smooth round hill, be-

yond 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 advancing to a point about west-south-west. Upon the whole I was satisfied that we were already near the junction of the two rivers, and we encamped on the lower extremity of the point already mentioned, overlooking a small lagoon, and 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, and we thus crossed a plain of about two miles in breadth, when we came to a line of yarra trees enveloping a creek from the north-east which was dry, and which also very much resembled Clover-creek. We next travelled over ground chiefly open, and at four miles crossed a sand-hill 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, but I had scarcely reached the bank, when my attention was drawn to a fire about a hundred yards before us, from 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. These savages rapidly retired towards others who were at another fire on the bank further on, but Piper and his gin going boldly forward, succeeded at length in getting within hail, and allaying their fears. While he was with these natives, I had again leisure to examine the water-course 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” of the Murray, that I at first thought it nothing but an ana-branch of that river.

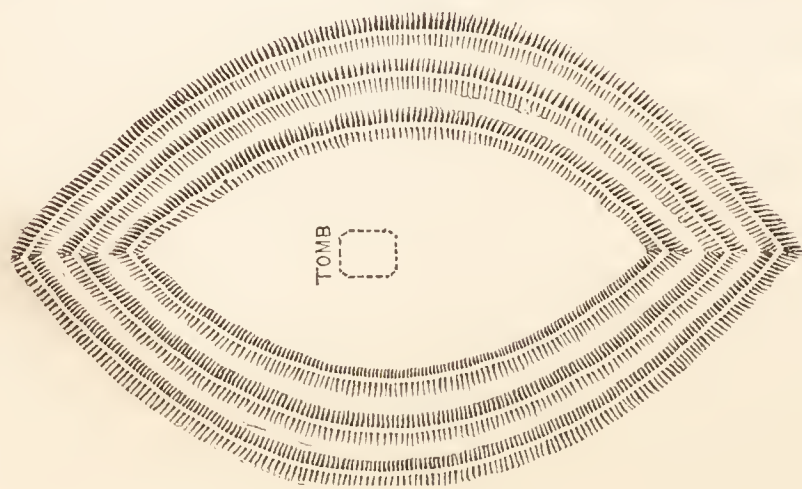
The natives, however, told Piper that it was the channel of all the waters of "Wambool," (the Macquarie), and "Callewatta" (the upper Darling), and I accordingly determined to trace it up, at least far enough to identify it with the upper part. But the precise situation of its junction with the Murray I had not yet seen, and I thought it as well that we should endeavour first to recognise the junction seen by Captain Sturt. The natives said it was not far off, and I accordingly encamped at two o'clock, and set off with a few men with the intention of measuring to that important point. Thirteen natives set out, as if going with us, for they begged us not to go so fast. Three of them soon set off at full speed, however, as if going on a message, and the remaining ten fell behind us. We had passed the camp of their gins, and I supposed at the time that their only object was to see us past these females, Piper having been with us. 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 this branch increased very much in width lower down, and when at length filled with the clay-coloured water of the flood then in the Murray, it certainly had the appearance of a river of importance.

*June 1.*—The country to the eastward seemed so dry and scrubby, that I could not hope in returning, to 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 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 had been 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 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 the book they always read, thus it happened they were so late in following our party this day. Kangaroos were more numerous and larger here than at any other part we had yet visited. This day one came before me so that I fired at him with my rifle, and a man beside me, after asking my permission, fired also. The animal, nevertheless, ran amongst the party coming on behind, who hastily, and without permission, discharged some of their carabines also. At this four horses took fright, and ran back at full speed along the track we left behind. Some of the men who went after these horses fell in with two large bodies of natives coming along this track, and it happened twice that one or two had nearly fallen into their hands. "Tantragee" (M'Lellan) narrowly escaped when running at full speed, pursued by bands of savages, only by the opportune appearance of others of our men, who had caught the horses and happened to come up. The natives then closed up to 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. When I turned to look at them, however, when riding some way a-head, I observed an old man and several others suddenly turn to run, and, on my going back to the carts, the whole fell back, those in their rear setting off at full speed. Soon after, I perceived them all running to the rear, 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 they entertained the idea that our clothes were impervious to spears, and had therefore determined on a trial of strength by suddenly overpowering us, and they had therefore "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. That party consisted of strong men, neither women nor boys were among them; and although we had nothing 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. Nothing seemed to excite their surprise, 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 beheld the cattle as if they had been always amongst them, and seemed to understand the use of every thing at once.

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. The graves on these hills no longer resembled those on the Murrumbidgee and Murray, but were precisely the same as those we had seen on the Darling, viz. 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 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. 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.



*Inhabited Tomb.*



And on the Darling, as above stated, the graves are in mounds\* covered with dead branches and limbs of trees, and surrounded by a ditch, which here we found encircled by a fence of dead limbs and branches.

As we proceeded, the sand-hills 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 river in times of flood, the intervening ground being covered with *polygonum junceum*. At length I reached an angle of the river and encamped on a small flat beside a sand-hill. 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 sand-stone. 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 journeys. As I stood on the adverse side of this hopeless river, I began to think I had pursued its course far enough. The identity was no longer a question; and the country we had seen there, and now found on both sides here, and all around as far as I could penetrate or see, was one unvaried desert. 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 depôt, 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 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 separate parties amongst a savage population, was perilous in proportion to the length

\* See plate 16, at page 251, vol. i.

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 have been 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, parallel with us, but they did not appear at our camp, although their smoke was seen at a distance.

*June 2.*—For several days the barometer had been falling, and this morning the weather was rainy and cold. After tracing the further course of the Darling for some distance, and obtaining, during an interval of sunshine, a view from a sand-hill, 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 this morning, and it was doubtful whether their pieces would have gone off had the natives come on, the day became so wet; but, fortunately, they did not require them. We reached our old encampment, notwithstanding the unfavourable state of the ground, and again pitched our tents upon it. We found among the scrubs this day a curious new species of *Bæckea* with extremely small scattered leaves not larger than grains of millet, plano-convex, and covered with pellucid dots.\*

*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

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

at their old camp, for as the party crossed a flat not far from it, and I happened to discharge my rifle at a kangaroo, their voices were immediately heard, and signal columns of smoke arose in the air, as they hurried with their children to the opposite side of the Darling. From this astonishment on their part at our appearance, and especially their flight after knowing who we were, it was not improbable that the men were absent on some mischievous scheme affecting us. 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 line 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 back water 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 both rivers turned westward, to the junction at the extremity of this ground between them, I found 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 retrace our steps and join them, might have had enough to do with the natives. I thought that in case it might ever have been necessary to look for us, this junction was the most likely spot where traces might have

been 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 depôt, adding also the names of the men then with me. The ground happening to be soft, I had no need to dig, but merely to drop the phial into a hole made with the scabbard of my sabre, so that this bottle would probably escape the notice of the natives.

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 both rivers 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 affect our barometrical measurements, as obtained by simultaneous observations at Sydney. The bed of the greater river being also the deepest, any flood descending 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 also have a tendency to deepen and widen the lower part of the Darling.

## CHAPTER VI.

Return along the bank of the Murray—Mount Look-out—Appearance of rain—Chance of being cut off from the depôt 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 depôt—Surrounded by inundations—Cross it in a bark canoe made by Tommy Camelast—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 cattle—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—Natives very shy—Piper speaks to natives on the river—Good land on the Murray—Wood and water scarce—Junction of two rivers—Swan hill.

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 some 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 still 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 were seen protruding from the earth. Piper said that the dead were sometimes dug up and eaten, but this I could not believe.

By 3 P. M., we again occupied the remarkable point

where we had formerly encamped. It is at this point (Mount Look-out 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 point 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, who were still between us and our depôt, 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 he found of natives led upwards, and seeing no longer any of them there, we felt more anxious about the safety of the depôt. The barometer had been falling gradually from the 1st inst., 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. There, after crossing Golgol creek, we occupied a clear point of land between it and the Murray. As I was reconnoitering the ground for a camp, I observed a native on the opposite bank, and without being seen by him, I stood awhile to watch the habits of a savage man “at home.” His hands were ready to seize, his teeth to eat, any living thing; his step, light and noiseless as that of a shadow, gave no intimation of his approach; 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. Deep in the hollow heart of some of the upper branches was still hidden, as it seemed, 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 I was on horseback, with pistols in my holsters, a broad river was flowing between us, and I overlooked him from a high bank, and I ventured to disturb his meditations with a loud halloo: he then stood still, looked at me for about a minute, and then retired with that easy bounding kind of step which may be termed a running walk, exhibiting an unrestrained facility of movement, apparently incompatible with dress of any kind. It is in bounding lightly, at such a pace, that with the additional aid of the "wámmerah," the aboriginal native can throw his spear with sufficient force and velocity to kill the emu or kangaroo, even when at their speed. One or two families of natives afterwards appeared, huddled on the river bank 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 "Millewà," (Murray), had now a flood in it, having for some time previous been much lower than it was just then, but they assured Piper, apparently with exultation, that it "flowed always." The name of the creek we had just crossed was Gòlgol, 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, I thought this might have been that branch of the Lachlan already mentioned as Boororàn, flowing westward under Warranary and other hills between the Murrumbidgee and the Darling.

*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

sand-hills in which the sand was bound down only by the prickly grass already described. From these hills the view was extensive, but bounded on all sides by a perfectly level horizon. On one of these sand-hills, 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, and 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 have been blown into the river. The waters continued 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 depôt, if the river continued to rise much longer, was a question for which I was prepared ; but, on the other hand, the very cold and boisterous weather was opposed to any assembling of the tribes at points of difficulty along the line of our track, as the fools ought to have done, for they never lost sight of our movements while we were in that country:

*June 6.*—It had rained heavily during the night, but the morning was clear. As we continued our journey, the

\* A new and genuine species of *Gyrostemon*. *Gyrostemon pungens*, (Lindl. MSS.); 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.



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 finally encamped within four miles of the ground where we had been obliged to disperse the tribes from the Darling. We had reached the eastern side of the last lagoon, where we found an agreeable shelter from the storm in some scrub that on former occasions had not been thought so comfortable a neighbour. We could now enter such thickets with greater safety; and in this we found too 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*.\*

*June 7.*—The ground had been so heavy for travelling over during some days that the cattle had been much in need of rest, and as I contemplated the passage in one day, of that *dumosa* scrub, occupying twenty miles along the track before us, I made our journey for this day 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 now 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 found, on examining the ground where we had repulsed the Darling tribes, that they had left many of their spears, nets, &c. on

\* *C. heteroloba*, (Lindl. MSS.); foliis bijugis linearibus carnosis citò deciduis apicè mucronulatis recurvis, glandulâ parvâ conicâ inter omnia, petiolo compresso herbaceo nunc aphylo mucronulato, racemis paucifloris folio brevioribus, leguminibus oblongis planis obtusis papyraceis continuis aut variè strangulatis.

† *L. cordifolius*, (Lindl. MSS.); ramulis pubescentibus, foliis sessilibus subrotundis planis patentibus cordatis mucronatis margine scabris suprâ lævigatis subtùs striatis, floribus solitariis sessilibus axillaribus.

our side of the river, having afterwards returned for them, and also that a considerable number did not swim across, but had retired along the river bank. Upon the whole it was estimated that the numbers at that time in our rear, amounted to at least one hundred and eighty.

*June 8.*—As soon as daylight appeared this morning we broke up our encampment and commenced our long journey through the scrub. There we discovered to our surprise, by the traces of innumerable feet along our track, that the natives had not, as I supposed, come along the river bank, 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 from the prickly spinifex-looking grass, which is intolerable against their naked legs. While we were encamped in that scrub on May 25, they must have passed that stormy night there without having 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*.\* Our cattle, though they were jaded, accomplished the journey before sunset, and we encamped on 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, had first emerged from the woods. The weather being still boisterous, we encamped on the lower ground, where we were sheltered from the west or stormy quarter by the river berg. 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 this camp at least four hundred natives. The bushes placed around each fire seemed to have been used for that temporary kind of shelter required for only one night.

*June 9.*—We proceeded this morning as silently as possible,

\* *Tr. lanatum*, (Lindl. MSS.); *incano-tomentosum*, caule corymboso, foliis obovatis cuneatisque, capitulis hemisphericis lanatis, bracteis dorso villosis.

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 depôt. Two creeks lay in our way, and from the flood then in the Murray, it was likely that these might be full of water, and the savages prepared to take advantage of the difficulty we should have then experienced in crossing them. The first channel we arrived at had been quite dry when we formerly crossed, but 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, 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 had formerly 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 had been 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 were glad to find that tranquillity prevailed throughout its extensive confines. I perceived only one or two natives fishing, and 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 ran off from some huts on the shore, but Piper pursued those in the water for the purpose of obtaining information about the tribe, until they ran so far out into the lake, that they seemed at length up to their ears in the water, and I was really afraid that the poor fellows, who were found to be only boys, would get drowned in endeavouring to avoid him. I could scarcely distinguish them at length from the numerous water-fowl 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, and 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 nearly in the centre of the lake he overtook one, and while leading him by the hand towards the shore, he ascertained that the Darling tribe had returned to the lake only the day before, having been ever since their dispersion on the 27th May, until then, 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 still on the upper Darling, with the news of what had befallen them, acquainting them also with our progress in that direction, and requesting them to join them as soon as possible at the lake.

I perceived that the depth of water then in this basin did not in the deepest part exceed 8 or 10 feet, although the surface was certainly far below the level of the sandy beach, perhaps as much as 20 feet, thus making 28 feet as the extreme depth when full. Now that I could examine this fine piece of water at leisure, I found that it 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 clear of trees, well covered with grass and sloping gently towards the water. The whole was surrounded by a beach consisting of fine clean quartzose sand. This was a fine 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 have done. From what we learnt however, we were satisfied that the depôt was safe, and this fact relieved me from much anxiety. We were still to cross that creek or ana-branch which apparently supplies the lake, although it was then, as we found, 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. We reached our former camp on the Murray by three P.M. and once more pitched our tent 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 they had risen eight feet and a half. We were then within but a short day's journey of the depôt, and still anxious enough to know if it was safe.

*June 10.*—We set off 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 depôt was safe. It was now cut off from us by a deep stream filling the creek which it overlooked, and which was flowing with a considerable current towards the Murray, having also filled lake Stapylton to the brim. 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 mending, the mother having been unremitting in her care of the child. Good

\* See page 90.

grass had also been found, so that the cattle had become quite fresh and indeed looked well. I crossed Stapylton's creek in a bark canoe, ferried over by Tommy *Came-last*, who also by the same means soon conveyed every article of equipment, and the rest of the party over to the depôt 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 prospect, now that we could bid adieu for ever to the dreary banks of the Darling.

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 depôt camp came from the Murrumbidgee, and that it entered the Murray. Our depôt thus stood on a tract surrounded by water, being between this water 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 cross the Murray either at or below that point, I determined to make an excursion in search of it next morning.

*June 11.*—Taking a ride southward I reached a bend of the river Murray, not distant above two miles from our camp. On tracing the river upwards from that point we saw some natives running away from fires, one of these men holding up a green branch, however, in each hand while running. He answered Piper while he ran, but could not be prevailed on to stop, although the gins had left a heavy bag near us, containing their stone tomahawks, &c. I directed Piper to carry the bag to them, but he was obliged to pursue them with it for nearly a mile before they would stop. A number at length stood still together, but remained at a considerable distance, and incessantly calling to us for tomahawks. From the number of huts along the river-bank, it was obvious that the inhabitants were numerous, and I was

therefore the more surprised that our depôt could have continued so long near them without their discovering it. After following the river upwards eight miles without meeting with the Murrumbidgee, I came to a place where it seemed to have formerly changed its channel, leaving there 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 at once to this point, and to entrust to Mr. Stapylton the further search for the junction of the Murrumbidgee, which could not be far from it.

*June 12.*—While I conducted the party to that part of the Murray where I intended to cross, Mr. Stapylton returned along our old route to where we first crossed the now flooded creek, and by tracing this downward to the Murrumbidgee, and this latter river to its junction with the Murray, he ascertained that junction to be little more than a mile distant from the encampment 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 basin of still water adjacent 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 an object of much importance. I was met as favourably by the natives on this first passage of the Murray, as when, on our first approach to the Murrumbidgee, we had been received by the natives there. A small tribe came forward and laid a number of new 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 come to that side I would give him a tomahawk in return for it. 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 a bank-island in a shallow part, from whence they could not

be dislodged, much less compelled to swim from it to the opposite shore. Much time was lost in endeavouring to drive them from that bank, while only a few could be drawn over by ropes attached to the boats, by which process one was drowned. This was owing to the injudicious conduct of one of the men (Webb), who gave the animal rope instead of holding his head close *aboard*, so as to keep the mouth at least above water. The drivers then represented that the rest of the animals had been too long in the water to be able to cross the river before the next day; but having first tried their plan, I now determined to try my own, and directed them to bring the cattle to the steepest part 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 cattle this measure succeeded, for on driving them down the steep bank, so that they fell into the water, the whole of them at once turned their heads to the opposite shore, and reached it in safety.

We next swam the horses across by dragging them separately at the stern of a boat, taking care to hold the head above water. Thus by sunset everything save one or two carts and the boat-carriage, had been safely got across the Murray, and I then went to pay my debt to the natives on that side. These were differently behaved people from those of the Darling, for although one group at beside our party, which was for the most part still on the right bank, another group on a point of the opposite shore to the eastward of our new camp, and a third body of them near my tent, in the neck of a peninsula on which I found we had landed; none of these parties caused us any anxiety or trouble. It was to the last party that I owed the tomahawk, and I went up to them 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, probably from seeing the two native



boys who then accompanied me as interpreters, being also dressed well, and apparently happy, I had no doubt the poor man was willing to have placed 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 guns, if too much troubled. Experience had taught me the necessity for thus keeping even the most civil of these savages perpetually in mind 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.

*June 14.*—The morning dawned under the most steady fall of rain that I had seen on this journey; this happening 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. In the afternoon I proceeded in one of the boats up the river to the junction of the Murrumbidgee, and ascertained that there was a fresh in that river also. This was certainly narrower at the mouth than it was 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 enquired 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.*"

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 sand hills on which grew pines (*callitris*). Open forests of goborro (or box tree), prevailed very generally nearer the river, and where this tree grew we found the ground still good for travelling upon (notwithstanding the heavy rain), this having apparently been owing to 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, all which appeared to lie in channels of 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. The most remarkable incident of this day's journey was the discovery of an animal, of which I had seen only the head among fossil specimens from Wellington Valley. This animal was of the size of a young wild rabbit, and of nearly the same colour, having a broad head, terminating in a long very slender snout, like the narrow neck of a





L. L. M. del.

Fore Foot  
Natural Size



MACAUDATUS  
(*Chironius or Terameles*)

W. L. Miller 1872

wide bottle; and no tail. The feet, and especially the fore-legs, were singularly formed, the latter 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 by our native guides on the ground, but when pursued it took refuge in a hollow tree, from which they took it alive, all of them declaring that they had never before seen an animal of that kind.\*

*June 17.*—The cattle were not brought up until ten o'clock this morning, 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 sand-hills on which grew *callitris*. The plains covered with *salsolæ*, which 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 sand-hills, as possible. On crossing a point of one of these sand-hills, 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 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 fore-feet which have only two middle toes resembling those of a hog, and in the total absence of tail. This genus requires to be verified by an examination of the specimen at Sydney. It may eventually turn out to be a real *Perameles*, and may in that case be called *P. Ecaudatus*: or if generically distinct *Chæropus Ecaudatus*."

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 sand-hills nearest the river, where a variety of shrubs, such as we had not previously seen formed a curious foreground. Amongst them a creeper was found with very large pods, two of which were brought to me last year 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 tree of the *Eucarya Murrayana* with young unripe fruit. The country abounded with kangaroos, and on ascending some grassy ridges, I perceived a verdant plain extending 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 them presented something like hills, a refreshing sight then to us 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 this during the rest of the day, and we finally encamped on the margin of this water 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 sand-hills and scrub. On crossing one of these we heard the sound of the natives' hatchet on some hollow trees before us, and Piper hastened forward as usual 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



Major T. L. Mitchell del. "cacia. an. larns.

G. Barrard lith.

Lord, Butler in her Majesty.

BACK WATER OF THE MURRAY.

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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. The Murray was flowing rapidly in a narrower channel than we had seen it in, 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 right bank of this river. The grassy flats backed by hills covered with pine seemed very eligible for cattle runs, the chief objection to them in that respect being only that the banks of the river were everywhere so steep and yielding, that the water was in general inaccessible to cattle. 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. On crossing the extremity of a sand-hill, within about two miles of the spot where we afterwards encamped, I perceived that a vast region of reeds lay before us. These grew everywhere, even under the trees, and extended back from the channel of the river as far as I could see: no alternative presented itself, and 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 reedy 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 these reeds, but the ground, even where they grew, was as firm and good for travelling upon as any that we had recently crossed. Grass was also to be found among the reeds, 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; the margin was covered with high reeds; and thus, although I ultimately encamped near a small lagoon within the reeds, the cattle would not venture to drink, but instinctively shrunk back from the muddy margin. In the course of the evening one animal fell into the river, and

could not be extricated without great difficulty and 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, on the contrary, 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.

*June 19.*—Notwithstanding the obvious necessity for closely watching the cattle, they had been suffered to run nine miles up the river during the night, and could not be brought back to the camp until noon. This unusual and untoward circumstance was the more surprising, as the whole country along the river bank was covered with good grass. Whether they had been moved instinctively to set off towards the upper country where most of them had been bred, or that want of water after a hard day’s work had occasioned such restlessness, it was difficult to say ; but their tracks extended even to beyond the camp that we reached this day, in a journey commenced however, only at  $\frac{1}{2}$  past 12. The natives were seen peeping 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 bommerengs with them. We had not proceeded above a mile and a half, when I perceived, close to the berg on which we were travelling, a small deep and still branch of the river among the reeds. This appeared connected with numerous winding branches, in all of which the water was quite still, although it had the same muddy colour as that then flowing in the river, and appeared equally deep. These still channels seemed to wind 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 grew even in the water. The 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 sand-hills 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  $14^{\circ}$  S. of E. A broad piece of water, (probably only an inundation occasioned by the late rain), filled the centre of the reedy space. At 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 being more than a foot below the level of the right bank. Thus the Murray seemed to flow through that reedy expanse, its course being unmarked by trees or bushes, although one or two clumps of yarra were strewed about and probably grew on the banks of the permanent stream. At two miles farther on, these trees again grew plentifully close under the berg by which we travelled, and where I hoped to have again seen the river. We found that these trees 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, as also several interesting shrubs, and among them some fine specimens of that rare shrub, 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 this and gum *acacia* may in time become articles of commerce in Australia.

*June 20.*—The morning was frosty and clear, and 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. Behind it an extensive flat was also clear of wood with the exception of a few atriplex bushes, and 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 this canal, 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 went boldly up to the fire there, and found three families of blacks in as many canoes on the river. They told him there was a junction of rivers some way a-head of us, and I understood him to say that some of these natives had come across from Waljeers. The country became more and more open as we proceeded, and the basin of reeds more extensive. The bergs on the opposite side (on which I had fixed several points), were distant on an average about eight miles, the breadth therefore of that low margin of reeds. The winding borders of this reedy expanse 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 pine. One or two spots seemed very favourable for farms or cattle stations. The soil in these grassy flats was of the richest description, and indeed the whole of the country under reeds seemed capable of being converted into good wheat land, and of being also easily irrigated at any time by the river, then a navigable stream by which the produce might be conveyed at most seasons to the sea shore. There was no miasmatic savannah here, nor 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 abun-

dance of water. We found on these plains an addition to the common grasses.\* The fine open country now afforded extensive views, and to the eastward and south-east we saw hills grassy on their sides, and crowned with callitris. In the intervening valley flowed the Murray, whose course was seldom visible, as no trees grew along its border. In such a situation we could not encamp upon the bank, neither could it be safely approached by cattle, and our prospect of obtaining wood, and watering the cattle 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 in the direction of four trees on the side of a green hill, still at a great distance, but in the direction in which I wished to proceed. When we arrived there, just before sunset, we had the good fortune to find close under the hill a bend of the river, and to discover the junction of another river with it at this point. Within the margin here, we found a small pond quite accessible to the cattle, and behind the hill an extensive flat was covered with the richest grass. Here, therefore, we could encamp most contentedly, beside a clear hill, always a desirable neighbour, having the river at hand and accessible, and also possessing thus the means of determining the junction of two rivers, an important point in geography. The latitude was  $35^{\circ} 19' 43''$  S.

The lesser river 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 have been only the termination of some ana-branch. But from the falling off of the bergs on the distant right bank, and the approach of a lofty line of 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

\* An *Andropogon* allied to *A. bombycinus*.

perceived a wide spreading conflagration, doubtless caused by them, although this expression of ire troubled us but little so long as the flames did not come near us. 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 varieties new to us: one being a rigid hard-leaved acacia not in flower, in many respects similar to the *A. farinosa* met with two days later, but perfectly smooth in all its parts.\* The other appeared to be related to *A. hispidula*, but with much narrower leaves without the ragged cartilaginous margin of that species. †

\* *A. sclerophylla*, (Lindl. MSS.); ramulis angulatis glabriusculis, phyllodiis rigidis carnosis rectiusculis linearibus apice latioribus mucronulatis multinerviis glabris eglandulosis, capitulis 1-2 sessilibus glaberrimis.

† *A. aspera*, (Lindl. MSS.); phyllodiis oblongo-linearibus uninerviis mucronatis eglandulosis ramisque angulatis asperrimis, capitulis 1-2 axillaribus, pedunculis villosis phyllodiis duplò brevioribus.

## CHAPTER VII.

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 water-course—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 wears 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.

*June 21.*—AMONG the reeds on the point of ground between the two rivers there was a shallow lagoon where swans and other wild fowl were so very numerous, that although it was half a mile distant 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.

I wished to have devoted the day to meteorological observations, as pre-arranged with my friends in the Colony, Mr. Dunlop and Captain King ; but there was a thick fog in the morning which promised a day of clear settled weather, and I was obliged to proceed, observing 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 before us on the previous evening, I had no difficulty in pursuing the direction I then chose for this day's route, and at 11 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 water fowl, was afterwards discovered beyond it. We passed along the southern shore of this lake, thus leaving 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 that we had seen near rivers elsewhere: but water could pass by such small channels only during the highest floods, for the water in the lake was even then very low, although the flood in the river was evidently high. This lake was about three miles in circumference. As I ascended a grassy hill about two miles beyond it, I perceived on my left hand another smaller lake; this had no reeds about it, but 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 it was the low scrub of the back country, in which I again saw, just coming into flower, the plant *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 brown with some 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 was also connected with the hill on which I then stood. In one place a narrow line of high reeds was likely to impede us, and Mr. Stapylton rode forward to examine it. As he reached the reeds much smoke suddenly arose, evidently from natives there, whom he had thus accidentally disturbed. He nevertheless pressed forward amongst the reeds, and soon reappeared on the green hill beyond, thus shewing us there was no obstruction, and the carts continued. These reeds enveloped a small creek or hollow, by which it appeared that the floods of the river supplied the lake. One pool of water lay in it, and other parts of the



bottom were so soft, that the wheels of one of the carts went down, so that the united strength of two teams was necessary to draw it out. We found there the huts of the natives who had fled on Mr. Stapylton's approach, having left their fishing spears, skin cloaks, shields, &c. behind. They were soon to be seen on the lake in twenty-four canoes, all making for the little isle in the centre; this isle being covered with reeds, and according to their modes of warfare, probably their stronghold. These 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.

As I wished to learn the original names of these lakes, and also to obtain some information respecting the rivers; I requested Piper and "the two Tommies" to remain behind the party 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, a line of majestic trees marked the course of the 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 myself occupied alone to the southward of the lake, making a survey in order to ascertain its shape. Near the margin I found a small fragment of highly vesicular lava. The ground traversed by the party was firm, and when I at length 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 now left but to change our course to 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 rather 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 both abundant. One solitary group of trees seemed to be on our side of the stream, but they were distant still about two miles when Mr. Stapylton and I galloped towards them, the party following; but there too we found the river, separating us even from these trees, three very small ones only being on our side, and these likely to fall, when cut, into the stream. It had become quite dark before we got to these trees, 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°. We were perhaps more sensible of the want of fuel, from the abundance so apparent on the banks of another river at so small a distance across the open plain. These rivers, flowing thus so near each other, seemed in this respect distinctly different; the one flowing among reeds, without having a tree on its banks; the other under lofty trees, like almost every other interior river of New South Wales. 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, carrying spears, bommerengs, &c. 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" all about him,—and blamed him for bringing the whitefellows there; adding that they did not like him,





and an old man called to the rest to kill him, for that he was no good; upon which two spears were immediately thrown at Piper. These he parried with his carabine, and instantly discharged it at the foremost, wounding him in the right jaw, and the rest 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. They had used on this occasion spears made of reed, and set with bones of the emu; but for the purposes of fishing they had others, as we saw at their huts several heavy jagged spears made of very hard wood. They wore cloaks made of kangaroo skins.

A very curious and rare little quadruped was this day found by the two Tommies, who had never before seen any animal like it. Its fore and hind legs resembled in proportion those of the kangaroo; and it used the latter by leaping on its hind quarters in the same manner. It was not much larger than a common field-mouse, but the tail was longer in proportion even than that of a kangaroo and terminated in a hairy brush about two inches long.\*

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*.†

\* This appears to be the Jerboa, thus, for the first time, seen by us in Australia. My friend Mr. Ogilby has described this animal in the Linnæan 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-fuseo, subtus albido; auriculis magnis, cauda longissima, floccosa.—*Linn. Trans.* vol. p. 129.

† *P. Rodneyanum*, (Lindl. MSS.); patentim pilosum, caule subterraneo horizontali crasso fragili ramos erectos promente apice tantum epigæos foliosos, ramulis herbaceis erectis, foliis ovato-oblongis sublobatis basi cuneatis obtusis grosse crenatis tenuibus glabriusculis longipetiolatis, pedunculis erectis foliis longioribus, umbellis tomentosissimis 8-10 floris demùm laxis divaricatis, petalis angustè obovatis calyce triplò longioribus, staminum tubo obliquo: sterilium 3 denticuliformibus, fertile 2 sterilibus interjectis cæteris longioribus.

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 stript off all their clothes, (their usual custom,) previous to lying down to sleep in the open air, their bodies being doubled round a few burning reeds. We could not understand how they bore the cold 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 having a bit of fire beside us 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; and the naked savage is not without some reason on his side, for with fire to warm his body he has all the comfort he ever knows; whereas we require both fire and clothing, and can therefore 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, or in summer the luxury of a bath which he may enjoy 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 civilized life.

*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 horizon of the south-east; 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 for these, that should sufficiently express my satisfaction. I measured the breadth and velocity of the river flowing by our camp, and found the breadth 50 yards; 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, 18 inches.

The entirely open country through which the nearest river continued to flow, and the lofty and remarkable trees on the banks of the other stream, enabled me in chaining along our route to survey the course of both, by fixing points on that which was most distant, and tracing that of the nearest. 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 gum-trees (*yarra*) grew beyond, and the general course I wished to pursue led towards them, and there I hoped to find 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 water was exactly what we wanted, being safely accessible to our cattle, as the river itself was not. We therefore pitched our tents on a spot where there was excellent grass, and where wood also 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;\* and also an acacia most 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 contained

\* It is found to be an acacia related to *A. multinervia*. *A. farinosa*, (Lindl. MSS.); 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.

† For description see 19th Sept.

some water, and was evidently the bed of a lake nearly dry.

*June 23.*—The most eastern of these smooth bare ridges was immediately above our camp, and having observed in this the same regularity of curve that I had noticed in others, I was struck with the similarity and the analogy in other respects, for these regularly curved ridges lay always on the eastern shore of hollows or lakes, while the western was irregularly indented, and in some parts so abrupt as to have the character of cliffs. The southern end of these ridges was generally the highest, and perceiving that no reeds grew near the water, and seeing no birds upon it, I sent Mr. Stapylton to taste the water, which he found quite salt, like that of the sea. This and several of the other basins, were surrounded by high ground, and without any communication with the river.

I passed soon after another of these circular basins, which, although much smaller than those already mentioned, presented similar features. There was some water rather brackish, in pools in the deepest part of this basin. 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 muscles, and the balyan or bulrush, a root eaten by the natives, and cooked on 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 I found 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. In this wood we heard the hatchet of the natives, but they fled at our approach. On entering a small plain we saw their fire on the opposite side, but they had deserted it. 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. Before I reached them, and while far a-head 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 to us, after a journey of nineteen miles. This seemed by moonlight such a singular place, that I was anxious for daylight that we might see at what we had arrived.

*June 24.*—When, after seeking in vain for the river seven miles beyond where I expected to find it, I at length came upon this creek in the dark, I concluded that the main stream could not be far from it. The morning light however 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 the 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 from whence we had come, and where the land seemed lower than the plain where 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 this was rendered still more striking by a narrow line of rushes that had grown on the margin of the water when it had stood at a much higher level. A concentric border of grass of uniform breadth grew 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 marked where a row of saplings had once grown up in the very centre of the stream. These poles were the remains of yarra trees of eight or ten years growth, and marked the extent, doubtless, of a long period of drought, which had continued until some high flood killed them. 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  $36\frac{1}{2}^{\circ}$  E. of S., and distant, as afterwards ascertained, twenty-two miles.

Near our camp we found some recent fire-places of the natives, from which they must have escaped in some haste 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, as if it had 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 plants found in the bag resembled potatoe stalks, and 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 beside our camp. On its ample surface the vestiges of a very ancient grave were just visible, this grave having been surrounded 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, but 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.

\* Biddulph says, he "saw many poor people gathering mallows and three-leaved grass, and asked them what they did with it, and they answered that it was all their food, and that they boiled it and did eat it. Then we took pity on them and gave them bread, which they received very joyfully, and blessed God that there was bread in the world."—*Collection of Voyages and Travels from the Library of the Earl of Oxford*, p. 807.

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

The course of the creek that I had 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 through an extensive forest of goborro for three miles, and then crossed a plain three miles in extent. Beyond the plain we approached a promising line of lofty yarra trees, but found they only shaded a hollow subject sometimes to inundation. Two and a half miles beyond that we came to another similar line of trees, and found within their shades an ana-branch full of clear water; another branch much deeper, a little further on, afforded a good spot for our camp, as I intended to cross it by some means in the afternoon and look for the river. The plains we had crossed this day were covered with excellent grass, and in many places the trees in detached groups gave to the country a park-like appearance, very unlike anything on the banks of the Darling. After crossing this water by means of a fallen tree, I found the ground beyond of the richest description, 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 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 small bush very like European heath, having the branches covered with small

three cornered leaves, and tipped with clusters of small pink flowers.\*

*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 this was limestone, from indications of subsidence that I observed on the surface. We had seen no country like this during either of the two former journeys. There were none of the acacia trees such as 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* forming a most singular bush, grew here, being very much like a *Grevillia*. It had no leaves, but instead of them the branches were green and formed into short broad thick vertical plates arranged spirally, and much longer than the little axillary clusters of flowers which were just beginning to open.† We also met with bushes of the rare *Trymalium majoranæfolium*, a hoary bush, with clusters of small grey flowers, enclosed when young in a bright large membranous involucre. Once or twice lofty gum-trees resembled at a distance the line of the river; but on approaching them we found either dry hollows or the same anabranch, as it seemed, on which we had been last encamped. I observed at several places that the more dense box-forests near the river, (or rather, this branch of it,) were skirted with ground broken up into low undulations, about six or eight feet square. These appear where there is great depth of soil, and are probably caused by the deep rents or cracks which must have opened at the first induration of the deposit. When this soil, saturated with water, was first exposed to heat or drought sufficient to evaporate the water from

\* *Bæckeia micrantha*.

† *D. pectinata*, (Lindl. MSS.); glabra, aphylla, ramis lateralibus ensiformibus crassis rigidis spinosis verticalibus pectinatim spiralibus dorso decurrentibus racemulis glomeratis multò longioribus.

the whole mass, and then perhaps to more than ordinary heat; rents or cracks would open as the water evaporated, and succeeding rains would wash more and more of the edges into such yawning cracks, until only slight hollows remained with hillocks between as we now find them. This seems to be the state of the deep deposits at the present day, where from the absence of trees, the virgin surface of tenacious soils still remains visible. I was first struck with this effect in the argillaceous soils near the Darling, where the 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, for there the hollows still exist under dense forests of *casuarinæ*, and are so deep and extensive, that I for some time was induced to examine them in hopes of finding water; but a small hole or fissure still remaining there, soon taught me that any search for water was hopeless.

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 at about half the distance that it was from us when first seen. At  $3\frac{1}{2}$  miles we again came upon the ana-branch; but now a slight current appeared in it and the water was tinged with the turbid colour of the main stream. After winding round several of its turnings, we encamped at one P.M. beside a large pool, after a journey of nearly fourteen miles.

*June 26.*—The barometer being unusually low, and the cattle having had some long journeys lately, which had prevented me from laying down my surveys of the lakes, I halted here with the intention of completing them, and also with the view of reconnoitering the country to the southwest, in which direction a vast extent lay still 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, and I had now brought the survey of it far enough upwards, to be able to trace its bends or tribu-

taries downwards upon this point, as I intended, when returning to the northward under the western extremities of the Snowy Range.

This day I requested Mr. Stapylton to cross the piece of water where we had encamped, that he might endeavour to find the river in a north-east direction; but he found that the water-course turned northward, and to the west of north, without ever entering the river, as far as he traced it, having returned, after following 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. Mr. Stapylton observed in the channel he was tracing one of those nets or fences of boughs which the natives had that morning set up, and which shewed 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; no unusual circumstance in these ana-branches where the lower end is naturally on a lower level, being worn by the currents into a deeper channel there than we find at the upper end, where the water not unfrequently leaves the river by overflowing its banks in various channels of small depth.

The natives had left in one place a net overhanging the river, being suspended between two lofty trees, evidently for the purpose of catching ducks and other water-fowl. The meshes were about two inches wide, and the net hung down to within about five feet of the water. In order to obtain water-fowl with this net, it is customary for some of the natives to proceed up, and others down the river, in order to scare the birds from other places; and, when any flight of them 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 few specimens of art to be found in use with the primitive inhabitants of these wilds, none came so near our own manufacture as the net, which, even in quality, as well as in the mode of knot-

ting, could scarcely be distinguished from our own. As these natives possess but little besides what is 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 the earliest ages in Australia.\* Almost every specimen of art they possess is the result of necessity (the mother of invention). Perhaps the iron-tomahawk is the only important addition made to their implements during the last three or four thousand years.

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 bounded the eastern shore of all of them. The number of lakes or hollows of this character, already seen by us on this side of the Murray, amounted to eleven. In three of these lakes the water was salt, and the greater number had no communication with the river; but between the river and the others, there was a narrow creek or gully, accessible only to the highest floods. The northern margin of one of the salt lakes consisted of a bank of heterogeneous white sand, on which grew thickly a kind of pine, different from the trees around. The channels between the river and these lakes seemed to be accidental, as if they had neither belonged to the original arrangement of water-courses, 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

\* Isaiah xxiv. 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, inclosing, 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.

that such features 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 we had seen elsewhere, whose anomalous peculiarities had been 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.

*June 27.*—The morning was clear, and Mr. Stapylton set out with a party of six men to trace 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; after which the moon shone out, and 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 deep and still reach of water intervened. This day, I sent Burnett with Piper across to the hill, and they brought me some of the soil which I found consisted of loose red sand.

*June 28.*—The morning being fine I at length proceeded towards the hill which we had already twice seen from great distances. It bore  $206^{\circ} 45'$  (from N.) being distant exactly ten miles from this camp. After a ride of six miles through box-forest, we crossed a dry creek, and, immediately after, entered upon an extensive plain, beyond which I had the satisfaction of seeing the hill of Hope straight before me.



*Mount Hope from the north.*

This consisted of immense blocks of granite, in which the felspar and quartz were white, the mica black, and appeared to



belong to a group or range of lower hills, of which it formed the western extremity. It was, indeed, a welcome sight to us, after traversing for several months so much of the dead levels of the interior; 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 this hill Mount Hope, as I spurred my horse into a gallop over the verdant plain. On this plain 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. 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. These were not all quite connected, and I supposed them to be only the northern extremities of some higher range still more remote. I perceived along their base a line of lofty river trees, and this line was most apparent on the horizon to the westward of these heights. The intervening country consisted, as far as the glass enabled me to see, 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  $143\frac{1}{2}^{\circ}$  (from N.) 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 this 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 again here the *Bæckea 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 now appeared, being distant from Mount Hope  $5\frac{1}{3}$  miles, bearing  $30^{\circ} 10'$  W. of S. It is a triangular pyramid, which being quite isolated, closely resembles the monuments of Egypt.

Soon after my return to the camp Mr. Stapylton came in with his party, having succeeded in finding the river, after 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.

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  $215^{\circ}$  from N. as the general direction of our route, until we should fall in with the line of river trees before mentioned.

\* *Anguillaria dioica*.

† *E. pungens*, (Lindl. MSS.); ramulis teretibus pilosulis, foliis acerosis pungentibus glandulosis, pedicellis solitariis axillaribus brevibus unifloris, staminibus glabriusculis, antheris inappendiculatis.

‡ *P. incana*, (Lindl. MSS.); foliis linearibus obtusis tomentosis marginibus revolutis costam tangentibus, floribus sessilibus terminalibus, staminibus 6 inâ basi monadelphis.

## CHAPTER VIII.

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 Barrabungale—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 in the morning—Descend with difficulty—Men taken ill—New plants found there—Repose in the valley—Night's rest—Natives at the camp during my absence.

*June 29.*—THE party moved forward in the direction of Mount Hope, and leaving the hill on the left 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 every hollow 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 hollow with polygonum bushes, but without any marks of ever having had any water in them, although it may be presumed that in very wet seasons it must lodge 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.

*June 30.*—Having seen the party on the way, and directed it to proceed on a bearing of  $215^{\circ}$  from N., I as-

cended the rocky pyramidal hill, which I found arose to the height of 300 feet above the plain. Its apex consisted of a single block of granite, and from this the view over the surrounding plains was exceedingly beautiful, as they shone 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 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 there; for 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 all that was to be seen of the distant horizon from that summit, but I could just see and intersect those mountains to the southward, which I had observed from Mount Hope.



*Pyramid Hill.*

Nothing impeded the progress of the party still visible from that hill, pursuing their course over the distant plains like a solitary line of ants. I afterwards overtook them 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, near a plain on the east covered with rich grass, and where we found on the surface some small ponds of rain water.

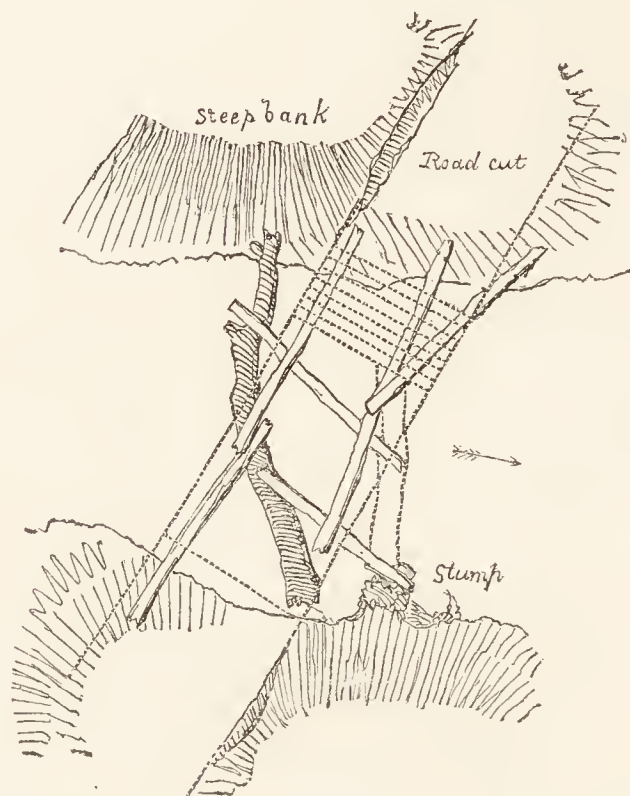
*July 1.*—Proceeding still on the bearing followed yesterday, we reached at three miles from our camp a fine chain of





ponds. They were deep, full of water, and surrounded by strong yarra trees. Passing them, we met a small scrub of casuarinæ, which we avoided, and next entered on a fine plain, in which the *anthistiria* or oatgrass appeared. This is the same grass which grows on the best parts of the counties of Argyle and Murray, and is I believe the best of any Australian grass for cattle, as it is also one of the surest indications of a good soil and dry situation. 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  $6\frac{1}{2}$  miles our journey for the day was terminated by a deep running stream. The banks were steep but covered thickly with grass to the edge of the water, then at the depth of about twenty feet below the bank or level of the plain. 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  $1\frac{1}{2}$  miles 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. It was so narrow that I anticipated little difficulty in making a bridge by felling some of the overhanging trees. Finding a large tree already fallen across the stream where the slopes of the banks could be most readily made passable, we lost no time in felling another tree, 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

waggon, that I found it best still to take advantage of the large fallen tree, and bring others of smaller dimensions to it, to be laid 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 had completed a bridge covered with strong sleepers and earthed over with the cuttings from a road way made down each bank. The larger tree supported the rest of the bridge, laid diagonally across it, and this could thus be made with other much shorter and lighter wood, with the support this fallen tree afforded; and it was perhaps equally important that this construction met the descents necessarily oblique, in a straight line. At length we had thus a prospect of being able to advance beyond the river into that undiscovered and promising land of hill and dale, everything being ready for going forward early in the morning.

*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 during the five previous days: on the contrary, the sun had shone out during the last two so powerfully, that we concluded this



unexpected flood was occasioned by the melting of snow at 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 were 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; and 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 when united reached through it, from the carriage on one side to a strong team of bullocks on the other. This was a very busy day for the whole party—black and white; I cannot fairly say *savage* and *civilized*, for in most of our difficulties by flood and field, the intelligence and skill of our sable friends made the “white-fellows” appear rather stupid. They could read traces on the earth, climb trees or dive into the water, “drink up Eisel”—(ay! or) “eat a crocodile,” 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 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 having broken, Piper by diving

attached a heavy chain to it, thereby enabling the party to draw it out with the teams. At this place the widow being far beyond her own country, was inclined to go back, and although I intended to have 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 her broken limb, and the mother seemed uneasy under an apprehension that I wanted to deprive her of this child. I certainly had always been willing 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, had chance placed one at my disposal. This little savage, who at first would prefer a snake or lizard to a piece of bread, had become so far civilized at length, as to prefer bread, and 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, at the same time pushing the child before her floating on a piece of bark.

*July 4.*—At the distance of about a mile to the southward, a line of trees marked the course of another channel, but this 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 consisting of grey gneiss. The most open 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, having the highest of those hills on our left at a distance of five or six miles. On entering the wood skirting the wide plain, our curiosity was rather disappointed on our finding, instead of rare things, the black-butted gum and casuarinæ, 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, so common near Sydney, and various plants also familiar in that neighbourhood, but not before seen by us in the interior.

At ten miles we travelled on undulating ground for the first time since we left the banks of the Lachlan, and crossed a chain of ponds watering a beautiful and extensive valley, covered with a luxuriant crop of the anthistiria grass. Kangaroos were now to be seen on all sides, and we finally encamped on a deeper chain of ponds, apparently the chief channel of the waters of that valley. A ridge of open forest-hills now 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 hilly region as that before me 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 lay over granite-rocks, and we had reached a naked mass near the principal summit, when the clouds which had been lowering for some time began at length to descend on the plains to the northward, and these 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 to us with respect to our further progress; for I could enter that mountain-region with less hesitation when I knew that I could leave it if this

became necessary, and proceed westward by following down any of the vallies falling in that direction.

*July 6.*—The morning being rainy I could learn nothing more by ascending Barrabungále 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 vallies, each bounded by open forest-hills; we crossed at six miles from the camp a range on whose summit grew a low scrub which did not impede us much in still pursuing our way across. Beyond this range we again found open forest land and saw extensive flats still more open to our right, in which direction all the waters seemed to fall. At length at the distance of about twelve miles from the camp, we came upon a deep chain of ponds, winding through a flat thickly covered with anthistiria, this grass here resembling a field of ripe grain. Smoke arose in all directions from an extensive camp of natives, but, although I cooyed and saw them at a distance, they continued to crouch behind trees, and would not approach. I did not disturb them further, but returned to the camp 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.\*

In the evening the widow returned to our camp with her child on her back: she stated that after we had gone on, a numerous tribe arrived at our late encampment on the opposite bank of the river, and seeing the fires on the side she was upon, they called out very angrily, (“Murry coola” as Piper translated her tale,) inquiring, who had made

\* This has been ascertained to be a new species of the genus *Pigea*. *P. floribunda*, (Lindl. MSS.); caule erecto ramoso, foliis alternis linearibus et lineari-lanceolatis obtusis glabris, racemulis secundis paucifloris foliis brevioribus, sepalis petalisque glandulosis ovatis acutis, labelli laminâ obovatâ rotundatâ basi bilamellatâ, antheris sessilibus syngenistis apice lamina oblonga membranacea auctis, processibus 2 corniformibus basi staminum 2 anteriorum.

these fires; and 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 since 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, by which, as displayed on this occasion, 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.

*July 7.*—The party moved to the creek where I had yesterday seen the natives, and Piper found at their fires an old woman and several boys. They said there was a station of white-fellows there, pointing far to the south-east, (doubtless meaning Port Phillip,) and that they had been at the sea-coast, which was not very distant. The old woman spoke with expressive gestures, of a part of the coast she called “Cadòng,” where the waves raged like those of the sea; and of a river she named *Woollamàee*, running into it. It appeared that the rest of the party were at that time out in search of opossums; but she promised that when they returned in the evening or next morning, 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 the camp. The former pointed towards “Cadòng,” in the direction of  $232^{\circ}$  from N. 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 *Kéyinga*, he said that was a place filled sometimes with rain (i. e. river-) water, not like “Cadòng” which was salt-water. He described the whole country before us as abounding in good water and excellent grass, and said that in the direction I was pursu-

ing, 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 sate, and continued to address me with great volubility of speech 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.

Proceeding a little west of south-west we crossed this creek (Tarrà) three times, leaving it finally flowing southward and to our left, 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 fed on by sheep. When I ascended an extremity of the clear ridge, I obtained an extensive view of the mountain-chain to the south-east, and intersected most of its summits. The whole seemed smooth (i. e. not rocky), grassy, and thinly timbered. Crossing the lower or outer extremity of this forest ridge, we entered another fine valley watered by a creek which we crossed at six miles. This little channel was grassy to the water's edge, its banks firm and about eight feet high, the course being eastward. In this 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 fine flats of land,

with grassy forest-hills on our right, we reached the summits of a forest-range which afforded an extensive view over the country beyond it. This seemed to be low for some distance, but rising gradually then towards some rocky points, beyond which the summits of a higher range still further southward, were partially seen. The descent to that lower country from the forest range was easy enough for our carts, and we found at the foot of it, 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 being 18 or 20 feet below the level of the adjacent flats, and from its resemblance in some respects to the little stream at home, I named it the *Loddon*. We encamped on its bank in latitude  $36^{\circ} 36' 49''$  S. longitude  $143^{\circ} 35' 30''$  E.

*July 9.*—In 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, at length crossed some poor hills of the same rock, the wood being an open box forest. After travelling through a little bit of 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 break it by the passage of our cart wheels. Proceeding for a mile and a half along this rivulet through a valley wholly of the same description, we at length encamped on a flat of rich earth (nearly quite black), and where the *anthistiria* grew in greater luxuriance than I had ever before witnessed in Australian grass. The earth 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

this very morning thought it advisable to reduce the allowance of rations.

*July 10.*—Tracing upwards the little 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. A hill on its bank, consisted of a quartzose 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 from a higher range. On these hills grew iron-bark, blue-gum, and stringy-bark; (all these being varieties of eucalypti known in the colony.) The lower grounds were so wet and soft, and the water-courses in them so numerous, that I was now desirous to keep along such a ridge as long as it would take us in the direction in which we were proceeding. This range answered well for the purpose, and on gaining its crest of rather elevated rocky hills consisting 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 much higher forest-hill on the left, which consisted chiefly of quartz-rock. I not only recognised from that hill some high points to the eastward, and obtained angles on them, but I also perceived some 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 this pass we crossed a deep creek running westward, which I named the Avoca, and encamped on an excellent piece of land beyond it. This day we had even better fortune than yesterday in our field sports, for besides three kangaroos, we also killed two emus, one being a



female and then esteemed a great prize, for I had discovered that the eggs found in the ovarium of the emu were a great luxury in the bush, affording us a light and palatable breakfast for several days.

*July 11.*—At two miles on this day's journey we crossed a deep running stream. The height of its banks above water was twelve feet, and they were covered with a rich sward; the course of the stream being to the westward. The land along the margins of this 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 consisting 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, for it was in the vallies now that we met most difficulty. The earth had become so soft and wet that the carts could only be got through some places by the tedious process of dragging each successively, with the united strength of several teams.

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 W. of S.  $26^{\circ} 54'$  and the western extremity which consisted of a remarkably round hill bore  $16^{\circ} 30'$  S. of W. Descending 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 like the others to the westward, and in other respects similar to those we had already met. This I named Avon water, and after crossing we encamped on its left bank.

*July 12.*—At two and a half miles 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 this we entered on a soil of clay altogether different from any of the soils hitherto passed on this side the Yarràyne. At about eight miles we reached a fine running brook with grassy banks, its course being to the north-west. The bed consisted of red-sand and gravel, 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 had proved so soft and rotten, 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, two bullocks having been left behind in an exhausted state.

*July 13.*—We had at length discovered a country ready for the immediate reception of civilized man, and fit to become eventually one of the great nations of the earth. Unencumbered with too much wood, yet possessing enough for all purposes; with an exuberant soil under a temperate climate; bounded by the sea-coast and mighty rivers, and watered abundantly by streams from lofty mountains: this highly interesting region lay before me with all its features new and untouched as they fell from the hand of the Creator! Of this Eden it seemed that I was only the Adam; and it was indeed a sort of paradise to me, permitted thus to be the first to explore its mountains and streams—to behold its scenery—to investigate its geological character—and, finally, by my survey, to develop those natural advantages all still unknown to the civilized world, but yet 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, hoping that it would command an extensive view over the surrounding country as far as the sea coast in the direction of Lady Julia Percy's Isles. Such a height was sure to command a view of the country between these mountains and the sea, and also of that region between the range and those less connected forest-hills I had seen to the eastward.

When I first saw 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, but I was 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 here 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.

Pursuing the bearing of  $193^{\circ}$  we crossed at three miles from the camp a deep creek, similar to that we had been upon, 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 his rider, who while his horse was swimming, incautiously pulled the bridle and of course overturned his horse, so that they parted company in the water, the horse reaching one bank, his rider the other. The latter, who was my botanical collector Richardson, took his soaking on a cold frosty morning so philosophically, coolly talking to his comrades as he swam to the bank 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 very fine, having several broad and deep ponds, or small lakes in the woods, and all were 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, deep, flowing, and thirty feet wide, being broader than the Yarràyne, but not so uniformly deep. Unlike the latter river this had reeds growing about its margin in some places, and its banks though grassy and fifteen feet high, were neither so steep as the Yarràyne, nor so closely shut together. 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 also forded, and immediately after ascended a piece of rising ground which convinced me that we had at length crossed all the branches of that remarkable river. We might indeed have come upon it where it received the waters of tributaries, and some of these channels might have been such.

We next fell in with some undulating ground, different in many respects from any that we had traversed. The soil was poor and sandy, and the stunted trees and shrubs of the Blue mountains grew upon it, instead of the novelties we had been looking for at such a great distance from home. We also recognized the birds common about Sydney. On reaching the higher part of this ground (at nine miles), I again saw the mountain then bearing  $196^{\circ}$ . The intervening ground seemed to consist of a low ridge rather heavily wooded and 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 we saw to the eastward, and the lofty mass then before us. We found upon this neck huge trees of iron-bark and stringy-bark. Some fine forest-hills appeared to the eastward, and distant only a few miles. At sixteen miles we crossed a small river running westward; at eighteen miles, another; and at nineteen, a third, flowing over sandstone rock. At twenty-one miles we crossed a fourth; and at twenty-three, a fifth; all flowing westward. After crossing the last mentioned stream we halted for the night 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 day-light in the morning.

*July 14.*—On leaving our bivouac we crossed some hills of trap-rock lightly wooded, and covered with the finest grass in great abundance. The scenery about these hills, the excellent quality of the soil, the abundance of water, &c. contrasted strangely with the circumstance of their still 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 inconvenience 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. Here we 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 *banksias* and *casuarinæ* were the chief trees. There was, also some good grass growing 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. 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 of about 140 feet in perpendicular height. Fortunately the ablest of the men with me was a house carpenter who, being accustomed to the roofs of houses, managed to get up and then assist the rest. Having gained the top of this second precipice, we found winter and desolation under drizzling clouds, that afforded but partial and transient glimpses of the world below. The surface at the head of the cliffs consisted of large blocks of sandstone separated by wide fissures full of dwarf bushes of *banksia* and *casuarinæ*. These rocks were inclined from the summit 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 towards the summit either on the slippery rocks or between fissures among wet bushes. At length however we reached the highest part and found that it consisted of naked sandstone rock. The highest block was encrusted with icicles, and hoary under the beating of innumerable storms. But even here were plants suited to such a climate, as this isolated and lofty eminence was exposed to. 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 part of this plateau I found a new species of euca-

\* *L. glacialis*, (Lindl. MSS.); ramulis pubescentibus, foliis lineari-lanceolatis erectis contortis acutis ciliatis margine scabris, floribus terminalibus solitariis et aggregatis, pedicellis pubescentibus distanter squamatis, calycibus glabris.

lyptus with short broad viscid leaves, and rough-warted branches.\* All around us was hidden in mist. It was now within half an hour of sunset, but the ascent had cost us so much trouble, and the country this summit commanded was so interesting to us then that I was unwilling to descend without trying whether it might not be clear of clouds at sunrise next morning. We had not come prepared in any way to pass the night on such a wild and desolate spot, for we had neither clothing, food, shelter, nor fire; but I was willing to suffer anything 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 havresack, and these I divided equally among *five*. No rocks could be found near the summit to shelter us from the piercing wind and sleet. The thermometer stood at 29°, 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 grew there of iron-bark, stringy-bark, and blue gum; but had we descended, a second ascent might have appeared too laborious to be repeated on a mere chance of finding the summit clear, so I remained above. The men managed to boil some tea in a tin pot, and into this water as it boiled I plunged a thermometer which rose to exactly 95° of the centigrade scale. We got through that night of misery as well as might have been expected under the circumstances, and succeeded in keeping the fire alive, although while twigs were blown into red heat at one end, icicles remained at the other within a few inches of the flame. In order to keep up some kind of fire through the night, we divided, at eleven P.M. the stock of branches which had been

\* *E. alpina*, (Lindl. MSS.) ; ramulis brevibus rigidis angulatis, foliis alternis petiolatis ovato-oblongis viscosis basi obliquis, umbellis axillaribus paucifloris petiolis brevioribus, opereculo hemisphærico verrucoso inæquali tubo calycis turbinato verrucoso brevioris.

gathered before dark, into eight parcels; this being the number of hours we were destined still 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 enterprize and inspired me with hope.

*July 15.*—At six o'clock the sky became clear, the clouds had for once indeed left the mountain, and as soon as it was day I mounted the frozen rock. But in the twilight all lower objects were blended in one grey shade, like the dead colouring of a picture. I could only distinguish a pool of water, apparently near the foot of the mountain. This water I afterwards found to be a lake eight miles distant, and which I named Lake Lonsdale. 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 common-place objects of a surveyor, for the lower world was as obscure and undefined as our ideas of the world to come. The sun was rising 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 for a while, 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 the country might have been broken by mountain gullies, as it is in the settled colony and all along the Eastern coast, in which 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 finally to quit its summit without completing the work. The wind blew keenly, the thermometer stood as low as 27°, and in the morning the rocks were more encrusted with ice. Our descent under such circumstances was therefore the more difficult, but no impediment could have arrested us then, the lower regions having so many attractive charms for such cold and hungry beings. That night on the summit materially injured the health of two of my best men who had been with me on no less than three expeditions. Muirhead was seized with ague, Woods with a pulmonary complaint, and although both recovered in a few weeks, they were never quite so strong afterwards. We found upon that mountain 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.\* A most remarkable species of *Phebalium*, with holly-like leaves and bright red flowers resembling those of a *Boronia*. It was related † to *P. phlycifolium*, but quite distinct. A new *Cryptandra* remarkable for its downy leaves ‡ A beautiful species of *Bæckea*, with downy leaves and rose-coloured flowers resembling those of the dwarf almond.§ A new *Pultenæa* related to *P. biloba*, but more

\* *E. tomentosa*, (Lindl. MSS.); foliis ovatis acutis planis crassis tomentosis, floribus cernuis, corollâ arenatâ infundibulari laciniis obtusis apiculatis.

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

‡ *C. tomentosa*, (Lindl. MSS.); undique densè tomentosa, ramulis racemosis, foliis fasciculatis linearibus obtusis marginibus revolutis contiguis, capitulis terminalibus congestis, calycibus campanulatis bracteis acutis scariosis parùm longioribus. Next to *C. propinqua*.

§ *B. alpina*, (Lindl. MSS.); 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 duplò brevioribus, antheris apice verruciferis.

hairy, and with the flowers half concealed among the leaves.\* A new species of *Bossiaea* with the appearance of a Rosemary bush, differing from all the published kinds in having linear pungent leaves.† A beautiful new and very distinct species of *Genetyllis*, with altogether the habit of a Cape *Diosma*, the heath-like branches being terminated by clusters of bright pink and white flowers.‡ Several species of *Grevillea*, particularly a remarkable kind, with leaves like those of an European holly, but downy;§ another fine new species, with leaves like those of an European oak,|| and another with brownish red flowers and hoary leaves, varying from an erect straight-branched bush, to a diffuse entangled scrub,¶ and lastly a new *Leucopogon*, besides that found on the summit as already mentioned.\*\*

\* *P. montana*, (Lindl. MSS.) ; foliis obcordatis muticis lobis rotundatis supra scabris utrinque ramulisque hirsutis, capitulis solitariis terminalibus sessilibus foliis parùm longioribus, calycibus villosis laciniis subulatis appressis.

† *B. rosmarinifolia*, (Lindl. MSS.) ; ramis teretibus villosis, foliis linearibus pungentibus margine revolutis suprâ glabris subtùs pallidis pilosis, floribus solitariis axillaribus.

‡ *G. alpestris*, (Lindl. MSS.) ; ramulis piloso-hispidis, foliis linearibus tetragonis scabro-pilosis, capitulis sessilibus terminalibus nudis rachi lanatâ, tubo ovarii pentagono pubescente, sepalis petalis pluriès brevioribus, stigmatè glaberrimo.

§ *G. Aquifolium*, (Lindl. MSS.) (propria) ; foliis oblongis extra medium incis: lobis triangularibus apice spinosis ; adultis supèr glabratis : subter mollibus pubescentibus, racemis pedunculatis, calycibus villosis, ovario hirsutissimo, stylo glabro.

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

¶ *G. alpina*, (Lindl. MSS.) (Ptychocarpa) ; foliis lineari-oblongis tomentosis muticis margine revolutis suprâ scabris 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 suprâ scabris.

\*\* *L. rufus*, (Lindl. MSS.) ; ramulis foliis que subtus pubescentibus, foliis ovatis acuminatis apice spinosis erectis concavis suprâ lævigatis subtùs striatis margine lævibus, floribus subsolitariis sessilibus axillaribus, barbâ corollæ cinnamomeâ.



*J. Graf, Prætor to her Majesty*

*G. Barnard lith.*

*Moor T. I. Mitchell del.*

MITRE ROCK AND LAKE, FROM MOUNT ARAPILLES

*Published by T and W Boone London.*



In adding such a noble feature to the world's map I felt some difficulty in naming this range of mountains. To give names that may become current in the mouths of future millions, 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 as belonging to the highest antiquity, 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 of ancient origin. Names of individuals seem eligible enough, when at all connected with the history of the discovery to be named, 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 had been first explored; and, I confess, it was not without some pride, as a Briton, that I, "more majorum,"\* gave the name of the Grampians to these extreme summits of the southern hemisphere.

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 a winter night on a

\* "Procedo, et parvam Trojam, simulataque magnis  
Pergama, et arentem Xanthi cognomine rivum,  
Agnosco."—

ÆN. lib. 3.

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 only one day's provisions with us, whereas this was the morning of the third day 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 by day-light, we lay down on its bank for the night.

*July 16.*—I had a snug bit of turf to sleep on, within two feet of the stream, so that the welcome murmur of its rippling waters assisted my dreams of undiscovered rivers, and 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.

Two natives had visited the camp during my absence, and had slept by our fires. They had been at cattle-stations, and *could* say “milk.” They consequently approached our camp boldly, and during the night had shewn much restlessness, endeavouring to decoy the gins away with them. But the widow gave the alarm, and very properly handed over these insidious woers to the especial surveillance of the man on watch. Notwithstanding that 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 sick-list, but under the treatment of Drysdale (our medical attendant), they speedily recovered.

## CHAPTER IX.

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—Basket work of the natives—Muddy state of the surface—Mr. Stapylton's ride southward—Disastrous encounter 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.

*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 that remained to us of being able to continue the journey, was by proceeding over the plains which extended along the interior side of the Grampian mountains. The soil of such plains consisted chiefly of clay, and we had recently found that this kind of soil bore the wheels of the waggons much better at such a season, than the thin and loose soil on the sides of hills, apparently because this lay either on rock or a subsoil so tenacious as to support the water in, or just under, the upper soil. The wheels, and also the feet of the cattle, sank at once to this rock or 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 turned into a current of water and a drain from the sides of hills. I had observed the plains during

my reconnoissance of the interior from the side of Mount William, and I now directed our course towards them. We met no difficulty in crossing 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, this plain being also 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  $2\frac{1}{2}$  miles over the plain, we reached the banks of Richardson's creek, and forded it after some delay and considerable difficulty from the softness of the bottom. We next entered on a tract of grassy forest land, the trees being chiefly box and *casuarina*. At  $2\frac{1}{2}$  miles beyond Richardson's creek we crossed a small run of water flowing west-north-west, apparently towards it. Passing over similar ground for some miles further, and having 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.*—Continuing for five miles along good firm ground, on which there was an open forest of box and gum-trees, part of the bold outline of the Grampians appeared to our left. At 9 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 was on the contrary convinced that it contained the water of all these streams we had crossed on our way to Mount William, with the exception of Richardson's creek, already crossed by the party, and then flowing to the north-west. The richness of the soil and verdure on its banks, and the natural beauty of the scenery, could scarcely be surpassed in any country. The banks were in some places open 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 then turned towards the river, encamping on its banks in latitude  $36^{\circ} 46' 30''$  S. longitude  $142^{\circ} 39' 25''$  E. Magnetic variation  $5^{\circ} 21' 45''$  E.

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."

*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 some of the loads in one of the boats. Thus, the whole party had gained what I considered the left bank by ten A. M. But on proceeding I perceived some yarra trees before me, which grew, as we soon discovered, on the bank of a smaller branch, the bottom of which was soft. We had 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 sloping 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 working to release this 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, &c. to the party), dash his horse into this stream in search of a bottom, but at last one broad favourable place was found, where the whole party forded, at a depth of not more than  $2\frac{1}{2}$  feet. Beyond these another similar channel still obstructed our progress, but this we also successfully forded and at length found rising ground before us, consisting of an open plain extending to the base of the mountains. On the skirt of this

plain 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 prevailing throughout the whole course, 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, although this had probably been augmented before it came thus far by the waters of many important tributaries.

*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  $8\frac{1}{2}$  miles. I found this hill also consisted 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.\* 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

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

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 now 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, were not quite level, but undulating so much, that in one place I could see only the tops of trees in hollows. On these plains I found small nodules of highly ferruginous sandstone, apparently the same as that which occurs near Jervis Bay and in other places along the eastern coast. 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 consisting of clay as usual, but a dry red sand; and then arose the green bank of black soil 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 whose track I was riding had passed through 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 *casuarinæ* on light soil

or lofty yarra trees growing in black soil, that part of the country looked tolerably well.

*July 21.*—At a quarter of a mile from the camp we crossed a running stream, which also contained some deep and apparently permanent ponds. Some 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 *casuarinæ*, and box trees (*eucalypti*). At  $3\frac{1}{2}$  miles we crossed another chain of ponds, and at 4, 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 rose beyond, and after crossing them, we found an undulating country and sandy soil, where there were shallow lagoons and but little grass. 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 to that river. No water-worn banks appeared on any of the rivers in this newly discovered land of grass; they were characterised here rather by verdant slopes, the borders being fringed with bushes of mimosa. The country was indeed fine on the banks of the Wimmera, and at the point where we came to it, this river was joined by a running creek from the south, and this we crossed and at  $2\frac{1}{4}$  miles beyond it encamped on a spot overlooking a reedy lagoon from which some long slopes descended towards the river distant 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. The isolated hill lay before me, and it was now to be ascertained whether the course of the river 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 its course to the southward of the hill before us, which bore nearly west. This prospect accorded with my wishes, as I could then hope to trace it to the coast, without deviating for this purpose 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 this I perceived a change in the appearance of the country. We had been for some time travelling through forest land, but the forest now opened into grassy and level plains, variegated with belts and clumps of lofty trees which gave 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, as I had reason to suppose from what had been seen from the tree by Burnett; turning towards the north-west therefore, and at last to the 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 fell behind and could not be brought in before midnight, although assisted by several teams sent back from the camp. What had become of the river I could scarcely imagine, but 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). Anxious to ascertain the course of the river, 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 being to the northward at the distance of two miles and a half, and apparently six miles in circumference. This lake seemed 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 in this lake also

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 might have rather belonged to that of the moon as seen through a telescope. The eastern and principal summit of the hill was still at some distance, and I returned to the camp in hopes of being able from thence to discover in the morning some indication of the further course of the Wimmera.

*July 23.*—Having ascended the highest summit, I counted from that point twenty-seven circular lakes, two of the largest being about seven miles to the north-east, the direction in which I expected to have seen the river. Beyond these, however, I saw an extensive woody valley from 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 yesterday by the party. Beyond that supposed bed of the Wimmera the country appeared to be undulating, open, grassy, and 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 Grampian mountains, and now discovered that a lofty range extended from them to the southward, and this I named the Victoria range, having also recognised and intersected Mount William, distant from this hill  $53\frac{1}{2}$  miles. I could see no high land to the westward, and this hill seemed to divide the singular lacustrine country from that where the character of the surface was fluviate. Mount Arapiles is a feature which may always be easily recognised both by its isolated position, and by its small companion Mitre Rock, situate mid-way between it and the lake to the northward, which I named Mitre Lake after the little hill, its neighbour. Like the mountains in the east, Mount Arapiles consists of sand-stone passing into quartz, the whole apparently an altered sand-stone, the structure being in one part almost





DATE 1851. DRAWN BY ANAGLYPTOGRAPH  
J. P. E. BAIRD, SC.

GREENHILL LAKE, (Interior of Australia.)

Scale of Miles



destroyed, in others perfectly distinct, containing pebbles of quartz. At the western extremity this rock occurs in columns resembling at a distance those of basalt. On the steep slopes grew pines, casuarinæ, and a variety of shrubs, among which we found a fine new species of *Bæckea*, 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.

*July 24.*—While Mr. Stapylton rode northward in search of the Wimmera, I proceeded to examine and survey some of these remarkable lakes. On the margin of one of them bearing  $55\frac{1}{2}^{\circ}$  W. of N. 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 there quite salt, the basin nearly circular, though partially filled with firm level earth, about three feet higher than the water, which was then very shallow, and surrounded by a little beach of soft white mud or clay, in which we found no change on digging to the depth of several feet. 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 shores of lakes, a peculiarity I had previously observed not only in those lakes near the banks of the Murray, but also in others on the Murrum-

\* *B. calycina*, (Lindl. MSS.); glaberrima, foliis planis sparsè punctatis oblongo-cuneatis acutis, floribus pedicellatis terminali-axillaribus, laciniis calycinis petaloideis petalis longioribus. Near *B. virgata*.

† 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 incalculable value in the representation of the earth's surface, under the skilful management of Mr. Freebairn.

bidgee and Lachlan, when 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. The water of Mitre lake we found also salt,\* but there were numbers of ducks and black swans upon it. The western shore was low, and the sub-soil where it had been thrown up in the roots of fallen trees, was nearly as white as chalk. A grey quartzose sand rather fine occurred in some places; and along the water's edge a very minute shell had been thrown up in considerable quantities by the waves.† The hills to the eastward of this lake were arranged in a crescent round the basin, but this being only composed of a number of hills almost separate from each other, had a less regular or uncommon appearance, although apparently the remains of a curve equally 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 water-course was soft and



*Mount Arapiles from Mitre lake.*

\* For Professor Faraday's analysis of these waters, see page 266.

† This was a truncatella, a salt-water shell, of which there are several species on the English and French coasts. The species found here has been named by Mr. J. D. Sowerby, *T. filosa*.



(An altered Sandstone.)

Caruarua.



J. Grad Printer to her Majesty.

(Barbours.)

G. Barnard lith.

Major J. I. Mitchell del.

THE COUNTY OF MOUNT ARAPILES.

boggy near the lake, so that I could only cross by going up its channel much nearer to the hill, and at a point where some rocks protruded and prevented our horses from sinking.

Mr. Stapylton, in his search for the Wimmera, rode about six miles to the northward without reaching the river, although he had seen the valley through which he thought it flowed, and it appeared to him likely there to resume again a course to the southward of west. Upon the whole I think it most probable that the estuary of the Wimmera will be found either between Cape Bernouilli and Cape Jaffa, or at some of the sandy outlets laid down by Captain Flinders to the northward of the first of these capes. The country which Mr. Stapylton crossed was assuming the barren character peculiar to the lower parts of the Murray. He actually saw the *eucalyptus dumosa*, and passed through a low scrub of it; but I have no doubt that the country, back to some distance on both sides from the Wimmera, continues good whatever its course may be, even to the sea-coast. At all events I here abandoned the pursuit of that river, and determined to turn towards the south-west, that we might thus 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.

*July 25.*—Proceeding accordingly nearly south-west, we crossed at less than a mile from the last camp, the dry creek 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 we found loose calcareous matter or friable tuff below, in which the wombats made their burrows under the stratum of tuff. 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 than on the other bank, the stratum of compact tuff occurring here also and being three feet in thickness. At  $2\frac{1}{4}$  miles we came upon the shores of Red lake, which I

so named from the colour of a weed growing upon its margin. This lake was nearly a mile in length and half a mile broad; the water being slightly brackish, so that reeds grew upon the banks, 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 sand-hills, on which grew stunted iron-bark trees (*eucalypti*). In the higher part of those hills we crossed a small dry hollow of the lake character, even this having its bank on the eastern side. At  $5\frac{1}{2}$  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. At seven miles we crossed a low ridge of white sand, on which grew stunted trees of stringy-bark, and black butted gum-trees, (both being of the genus *eucalyptus*.) Beyond this we crossed a country on which wet reedy swamps of fresh water, white sand-hills, and fine flats of good forest land occurred alternately; but towards the end of our journey the barren sand-hills seemed to prevail, until we at length 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 *casuarinæ*. At 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 run of water fell into this 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 sand-hills and stunted timber beyond. These sand-hills enclosed a long grassy flat,

full of 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. From this I perceived a circular lake a little to our right, and on riding to it, I found the water salt and very white in colour. No trees grew on the margin, and the surrounding scene was so dreary that it more 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 this lake also consisted of a very white marl. A high semi-circular 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 seen some of their huts, which were of a very different construction from those of the aborigines in general, being large, of a circular form, and made of straight poles 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; a hole at the top had been left as a chimney, and the place seemed to have been in use for years as a casual habitation. 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. There were also two of these resembling reticules, and containing balls of resin, flints for



the spear-heads, &c. The iron bolt of a boat was likewise found in one of these huts. The natives now always fled at our approach ; a circumstance to be regretted, perhaps, on account of the cognomena of my map ; but otherwise their flight here 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 salsolæceous deserts and mesembryanthemum we now found a variety of every thing 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 austral 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 sand-hills, and at length encamped on a rich flat. 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.

*July 27.*—The cart which fell 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 he, being an old bushranger, had, 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 ; but I could thus at least bring up my maps and journals, and rest the jaded cattle after so much long-continued daily toil in travelling



through the mud. I directed Mr. Stapylton to ride in the direction of  $30^{\circ}$  W. of S. (my intended route), and thus ascertain whether we were approaching any river. The country we were in being still lacustrine, I hoped to find the land 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 there were slopes, the ground 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 in preference any kind of hills. Those hills we occasionally fell in with consisted of white sand, and at first looked like connected ridges where we might have found streams; but we found 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 returned 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 they overtook him. Mr. Stapylton returned however before mid-day, 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 who had gone eastward heard our signal-shot on Mr. Stapylton's arrival, and returned, they having also seen four similar lakes, but the party sent westward did not return until some hours after the others. 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 to-day 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 on that evening I had reconnoitered a more favourable looking line, which I meant to try in the morning.

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. 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.

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 Rutaceæ, 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.\*

*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 found that this 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 pinnacled summits of the Victoria range presented an outline of the grandest character. The noble coronet of rocks was indeed a cheer-

\* *Didimeria æmula*, (Lindl. MSS.); 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 aucti. Calyx conicus, membranaceus, 4-partitus: laciniis acuminatis. Petala 4, longissima, distincta, linearia, convoluta circa staminum paria, extùs tomentosa intùs glabra. Stamina 8, hypogyna; filamentis liberis, lineari-lanceolatis, membranaceis, alternis brevioribus; antheris sagittatis in appendiculatis. Stylus filiformis glaber. Discus 0. Capsula 4-coeca, villosissima, coccis dispermis, endocarpio solubili; seminibus uno supra alterum positus.

ing 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. 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. The bed of this lake consisted of dark-coloured mud, and there too the water was 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 on the east, to some scrubby ground nearly as high as these hills, and in a fall of ground 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. 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.\* 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.

*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

\* Consisting of white felspar and quartz, and silvery mica.

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. This 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 swimming 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. 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 much inclined, that it was 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 Hon. the Secretary of State for the Colonies.

*Aug. 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

\* This granite varied considerably 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.

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 then, to push through the opposing branches even to reach the bank. Many of these branches had been cut during this day's navigation; Woods, Palmer, and most of the others 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 a-head. 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.

*Aug. 2.*—There was a noble reach a quarter of a mile below the point to which we had brought the boats, and 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 and 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

\* *D. brevifolia*, (Lindl. MSS.); glabra, ramis rigidis strictis apice spinescentibus, foliis conicis spinosis subrecurvis, racemis foliis duplò longioribus, bracteolis obovatis cucullatis.

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 boat-carriage back to take up the boats, the whole party was once more in movement by eleven o'clock. As far as I had yet traced the course of the river it appeared to be flowing towards 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 for 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 have met at length with rivers falling southward. The ultimate course of the river we were upon could only be ascertained by following it down, and to do this by land was by no means easy; first, because it was joined by many small tributaries flowing through deep vallies 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, and these were the more perplexing from their similarity to that of the main stream. 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, with a few gum-trees, (or *eucalypti*), with *banksiæ*, and occasionally a few *casuarinæ*.

Aug. 3.—The ponds where we had encamped, were large and deep, and I endeavoured to ascertain whether the cod-perch (*Gristes Pealii*), 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 flowing to the eastern shores, and I had now ascertained that all the rivers in which we find the fish in question belong to the extensive basin of the Murray. We were now on channels evidently distinct, both from those leading to the eastern coast, and those belonging to the basin of the Murray. 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 muscle 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 spawn, and the question could not be satisfactorily determined, although the natives declared that none of them were the spawn of cod-perch.

It was no easy matter now to ascertain in what direction the waters of the valley ran, but by the direction 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 opened 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 vallies of a similar character, and beyond them I saw hills of the finest forms, all clothed with grass to their summits, many being entirely clear of timber. A bronze-winged pigeon flew up just as I discovered the stream, and as this bird had not been before seen by us on this side of the mountains, I named the waters "Pigeon" ponds. We descended to that part of the valley which lay before us in our proposed course, and found that some of these ponds rather deserved to be styled lakes. The soil was everywhere black and rich.

*Aug. 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 then 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, covering the logs with boughs, and the boughs again with the earth we were obliged to 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 ; but 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 another similar one, some rocks favourably situated enabled us to effect a passage by bedding logs between the rocks, and covering them with branches and earth, leaving room for the water to pass between.

*Aug. 5.*—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 begun to think its estuary might still be found 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. 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 that 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 to approach coming 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. 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.\*

*Aug. 6.*—The passage of the rivulet which I named the Chetwynd, after Stapylton who had explored it at such a risk, was effected with ease across the temporary bridge, and we proceeded, soon crossing by similar means two other running streams, probably tributaries to this. 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 gum-trees (white bark *eucalypti*), growing on it. Unfortunately, it was so soft and *rotten* as the men described it, that all the wheels sunk in it to the axles, and whereas 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 so necessary 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 in turn, 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 that had proved so formidable an impediment.

*Aug. 7.*—Our progress this day was still less than that made during the preceding one, for it did not much exceed

\* *T. ciliata*, (Lindl. MSS.); caulibus erectis tomentosissimis filiformibus, foliis oppositis verticillatisque obovatis ovatisque ciliatis subtus glabris, pedicellis setosis, sepalis ovatis concavis acutis, petalis obovatis.

a mile. To that distance we had proceeded tolerably well, having crossed two small running brooks, and all appeared favourable before us. But on a broad piece of rising ground which being sandy with *banksia* and *casuarinæ* trees on it, I had considered firm; the ground proved on the contrary so very soft, that even my own horse went down with me and wallowed in the mud. There was no way of avoiding this at least without delay, and I ordered the party immediately to encamp, 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, determined to explore the country to the coast. 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 table land, 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 we ascended a very steep but grassy mountain-side beyond it, 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 arose swelling hills of fantastic shapes, but all were smooth and thickly covered with rich grass. Behind these were higher hills, all having grass on 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 one entirely open grassy ridge, and then found again the river Glenelg, flowing eastward towards an apparently much lower country. All our difficulties seemed thus already at an end, for we found here good firm ground on which we could gallop, this being also clear of

timber. 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 insurmountable, 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 a reasonable length.

*Aug. 8.*—It was in vain that I reconnoitered 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. Some clay occurred in places, but they only led to others, where the surface under the pressure of the cattle was immediately converted into white and liquid mud. It was necessary to unload the carts, carry the loads 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, 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 this 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 X.

Cross various rivulets—Enter the valley of Nangeela—Native female and child—Encamp on the Glenelg—Cross the Wannan—Rifle range—Mount Gambier first seen from it—Sterile moors crossed by the party—Natives numerous but not accessible—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 depôt at Fort O'Hare—Character of the river—*Ornithorynchus paradoxus*—Black swans—Water brackish—Isle of Bags—Arrival at the sea coast—Discovery Bay—Mouth of the Glenelg—Water-holes dug in the beach—Remarkable hollow—Limestone cavern—One fish caught in the Glenelg—Stormy weather—Return to the depôt—Difference in longitude.

*Aug. 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 the ravine here 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 projecting across, a passage seemed just possible, and after we had made it better with spades, we attempted to take a light cart over there. The acclivity was still however rather too much, and over went the cart carrying the shaft bullock with it, and depositing all my instruments, &c. 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, (named Steep-bank rivulet in the map,) consisted of grey gneiss, and on the hills beyond it I found nodules of highly ferruginous sandstone.

*Aug. 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 this morning. At a mile and a half from the camp a scene opened to our view which gladdened every heart. An open grassy country, extending as far as we could see,—the hills round and smooth as a carpet,—the 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 watered by a winding stream whose waters glittered through trees fringing each bank. 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 Wándo, immediately attracted the notice of the females from the Lachlan. The bag usually

carried by gins, was neatly worked in basket-work composed of a wiry kind of rush ; and she of Wándo 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 on her back 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 fire-wood, and a few roots, apparently of Taö, which she had just been digging from the earth. Such was the solitary inhabitant of this splendid valley, resembling a nobleman's park on a gigantic scale. She stated that the main river was called "Temiángandgeen," 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 with a perfume resembling hay, which arose from the thick and matted herbs and grass. Proceeding along the valley I perceived that the stream on our left seemed to terminate at an isolated rocky hill ; but, on closer examination, I found the hill 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 consisted of granular felspar in a state of decomposition, and may, probably, be considered a striking instance of the formation of the earth's present features by gradual decomposition ; those of the surrounding country consisting chiefly of very fine-grained sand-stone. It is not so easy to





Painted by Mitchell

Waldeck del.

Engraved by H. B. Meyer

FEMALE AND CHILD OF AUSTRALIA FELIX

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suppose that the river had first begun to flow through the valley in its present state, and forced its way through that isolated hill of hard rock, rather than through the much lower and softer ground offering no obstruction to its passage round; as to believe that the rock, now isolated, originally contained a chasm before the calcareous sandstone had been worn down by gradual decomposition, and then afforded the lowest channel for the water, before any open valley had been scooped out on either side. According to my plan of following down the main river, it was necessary to cross both these tributaries. In the open part of the valley the channels of these streams were deep and the banks soft; but by the base of the hill of Kingànyu (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 farther, on the banks of the Glenelg once more. Our route lay straight across an open grassy valley, under swelling hills of the same description. Each of these vallies 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 Wándo, 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 them, we proceeded.

The left bank of the principal stream was very bold where we reached it on this last occasion, but still open, and covered with rich turf. The right bank was woody, and

this was indeed generally its character at the other points where we had seen this river which was now flowing with considerable rapidity, but still amongst the same kind of bushes, although they did not appear so likely here to obstruct a boat.

On the plains we found a singular acacia with the leaves 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.\*

*Aug. 11.*—Passing along the bank of the river under the steep grassy hills, which consisted of very fine grained calcareous sand-stone, we at two miles on began to ascend these heights; as well to avoid a place where they closed precipitously on the river, as to gain a high 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. Nothing could be seen beyond that woody range which seemed to be a very predominant feature, bounding the fine valley of the Wannon on the south. By turning round the eastern summit of the high ground on which we then were, we gained a long ridge of smooth grassy land, leading by an easy descent down from this height to the junction of the rivers. The summit of the high ground was thickly wooded with stringy-bark trees of large dimensions, and a few other eucalypti, together with *banksiæ* and *casuarinæ*. The soil there was soft and sandy, and the substratum contained masses of iron-stone. The shrubs upon the whole

\* *A. exudans*, (Lindl. MS.); ramis crassis rigidis angulatis leviter pubescentibus, phyllodiis oblongo-lanceolatis mucronatis obliquè binerviis viscido-punctatis basi obsolete glandulosis, capitulis 1-2 axillaribus, pedunculis lanatis, bracteolis rigidis acutis pubescentibus alabastris longioribus (capitulis echinatis).

reminded me of those in the wooded parts of the sand hills on the shores of Port Jackson. Smoke was arising from the various parts of the distant country before us, and we perceived one native running at prodigious speed across the plain below. On reaching the banks of the Wannan, 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 Wannan, 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 whose western side overhung the river at the distance of two miles.

*Aug. 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 country 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 still grassy, until we reached the high and wooded crest. Lofty stringy bark-trees grew there and other timber on a white sandy soil, but we found still among the bushes abundance of the anthistiria 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 hollows falling eastward, or to the left, shewed that we were not so near the river I was endeavouring to follow. We were delayed in several of these hollows by the sinking of the carts and boat-carriage. We next traversed an extensive moor or heath, on which the ground was firm, and beyond it a little way 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. One peaked hill alone appeared on the otherwise level horizon, and this bore  $68^{\circ}$  W. of S. I supposed this to be Mount Gambier,

near Cape Northumberland, which, according to my survey, ought to have been found in that direction at a distance of forty-five miles. I expected to have found the river on reaching the lower country beyond this range; but, instead of the river 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 stringy-bark 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 one quite covered with water, without sinking. Our camp was marked out on a low hill of white sand covered with mahogany and stringy-bark trees of large dimensions. The range from which we had descended, now appeared continuous as far as we could see eastward. Much smoke arose from this lower country when we entered upon it, and after sunset, the incessant calls of a native were heard around 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 thus insidiously make war on each other, but he only reiterated his calls the more.

*Aug. 13.*—At day-break the cries of the native were renewed. I then made Piper *cooy* to him, whereupon he became silent, and I heard him no longer, 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 some resemblance to some of the oolitic limestones of England, and in the bed irregular concretions of ironstone, containing grains of quartz, some of the concretions being of externally glazed appearance, arising from a thin coating of compact brown hæmatite. *Casuarinæ* and *banksiæ* 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. Its banks here were of a different character from that they presented above, but they were still fine. 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 *Feramenifera*, most probably of recent origin. 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 stringy-bark 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 were easily crossed by the party at the fall of the ground, where we found rocky strata. After tracing the river more than four miles, we encamped on an elevated point overlooking a flat of good grass for the cattle.

*Aug.* 14.—Some of the bullocks were missing, and we were compelled to halt an hour or two, while two parties were 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 at this camp 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 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 on the river. Limestone rock appeared in the bank opposite, and at the foot of some cliffs there we found fossil oyster-shells. Mr. Stapylton traced this stream to its junction with the river, which he found about two miles lower down.

*Aug. 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. The passage of the little river (which I named the Stokes), 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 carts sinking deeper in the water than they ever had done in any river that we had previously



forded. We found the country beyond very intricate, being so intersected with swamps draining off in all directions and divided by stringy-bark forests, that it was next to impossible to avoid the soft swampy ground, or reach the river bank 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 spread at length round us on all sides, except that from which we had approached it by so circuitous a route. We had no alternative but to cross this bad ground, and after finding out by careful examination the narrowest part, we prepared to pass 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 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 consisting 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 *Kennedyia prostrata* was climbing among the bushes and rendering them brilliant with its rich crimson flowers. 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 on that side, 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

\* *C. rotundifolia*, (Lindl. MSS.); ramulis rufis villosissimis, foliis subrotundis brevi-petiolatis supra scabris subtus villosis sæpius emarginatis, corollis campanulatis brevibus subtetrapetalis, calyce truncato rufo villosissimo.

of this at  $2\frac{3}{4}$  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 ever succeed in transporting them over the mud to this spot, and I with this intention returned to the muddy scene where I had left the men. It was quite dark before I found it again, and then they had only succeeded in getting through the three light carts. I did not despair of accomplishing the passage, at least in the course of time, and felt indeed impatient for daylight that I might carefully examine with that view all parts of the country between our camp and the junction where I intended to launch the boats into the Glenelg again.

*Aug. 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 that 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 were 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 efforts 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 ten 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. 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 got along successfully although another ravine came in our way which I managed to travel round until we at length found a place where we crossed a watercourse it contained by filling up the chasm with logs. On passing this we entered the stringy-bark forest which I had passed through on the day previous, and I at length recognized through the trees the hill from which I had seen the junction of the streams. A tremendous hail storm 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 swamp.

*Aug. 17.*—Sent overseer Burnett back with some spare bullocks, to assist the people in bringing on the carts and the boat-carriage, a man having been sent from them to me 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 lower down 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 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 was 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 brilliant 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.

*Aug. 18.*—The morning was uncommonly fine after a clear frosty night. The boats were hoisted out to be launched once more on the bosom of the newly discovered Glenelg, and loaded with what the party going with them might require for ten days. I left with Mr. Stapylton instructions that the party 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. At 12 o'clock I embarked on the river with sixteen men, in two boats, leaving eight with Mr. Stapylton in the depôt. We met with many dead trees in the river 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 were flowing 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 nowhere were the banks of waterworn earth, but 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 tributary streams joined the river from the right or westward, and one from the left or eastward: one of those from the west making a noisy cascade at the junction. The river soon opened to a uniform width of sixty yards, its waters being everywhere smooth and unruffled, the current having at length become scarcely perceptible. 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 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. About the cliffs of limestone the land was tolerably good and grassy, but toward the end of this day's pull the forests of stringy-bark eucalyptus closed on the river, having in them trees of large dimensions. We

endeavoured but in vain, to catch fish in this river, and whether it contained the cod-perch (*Gristes Peelii*) or not, remained still 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.

*Aug. 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 circum-polar 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 rivers 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 seventy yards. We continued our interesting voyage, and found the breadth of the river very uniform, and also 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 still 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  $4\frac{1}{2}$ ,  $3\frac{1}{2}$  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 of this river was nearly west, and it preserved this course during the progress we made this day without much winding. 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



(Limestone)

(Barbara)



J. Graf Printer to Her Majesty

G. Barnard lith.

Major T.J. Mitchell del.

THE RIVER GLENEELG.

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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 *casuarinæ* and *banksiæ* 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. Black swans being numerous, we shot several; and found their eggs, which we thought a luxury, among the bul-rushes at the water's edge. But we had left as it seemed, all the good grassy land behind us; for the stringy-bark and a species of *Xanthorrhæa* (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 where the rock is limestone. One or two small tributaries joined the river, the principal one coming from the left bank, and joining the river 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  $57^{\circ}$  W. of N. Here the water was slightly brackish but still very good for use; the saltness 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 across was 101 yards, and the mean depth five fathoms. 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.

Aug. 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 perspective 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. A small bushy island next appeared, 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. Soon after passing the island, a few low sandy-looking hills appeared before us, and we found ourselves between two basins wherein the water was very shallow, although we had sounded just before in four fathoms. As a wide basin which then appeared directly before us had no outlet, we proceeded into another on the right, and on rounding a low rocky point we saw the green rolling breakers of the sea through an opening straight before us, 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 sand hills near it, I perceived Cape Northumberland; the rocks outside called "the carpenters," bearing  $7^{\circ} 20'$  S. of W. (variation  $3^{\circ} 30'$ ), and being distant, as I judged, about fifteen miles. Mount Gambier bore  $23^{\circ} 40'$  N. of W. and a height which seemed near the extreme point of the coast to the eastward, and which I therefore took for Cape Bridgewater, bore  $52^{\circ}$  E. of S.

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. 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 merely choked up with 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 sea 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 several initials, I. W. B. 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 to sea; 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. 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 sand-hills 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  $38^{\circ} 2' 58''$  S. 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 re-entering the

river from the sea I presented the men with a bottle of whiskey, with which it was formally named the Glenelg, after the present Secretary of State for the Colonies, according to my previous intention.

*Aug. 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 it resembled in width the channel of some considerable tributary; the rock presenting a section of cliffs on each side, and the bottom being broad, 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 a very friable limestone, varying in its hardness, being sometimes very friable, and the surface in some places presenting innumerable fragments of corallines with pectens, patangi, echini, ostrea and feraminifera. 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 fissure 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 under ground 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.\* While the people in the boat awaited us here, a fish was caught by Muirhead, who had also caught the first

\* 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 lucinæ, echinus, patangi, and turritella or millenia were comprised in specimens from a softer stratum which was the lowest.

fish in the river Darling. This of the Glenelg was a salt-water fish known at Sydney by the name of Snapper.\*

The weather was more moderate this day 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 the thick woods left room for our tents. This happened to be on a steep bit of bank; and, here, in the evening, I was called in haste from my tent 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 my tent, according to usual custom, our stock of ammunition packed in a keg; and yet, 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.

*Aug. 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 depôt-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, &c.—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

\* This was the only fish caught in the Glenelg, notwithstanding that the men threw in their lines whenever we encamped on its banks. The weather was too cold, for that the river did contain fish was evident, from the trelliced work which the natives had set across it in the upper parts.

marks of flood in the dry floated matter remaining in the branches of trees, 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 Aug. 15). This 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 depôt during our absence, and we had indeed reason to believe that the adjacent country contained but few inhabitants. During the afternoon I laid down my survey of the estuary of the Glenelg, and had 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.\*

\* 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 a half 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 XI.

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 Murròà—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 Murròà 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 depôt to refresh while I proceed forward—Specimens of natural history—Situation of depôt camp at Lake Repose.

*Aug. 23.*—HAVING at length disposed of the course of the Glenelg, my next object was to cross and examine that 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 bogs, I devoted this day to an extensive reconnoissance 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 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, having previously ascended 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 from 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 useful species of *eucalyptus*, known as "*stringy-bark*." Some of the trees we measured were 13 feet, and one as much as  $14\frac{1}{2}$  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.

*Aug. 24.*—The carriages were taken across the Crawford without much delay, considering its depth and the softness of the banks. The depth was at least five feet, for thus far the carts sank below the surface of 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 suc-



ceeded in crossing several rivulets at the head of 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 under side, and a much shorter calyx.\*

*Aug. 25.*—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 or 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 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 still abundant, and the fallen timber impeded our progress even more now than any unusual softness of the earth.

*Aug. 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 one 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

\* *C. cordifolia*, (Lindl. MSS.); stellato-tomentosa, foliis subsessilibus cordatis ovatis denticulatis obtusis planis supra glabris, corollis tubulosis cernuis, calyce truncato brevissimo.

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 got out 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 at length 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. At a mile and a half beyond it we reached a small rivulet, the first we had crossed flowing towards the south. Beyond it the country appeared open and good, consisting of what is termed open forest-land, with *casuarinæ* and *banksiæ* growing upon it. 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, after crossing the rivulet flowing to the south. Crossing others flowing 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 fine 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. 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 found the bushes at length so thick, and the bogs so soft, that any further progress in that direction was out of the question; and thus on the evening when I expected to have found 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.

Aug. 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 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 where I had first changed my course. That route had been, however, so much cut up by our wheels, that I preferred the chance of finding a passage northward, which, of course, was 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 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 the same rock as the trap range I 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 then 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.” 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.

*Aug. 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 but that at a short distance to the northward of our camp, we should again enter that beautiful open country, which, when seen from the mouth of the Wannan, 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, extending about two miles further to the southward. 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. There was a very remarkable feature in this hill—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 princi-

pally of compact felspar. The hill, which I named Mount Eckersley, was covered, as was also the ridge to which it belonged, with a luxuriant crop of anthistirium 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 recognized 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 Wannan, 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 places, that I could scarcely hope to get through it:—knowing it to contain all the water from those boggy vallies where our progress had been already so much impeded. Smoke arose from various parts of the lower country—a proof that there was at least some dry land 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 its more familiar enemies who bestrode them. In the lower country we saw also the 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 un-

doubtedly was. The timber was thin and light, and with a fine deep stream flowing through it, this tract which I had considered so sterile and wet, at first sight from Mount Eckersley, 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 cooyed 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 stringy-bark eucalyptus; and, although the anthistirium 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 xanthorrhæa alone prevailed—the latter being a sure indication of sterility and a total want of grass. 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.

*Aug. 29.*—The groaning trees had only sheltered us without letting fall even a single branch upon our heads,\* but the morning was squally and unfavourable for the objects of

\* The Australian woods are in general very brittle, and no experienced bushman likes to sleep under trees, especially during high winds.

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. 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 trellice work 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. 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 *casuarinæ* 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. On reaching the sea shore at this beach, I turned to observe the face of "Tommy Came-last," one of my party, 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 comprehen-

sive gaze he cast over it seemed fully to embrace the grand expanse then for the first time opened to him. 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 shoe marks 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 toward 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 shore 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 these sheds, 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 the men to fire a gun and sound the bugle; 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 now occurred to me that I might there procure a small additional



supply of provisions, especially of flour, as my men were then on very reduced rations. I therefore approached the house and was kindly received and entertained by the Messrs. Henty, who as I then 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 here, surpassed in magnitude and quality any I had ever seen elsewhere. 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 there that season. I was likewise informed that only a few days before my arrival five vessels lay at anchor together there, and that the 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 bring them over, and the numerous whalers touching at or fishing there, were found to be good customers for farm produce and whatever else could be spared from the establishment.

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 that quarter. That 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 of fresh water falls into the bay there, and the situation seems altogether a most eligible one for the scite of a town. The rock is trap, consisting prin-

cipally of felspar; and the soil is excellent, as was amply testified by the luxuriant vegetation in Mr. Henty's garden.

*Aug. 30.*—I proceeded with the theodolite to a height near Cape Nelson, and from that station intersected that cape and also Cape Bridgewater, Cape Sir William Grant, the islands to the eastward, &c. I here recognised also the high hill which appeared within these capes when first seen from the westward, and which 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 of the sun's meridian altitude. I was here 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. 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 being likely to occupy the boats for some time I proceeded homewards. I understood that it frequently happened that several parties of fishermen left by different whaling vessels were engaged 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 he is of little value to whalers,

as the removal, &c. 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 shewn themselves to the white people of Portland Bay; but as they have taken to eating the cast-away whales, it is their custom to send up a column of smoke when a whale appears in the bay, and the whale-fishers happen to 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 that the whale may run ashore, in which case a considerable share must fall finally to them. The whale fishers whom I saw on the shore 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 a 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, crossing at its estuary the mouth of the little river last crossed, and which I now named the Surry. This river enters Portland Bay in latitude  $38^{\circ} 15' 43''$  S.; longitude (by my map)  $141^{\circ} 58'$  E. We encamped on the rich grassy land just beyond, and occupied for the night a snug old hut of the natives.

*Aug. 31.*—Early this morning Richardson caught a fine bream, and I had indeed been informed by Messrs. Henty that these streams abound in this kind of fish. 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 occupied a considerable breadth, even as much as three miles across. 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  $38^{\circ} 8' 51''$  S. 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 was clear, so that I completed my series of angles at that station by observing the Julian Island and Mount Abrupt, two points of great importance in my survey, and which had been hidden from our sight by the squally weather when I was last on this hill. 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 new steeled; 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 in this way, 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 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 when 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, spoke rather doubtfully.

*Sept. 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 coast-line on the engraved map was very defective, and indeed the indentations of the coast 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.

*Sept. 2.*—We travelled as much in a north-east direction as the ground permitted, but notwithstanding that 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 one nearly nine miles, while the boat-carriage was at least six miles behind me, the other heavy carts having also been retarded, from the necessity for yoking other teams to the cattle drawing the boats. The weather was still unsettled, and the heavy rains had at length made the surface so soft that even to ride over it on horseback 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 country near the head of the Wannan. 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 was never more puzzled in my travels than I was with respect to the nature of the country before us here. Mount Napier bore  $74^{\circ}$  E. of N. 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 vallies we had seen further westward from the country sloping towards the sea.

*Sept. 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 came round

to the south-east in situations near the coast, or to the north-east when we were more in land. 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 forward it had again sunk, and thus delayed the carts, but that they 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 civilized men, we had yet to travel 400 miles over a country intersected by the highest mountains, and watered by the largest rivers, known in New Holland.

*Sept. 4.*—Although the boats and carriage had been of late a great hindrance to the party, I was very unwilling to abandon such useful appendages to an exploring party, having already carried these boats over-land nearly 3000 miles. A promising part of the coast was still to be explored, large rivers were to be crossed, and we had already found boats useful on such occasions. One however was likely to be sufficient for future purposes. We had two, and the outer one being also the largest and heaviest, had been shaken so much when suspended without the thwarts so necessary to keep her distended, that she was almost unserviceable, and very leaky, as we had lately found in exploring the Glenelg. She had in fact served as a mere case for the inner boat,

which being also distended by thwarts was in excellent repair, and in every respect the best of the two. I determined therefore to abandon the outer boat, and shorten the carriage so that the fore and hind wheels should be brought two feet nearer each other. I expected from this arrangement that the carriage, instead of retarding the party, might be drawn in advance with the light carts. Having directed the alteration of the carriage 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 this swamp to the left for a mile and a half, I found it at length passable, and having crossed we proceeded towards the hill by a rather circuitous route, but over a fine tract of country, although it was then very soft under our horses' feet. At length we reached a deeper ravine, the land on its sides being more open, and also firmer, while a small rivulet flowing through it amongst bushes, was easily crossed and we then ascended some fine rising ground beyond it. Rich flats extended before us, and we at length reached 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 romantic beauty of the spot, and as the day was showery I wished to return if possible to pass the night there, for such huts with a good fire before them made very comfortable quarters in bad weather. We had heard the voices of natives in the woods several times this day, but they were 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 projected over the stream, this was nearly a decomposed trap; 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. At about a mile beyond the river, (which I named the Shaw), we at length 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 recognized 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 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. On the sides of this we found some soft red earth mixed with fragments of lava,

\* See Lyell's Geology, vol. 1. p. 128.



and on reaching the summit I found myself on the narrow edge of a circular crater, composed wholly of lava and scoriæ. Trees and bushes grew everywhere luxuriantly, 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. 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, but on the contrary the worst possible, for as the trees grew on the edge of the crater, no one station could be found affording a view of the horizon until the whole circumference was cleared of the trees, and this was too great a work for us then. Mount William and the Grampian range now presented a noble outline to the northward. The sun had set before I could recognize 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 the base, in hopes that the next morning might be clear. 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 while 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 bones. 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.

*Sept. 5.*—A thick fog hung upon the mountain until half-past ten A.M., and when I ascended an extremity then, 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 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 to this camp as I wished, 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.

*Sept. 6.*—This day I requested Mr. Stapylton to examine the country in a north-west direction. Several 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 right angles to the route of Mr. Stapylton. 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 largest boat, keel upwards, at the swamp which had occasioned so much delay.

Sept. 7.—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 stream 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 nearly 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 resembled *D. peduncularis*, but proves on examination to be distinct.\* 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

\* *D. hispida*, (Lindl. MSS.); ramulis hispidulis, foliis linearibus patulis verrucosis obtusis hispidulis, corymbis longè pedunculatis terminalibus laxis paucifloris, pedunculo glaberrimo, pedicellis calycibusque pubescentibus.

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 newborn child. Kangaroos were more numerous in this part of the country than in any other that we had passed over. 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, when not unfrequently two or three were caught by our dogs.

*Sept. 8.*—The heavy carts not having come up, I left the two with us that the men might assist the drivers of the others with their teams in crossing this stream when they should arrive. On proceeding then with the light carts only, I crossed several soft bad places and one or two fine little rivulets, encamping at last where we again fell in with my horse's track on an open space about eight miles from Mount Napier. We had 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 swamps, for no better ground appeared on any side. I hoped however to obtain a better 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.

*Sept. 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 equally 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 a hill that I had previously named Mount Abrupt. Between the largest of these waters (named by me Lake Linlithgow), and the mountains, there appeared an extensive tract of open grassy land. 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.

*Sept. 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 (Glencg). 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 shewed that the

inhabitants were very generally scattered over its surface. We could now look on such fires with indifference, so harmless were these natives compared with those on the Darling, and the smoke now arose 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 between our camp and Mount Abrupt; but I could trace no connection between these hills, and was rather apprehensive that a soft and swampy country intervened. 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 round one portion of it, but there was a gap towards the west-north-west in which direction the crater was open almost to its greatest depth. Several steep 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 improbable that this valuable weed might have been found here, as it occurs 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, excepting only that 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  $3^{\circ} 2' 45''$  E. and by the sun's altitude observed this day at Mount Napier, I found the latitude of that hill to be  $37^{\circ} 52' 29''$  S.

*Sept. 11.*—In order to lighten the carts as much as possible, I caused the pack-saddles to be placed on the spare bullocks and various articles carried upon them; thus lightening the loads of two of the heavy carts which had narrow wheels and sunk most in the ground, to less than eight hundred weight each. The old cover of the boat carriage was also laid aside, and in its place tarpaulins which had previously added to the loads, were laid across our remaining boat. A heavy jack used to raise cart wheels was also left at this camp, and some iron bars that had been taken from the boat carriage when 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. Despairing at length of being able to avoid these swamps, 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. About that time a yellow flower in the grass caught my eye, and remember-



ing 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.

*Sept. 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 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 through a broad grassy vale, and having crossed this also without difficulty, we encamped in one of the vallies beyond it, 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 every where ; and several new varieties of *Caladenia* were found to-day. The blue, yellow, pink, and brown coloured were all found on these flowery plains. 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 Bainbrigge, the other on the south Mount Pierrepoint.

*Sept.* 13.—We broke up our camp early this morning, and on reaching the highest ground 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 outlet visible on any side ; this I named Lake Nivèlle. At a few miles beyond this lake the cheering sight of an open country extending to the horizon appeared first 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. The cart-wheels trundled merrily over this, so that twelve miles were accomplished soon after mid-day, 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 a day without any rain had been rare with us for several months.

*Sept.* 14.—I was most anxious to ascend Mount Abrupt, the first peak to the northward of Mount Sturgeon, that I might there 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 this 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*,

*Mt. William dist. 21½ miles.*



*Victoria Range.*

*The Grampians from the summit of Mount Abrupt.*

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 bank 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 xanthorrhæa, reminded us of former toils on the opposite side of these ranges. 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, and which consisted of sharp cones and perpendicular cliffs foreshortened, so as to form one feature only of the extensive landscape, but 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. Several extensive lakes appeared in the lower country, 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, from that height, 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 by 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 here 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 most northern point is Mount Zero, in latitude  $36^{\circ} 52' 35''$ . The most southern is Mount Sturgeon, in latitude  $37^{\circ} 38' 00''$ . The most northern and elevated range extends from Mount William to Mount Zero, and is steepest on the northern side. From this hill the two other ranges branch off to the south; the western being the Victoria range, and the eastern I called the Serra from its serrated appearance, so highly ornamental to the fine country around. On the slopes of the northern 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 northern range, from 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 *Pultenæa*; 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 *P. stipularis*.\*

*Sept. 15.*—Pursuing an easterly course in order to avoid the Wannon, we again found the ground so soft and boggy

\* *P. mollis*, (Lindl. MSS.); ramulis villosis, foliis linearibus v. lineari-lanceolatis obtusis v. acuminatis subtus convexis supra sulcatis sericeo-pilosis capitulis sessilibus longioribus, stipulis ovato-linearibus acutis glabris badiis, calycibus villosis.

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 journies 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.

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 about three or four miles from the camp, and that from beyond that distance to the forest hills he found the ground tolerably firm.



*Mount Abrupt from the south.*

*Sept.* 16.—The country which proved so soft was nevertheless stoney, and trap-rock projected from every higher portion, yet such rocky eminences being unconnected, were each surrounded by softer ground. I was resolved to make the very most of them; nevertheless, in endeavouring to move forward an iron axle having been broken in our struggles with the mud, the smith required more time to repair it, and I therefore endeavoured 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. 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 at length came to a small running stream, the ground rising to a somewhat steep ascent beyond it. 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 party still remained encamped.

*Sept.* 17.—This day the remainder 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 farther 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. 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 provision, 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, while I should be enabled in travelling with so light a party, to 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. This was the outline of the plan which our position and necessities suggested.

*Sept.* 18.—This day was passed in making preparations for setting out to-morrow with the light party as proposed. 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 were the pig-footed animal found on June 16. This measured about ten inches in length, had no tail, and fore feet resembling those of a pig. There was also the rabbit-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 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 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.\*

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 was undulating and thickly clothed with fresh verdure, a grassy swamp such as cattle delight in, extended northward into a lake of fresh water, which I named Lake Repose. The peaks of the Serra Range, especially Mount Abrupt, were land-marks which secured the men from even the possibility of losing their way in looking after the cattle.

Of the natives in our party it was arranged amongst 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.

\* 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.—I left with some regret at Sydney the single specimens of the *Ecaudatus* 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.





AUSTRALIAN EAGLE. (*Aquila fucosa*?)

Painted by Mr. Mitchell.

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## CHAPTER XII.

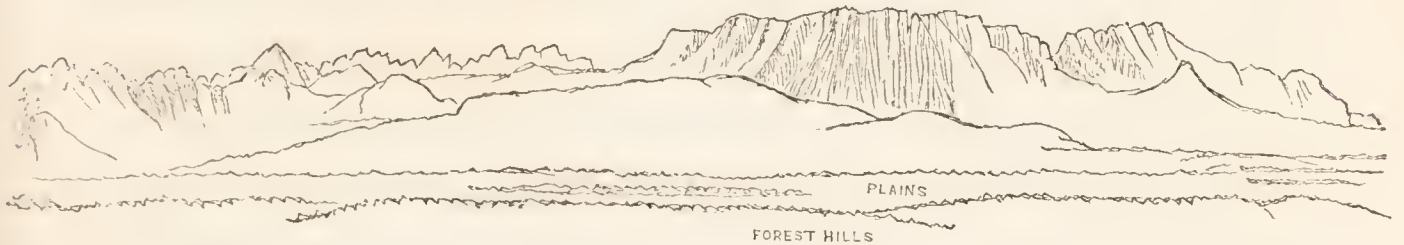
Parting of the widow and her child—We at length emerge on much firmer ground—River Hopkins—Mount Nicholson—Cockajemmy salt lake—Natives ill disposed—Singular weapon—Treacherous concealment of a native—Contents of a native's "basket and store"—A tribe comes forward—Fine country for colonization—Hollows in the downs—Snakes numerous—Native females—Cattle tracks—Ascend Mount Cole—Enter on a granite country—Many rivulets—Mameloid 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, &c.—Arrival at, and passage of, the Goulburn—Fish caught.

*Sept. 19.*—WHEN about to set out I observed that the widow "Turandurèy," 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 native 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 despaired of being ever able to initiate her thoroughly in the mysteries of killing and eating snakes, lizards, rats, &c. &c. The widow had been long enough with us to be sensible how much more her sex was respected by civilized 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.

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, where an extensive prospect opened before us. Leaving the party to encamp I rode to a round forest-hill eastward from it some miles, 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 but that we should find it more favourable for travelling upon. Eastward of the forest-hill the ground sank into a deep valley turning round to the south-east, after receiving the drainage from some hollows in the open country north of it. This ravine received also the waters from the woody ridge now south of us, where the numerous deep vallies were watered by streams arising in swamps, the whole probably forming the head of some considerable stream flowing to the coast, and which I here named the river Hopkins. This eminence, which I named Mount Stavely, consisted, apparently, of decomposed clay-stone or felspar, having a tendency to divide naturally in 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 these growing very thickly 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.\* 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.



*Mount William from Mount Stavelly.*

Sept. 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, at first bounding our view towards the north, and which 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. 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

\* *A. fureifera*, (Lindl. MSS.); stipulis spinoscentibus persistentibus, phyllodiis obliquis ovato-oblongis mucronatis uninerviis hinc venosis glabris, ramis hirsutis, capitulis solitariis foliis brevioribus.

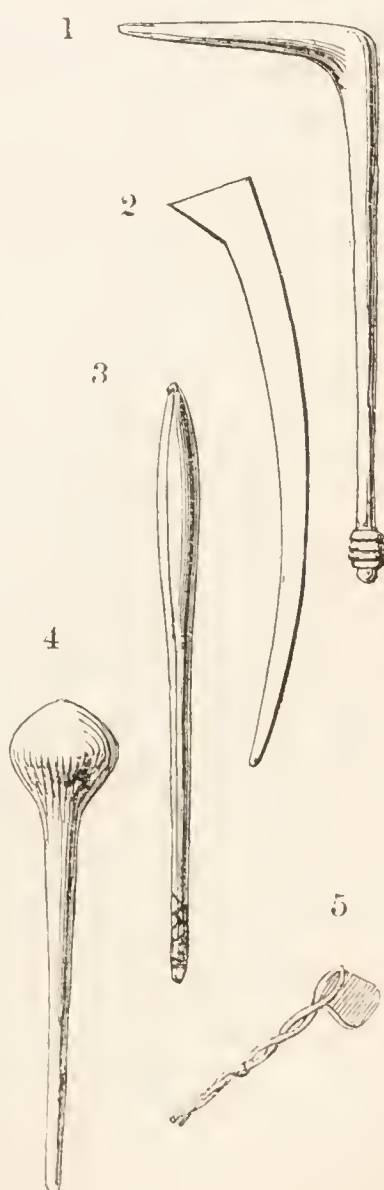
† This was most nearly related to *A. hispidula*, but the leaves were quite smooth and much smaller. *A. acinacea*, (Lindl. MSS.); glaberrima; ramulis alato-angulatis rigidis, phyllodiis brevibus acinaciformibus mucronatis 1-nerviis et enerviis: margine superiore infra medium glanduloso, capitulis geminis axillaribus, pedunculis phyllodiorum longitudine.

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 that adjacent containing the stagnant salt lakes. The rock enclosing these singular vallies was of basalt, and from these peculiarities considered with reference to the ancient volcano and the dip of the 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 leave the solution of the problem to geologists.\* 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.

\* 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 Sept.* had a specific gravity of 1055.3, and the amount of dry salts from three measured ounces was 113 grains."

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 shewing that they had some idea of fire-arms, although they refused to answer Piper's questions or to remain longer. In the evening four of them were seen approaching our camp, when 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-by 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. 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 fig. 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 fig. 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. 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. How many more had been there 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 lbs. of small fish, like white bait, cray fish, and a quantity of the small root of the cichoraceous plant *tão*, usually found 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, (fig. 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.

*Sept. 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 enquire 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 beyond it. Whether they would find a letter that 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 was buried by merely pushing a stick into the earth and dropping into the hole thus made, the note twisted up like a cigar. This 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. 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 open plains fringed with forests and embellished with lakes. To the northward appeared other more accessible looking hills, some being slightly wooded, others green and open 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 open country and the hills within reach, and might choose either for our route according to the state of the ground, weather, &c. Certainly a land more favourable for colonization could not be found. Flocks might be turned out upon its hills, or the plough at once set agoing in the plains. No primeval forests required to be first rooted out here, although there was enough of wood for all purposes of utility, and adorning the country just as much as even a painter could wish. One feature peculiar to that country appeared on these open downs : this consisted of hollows which being usually surrounded by a line of "yarra" gum-trees or white bark 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 had been the remains of ancient water-courses, 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 hollows, and whether by digging a few feet permanent wells might be made there may be a question worth attention when colonization 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 hæmatite. 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 *Täo*, 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.\* The genial warmth of spring had begun to shew 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 at all venomous I believe, which the natives

\* 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 fasciculatâ, foliis longissimis attenuatis semiteretibus basi canaliculatis glaucis, racemo erecto multifloro, petalis oblongis subundulatis sepalis duplò latioribus, staminibus ascendentibus, filamentis apice stuposis petalinis patentibus sepalinis erectis apice incurvis brevioribus.

eat. We encamped near a small clump of trees for the sake of firewood.

*Sept. 22.*—This day's journey lay chiefly across open downs with wooded hills occasionally on the left. On the southward these downs extended to the horizon : and several isolated hills at great distances apparently the trap-formation, presented a volcanic outline like Mount Napier. In that direction all the various small rivulets we crossed seemed to flow. 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 as well as quality, from the mountains to the westward which were all of red sandstone. A thunder storm came on in the afternoon, but the sky became again perfectly serene in the evening.

*Sept. 23.*—This morning a thick fog hung over us ; but I had already well reconnoitred the country beyond, and 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 travelling seven miles on good firm earth, we again came upon very soft ground, which obliged us to turn, and wind, and pick our way where the earth was most likely to bear us. 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. 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 at length reached a small run of water from the hills, and by keeping along the bank of this, 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. We had at length arrived under Mammala, the bluff hill which had been my land mark 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-rock,\* and was crowned with such lofty timber that I could only catch occasional peeps of the surrounding country : nevertheless I obtained by running about among the trees with my pocket sextant almost all the angles I wanted, and 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 there appearing 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 as this did, thus leaving me a passage precisely in the most direct line of route homewards. We were still however to cross the range we had now reached, and which, as I perceived here, not only extended southward, but also broke on the eastern side into bold ravines, being connected with some noble hills or rather mountains, all grassy to their summits, thinly wooded, and consisting wholly of granite rock. They resembled very much some hills of the lower Pyrenees, 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

\* Consisting of pink felspar, white quartz and silvery mica.

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 being connected with the highest and most southern hills visible from this summit, 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.

*Sept. 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 vallies 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.

*Sept. 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 trapean conglomerate with embedded quartz, 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 iron-bark eucalyptus, where the trees were very large, and we finally encamped in a grassy valley in the midst of this forest.

*Sept. 26.*—We first crossed more hills of the trapean conglomerate, on which grew iron-bark eucalypti and box. The rock consisted of a base of compact felspar, with em-

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  $60\frac{1}{2}^{\circ}$  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 here 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 here than elsewhere, and our hard wrought cattle well deserved to be the first to browse on that verdant plain. The stream vanished amongst grassy hills in its course downwards, to water a country apparently of the most interesting and valuable character.

*Sept.* 28.—The steep banks beyond the river consisted of clay-slate, having under it a conglomerate, containing fragments of quartz cemented by compact hæmatite. 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, and on cutting the snake open, two young quails were found within: one of these 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 good strong grass grew among the trees, which consisted of box and lofty blue-gum. 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, a height then more than fifty miles behind us. Like that mountain these heights also belonged to a lofty range, and were immediately over a lower 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 found that the heights immediately beyond our camp were part of the dividing range, and broke 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; a change evidently owing to a difference in the rock, which was granite, consisting of small grains of felspar and quartz, and a few plates of mica, whereas the hills we had recently crossed belonged chiefly to the volcanic class of rocks, with the exception of the range I had crossed 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 were distinguished by 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 iron-bark and stringy-bark, now presented the shining bark of the blue-gum or yarra and the grey hue of the box. The *anthistiria 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. I could ride with ease to the summit of the friendly hill that I had seen from afar, and

found it but thinly wooded on the summit, so that I could take my angles round the horizon without difficulty. Again reminded by the aspect of this region, of the lower Pyrenees and the pass of Orbaicetta, I named this summit Mount Byng. A country fully as promising as the fine region we had left, was opened to my view from that hill. 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 ranges 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 towards the coast: 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 back to the camp; and who, on such occasions, could trace my steps backwards by day or night with wonderful facility.

*Sept. 29.*—The range before us was certainly rather formidable for the passage of carts, but home lay beyond it, and 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 by which the carts might gain the lowest part of the range. Having led 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. This 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



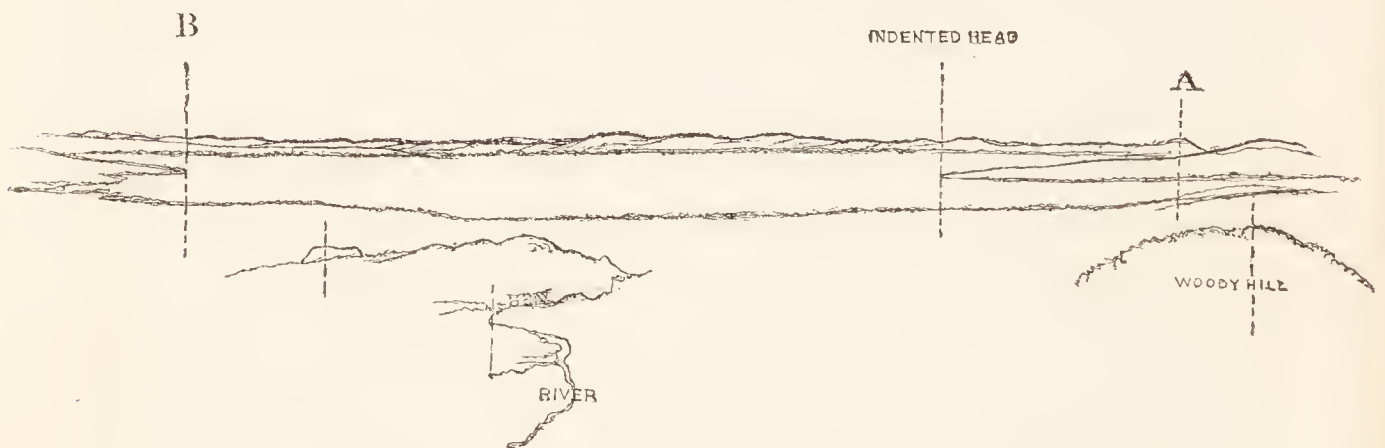
discovered and opened, over a neck apparently the very lowest of the whole range, I named Expedition-pass, confident that such a line of communication between the southern coast and Sydney, must in the course of time become a very considerable thoroughfare. The change of soil however, introduced us to the old difficulty from which we had now been happily relieved for some time, for we now 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, that the bolt might be repaired, although we had only travelled four miles.

*Sept. 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 from 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. 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 flowing fully 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 ridden about four miles over it, we came quite unawares to a fine flowing stream, nearly on a level with its grassy banks; the bottom being so sound that we forded it without the least difficulty. Emus were very numerous on the open 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 these birds come to us on that occasion, 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 probably a tributary to the first. 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. The effects of some violent hurricane from the north were visible under every tree of this forest, 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, not a few having 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 the withering branches of trees. 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 there 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 this forest, and consisted principally of black-butt and blue-gum eucalypti, measuring from six to eight feet in diameter. The rock was syenite, so whitened with the weather as to resemble sandstone. I ascended without having been obliged to quit my horse's back, and I found that the summit was very spacious, being covered towards the south with the tree-fern, and the musk-plant growing in great luxuriance. I saw also besides these 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 the side of the mountain by which I had ascended, was covered with the dead trunks of enormous trees in all stages of decay. 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 recognize 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 of land 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 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 recognized 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.



*Port Phillip from Mount Macedon.*

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 this mountain and picked out a dry bit of turf on which to lie down for the night.

*Oct. 1.*—The morning was cloudy with drizzling rain, a circumstance which prevented me from re-ascending to extend my observations over the country we were about to traverse, from a naked rock on the north-eastern summit. I found decomposed gneiss at the base of this hill. In returning to the camp we saw great numbers of kangaroos, but could not add to our stock of provisions, having neither dogs nor 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.

*Oct. 2.*—This was Sunday, and the weather being unfavourable, for it rained heavily, the barometer having also fallen more than half an inch; I made this a day of rest for the benefit of our jaded horses notwithstanding our own short rations, having been also very desirous to complete some work on the map.

*Oct. 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 avoiding that which was boggy, and we found the surface much improved in this respect as we receded from the base of the higher range. We crossed some fine vallies, 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, and this rivulet at length entered a still deeper valley in which there was very little wood, the hills on the opposite side

\* Geboor is the native name of this hill, as since ascertained by my friend Capt. King, and is a much better one.

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 there. When we had effected at length a descent and a passage across, having also established our camp beyond this stream, I rode up along the bank towards a noise of falling water, and thus came to a very fine fall 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, including those on the Clyde and Devon, but this was certainly the most picturesque scene of the kind I had witnessed; but the effect was not so much in the body of water falling or the loud noise, as the bold character of the rocks over and amongst which it fell. Their colour and shape were harmonized into a more perfect picture than nature usually presents. The prevailing hues were light red and purple-grey, the rocks being finely interlaced with a small-leaved creeper of the brightest green. Dark coloured moss, which presents a warm green in the sun, covered the lower rocks, 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 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. The geological character of the adjacent country was sufficiently striking,—the left banks consisting of undulating hills and bold rocks of granite; the right bank of trap-rock in the higher part, and presenting 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



*Wm. T. Mitchell del.*

*(All granite)*

*G. Barnard lith.*

*J. Graf, Printer to her Majesty*

FALL OF COBAW.

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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. These 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. We found a long winding valley by which we ascended without inconvenience between these curiously scarped trap hills.

*Oct. 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 whose destructive effects we had noticed on the trees there. Beyond the clay-stone range we entered on another open and grassy tract where trap-rock again appeared; and at  $4\frac{1}{2}$  miles we descended into a grassy ravine where 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, and crossed. 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 through it 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. 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,

so remote until lately from civilized 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°. We encamped on a chain of deep ponds falling to the northward; reeds grew in them, and we endeavoured to catch cod but without success, probably because the natives of the country were too expert fishers to leave any in such holes.

*Oct. 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 and also 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 this was not too steep to be crossed, and I required some angles on the surrounding hills and the country before us. We ascended it therefore, and comparatively with ease; and from amongst the trees on a hill there, I saw and intersected more points than I expected to have seen; 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. The adjacent forest consisted of large trees of iron-bark, 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 an old native encampment a considerable quantity of its flowers in a large canoe that had not been long cut. Piper explained the purpose for which these flowers had been gathered, informing me that by steeping them a night in water the natives make a sweet beverage named “bool.”

*Oct. 7.*—The whole of this day's journey (fourteen miles) was pursued along the 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. (Pl. 50.) 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 of them, 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 *Déegay*. 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 they should go to their tribe I returned to my tent. On looking out 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 with strange natives were in vain as usual, 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. When I went out they retired to the group, but long after it had become quite dark there they still sate, having scarcely any fire, and evidently bent on mischief. 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 con-

\* The use of these masks, which I on several occasions tried with success, was first suggested to me by Sir John Jamison.

cealed behind the boat-carriage bellowed hideously through speaking trumpets at the same time, while all the others shouted and discharged their carabines in the air. Burnett marched solemnly towards the astonished natives who were seen through the gloom but for an instant, as they made their escape and disappeared for ever, but leaving behind them 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, was a circumstance which 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 natives 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.

*Oct. 8.*—The windings of the creek came 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 it or one joining it there from the south, I perceived a small hill at no great distance beyond it, 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. On returning to the party we crossed the channel of the Deegay, but at less than a mile further on we were obliged to recross it 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° of Fahrenheit. After having ascertained that this river was no where fordable at that time, I sought an eligible place for swimming the cattle and horses across, and immediately launched the boat. All the cattle and horses reached the opposite bank in safety; and, by the evening, every part of our equipment except the boat-carriage was also across. In this river we caught one or two very fine cod-perch, (our old friends *Gristes Pealii*.)

\* 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.

## CHAPTER XIII.

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—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 arrive on the Murrumbidgee—Write my dispatch—Piper's happiness—Native names of rivers.

*Oct. 9.*—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 have found 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 these were fine sheets of water, apparently much frequented by ducks and other aquatic birds. At exactly  $2\frac{1}{2}$  miles from the river we reached the outer bank or berg, and resumed at length a straight course homewards as before, for I there found a level forest country open before me, through which we travelled nearly eight miles in a south-east direction. We then encamped near some water-holes 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*” spe-

cies of eucalyptus, and we crossed soon after first entering it, a small plain. At  $3\frac{1}{2}$  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 crossed 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; it was open enough to afford a prospect of about a mile around us, and thus we travelled on in a straight line with unwonted ease and facility.

*Oct. 10.*—Continued our journey homeward through a country of the same character, at least for the first five miles, as that seen yesterday, when we came at length to a chain of deep ponds, the second we had passed over that morning. In the bank of this I found a stratum of alluvium; beyond it the soil was granitic, and *banksia* was seen there for the first time after crossing the river. At  $7\frac{1}{4}$  miles we met with another chain of large ponds, and at 9 miles a running-stream flowing to the north-west. After crossing various other chains of ponds, we encamped (after performing a journey of  $14\frac{1}{2}$  miles), near the bank of another running stream in which were also some deep pools.

*Oct. 11.*—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 stringy bark, 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 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, being distant from it about  $5\frac{1}{2}$  miles. On our way an emu ran boldly up to us, 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 then, and we proceeded. 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.

*Oct. 12.*—We passed over land of a 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.

*Oct. 13.*—At  $3\frac{1}{4}$  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. 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 this 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 allowed him, relying too much, as it now appeared, on swimming his horse, which until this morning I had hitherto 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 cross on a horse in order to ascertain where the opposite bank was most favourable for the landing of the cattle. I agreed to his crossing wherever he thought he best could, and he rode towards a place which I thought was by no means the best, and accordingly said so to him. I did not hear his reply for he just then rode 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 on going on

foot to the spot, called out for all the men who could dive, at the same time exclaiming "the man is 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 in the river. Four persons were immediately in the water—Piper, his gin, and two whites—and in about 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 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 heartfelt 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 encamped on the opposite bank.

*Oct. 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

\* 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.

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 elsewhere 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. The country crossed beyond this 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. Thus 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 now 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.

*Oct. 15.*—We had not proceeded more than half a mile in the general direction I proposed for our route, when a reedy swamp appearing before us, compelled me to turn northward, and after travelling in that direction 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 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  $10\frac{1}{2}$  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 by crossing all in one place the soft earth over which it flowed. At two miles farther on we crossed another stream of less magnitude, flowing also to the north-west, and at about a mile beyond this we reached the bank of the river 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 river, finely breaking up the dead levels of the surrounding plains, which indeed where we approached it, formed its highest bank, being twenty-three feet above the water.

No time was lost in launching our boat, and we crossed 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 landed.

*Oct. 16.*—This morning the river had fallen three inches, its temperature being  $59^{\circ}$  (of Fahr.); the current was flowing at the rate of  $1\frac{1}{4}$  miles per hour; the mean depth two fathoms; 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 water-courses 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. 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 the hill, certainly in doubt as to 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 these terminated on the level interior country, where the horizon was broken by only one remarkable hill, which as I afterwards learnt, was named "Dingée." 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. 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 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 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 Bowrell range near Mittagong within the present colony. We found in these vallies abundance of good grass.

*Oct. 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  $13\frac{1}{2}$  miles we entered a rich plain terminating northward at a low but remarkable hill that I had observed from the mountains. 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 its lofty trees and still lakes, could have belonged to no other Australian river we knew of. On descending the berg or outer bank, which was here 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. 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 living 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, and after riding a mile, that a deep reach still separated me from that high bank which I 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 Ochtertyre. I had only daylight left to conduct the party

across part of this hill, to a portion of the river bank only accessible then to carts by fording one lagoon. The velocity of the Murray at the only spot where we could get to its border at that time, exceeded that of any other river we had previously crossed, being at the rate of  $2\frac{1}{2}$  miles per hour.

*Oct.* 18.—At daylight this morning the boat was sent across, and Burnett accompanied by Piper landed and examined the ground within the reeds on that bank, and which they found intersected by various deep lagoons, so 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 was under a steep bank of red earth on the opposite shore where the river seemed to be encroaching. We were anxious to ascertain by looking for cattle marks, whether any stations were near, having heard that the flocks of the settlers already extended to the Murray. We therefore landed and proceeded northward, eager to trace any marks of civilized men. The wheels of a gig drawn by one horse and accompanied by others were found by Piper, but they were some months old. We walked to a spacious plain at some distance from the river without seeing any more recent tracks, and were at length convinced that no station existed then in the immediate neighbourhood. The left bank between where our camp then was and the crossing place selected, was low but apparently firm, but on returning over it we met with several narrow channels, in which water was then flowing from the river, and which afterwards cost us considerable trouble to cross with our carts.

That part of the bank on which I had fixed for driving the cattle into the river that they might swim across, was soft and boggy, but on the opposite side where they were to go out, we cut a landing place and path with picks and spades, in the firm clay at the base of the red cliff before mentioned, 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 of the day had elapsed in conducting the party to within a short distance of the place where it was to cross, my horse unexpectedly sunk in what had appeared to be firm ground. This the party avoided by cutting down some brush and small trees, thus opening a lane through which we at length succeeded in bringing 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 only, 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 ascend it much lower down where the banks were either too soft or inaccessible; others swimming straight down the stream, and turning to parts of the opposite bank which they could not ascend. 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 the latter or those which had arrived at the wrong place, out with ropes; we succeeded at length in forcing all that had floated too far down safe across. But the greater number had landed higher up the river upon some fallen portions of the red-cliff instead of taking the path we had cut under it; and their footing there was so slight, that as they crowded on each other, groups fell from time to time back into the river. My last operation was therefore to row towards these, when Woods who was in the boat, soon induced one well known to him to take the path, upon which all the rest followed, until they reached the grassy flat where others more fortunate 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.

*Oct. 19.*—The first half of this day was required for the passage of the horses one by one, and also 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 this party should return to the spot with a stock of provisions for that under Mr. Stapylton. Here the last mountain barometer, which had been carried in excellent order throughout the journey, began to lose mercury so copiously that I could not hope to use it any more; time having been then too valuable to admit of longer 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 so as to loosen it from the edges of the cylinder, thus forming openings through which the mercury had escaped. The breadth of the Murray was 80 yards at the place where we crossed it, the mean depth  $3\frac{1}{2}$  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. 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 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 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 also 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, that little party returned towards the houseless wilds, when we left the Murray to continue our journey homewards. Although we did not set off until after noon, we this day travelled 14 miles, and did not encamp until 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 but little more than enough for ourselves and cattle.

*Oct. 20.*—After travelling five miles over tolerable land we crossed a range of very fine grained granite, consisting of felspar and quartz and small particles of mica, giving it a very chrySTALLINE aspect. This range was a branch from a higher mass of hills 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 not so red and having fewer spangles of mica. 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 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 streams descending towards that part of the interior plains. We found there a curious black-headed grass, which proved to be of the *carex* species. At  $11\frac{1}{2}$  miles we arrived at a running stream, its course being northward, and at  $15\frac{1}{2}$  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.

*Oct. 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 this 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 hill 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  $8\frac{3}{4}$  miles we met with some good ponds of water, and beyond them the winding channel of a smaller water-course 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 conic summit on the left, apparently the highest and most pointed of those previously observed. This 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. 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. Stappylton'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 had therefore been 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 it thus 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.\*

*Oct. 22.*—Soon after we set out this morning we approached a range of barren hills of clay slate, on which grew the grass tree (*xanthorrhæa*), 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,

\* *Danthonia eriantha*, (Lindl. MSS.); paniculâ subcoarctatâ lanceolatâ, spiculis sub-4-floris glumâ lævi multò brevioribus, paleâ exteriori lævigatâ basi apiceque villosissimâ, aristis lateralibus subulatis debilibus intermediâ brevioribus, foliis setaceis vaginisque patentim pilosis, collo barbato.

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  $2\frac{1}{4}$  miles, and we next crossed a ridge of quartz rock. Beyond this ridge the natives found some old cattle tracks, and this intelligence very much pleased and encouraged the men. 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.”

The only valley of any extent that could be seen was that watered by the rivulet below, and which 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 civilized people once more, and which, according to the map was almost within our reach. Again and again I examined the ranges with my glass, and only discovered that they were numerous and all extending 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 to find some valley likely to lead us into

\* See figure with the fowling piece in plate 17—vol. i.

that of the Murrumbidgee, and although this 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 descending 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.

*Oct. 23.*—The hills we ascended offered much less impediment to the carts 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. 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 only of cattle, but of well shod horses; also 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 into this valley with our carts, we found excellent pasturage while the cattle marks were very numerous, and at length quite fresh, even the print of young calves' feet appeared, and all the traces of a numerous herd. 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 of wild animals, 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. Symptoms of famine now began to shew themselves in the sullenness of some of the men, and I most reluctantly consented to kill one of our poor working animals, which was accordingly shot as soon as we encamped, and divided amongst the party. 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.

Oct. 24.—As we continued our journey downwards, the water holes 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 hill on the right, I perceived at once before us the dark umbrageous trees overshadowing that noble river, and 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 *casuarinæ*, whose sombre masses of darkest 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 stock-yard. 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. 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'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 black-fellows," 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.

I learnt from the natives we found here, their names for the greater rivers we had passed, and some of the isolated hills. Everywhere the Murray was known as the "Millewà"; but I was not so sure about "Bayùnga" which I had understood to be the name of the *Goulburn*, *Hovell* or *Ovens*.

When Billy Buckley, who was only a stock-keeper at that station, saw my party arrive and was aware at length who we were; he came to me when enjoying a quiet walk on the river bank 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 illness of the stomach, which very much interfered with my enjoyment of that luxuriant repose I had anticipated under the shade of the *casuarinæ*, in my tent on the brink of the living stream.



## CHAPTER XIV.

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—Advantages of art and science—A garden—Public works—Shoalhaven river—Limestone caverns there—County of St. Vincent—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 Razor-back—Ford of the Nepean—Campbell Town—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—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—Painting with red—Raised scars on arms and breast—Cutting themselves in mourning—Authority of old men—Native dogs—Carrying children—Weapons—Spear—Wammera—Bommereng—Its probable origin—Shield or Hieleman—Skill in approaching the kangaroo—Modes of cooking—Opossum—Singeing—Vegetable food—The shovel—General observations.

*Oct. 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 that river in a small canoe that morning. Seven months had elapsed since I had seen either a road or a bridge,

\* Remains of Peter Corcoran.

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 to me just then, 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.

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. The whole of the banks of this fine stream were occupied as cattle-stations, which indeed extended much lower down the river; and such was the thoroughfare in that direction, that I found a tolerable cart road from one cattle-station to another. I passed the night at the hut or house of a stockman in charge of the cattle of Mr. James Macarthur, and was very comfortably lodged there.

Oct. 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 then looked fat, and sufficiently showed 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 pieces 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, every where 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, and 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. I arrived thus long after dark at a cattle-station occupied by a superintendant of Mr. Henry O'Brien, and there passed the night. We were here near Jugion Creek, on the right bank of the Murrumbidgee. Two considerable rivers join this 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. Murchisson's silurian system. Favosites, stems of crinoidea, stromatopora concentrica, and heliopera pyriformis are found loosely about the surface. There is also a large rock of hæmatite under Mount Jellùla.

*Oct. 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 but delicate tint of ultramarine blue. I was this day 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, some 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 so satisfactorily as I wished, not having been able to distinguish any of the latter.

Towards evening I drew near Yass Plains, and was not a little struck with their comparative insignificance as com-

pared 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. 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 dispatches and a much shorter route led to the left, by which I could divide the way better by 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.

*Oct. 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. On this the wood is rather open, consisting of a stunted species of eucalyptus, the grass apparently a hard species of *Poa*, affording but little nourishment. Sandstone, quartz, and ironstone, are the predominant rocks, although some of the most remarkable hills consist of trap.

Passing at length through a gap in a low ridge of granular quartz, we entered upon Bredalbane plains; three open flats of grassy land circumscribed by some 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, these being among the most eastern heads of the Lachlan.

The plains are situated on the high dividing ground or watershed between the waters falling eastward and westward, and have probably once been lagoons of the same character as those which still distinguish at other places this watershed or dividing ground. 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, viz. 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 very good for use, and the lake was then surrounded by dead trees of eucalyptus of 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 its present state, for the whole of the basin is now (Oct. 1836) a grassy meadow, not unlike these plains of Bredalbane.

It would be well worth the attention of a man of leisure to ascertain the lowest point in the country around Lake George, at which its waters on reaching their maximum height would drain off from its basin.

Several lagoons, apparently the remains of more extensive waters, occur between it 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.

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 hills 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 ridge 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.

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 now by comparisons 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 struck with the parched aspect of the country generally.

Goulburn plains consist of open downs affording excellent pasturage for sheep, and extending twenty miles southward from the township, their breadth being about ten.

I reached at twilight the house of a worthy friend, Captain Rossi, who received me with great kindness and hospitality. The substantial improvements that 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, with which and my friend's good cheer, I found his invitation to rest my horses for one day, quite irresistible.

*Oct. 31.*—“O art! thou distinguishing attribute and honour of humankind, who art not only able to imitate nature in her graces, but even to adorn her with graces of thine own. Possessed of thee the meanest genius grows deserving, and has a just demand for a portion of our esteem; devoid of thee the brightest of our kind, lie lost and useless, and are but poorly distinguished from the most despicable and base. When we inhabited forests in common with brutes, nor were otherwise known from them than by the figure of our species, thou taughtest us to assert the sovereignty of our nature, and to assume that empire for which Providence intended us!”—This passage got by rote as a lesson when at school, came into my mind this morning, on again partaking of the comforts and luxury enjoyed by civilized men.

A walk in the garden; a visit to the shearing shed; the news of colonial affairs in general; fat pullets cooked à la gastronome, and some good wine; had each in their turn rare charms for me. I had arrived in a country which I had myself surveyed, and where 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 in 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.\*

The Shoalhaven river flows in a ravine about 1500 feet

\* 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 12 chains shorter than the other proposed—but also avoided the steepest hills.

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. The limestone is of a dark grey colour, and contains very imperfect fragments of shells. We find among the features on these lofty river banks 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 much difficulty to a considerable depth over slimy rocks, having returned only because our candles were nearly exhausted. A current of air met us as we descended, and might have come from some crevice probably near the bed of the river. That water sometimes flowed there was evident, from some 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 *favosites*.

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 most soil available



either for cultivation or pasture, although on Bateman Bay, which is its limit on the south, much good soil cannot be expected, as Snapper Island at the entrance consists of grey compact quartz only, with white veins of crystalline quartz.

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 2,000 feet above the sea, being also so low in summer, that potatoes and gooseberries, for both of which the climate of Sydney is too hot, grow there luxuriantly. A rich field for geological research will probably be found in that neighbourhood. In a hasty ride which I took as far as Carwary in 1832, I was conducted by my friend Mr. Ryrie 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 that country at the head of the Shoalhaven river, from the ravines on the coast, I was shewn 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” that I have since explored. A part of the surface of that elevated country had subsided, carrying trees along with it to the depth of about 400 yards, leaving a yawning opening about 300 yards wide, resembling a gigantic quarry, at the bottom of which the trees still grew. In the eastern side of the bottom of this a large opening extended under the rock, and seemed to lead to a subterraneous cavity of large dimensions.

*Nov. 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 for 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.

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 were 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 was naturally the most level, and this happened 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. 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 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 marble chimney-pieces, tables, &c. now ornament most good houses at Sydney. This marble occurs in blocks over greenstone, and has hitherto been found only in that spot.

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





Cra. Zinc by Major Mitchell. (a Part of his Field Book)

Bronze Pe

Crowongang

Valley of Cox River

Kings Table Land

King Georges Mount

Mount Hay Tomah

Day & Hage Lith<sup>g</sup> to the Queen

PART of NEW SOUTH WALES from the summit of JELLORE .

London, Published by T & W. Boone

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 then 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, these being deep and inaccessible with sides of perpendicular rock, afforded 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.

\* My predecessor in office had declared this operation to be impracticable in such a country; but to this general survey I was pledged, in 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 fac-simile of a page of my field book, includes the view between north and north-west, taken for this purpose from the summit of Jellore, and extends over the ravines of the Nattai, to the crest of the Blue mountains. (Pl. 39.)

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 pl. 49.)

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 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.

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 irongangs had done some good work. I had now the satisfaction of travelling along a road whose every turn I had studied previous to marking it out, after a most careful survey of the whole country. On Crawford's creek I found that a bridge of stone buttresses had been nearly completed. I had endeavoured to introduce permanent bridges of stone-work in this colony instead of those in use, which being of wood were very liable to be burnt, and frequently required repair. We had among the prisoners some tolerable stone-cutters 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 request, in appointing Mr. Lennox, on my recommendation, to the super-

\* One of the most palpable consequences of the interruption my plan experienced was, that it interfered with the prospects of an inn-keeper, whose inn had already been half built of brick, in anticipation of the opening of the new line.



Major T. Mitchell del.

J. Fyffe lith.

London: T. and W. Boone, 1841.

MOYEGUENNY KING OF NATTAI

Published by T and W Boone, London.





intendance of such works, and on entering the township of Berrima this evening, I had the satisfaction at length of crossing one bridge at least, which was worthy of a British colony.

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 superintendance the bridge had been erected. The walls of a gaol and court-house were also arising, and a scite was ready for the church.

*Nov. 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. Bowrell, the highest part, consists of quartz or very hard sandstone. 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 the territory 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.

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 sea-shore. The Illawarra, a region in which the rich soil is buried under the matted creepers, tree-ferns, and luxuriant shade of a tropical vegetation, these being 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, this must become one of the most certain sources of agricultural produce in New South Wales. The sandstone extends to the summit of the trap range on the interior side, and its numerous ravines occasion the difficulties which have hitherto excluded wheel-carriages from access to the Illawarra. 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, but I was now obliged to turn with the present road towards the north-west, and to travel eleven miles over unfavourable ground in a direction 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 there.

*Nov. 3.*—The Razor-back 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. Around this trap range lies the fertile district of the cow-pastures, watered by the Nepean river. On proceeding along the road towards Campbell-town we cross this river by a ford which has been paved with a causeway, and thus enter the county of Cumberland. Here the trap-rock still predominates, and the soil is good and appears well cultivated in this part of the country, but there is a saltness 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, which would afford a permanent supply of good water. Passing through Liverpool, a town of 600 inhabitants, 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 bridges at this place, to the great inconvenience of the public; this being really a creek, rising and falling with the tide. This obstacle, and the steepness of the left bank, which was considerable, have both 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. This 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 been doing 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 on 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.

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.

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.

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 more than all these, as to cover about six-sevenths of the whole surface comprised within the boundaries of nineteen counties. Wherever this happens to be the surface rock, little besides barren sand is found in the place of soil. Deciduous vegetation scarcely exists there, no turf is formed, for the trees and shrubs being very inflammable, conflagrations take place so frequently and extensively 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 fires extend to every place. In the regions of sandstone, the territory is, in short, good for nothing, and is besides, very generally inaccessible, thus pre-

senting 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, where the quality may have been equal, yet throughout the wide extent of twenty-three millions of acres, only about 4,400,000 acres have been found worth having, while the owners of this appropriated land within the limits, have been obliged to send their cattle beyond them for the sake of pasturage. 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 upon 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 organized system. It can require no argument to shew 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 organized 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. With a well arranged system of roads radiating from such a harbour, even the sand stone wastes, extensive though they be, might be overstept, and the good

parts being connected by roads, the produce of the tropical and temperate regions could then be brought to one common market.

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 sea coast. 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 be ever scanty and uncertain in a country where there is so little moisture to nourish vegetation. We have seen, from the state of the Darling, 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 emigration from Europe.

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 fertilize a great 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, in general, well watered.

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, which are numerous on the face of these plains, as if intended by a bounteous Providence to correct the deficiencies of a climate otherwise too dry for an industrious and increasing people, by preserving in these abundant reservoirs the surplus waters of the large river, and indeed a finer country for cattle stations than this, can scarcely be imagined.

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 in order 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 sea-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.

On parts of the low ridges of hills near Cape Nelson and Portland Bay, are forests of very large trees of stringy-bark, iron-bark, and other useful species of eucalyptus, much of which is probably destined yet to float in vessels on the adjacent sea.

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 from thence along the skirts of the level interior country would require but little artificial levelling, and might extend to the tropic of Capricorn, or even beyond it, 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's Straits.

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, and this 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 natural deficiencies of water at particular places, or of affording the means of transport across the wide plains.

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 civilized 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 page for any geographical arrangement, whether of county divisions—lines of communication—or scites of towns, &c. &c. 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 foundation seems necessary where a large superstructure is likely to be built. The accompanying sketch of the limits I would propose for the colony of New South Wales, is intended to shew also how the deficiencies of such a region might be compensated, and the advantages combined for the convenience and accommodation of a civilized 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 being of difficult access by land, his success would depend much on such immediate means of communication with Sydney by water, and on the facility his position would thus afford, of shipping his produce to neighbouring colonies.

It would be establishing a lasting monument of the beneficial influence of British power and colonization, 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 with such means as England alone can supply :—

“ Here the great mistress of the seas is known,

“ By empires founded,—not by states o’erthrown.”

*Sydney Gazette, Jan. 1, 1831.*

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 depôt near Lake Repose on the 3rd of October, and that I arrived at this station to-day. 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 have 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 depôt.

“ I have to acknowledge the receipt of the letter containing your instructions of the 26th ult., which was delivered to me by Overseer Burnett on the 5th of this month, who arrived at the moment the first boat-load 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, &c. 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 depôt 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, &c.”

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 occurring, even to any of my papers or dried plants. 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.

Mr. Stapylton had also received my several communications, Nos. 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 first plan on this journey had been 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 when to dig. 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.

In my letter to Mr. Stapylton, sent by Burnett, I instructed 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,  $36\frac{1}{2}$  miles; making an error of only  $1\frac{3}{4}$  miles + or westward, in a chain-measurement continued from the station at Buree to the Darling; thence to the southern coast; and then back to this point on the Murrumbidgee.

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, at least in some parts, materials for comparing the atmospheric changes in the regions explored, with those occurring simultaneously on the eastern coast.

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 arrived in 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 safe once more into the yard of my office.

But Piper seemed to relish his share of triumph most, and certainly well deserved the kindness he met with on all sides. I clothed him in my own red coat, and 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 all his newly acquired consequence superlatively. He carried his head high, for (as he now found) every body knew him, and not a few gave him money. With this money 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 gypsy life about Sydney.

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, &c. 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.

The two Tommies still remained to be provided for, and 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.

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.

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 extraordinary, 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. 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 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, &c. By the accompanying list of words used at different places to express the same thing,\* 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 great island, and 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 dialects have been subsequently introduced from the northern or terrestrial portion of the globe.

I am not aware that any affinity has been discovered in single words between the Australian language and those of the Polynesian people†—but the resemblance of Murròà, the name of the only volcanic crater as yet found in Australia, to Mouna-roa, the volcano of the Sandwich islands, perhaps deserves attention.

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, with woolly hair like them. Little is known of the language and character of the unfortunate Tasmanian

\* See Appendix.

† 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.

aborigines, and this is the more to be regretted, considering how useful a better knowledge of either might have been in tracing the origin and history 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.

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

\* The History of New Holland by the Right Hon. William Eden, 1787, p. 99.

them in the face, and excited them to acts of desperate vengeance against all white intruders.

The habits and customs of the aboriginal inhabitants are remarkably similar throughout the wide extent of Australia, and seem to have been equally characteristic of those of Van Diemen's Land; and geological evidence also leads us to suppose that this island has not always been separated from the main land by Bass's Straits. The resemblance of the natives 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. 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 connexion of the inhabitants of Van Diemen's Land with the race in Australia, that a method of climbing trees new so well

\* 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.”—Vol. II. p. 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 viii. 15.

known as peculiar to the natives of Australia, should have been equally characteristic of those of Tasmania. The natives of Australia climb trees by cutting notches in the bark—by means of a small stone hatchet—and with each hand alternately. By long acquired habit 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 fig. 5, page 267,) 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 hollow 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 journies in the interior, I learnt 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 those of stone only; &c.

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. 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 shew to any one, invariably taking care when they do unfold them that no woman shall see them.\*

\* Genesis xxviii. 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 *Bactyli*, so celebrated in all Pagan antiquity were derived. These *bactyli* were stones of a round form,

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 this also connected with some superstition. 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 into the interior, and Dampier observed that the two fore-teeth were wanting in all the men and women he saw on the western coast. 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 *a 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.†

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 page 343), which is seldom to be found

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*, vol. i. page 40.

\* See Cambo, pl. 4. vol. i. &c.

† “We ought also to understand, Isa. iii. 21, and Ezek. xv. 12, of these nose-jewels, and to look upon this custom of boring the nostrils of the women as one of the most ancient in the world.”—*Harmer*, vol. iv. p. 312.

without some vestiges of both colours about the carving with which they are also ornamented.\*

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 seen in 1777.

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.†

Respect for old 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 bommerengs are at hand.‡ Young men are admitted into the order of the seniors according to certain rites, which their coradjes or priests have the sagacity to keep secret and render mysterious. 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

\* “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.*

† “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.*—Chap. xlvi. 37.”

*Harmer, vol. iv. page 436.*

‡ Leviticus xix. 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 Il. xv. 204, et xxiii. 788. Odys. xiii. 141.

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 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 emu. The threatened penalty was that young men on eating the flesh of an emu, would be afflicted with sores all over the body.

The non-existence of the native dog in Tasmania, is a remarkable fact, considering the resemblance of the human inhabitants, and the probable connexion at an early period, of that island with Australia. 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. And whence came the dog? for we find no remains of that genus among the fossils. 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 follower of man. 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 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, (pl. 33. page 69), 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 imperfection of their faculties, and it is satisfactory to find such direct illustrations of ancient history, among these rude and primitive specimens of our race.

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 *wammera*, 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 thrown by this means with great force and accuracy of direction; for by the peculiar method of throwing the spear, the *wammera* affords a great additional impetus from this most ingenious lengthening of the arm to that extent.†

The *bommereng*, a thin curved missile, about 2 ft. 4 inches long, can be thrown by a skilful hand, so as to rise upon the wind with a rotatory motion and in a crooked direction, towards any given point with great precision, and to return after a considerable flight to within a yard or two of the thrower; or, by first striking the ground near him, to bound so as to hit at a given distance, *en ricochet*, any object behind a tree.



*Bommereng.*

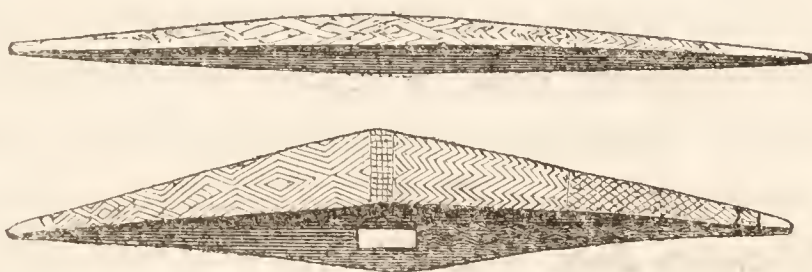
\* ————— “ Was the custom anciently the reverse of this? So it might be imagined from Isaiah xlix. 22. They shall bring thy sons in their arms, and thy daughters shall be carried upon their shoulders.”—*Harmer's Oriental Customs.*

† For the shape of the *Wammera*, see *Moyengully*, Plate 49, page 320; and the manner of throwing the spear may be seen in Plate 7, page 44. vol. I.



This is a very singular weapon, and 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 sea-coast, and better made, being often covered with good carving.\*

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 affords protection from missiles, chiefly by the facility with which it is turned round the centre or handle.



*Shield or Hieleman.*

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, &c. 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.

The native's method of cooking such animals is usually by digging a hole in the ground, making a fire in it, and heating the stones about. The kangaroo is placed in this hole with the skin on, and is covered with heated embers or warm stones.

\* That Dampier saw this weapon also on the western coast in latitude 16° 50', is evident from the following observation. "These *swords* were afterwards found to be made of wood, and rudely shaped *something like a cutlass.*"

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.

The young natives of the interior usually carry a small wooden shovel (see foreground figure, pl. 12. vol. 1.), with one end of which they dig up different roots,\* and with the other break into the large ant-hills for the larvæ, which they eat: the work 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 civilized 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.

Were it expedient here to enter 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

\* July 17, 1838. The plant mentioned at page 148, has at length flowered in the Horticultural Gardens at Chiswick, and proves to be a new species of *Picris*, of which Dr. Lindley has favoured me with the following description:—

*P. barbarorum*; sparsè hispida, foliis ciliatis supra nitidis scabriusculis radicalibus spathulato-lanceolatis subdentatis caulinis oblongis sessilibus amplexicaulibus recurvis dentatis integrisque, caule stricto ramoso, involucri foliolis lineari-lanceolatis acutis apice vel secus dorsum serie simplici pilorum longorum reflexorum appendiculatis, acheniis badiis longè rostratis transversè rugosis-simis disci sterilibus.

the interior parts of the country are uninhabited,"\* 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. 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 civilization 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; and 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 to the Europeans. The prohibition would be at least a proof of the disposition of the strangers to act as humanely towards the natives, as they possibly could. If wild cattle, on the contrary, became numerous, the natives might increase also in number, and if not civilized 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 on a larger scale, the unfortunate race whom we

\* History of New Holland, pp. 31, and 232.

have found on the shores of Australia, are not the less entitled to our protection.

Some adequate provision for their civilization 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 civilize and instruct these aboriginal inhabitants. That they are capable of civilization and instruction has been proved recently, in the case of a number who were sentenced for some offence to be confined with the chain gang 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 can also be very good shepherds when any of them are induced, by proper encouragement and protection, to take charge of a flock. One of the lads who travelled with me, named "Tommy Came-first," had previously tended sheep for a year, and had given great satisfaction.

My experiment with the little native, 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.





*J. L. M. del.*

FOR SALE AT THE LANCESHIRE CANAL, WILKINGTON, WILKINGTON, WILKINGTON.

*A Ficken bath*

*Printed & Published by T. & W. Boone.*

London, Published by T. & W. Boone.

## CHAPTER XV.

Geological Specimens collected—Connection between soil and rocks—Limestone—Granite—Trap-rocks—Sandstone—Geological structure and physical outline—Vallies of excavation—Extent of that of the Cox—Quantity of rock removed—Valley of the Grose—Wellington Valley—Limestone caverns—Description and view of the largest—of that containing osseous breccia—First discovery of bones—Small cavity and stalagmitic crust—Teeth found in the floor—A third cavern—Breccia on the surface—Similar caverns in other parts of the country—At Buree—At Molong—Shattered state of the bones—Important discoveries by Professor Owen—Gigantic fossil kangaroos—*Macropus Atlas*—*Macropus Titan*—*Macropus indeterminatum*. Genus *Hypsi-prymnus*, new species, *indeterminatum*.—Genus *Phalangista*—Genus *Phascalomys*—*Ph. Mitchellii*, a new species—New Genus *Diprotodon*—*Dasyurus lanianus*, a new species—General results of Mr. Owen's researches—Age of the breccia considered—State of the caverns—Traces of inundation—Stalagmitic crust—State of the bones—In a state of putrefaction when first deposited—Accompanying marks of disruption—Earthy deposits—These phenomena compared with other evidence of inundation—Salt lakes in the interior—Changes on the sea coast—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—At Wollongong—Cape Solander—Port Jackson—Broken Bay—Newcastle—Tuggerah Beach—Bass's Straits.

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.

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* occurs of different ages, and quality, presenting a considerable variety.

1st. 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.

2nd. A dark grey limestone appears, at perhaps a still greater height on the Shoalhaven river; in immediate contact with granite.

3rd. A crystalline variegated marble is found, in blocks, a few miles westward of the above, near the Wollondilly.

4th. 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*; *crinoideæ* are also found abundantly in the plains, and distinguish this limestone from the others above-mentioned.

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 page 38, vol. 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, 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.

*Obs.* 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 N.N.E. 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 coast-lines to a course from the west of south to the east of north, on the main land, and even in the islands

\* An account of some Geological specimens from the coasts of Australia, by William Henry Fitton, M.D., F.R.S., V.P.G.S., &c. 1826.

heath, and on the south to Murrumbidgee 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 2150 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 Clywd, 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 2200 yards wide, and flanked on each side by points about 800 feet high. 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, and calculating for the inclination of the Cox and other vallies, then, 134 *cubic miles* of stone must have been removed from this basin of the Cox alone.

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. vol. 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, &c. has been removed. There are no accumulations of sand, but great abundance of huge blocks of rock, scarcely worn by attrition, in the bed of the stream, neither do we find in the larger channels of the rivers below, any sandy deposits—on the contrary, the very rich alluvium which distinguishes the banks of the Hawkesbury.

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

\* 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 vallies.



# Geological Sketch of WELLINGTON VALLEY

Scale of One Mile



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 of this valley, hills of greater elevation, consisting of a red sandstone and conglomerate, extend parallel to the limestone; and, on the east of it, is another range composed of trap rocks. The basis of a tract, still further eastward, dividing the water-shed 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.

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. (Pl. 25.)

We first descended the fissure at the mouth of the large

cave, and then clambered over large 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.

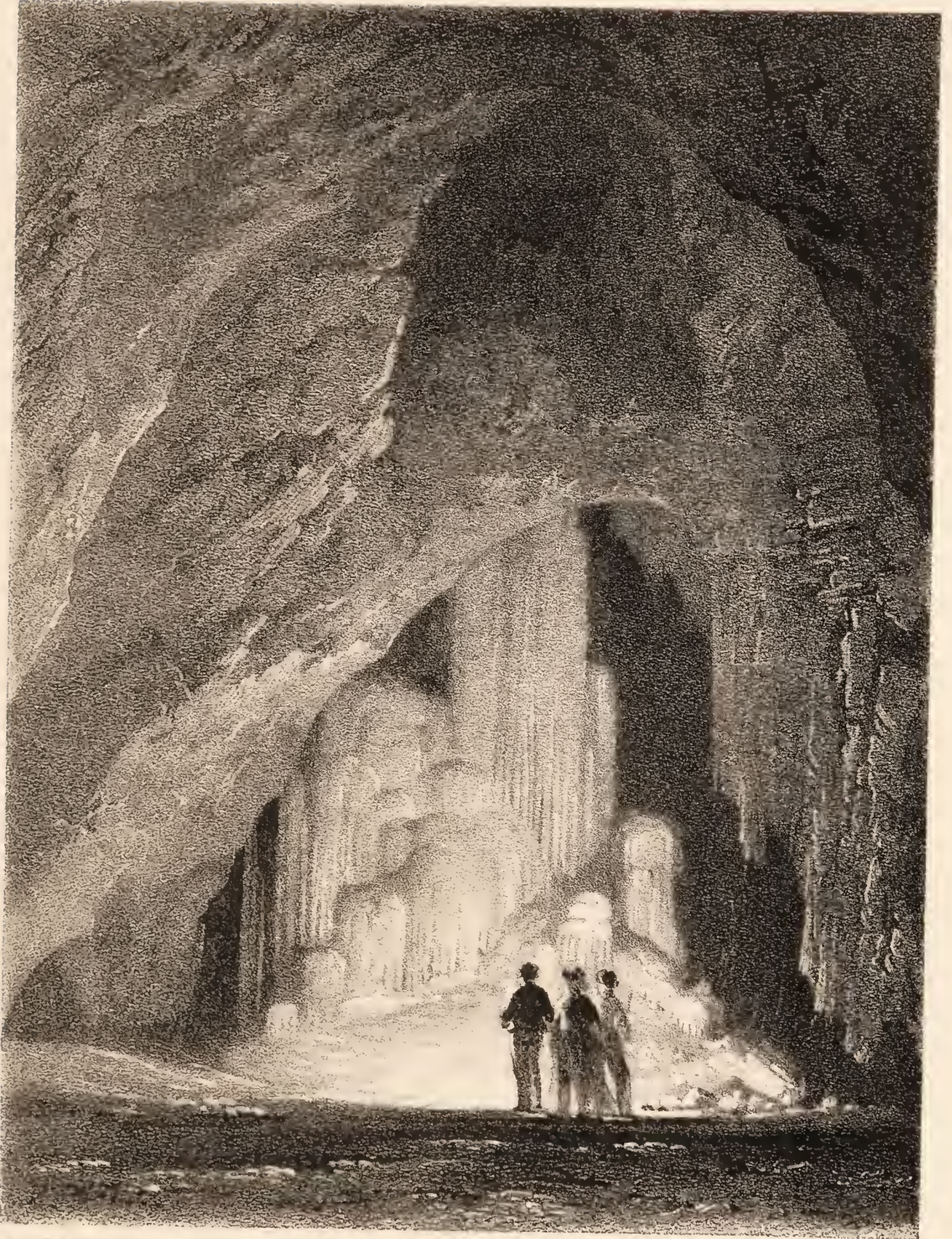
On a corner of the floor, behind the stalactite and nearly under a vertical fissure, we found a heap of dry white dust, into which one of the party sunk to the waist.\* (See Pl. 23. G.)

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

\* 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 Geological Society for 1831.



THE GREAT CAVERN AT WELLS, LINCOLN COUNTY, W. VA.

A. Becker del.

1880

Dev. & Eng. by the U.S. Geol. Surv.









Section and Groundplot,  
of two CAVERNS at  
WELLINGTON VALLEY.

Scale of Feet  
20 40 60 80

From Nature 6, in stone 4, March 21, 1862.

Engraved by T. W. Burne London

Drawn by J. H. Stoddart

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 Pl. 23.)

That this cave had been enlarged by partially sinking of the floor is not improbable, as broken stalagmitic columns and pillars like broken shafts, and once probably in contact with the roof, are still apparent. (See view of large cave, Pl. 26.)

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 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 (Pl. 27). 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.

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 shewn in the accompanying view of the cave, (Pl. 27) 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 Fig. 12 and 13, Pl. 32.)

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. We then reached a small cavern ending in several fissures, choked up with the breccia. One of these crevices (K, Pl. 23) terminated in an oven-shaped opening in the solid rock (Pl. 28) 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



H. H. Mitchell del.

STRATIGRAPHY OF THE CANYON OF THE COLORADO

PLATE 27

U.S. GEOLOGICAL SURVEY



roof adjoining, as if this substance had formerly filled the whole cavity. At about three feet from the floor (Pl. 28) the breccia, in this cavity, 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 shewn in Pl. 28). 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.

On digging (at K) into the soft red earth forming the floor of this recess, some fragments of bone, apparently heavier than those of 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 (Fig. 6, Pl. 29), a large tooth of an unknown animal (Fig. 4 and 5, Pl. 32), and one resembling some fragments of teeth found in the breccia. (See Figs. 6, 7, 8, and 9, Pl. 32.)

We next examined a third cave about 100 yards to the westward of the last described. The entrance, like that of the first, was tolerable 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.

Perceiving that the breccia, where it occurred, 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, Pl. 23.) 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 shewn in the accompanying drawing of a large and remarkable specimen. (Pl. 24.)

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.

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 a 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.





FOSSIL OF UMC 100



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 it proved also to be breccia containing fragments of bone.

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.

*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—

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 *Hypsi-prymnus* by Illiger. The remains of this species consist of a fragment of the right ramus, of the lower jaw. (I) Fig. 1, Pl. 29.

Sp. 2. *Macropus Titan*. O. I give 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 *Macr. major*. The remains of this species consist of a fragment of the right ramus of the lower jaw. (II) Fig. 3, Pl. 29.

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\*) Fig. 4 and 5, Pl. 29. 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 *Macr. 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, Fig. 6, Pl. 29.

II. *b.* Lower extremity of right femur.

II. *c.* Lower extremity of right femur, with the epiphysis separated, shewing its correspondence in age with the animals to which the fossil jaws belonged.

II. *d.* 5th Lumbar vertebra, Fig. 8, Pl. 29.

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. indeterminata.* 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 *Macr. 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. indeterminata.* From want of skeletons of existing species of kangaroo I must also leave doubtful the specific determination of a species smaller than *Macropus*



2



(Recent)

3



4



5



6



6



7



(Recent)



*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 referrible to the genus *Macropus*, but they do not afford information of sufficient interest or importance to be specially noticed.

#### GENUS HYPSSIPRYMNUMS.

*Hypsiprymnus*, *sp. indeterminata*. (No. VI.) Fig. 1 and 2, Pl. 30. A portion of 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*. (No. VI. a.) Fig. 3, Pl. 30. Part of the right ramus of the lower jaw, exhibiting a corresponding stage of dentition.

Obs. 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.

No. VII. Cranium, coated with stalactite.

No. VII. a. Part of right ramus, with spurious and 2nd molar.

No. VII. b. Right ramus, lower jaw.

Obs. The two latter specimens disagree with *Phal. 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. *Phasc. Mitchellii*. (VIII.) Fig. 4, Pl. 30. Mutilated cranium.

(VIII. a.) Fig. 5, Pl. 30. Part of lower jaw, belonging to the above.

(VIII. b.) Fig. 6, Pl. 30. Right series of molar teeth *in situ*.

(VIII. c.) Right ramus of the lower jaw.

Obs. 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, any one 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*."

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.) Fig. 1, Pl. 31. 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 Fig. 2, Pl. 31, and a section of



Fig 1



Fig 2

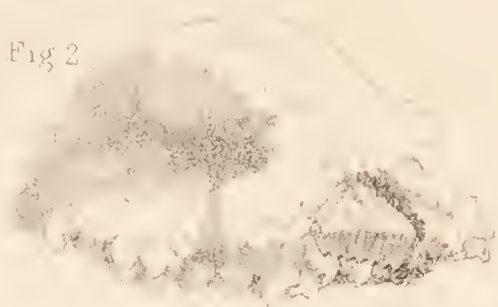


Fig 3



Fig 4

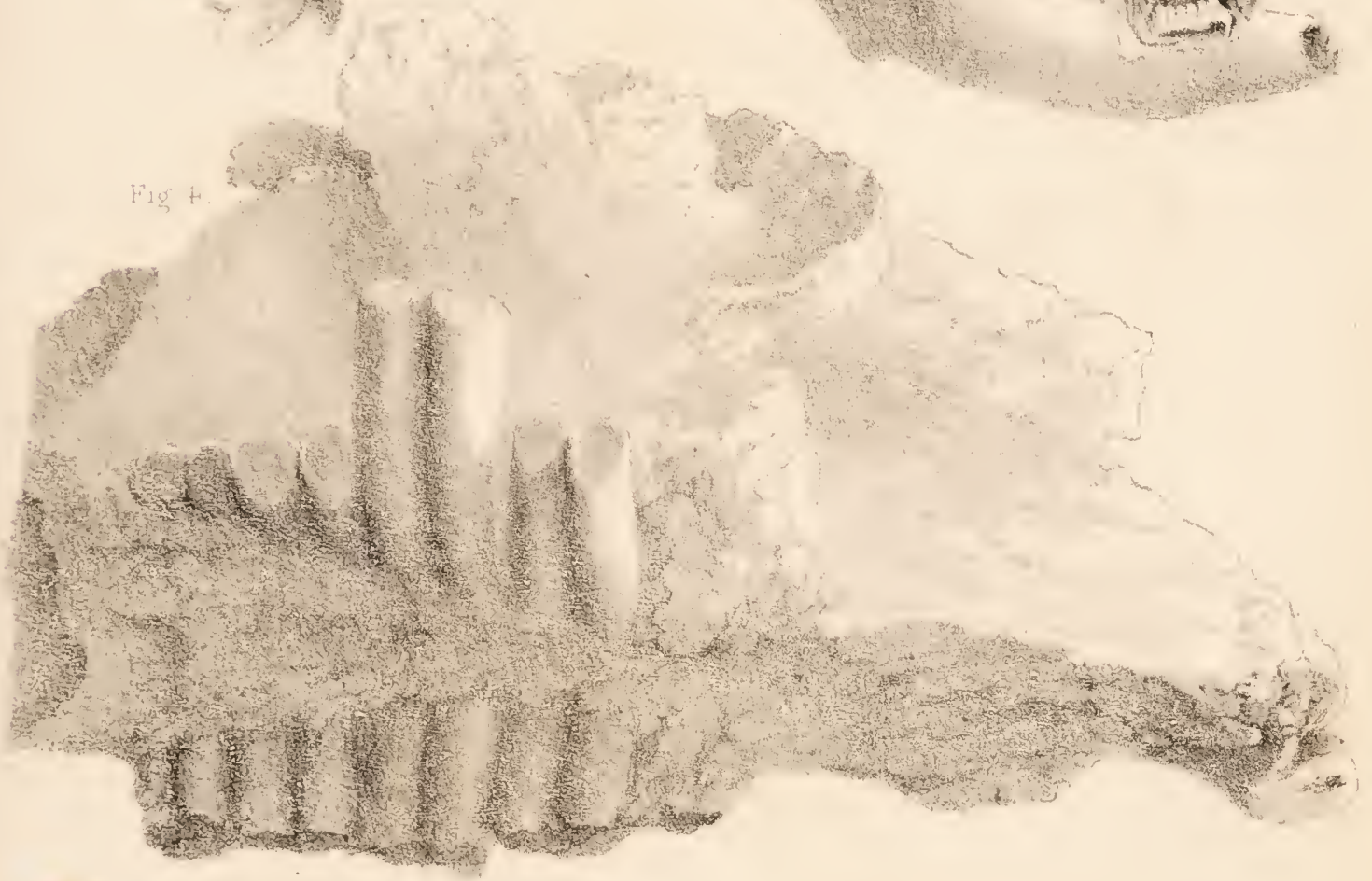


Fig 5



Fig 6



Fig 7









Fig. 2.

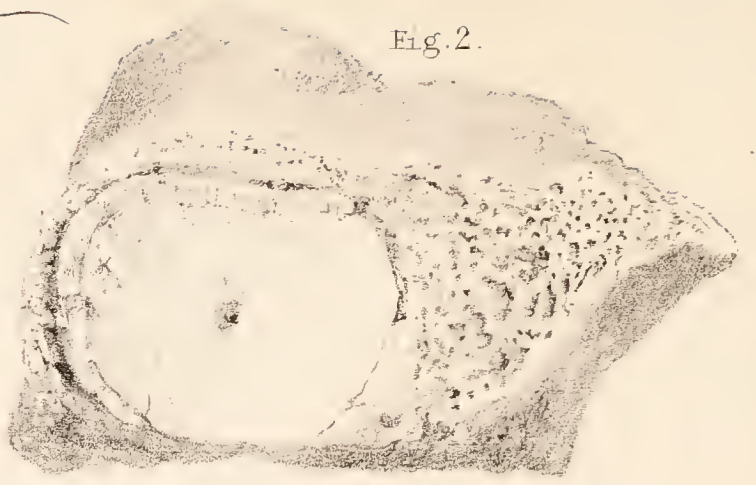


Fig. 3.



Fig. 4.

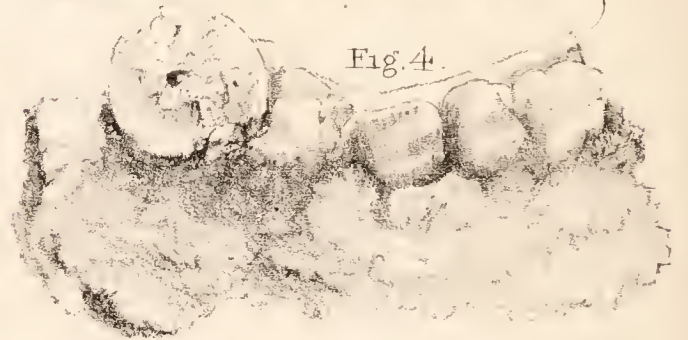


Fig. 5.

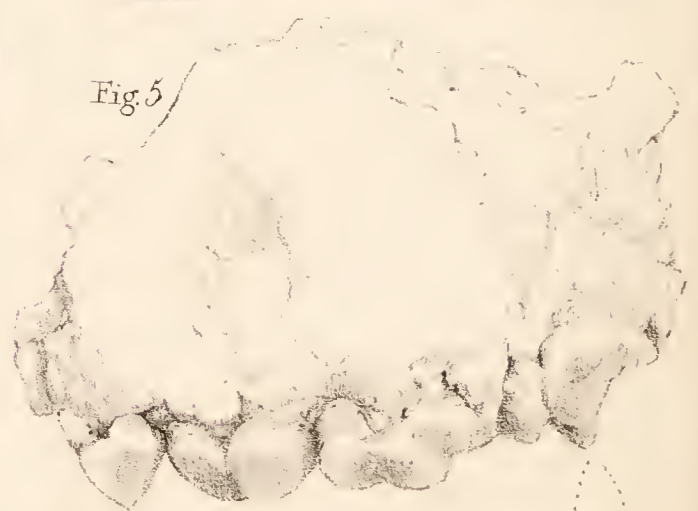


Fig. 6.



Fig. 7.



the wombat's teeth, in Fig. 7, Pl. 30.) 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*.

*Das. laniarius*, O.—I apply this name to the species to which the following remains belong :

XI. Fig. 3 and 4, Pl. 31. Portions of the left side of the upper jaw.

XI. a. Fig. 5, Ditto.

XI. b. Fig. 6. Left ramus lower jaw, with last grinders.

XI. c. Fig. 7. Anterior part of the right ramus of lower jaw.

This species closely resembles *Das. 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. Fig. 7), which are wider apart ; leads me to doubt whether it is the lower jaw of *Das. laniarius*, or of some extinct marsupial carnivore of an allied but distinct species.

The general results of the above examination are, 1st. That the fossils are not referrible to any known extra-Australian genus of mammals.

2nd. That the fossils are not referrible from the present evidence, to any existing species of Australian mammal.

3rdly. That the greater number certainly belong to species either extinct or not yet discovered living in Australia.

4thly. That the extinct species of *Macropus*, *Dasyurus*, *Phascolomys*, especially *Macr. Atlas* and *Macr. Titan*, are larger than the largest known existing species.

5thly. 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, &c.

(Signed)

RICHARD OWEN.

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.

Dry earth occurred in the floor of both the caverns at Wellington Valley, and in the small chamber (Pl. 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.

In the external or upper part of the same cave, as shewn in Plate 27, 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.



MARKS OF SUBSIDENCE IN THE BRECCIA CAVERN ( at K )

Copy by T. Mitchell

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Prof. Proctor's pen. No. 100.





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. 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, shew 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.

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, Pl. 31.)—On the other hand, it would appear from the position of the teeth in one skull (Fig. 4, Pl. 30), 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 (Fig. 2, Pl. 32), 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 (Fig. 1, Pl. 32), 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. 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 is found like mortar between them, in situations eight or ten fathoms under ground.

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 under water, 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 con-

Fig. 1

Fig 2

Fig 3

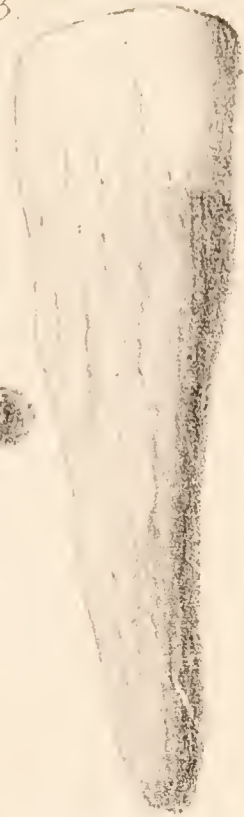


Fig 4

Fig 5



Fig 6

Fig 7



Fig 8



Fig 10

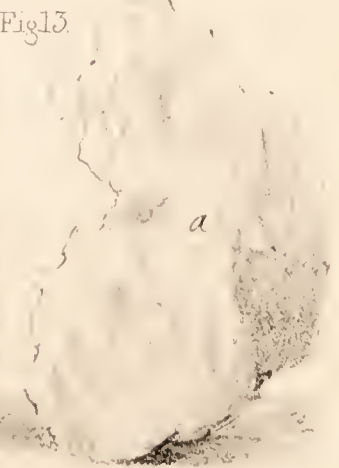
Fig 9



Fig 12

Fig 13

*Largest bone reduced.*



*Scale - Inches.*



sidered the submerged vallies of a surface originally scooped out by erosion, at a period when the land stood higher above the sea.

The hills on the margins of the Australian salt lakes are always on the north-east side, or opposite to 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 least perfect; but whether worn by time or sweeping inundations, I cannot pretend to say.

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 page 266.)

In those hills beside salt lakes on the plains, a tendency to regular curvature was the chief feature: the relative situation was always the same with respect to the water and the wind; 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.

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 main land by mounds of sand. The point of Wollongong was formerly an island, and is now only connected by drifted sand-hills, with the scite of the township.—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 main land by the neck of sand which separates Botany Bay from Port Hacking. 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. Baranjuey, the south head of Broken Bay, is connected only by a low beach of sand. 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. Brisbane Water, Toggerah Beach, and Lake Macquarie, are also striking proofs of change

\* See note to page 266.

of the same character as Port Jackson, especially as they occur in a country possessing no inland lakes, and along a coast line which is very even and straight in other respects.

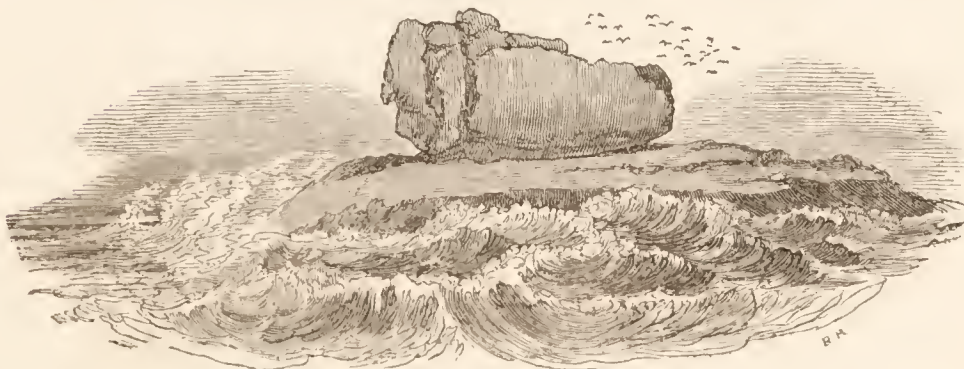
The line of rocky islets extending across Bass's Strait, seems to be the remains of land once probably continuous between the two shores, when the current was still active in the channel of the Glenelg, and the sea had not penetrated far within the heads of Port Jackson.

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, lower, with respect to the land, than they are at present.

ROCKS IN BASS'S STRAITS.



*Pyramid Rock bearing E. dist. 3 miles.*



*Rock (of Granite) bearing E. by N.*





# APPENDIX.

## VOCABULARY OF WORDS HAVING THE SAME MEANING IN DIFFERENT PARTS OF AUSTRALIA.

	King George's Sound.*	Raffles' Bay.†	Karaula in lat. 29°.	Wellington Valley.‡	Lachlan at Regent's Lake	Moreton Bay.§	Wollondilly River.
Head	<i>Caüt</i>	Warbee	<i>Kanga</i>	Bullong	Ballang	Maggol	Bubyong
Hair of the head	Kion	Away, ea	. .	. .	Ooran	Kàbboey	Darrenc
Eyes	<i>Mial</i>	Dala	<i>Mil</i>	. .	<i>Mil</i>	<i>Mill</i>	<i>Mil</i>
Nose	Chiangohet	Y, ē, ne	<i>Murro</i>	. .	<i>Murro</i>	<i>Murro</i>	Nógorro
The cheeks	Gnieluck	Adiera or adgara	. .	. .	Tàkal	Tággal	
The beard	Gnanuck	La mur mur	Yerry (beard or chin)	. .	Yàrrenc	Yarreu	Yarrenc
The lips	Tawa	La marjala	. .	. .	Moondo	Tàmbora	
The teeth	Gnoluck	<i>Ei yeu</i>	<i>Elera</i>	. .	<i>Yeèrang</i>	<i>Deer</i>	<i>Yerra</i>
The tongue	<i>Talien</i>	<i>Arrad</i>	<i>Talley</i>	. .	<i>Tallèng</i>	Choero- gòng	<i>Darline</i>
The mouth	Talgomet	Là wae	Nyèy	. .	Nyàn	Wongah	Mundo
Ears	Twany	O, tomare	Binna	. .	Ota	Bidna or pidna	Kurré
Neck	<i>Woort</i>	Ebanaiche	<i>Oorr</i>	. .	<i>Worro</i>	. .	Kanga
Breast	Twambar	Anabad	. .	. .	Bergin		
Mamillæ	Piap	O, ye or age	Nammo	. .	Nammo	Hammo	Ny-apung
Abdomen	Copul	Ei, wood	Cunna	Barabing	Porpin	Diggery	Bendy
Umbilicus	Peell	Wan, hor, eæ	. .	. .	Berâyñ	Móberee	
Nates	Pāre	Abaicha	. .	. .	. .	Nárral	
Penis	Maik	Ma, mure	. .	. .	Dònn	Doogi or Toogi	
Thighs	Tawell	Etanela	. .	. .	Tarra	Tarra	Darra
Leg	Woolet	Murando	. .	Böoyon	Bòyo	Pyoo	
Foot	<i>Tian</i>	E lood	<i>Tinna</i>	<i>Dinnung</i>	<i>Tinnang</i>	<i>Chidna</i>	<i>Dyenna</i>
Toe	Perigur	Eiman	. .	. .			
Shoulders	Moonk	Nandie, ya	Wallar	. .	Cannà	Kicka	Parowra
Elbow	<i>Gnoyong</i>	Mirenan	. .	. .	<i>Nyòona</i>	O'pee	<i>Nguna</i>
Hand	Gnoinek	Maneia	} <i>Marra</i>	<i>Murra</i>	<i>Màrra</i>	<i>Mùrrah</i>	<i>Màrrola</i>
Fingers	<i>Marr</i>	Eieman					
Nails	Peerr	Mana- weyiæ	Ullo	. .	Eòlo	Gillin	
Scarifica- tions	<i>Shamburu</i>	Poolark	<i>Moober</i>	. .	<i>Mòmber</i>	Mùlgarrah	
Back	. .	. .	Paggor	. .	Pèra	Mòbarah	
Knee	. .	. .	Parronè	. .	Pongang	Poon	Mutoit
Band round head	. .	. .	Uluguèr	. .	Nyolongér	Parra bone	
Younger brother	. .	Nabarēē	. .	. .	} Meèagan		
Elder brother	. .	Nad, ie, man	. .	. .			
Girl	. .	Niad	. .	. .	Einergùng		
Boy	. .	Ana, don, ye	Toobrad- yùr	. .	Boorai	Kipper, Jo- hannin	
Black woman	. .	Yal-kuhec	Einèr	Innèr	Einer	Marintin	

\* From Mr. Scott Nind.  
† Dr. Wilson.

‡ Mr. Larmer.  
§ Major Clunie, late Commandant.

	King George's Sound.	Raffles' Bay.	Karaula in lat. 29.	Wellington Valley.	Lachlan at Regent's Lake	Moreton Bay.	Wollondilly River.
Men	. .	Orie	Pallòlar (a man)	Myen (or Gibbree)	Myën	Mullar, (a man)	Nain
Dog	Toort	Alee	Myeye	Mirree	Mérry	Mèhee	Merrigang or Warri- gal
Kangaroo	Worr	Weidgiet	Bandar	Bundari	Bundar or Wam- bøyen	Gróo man	Wambùyn (young one Booró)
White cockatoo	Maniet	Marbit	. .	. .	Moorai		
Black cockatoo	Gnolap	Alowarae	. .	. .	Weèta- gallar		
Guanna Snake	Manar Norn	Arāmbö Alondjeian	. . . .	. . . .	Tollày Yappa	Toom-go (a black snake)	Wèrrika Tyerraweet (black snake)
Mosquito	Neymam	Ming ming	. .	. .	Moggyn		
Fish	Walguh	Amadju	Queer	Gooyee	Gooya		
Salmon	Gnarrhee						
Small fly	Wàrrul, (honey fly or bee)	Moork (common fly)	Cow (small fly)	. .	Bòrrimal	Kooneé-da (bee fly)	
Emu	. .	. .	. .	Urroong	Nyorròyu		
Opossum	. .	. .	Cooy	Willee	Willy	Kòpee	Ooallè
Duck	. .	. .	Carràn- guey	Poodung- bung	Wamboyn- bàng	Gnowo or now-woo	
Swan	. .	. .	. .	Dundoo	Booràlgan		
Lizard	. .	Monobo- gora	. .	. .	. .	. .	Màikatong
Cockle	. .	Mona	. .	. .	Pindògayn (muscle)		
The sun	Ke ait	<i>Moorhee</i>	<i>Morrè</i>	Yerry	Eery	Bagee or begee	Bùndil
Moon	Mi uck	Arana	Killè	Geewung	Kewang	Gillén	Tyeluck
Stars	Tiende	Woolerick	. .	Geralong	Geralong	Mirrigin	Cuàngy
Sky	Mā ār	Nanejuck	Eurro	. .	Goonangu- long	Koodna	
Clouds	Queel	Argai or ardjài	. .	Yourung	Eùrrong	Koah	
Wind	Coly-ern	Maiaia	. .	. .	Kérrar	Bòran	
Rain	Kiáp	Rawàn	Yarrainda	Kalin	Tolbà	Joòrum Jùrrum	
Night	Kateak	Arambolk	Gnurru ka- lakala	Nurroong	Nyòrrong	. .	Burrie
Sea	Ma-mort	Garagar or garahar	. .	. .	Bànbar	Goònko	Engaet- yung
Land	Mooree	Orad	. .	. .	Tàkal	Koondgil	
Salt water	Calumo	Manargo	. .	. .	. .	Táh-bil, ban	
Fresh water	Kiap	Oboit	Callè	. .	Càlle	Tah-bil kapping	
Wood	Cockur	. .	. .	. .	Keegal		
Spear	Kiet ye mer	Burne, Burai	Tolo	. .	Tòlo	Pillar or peelar	
Bomereng	Mirr	Rogórouk	Bommài	. .	Bàrgan	Párragan	
Knife	Taap	Mürë mürë	. .	. .	Kayenda		
Hatchet	Coit	Lee buck	. .	. .	Tawin		
Ship	Cayburugh	. .	. .	. .	Màrring		
Boat	Potora	. .	Barorwarga				
Food	Waukun	Carga	. .	Ding	Wakka		
House	Toolgoit	Rambal	. .	. .	Torrà		
Smoke	Pooie	O-lau	. .	. .	Boondo	Toómo	

	King George's Sound.	Raffles' Bay.	Karaula in lat 29°.	Wellington Valley.	Lachlan at Regent's Lake	Moreton Bay.	Wollondilly River.
Shells	Natang	Luda dnda	.	.	.	Newcane	
Fire	.	.	Wè	Weein	Wè	Tahlo or dahlo	Canbè
Lightning	.	.	Poomo-andie	Miggee	Miggy	Tàngan	Marrùp
Thunder	.	.	Dooloomy me	.	Mùrrobo	Mògarra	Murrongùl
Bread To-morrow	Maniana	.	.	Wigyea Nurroong-gul	Wikkày Noorongal	.	Porrendé
Yesterday	Kata Kier	.	.	.	Murrom-bàng		
Sponge Grass	.	Manburke Wara	Carràr	.	Pòkkon	Bùngil	Burràngu-ràng
Honey	.	Woonga or wonga	.	.	Nùarro	Kàbboy	
A string	.	A tōo roõ	.	.	Màwer		
One	Keyen	Loca	Mal	Woonbi	Nyoonbi	Kámarah	Medung
Two	Cuetrel	Orica	Bulàr	Bulla	Bulia	Bulla	Pulla
Three	Murben	Orōngarie	Culebà	Bulongonbi	Bulòngonbi	Mudyàn	Colluerr
Four	Pool	.	Burrùl	Bungoo	Bòngo	Bulla bulla	Borrè
Five	Qnoor	.	Murrebo-lèy	Bungulo-lon	Matto (holding up the fingers)		
Six	Mimembul	.	Mal Kangabula				
Seven	Nemutcal	.	Bular Kangabula				
Eight	Gnalia-conga	.	Culebà Kangabula				
Nine	Walleroop	.	Burrae Kangabula				
Ten	Nièlene-lawar	.	Tapirrà (2 hands held up)	.	Matto matto		
Black	Morum	Aroongulk	.	.	Bòmbirr		
White	Tondelger	Lool-bàrě	.	.	Barrorr		
Hot	Carugor	Lă, mēt, yě, lō	.	.	Wògell	Yawahnee	Wenyò
Cold	Mulgan	Maun	.	.	Balludin	Tan-tan	Carréta or Cayingul
Good	Cu-ap	Mutē	.	Murrumbung	Murrumbàng	Mùrroonbah	Coolaye-tang
Bad	Wae kier	.	.	Iugle	Nánnai	Wadly or Wadlee	Garraguin
Dead	Kipiuck	Ande	.	.	Ballo	.	Berraga
Asleep	Copiel	Maluna	.	.	Eurày		
Awake	Teramen	.	.	.	Wégy		
Bald	Shendac-kutict	A bälă	.	.	Dinder-bàld		
Sick	Pootongur	Moort	.	.	Yingel		
Large	.	.	.	Nurrawal	Beròng, Mònon, (big man)	Kooróm-bah	
Small	.	.	.	Boobijung	Cógin, Babijung (small man)	Parrapa	

	King George's Sound.	Raffles' Bay.	Karaula in lat 29°.	Wellington Valley.	Lachlan at Regent's Lake	Moreton Bay.	Wollondilly River.
Frightened	. .	. .	. .	Gěärā	Gèdra		
Concluded, finished	. .	Y-acko					
To swim	Wapwar	May, yan, aya	Cooley	. .	. .	Uroðela	
To laugh	Kankur	. .	Kindamin- diè	. .	. .	Gindi	Berrigà
To go	Kulgur	A, rad, ban	. .	Yănăgēē			
To be off	Puttocco	. .	. .	. .	. .	Yellah (be- gone)	
To come	Yerago	. .	. .	Diněguă			
To eat	Nangur	Baba	Daldey	. .	. .	Tùltoo	
To be hun- gry	Yul up	. .	. .	. .	. .	. .	Thèulda
To be full	Moor ut	. .	. .	. .	. .	. .	Bendèya
To be thirsty	Culum	. .	. .	. .	. .	. .	Gnàetyung
To be (or I am)	. .	Obe					
To sleep	. .	Woola	Babeè	. .	. .	Bóo-gan	Nyambur- ro negà
To walk	. .	. .	Yanna- andy	. .	. .	Yarreto	
To jump	. .	. .	Parreè	. .	. .	Toólpon	
To cry	. .	. .	Bäenmuga	. .	. .	Koongarrà	
To drink	. .	. .	Caling- aròguey				
To sit	. .	. .	Narrèe	Weya	Nàngarry	Gin-nila	
To stand	. .	. .	Warrèy	Warrung- ga	. .	Jil-lila	
To ease himself	. .	. .	Coona				
I go away	. .	. .	. .	. .	. .	. .	Yerra bun- yà
Go away !	. .	. .	. .	. .	. .	. .	Yerra bà (waving the hand)
Yours	. .	. .	. .	. .	. .	. .	Gòlanga nè
Mine	. .	. .	. .	. .	. .	. .	Gòlanga yà
Long	. .	. .	. .	. .	. .	. .	Curràr
Short	. .	. .	. .	. .	. .	. .	Warrèmu- gò
Now	. .	. .	. .	. .	. .	. .	Yengo
Yes	Kai kai	Eē eē	Nàwa	. .	. .	Ya-why	Gnè
No	Pall pall	No	Wēri	. .	. .	Baal	Garragin
By and bye	Poortack	Goo, goo	. .	. .	. .	Yarrepo	
Iron	. .	Will-mor					
A nail	. .	Will-morōō					
Net worn on the head	. .	Mungedēra					
A canoe	. .	Lipē lipē	. .	. .	. .	Gondole or Condole	
Smallpox	. .	Oie boie					
A gift	. .	Niday					
Yam	. .	Merry-iet					
A dance	. .	Dagara wamba	. .	. .	. .	Kallee-la	
A stone	. .	Arickba	Cúllur	. .	. .	Moòla	Currobùng
Give it me	. .	Yad, ma, rew					
Come here	. .	Ah,wee	. .	. .	. .	Pál-ka	Coy

	King George's Sound.	Raffles' Bay.	Karaula, in lat. 29°.	Wellington Valley.	Lachlan at Regent's Lake	Moreton Bay.	Wollondilly River.
Come with me	. .	Go, wee					
Surprise (expres- sion of,)	. .	(A shrill and long whis- tle)	A sound like drawing a cork repeat- ed quickly. Quarramè	. .	. .	Baggoro	
A tree	. .	. .	Borr	. .	. .	Mocamba	Gnollieng
Girdle of opossum wool	. .	. .	Bundâr	. .	. .	. .	Carrèng
Cloak (of skins)	. .	. .	Town	. .	. .	Darra	Daourè
Earth	. .	. .	Ooroga	. .	. .	Puyso	
Calf of the leg	. .	. .	Cabba	. .	. .	Béeps	
A hill	. .	. .	Buàr	. .	. .	Kalgreé piu	
Beads (of reeds worn round the neck)	. .	. .					
Stick or staff	. .	. .	Cunnè	. .	. .	Túllong	
Birds	. .	. .	Oorowen- goär or wengo wengo	. .	. .	. .	Bootyàn
A shield	. .	. .	. .	. .	. .	Góon tan	
Native huts	. .	. .	Toðra	. .	. .	Umpee	
Sleepy li- zard	. .	. .	Mangorry				
An owl	. .	. .	Bonoonor				
Father	. .	. .	. .	Bobeen	. .	. .	Curà yn
Mother	. .	. .	. .	Goonee	. .	. .	Gammuang
Brother	. .	. .	. .	Kalmun			
Sister	. .	. .	. .	Moagun			
Child	. .	. .	. .	Boori	. .	. .	Cootá
Make haste	. .	. .	. .	Burri			
Bring it	. .	. .	. .	Goügädine			
Take it	. .	. .	. .	Burruma			
Look !	. .	. .	. .	Narga-nar- ga			
What name?	. .	. .	. .	Minyung			
Sleepy	. .	. .	. .	Nuree			
Stop !	. .	. .	. .	Wärräthä			
You speak false	. .	. .	. .	Yambuldari			
Give it to me	. .	. .	Ockä	Oonga-dine			
Take care	. .	. .	. .	Burrung- gee			
Great many	. .	. .	. .	Cullung gu bung			
You	. .	. .	. .	Judoo			
Me	. .	. .	. .	Uttoo			
Do not	. .	. .	. .	. .	. .	Wonnah	
Day	. .	Bonagee	. .	. .	. .	. .	Burräl
Stump	. .	Walaroo	. .				
There	. .	. .	Etu etu (pointing)				
<i>Ac. longifo- lia</i> of the river bor- ders	. .	. .	Winganun- gandyèr				



PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.		WIND.	STATE OF THE SKY, &C.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.				A.M.	P.M.		OUT.	IN.		
1856. March 21. Camp of Chilberengaba, 20 feet above the bed of the Byrne's Creek.	7		29.144	48		Calm.	(At sunrise ther. 43°) Clear.	7		50.220	58	66	Clear; haze in horizon.	
	8		29.192	56½		S.	—	8		50.224	60	65.5	Cumuli generally.	
	9		29.240	68		—	—	9		.233	63.5	66.0	Overcast cumuli.	
	10		29.174	69½		S.E.	Cirrocumulus in the E.	10		.236	65.5	67	— showery.	
	11		29.191	71		—	—	11		.240	65.6	67	Large Cumuli.	
		No on.	29.192	76½	61	N.N.W.	Cumulus chiefly in E. or N.E.	No on.		.230	71.0	68.2	Overcast. Large Cumuli.	
		1	29.183	77		S.	Overcast, with cumulostratus.	1		.220	69.0	68.0	Do.	
		2	29.100	78		—	—	2		.210	69.8	68.6	Do.	
		3	29.086	75		Calm.	Cumulus. (Zenith clear.)	3		.210	68.0	68.5	Do.	
		4	29.095	77		—	—	4		.208	65	69	Do.	
		5	29.060	74		S.	Cirrocumulus in the N.	5		.214	64	68.7	Do.	1173
March 22. Camp N.W. of Marga named Cuenbla.	6		29.100	68½		Calm.	Clear.	6		.220	63.5	68.0	Cloudy	
	7		29.150	64		—	—	7		.226	59	67.5	Clear.	
	8		29.142	57		—	—	8		.238	58	67.3	Haze E. Clouds W.	
	9		29.138	57		—	—	9		.244	56.5	67	Hazy in the E.	
	10		29.142	56½	51	N.	Clear with light clds. of cirrostrat.	10		.246	56.0	66.8	Clear and calm.	
	6		29.148	43		Calm.	—	6		30.206	49.0	64.0	Clouds and haze.	
	No on.		29.238	76		—	—	No on.		.204	65	66.5	Overcast, no rain.	
	7		29.084	64½		—	—	7		.170	57.5	65	Clear.	
	8		29.100	58½		—	—	8		.184	52	64.7	Do.	
	9		29.090	56	51	—	—	9		.178	49.7	64	Do.	
March 23. March 24.	6		29.153	59½		E.	Cir. & cirrocumu. in W. & N.W.	6		30.128	44	61.5	Do.	
	7½			48		—	—	7½		30.118	53	61.8	Do.	
	9½			48		—	—	9		29.944	57	65.5	Do.	
	6		28.800	64	48	Calm.	Cumulostratus.	6		.668	44	61.0	Clear, very heavy dew.	1106
	7			70		W.N.W.	—	7		29.672	47	61	Clear.	
Waagan. March 25. En route. Camp beyond Waagan.	No on.		29.052	53		—	—	No on.		.600	85	70.3	Overcast.	
	7½		29.004	49	47	—	—	7½		.600	62	64.5	— lightning.	784
	6		28.982	44		W.	Cirrostratus on the horizon.	6		.675	54	61.5	Clear.	
	7½			51		—	—	7½		.670	58	62.2	Cloudy.	
March 25. En route. Camp beyond Waagan.	No on.		28.974	60		N.W.	Cumulostratus.	No on.		.626	70	67	Cloudy, high winds.	
	3½			60		W.	Nimbus, beginning to rain.	3½		.632	68	67	Do.	733
	7			50		W.	— clear in W. after rain.	7		.660	59	66	Do.	
			46		Calm.	Clear.	9		.690	55	63.5	Do.		

PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.		WIND.	STATE OF THE SKY, &c.	Time of obs.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.				A.M.	P.M.		OUT.	IN.		
1836.														
March 26.	6½		29.074	38		Calm.	Heavy dew. Sky quite clear.	6½		29.664	48		Clear. Strat. in Horizon.	
	7½			44		—	—	7½		.666	57		Clear.	
Camp W. of Buccabajal.	No on.			62		W.N.W.	Cumulostratus.	No on.		.676	70		Clouds.	
March 27.	6½		29.322	50		Calm.	Clear.	10		.822	58		Clear.	797
	9		29.379	40		—	—	6½		29.928	49		Do.	
			29.318	58		—	—	9		.948	64		Do.	
	3		29.324	74½		S.W. strong.	—	3		.910	69		Do.	
	6		29.375	66		Calm.	—	6		.942	63		Do.	
— 28.	10			53		—	—	10		30.050	51		Haze in the E.	
	6		29.412	40		—	—	6		.090	44		Clear.	
	7		29.460	44		—	—	7		.102	50		Do.	
Camp Merrimbah.	8		29.510	51		—	—	8		.120	55.5		Do.	
	3			77		E.	—	3		.114	73.0		Cloudy.	807
March 29.	6		29.486	50		W.	—	10		.200	61		Overcast.	
	7			42		Calm.	—	6		.190	59.5		Do.	
	No on.			50		—	—	7		.196	59.6		Do.	
Camp E. of Mount Cunningham.	1		29.408	78		E.	Light cumulus over E. horizon.	No on.		.120	66.0		Do.	
March 30.	9		29.414	82		—	Cumulus on E. half of Do.	1		.118	67		Do.	
	10			67		—	Cumulostratus in N.	9		.214	57.5		Threatening rain.	792
	6		29.424	66		—	Clear.	10		.144	57.5		Do.	
Under Mt. Cunningham.	8		29.416	56		Calm.	Heavy cu. in N.E. Stra. in hor.	6					Light rain.	
	No on.		29.388	64		E.	Cumulostratus.						Do	760
	1			80		—	—						Do.	
	2		29.372	78		—	—						Do.	
Camp in Lagoon.	5		29.434	82		N.E.	Nimbus in W. with thunder.						Do.	
	10		29.450	72		N.E. strong.	Nimbus all round with thunder.						Do.	
March 31.	7½		29.460	60		Calm.	Overcast. Rain from the N.W.	9		30.090	58		Rain.	
	9		29.432	63		—	Clear.	7		30.064	55.0		Continued rain.	
	10		29.410	62		—	—						Do.	
	11		29.387	66		—	Cumulostratus.						Do.	
	No on.		29.384	76½		—	—						Do.	
	2			73		—	— occasional sunshine.	No on.		.060	56		Do.	
	3			67		N.E.	Raining.						Do.	
	4			67		—	Cloudy. Raining to E.						Do.	
				64		—	Cloudy, light rain.	4		.040	56.0		Do.	



Date	Time	Temperature	Wind	Clouds	Barometer	Humidity	Direction	Remarks
April 1.	7	29.350	E.	drizzling rain.	29.960	59.0	63.5	Do.
	9	29.368	Calm.	steady rain.	.950	60	63.5	Do.
	11	29.534	—	—	.906	63.5	64.5	Do.
	1	29.280	E.S.E.	—	.878	63.5	65	Very heavy rain.
	2	29.230	—	—				
	4	29.200	Calm.	—				
	5	29.182	—	—				
	6	29.180	E.S.E.	—				
	8	29.190	—	—				
	9	29.210	—	—				
	10	29.196	—	—		.674	62.0	65
— 2.	7	29.200	S.W.	Haze with drizzling rain.	.800	62	65	Overcast, fair.
	9	29.263	—	—	.868	67	65	Do.
	10	29.258	—	—				
	11	29.264	—	—				
	No on.	29.264	—	—	.764	69	66.5	Rain.
	1	29.264	—	—				
	2	29.267	—	—				
	3	29.274	—	—				
	4	29.278	—	—				
	5	29.292	—	—				
	6	29.296	Calm.	Cumulostratus.	29.820	57.0	66	Rain.
— 3.	8	29.350	—	Stratus. Sunset clear.				
	9	29.356	—	Cumulostratus.				
	10	29.372	—	—				
	7	29.440	—	Cirrus.	50.040	58.0	63	Light rain.
	9	29.496	—	Thick fog.	.050	60.5	63.5	Do.
	10	29.524	—	Stratus rising.	.072	62	65.8	Fair. Overcast.
	11	29.544	—	—	.068	65	64.5	Do.
	No on.	29.550	—	Clear.	.068	65	65	Do.
	5 $\frac{1}{2}$	29.510	—	—	.110	60	63.5	Do.
	8	29.524	—	—	.158	59.0	63.5	Do.
	9	29.516	—	—	.176	59	63.5	Do.
10	29.518	—	—	.190	59	63.5	Do.	
— 4.	7	29.540	—	—	.216	56	62.5	Do.
	8	29.564	—	—	.220	57.0	62.5	Overcast.
	9 $\frac{1}{2}$	29.566	N.E.	Cumulus and cirrocumulus.	.250	61	63	— rain.
	8	29.580	Calm.	Cirrus on the horizon.	.210	59	63	Showery.
	9	29.594	—	Clear.				
Camp on Goobang Crk. (at junction with the Lachlan.)	10 $\frac{1}{2}$	29.590	—	—	.232	56	62	Showery.

Observations by Capt. P. P. King, R.N. at Dumheved.

PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.	WIND.	STATE OF THE SKY, &c.	Time of obs.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.					A.M.	P.M.		CUT.	IN.		
1856.													
April 5.	7		29.624	51	Calm.	Clear.	7		30.218	55	61.5	Showery.	624
1st Camp under Goo- bang.	8		29.636	54	—	—	8		.234	57	62	Rain.	
		6½	29.594	66	—	—		6½	.176	60	63.5	Overcast.	
		8	29.612	61½	—	—							
		9	29.620	60½	—	—							
		10½	29.624	59	—	—		9	.188	57	63	Haze.	
April 6.	7		29.624	52	—	Bright meteor descending W.	7	10½	.193	56.5	62	Do.	
	8		29.656	58	—	Clear. Dew, refract. on horiz.	8		.154	55	61	Overcast.	
	Noon.			72	S.E.	Clear.	Noon.		.168	56.4	61.4	Rain.	
2nd Camp under Goo- bang.	4		29.660	75	—	—		4	.174	65	63	Do.	
	8		29.672	61	Calm.	—		9	.180	63	63	Overcast, showery.	
	9		22.694	59	—	—			.225	54	62.5	Hazy.	
	10		29.692	58	—	—							
April 7.	7		29.670	50	—	—	7		.204	51	59	Overcast.	
	7½		29.700	55	Calm.	—	8		.212	56	60	Showery.	
	Noon.			82	—	—	Noon.		.202	68	64	Overcast, fair.	
	7		29.356	66	—	Nimb. & strat. (slight showers.)	7		30.084	52	61.5		
	9		29.390	70	North.	—	9		.092	63	62.5		
	5		29.340	57	N.W.	—							
	9		29.352	54	—	Heavy rain.		9.30	29.891	75.3	70.2		
	10		29.348	53	—	Cloudy.							
	7		29.330	53	—	Clear.			.808	62.5	65.2		
	9		29.376	56	—	Overcast.			.814	65.6	66.2		
	Noon.		29.354	62	—	—							
	2		29.330	63	—	—							
	5		29.328	62½	—	—							
	7		29.350	59	—	Cloudy with sunsh. occasional.		3	.745	73	72.8		
	10		29.376	57	—	—							
April 15. 4th Camp below Goobang.	7		29.460	46	West.	Clear.			.821	68	69.5		
	7½		29.502	61	—	—			.804	64	68.5		
	10		29.496	64	—	—							
	2		29.530	58	—	Cumulus and cumulostratus.			.880	55.5	61.5		
	7		29.530	58	—	Cumulostratus (overcast.)							
	8		29.578	57	—	Overcast.							
	9		29.606	56½	—	partly clear.			.921	63	66		
					—				30.008	59.2	65.5		

April 16.	7	29.620	46	Calm.	—	—	9	.194	51.5	66.5	Fine, clear.	470
— 17.	8	29.656	52	S. West.	—	—	7.0	.223	46.5	55.5		
Gooniguldury.	7	29.726	50	West.	—	—	9	.255	49.5	55.5	Cloudy.	
	8	29.728	50	—	—	—	9	.283	59.5	65		
	7	29.734	42	Calm.	—	—	9	.295	54.2	64.5	Cloudy, fine weather.	
	8	29.732	45	—	—	—	9	.298	58.5	59.2		
April 18.	7	29.750	69	—	—	—	9	.251	56.2	66.2	Foggy.	448
6th Camp on Lachlan.	8	29.706	45	—	—	—	7	.192	51	60.6		
April 19.	7	29.676	50	—	Clear.	—	9	.195	59.2	60.8	Fine, cloudy.	
	8	29.626	45	—	Cirrus.	—	9	.050	65.2	69.2		
	Noon.	29.652	47	—	—	—	Noon.	.091	60.2	69	7 A.M. heavy thunder.	
	6	29.602	62	—	—	—	6to	.032	54.2	63		
— 20.	9	29.586	55	—	—	—	9	.036	58.2	63	Thick foggy.	
	10	29.564	54	—	—	—	Noon.	.63.8	67	67		
7th Camp on Lachlan.	7	29.486	50	—	—	—	7	.29.935	59	67	Showery.	466
	8	29.482	53	—	—	—	9	.948	54.5	66.5		
	Noon.	29.412	66	N.W.	—	—	9	.934	48.2	58	Fog.	
	6½	29.396	61	Calm.	—	—	7.0	.812	63.0	69.2		
April 21.	8	29.424	63	—	—	—	9	.843	59	68.5	Thunder, lightng. & rain. Heavy thunder-storm.	
On Lachlan.	9	29.424	63	N.W.	—	—	Noon.	.943	60	63		
	10	29.434	59	—	—	—	7	.987	55	63	Fine.	
	6½	29.150	54	Calm.	—	—	6.0	.888	66.5	63.2		
	2	22.462	58	W.	—	—	9	.30.064	65.2	64.2	Thunder, lightng. & rain. Heavy thunder-storm.	
	4	29.468	56	—	—	—	3	.943	60	63		
April 22.	7	29.564	52½	—	—	—	9	.987	55	63	Fine.	
	11	29.588	49	—	—	—	6.0	.888	66.5	63.2		
	7	29.608	44	—	—	—	9	.943	60	63	Thunder, lightng. & rain. Heavy thunder-storm.	
	9	29.662	51	—	—	—	9	.987	55	63		
— 26.	2	29.690	74	W.	—	—	3	.888	66.5	63.2	Fine.	
	8	29.656	52	—	—	—	9	.30.064	65.2	64.2		
April 27.	10	29.648	49	Calm.	—	—	9	.035	47.2	53.2	Fine.	
	7	29.580	40	—	—	—	9	.29.855	65.5	64.2		
— 28.	9	29.614	50	—	—	—	9	.845	68.5	67	Fine.	
	1	29.536	63	W.	—	—	1	.963	53.2	65		
	3	29.544	62	—	—	—	3.20				Fine.	
	8	29.627	59	Calm.	—	—	9					

PLACE AND TIME OF OBSERV.	BARO.		THER.		WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.			A.M.	P.M.		OUT.	IN.		
1836.													
April 29. Nyarradarra.	8	29.662	54		S.W.	Cumulus.	9	29.976	.52	56		Fine.	215
	3	29.708	64		—	—			.929	68.2	64.5		
	7	29.758	55		—	Clear.	6		.985	58.6	65.2		
	8	29.754	53		—	—							
	10	29.784	51		—	—	9	30.058	55.2	65.6			
April 30.	6		30		Calm.	Cirrus in the N.W.							
	7	29.758	37		—	—							
	8	29.812	43		—	—	9	30.171	47.2	53.2			
Camp on Creek.	5	29.794	60		—	Overcast with cirrocumulus.							
	8	29.822	55		—	—	9	.208	56	63.2		Fine weather.	342
	10	29.806	53		—	—							
May 1.	7		36		—	Cirrocumulus in the E.							
	7½	29.770	44		—	—							
	8½	29.800	50		—	Cirrocumuli (dispersing.)	9	.205	43.2	58.5		Fine, overcast.	280
Cawan.	5	29.810	63		—	Clear.	6	.143	60	59.5			
	8	29.814	53		—	—							
	9	29.828	49		—	—	9.20	.173	53	60			
May 2. Cambedyego.	8	29.888	45		—	—	9	.221	56	57.2			
	5	29.876	64		East.	Cirrostratus.							
	8	29.906	50		Calm.	Cirrus.							
	9½	29.896	49		S.W.	—	6	.243	62	62.2		Showery.	300
May 3.	7	29.856	40		Calm.	Cirrostratus.							
	8	29.884	45		—	—							
	8	29.898	60		—	Cumulostratus.							
	11	29.852	57		—	Cirrocumulus.							
— 4.	7	29.796	48		E.S.E.	Cirrostratus.							
	9	29.826	53		—	—							
	1	29.782	65		—	Overcast.							
	3	29.750	67		—	—							
	5	29.742	64		Calm.	—							
	8	29.738	59		—	—							
	10	29.724	58		N.E.	Cumulostratus.							
— 5.	8	29.662	57		North.	Nimbus, rain.							
	9	29.666	56		—	—							
Múddur.	4	29.612	65		Calm.	Nimbus and cirrostratus.							

May 6.		7	5 29.646	61	—	Nimb. passing S. W. (snowy.) Partially clear.			
			8 29.720	57	—	Rain.			
			10 29.766	57	S. W.	Clear.			
Cobárdury.		8	29.818	46	Calm.	—			
			29.854	51	N. W.	—			
		7	29.940	60	Calm.	—			
May 7.		7	29.940	52	—	Zenith covred. with cirrostratus.			
		8	29.950	53	—	—			
			29.978	57	—	Cum. over head. Cu. strat. in horiz.			
Pomâbil.			4 29.896	67	S. W.	—			
			8 29.914	59	—	Clear.			
		10	29.900	55	—	Haze or fog.			
May 8.		7	29.822	48	—	—			
		9	29.848	56	—	Clear, cumulus in N. W.			
			1 29.832	76	—	Clear.			
			2 29.812	78	—	Cumulus around horizon.			
			4 29.800	75	—	Overcast with cirrostratus.			
			5 29.780	68	—	—			
			8 29.806	64	Calm.	—			
			10 29.810	62	—	— some stars appearing.			
— 9.		7	29.768	59	S.	Overcast, with cirrostratus.			
		8	29.780	60	—	—			
Yambarrènga.			5 29.757	67	Calm.	Cu. in zenith, stratu. on horizon.			
			8 29.786	59	—	Cloudy.			
			10 29.780	56	—	— stars visible S. and W.			
— 10.		7	29.758	54	S. E.	Fog.			
		8	29.774	56	—	—			
		No on.	75		—	Clear.			
Bedyngoga.			9 29.820	56	S. W.	—			
			10 29.812	53	—	—			
May 11.		7	29.900	48	—	—			
		No on.	80		Calm.	—			
Camp in wood.			9 29.896	60	N. E.	Cloudy, (showers.)			
			10 29.898	57	Calm.	—			
May 12.		8	29.876	54	N.	Heavy rain.			
Wéyeba.			8 29.828	54	E.	Cloudy.			
			10 29.840	55	—	—			
May 13.		8	29.894	50	N. E.	(Sunrise 40.) Clear.			
		9	29.912	52	—	—			
			6 29.730	63	Squall from N. W.	Rain suddenly set in.			
— 14		7	29.750	59	N. W.	Rain.			
		9	29.744	56	—	Showers.			
					9	50.099	55	61.5	Rain in the night.
					9	.052	53.5	64.5	Fine day.

PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.		WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.				A.M.	P.M.		OUT.	IN.		
1836.														
May 14.	8	10½	29.732	54		N.W.	Showers.							
— 15.	9		29.764	45		—	(At 7 ther. 40.) Clear.							
	10		29.800	49		—	—							
	Noon.		29.800	52		—	—							
			29.812	60		—	Cumulostratus.	No on.	29.946	61	58.5		Cloudy day.	
			29.784	64		—	—							
	3		29.770	62		W.	—							
	8		29.866	53		—	Rain.							
	9		29.874	51		—	Clear.							
	10		29.868	48		—	(At 7 ther. 38.) —	9.40	29.990	59	60.2		Strong N.W. wind.	
— 16.	8		29.962	43		N.	—							
	No on.			53		—	—							
2nd Camp, Murrumbidgee			7½ 30.028	51		—	—							
May 17.	7½		30.030	47		—	—							
(3rd Camp.)			30.086	44		W.	—							
	4		30.080	60		—	Overcast with cumulostratus.							
	8½		30.120	60		—	Clearing up, after a shower.							
	10		30.108	56		Calm.	Cloudy.							
May 18.	7		30.058	45		W.	(At sunr. ther. 40.) Clear.							
	8½		30.062	49		—	—							
Camp on lagoon.			29.930	62		N. light.	Large cumuli.							
	4		29.850	55		—	Cloudy.							
May 19.	7		29.830	46		—	(3 A.M. sqll. frm. N.W.) Clear.	9.0	30.130	49	61			139
	8		29.846	48		W.	—							
Camp on creek.			29.882	52		—	Nimbus, (after rain stormy.)							
	3		30.070	42		—	Clear.	9.0	29.989	50	52			
May 20.	7		30.224	38		S.S.W. light.	—							
	1		30.328	64		—	—							
	2½		30.300	61		Calm.	—	No on.	30.204	58.5	54			
	5½		30.320	52		S.S.W. light.	— cir. cu. in N.E.	3	30.321	59	56			
	7		30.332	45		Calm.	—							
	10		30.332	44		—	—	9.0	30.362	54	55			
— 21.	7		30.332	34		—	(At sunr. ther. 30.) —							
	9		30.392	54		—	—							
Lake Stapylton.			30.300	60		—	Cirrus.	9.0	30.436	56	52.5			

Date	Time	Temp	Wind	Wind Dir	Clouds	Pressure	Humidity	Remarks
May 22.	7½	30.206			(At sunr. ther. 32.)—	30.405	47.5	51.5
	9	30.232			—			
		30.271			—			
	1	30.234			Cirrocumulus.	4.0	30.390	54
	3	30.212			—	6.0	375	58
	5	30.200			—	8.50	405	56
	8	30.190			—			
	10	30.200			—			
— 23.	7½	30.180			(At sunr. ther. 28.) — foggy.			
	9	30.238			Clear.	9	30.457	52
	No on.	60			—			
	5	30.200			—			
— 23. 1st Camp on river Murray.	10	30.196			—	9.0	30.455	51
May 24.	7	30.136			(At sunr. ther. 32.) —			60
	8	30.160			—			
	No on.	70			—			
Cp. near Lake Benaneè.	6	30.068			—			
May 25.	7	30.014			—			
	8	30.006			—			
	6	29.930			Heavy rain, overcast.			
	8	29.950			—			
	10	29.950			—			
May 26.	7	30.010			Thick fog.			
	No on.	30.074			Overcast with cumulostratus.			
Camp, 60 feet above the Murray, (2nd.)	2	30.060			Cumulostratus (dispersing.)			
	4	30.070			— in the E.			
	6	30.084			—			
	10	30.124			Clear.			
May 27.	7	30.174			(At sunr. ther. 42.) cumu.strat.			
	8	30.180			—			
	6	30.190			Cumulus.			
	9	30.230			Clear.			
May 28.	7½	30.180			(Sunr. th. 42.) fog, (clearg. up.)			
	6½	30.156			Overcast with cumu. in zenith.			
Camp on Murray. (3rd.)	11	30.150			Overcast with cirrostratus.			
May 29.	7½	30.128			Cumulus.	8.30	30.442	56
	8½	30.150			—			60
	5	30.116			Nimbus, (rain.)			
	8	30.200			Cumulus.			
	10	30.180			Overcast.			
— 30.	7½	30.220			Continued rain.			

PLACE AND TIME OF OBERV.	A.M. PM.		BARO.	THER.		WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.				A.M.	P.M.		OUT.	IN.		
1856.														
May 30. Camp 40 feet above the Murray, (5th.)	8½		30.234		56	S.	Continued rain. Cumulostratus and nimbus.							
		3½	30.212		64	—	—							
		5	30.218		59	—	—							
		7	30.276		56	W.	Cirrocumulus (dispersing.) Clear.							
		9	30.286		55	—	Overcast with cumulus.							
May 31.	7	10	30.294		55	S.W.	(At sunr. ther. 42.) Clear.							
	8		30.332		46	E.	—							
The Darling.			30.342		46½	—	—							
		7	30.364		50	W.	—							
		9	30.364		47	—	—							
June 1. 2nd Camp Darling.	7½		30.290		43	S.	Cirrostratus.	2.0	30.393	56	58.5			83
		6	30.200		53	—	—							
		8	30.184		52	—	—							
		10	30.170		52	—	—							
June 2.	6½		30.052		51	—	Rain.	10.30	30.300	56.5	58			
	7½		30.060		51	—	—		2.40	30.168	57.5			
3rd Camp Darling.		3	30.000		52	S.	Drizzling rain.	6.20	.168	52.8	58.5			
		5	30.010		52	—	—							
		7	30.046		51	—	Fair.							
		9	30.070		51	—	Drizzling rain.	10.20	.151	52.7	58			
June 3.	7		30.080		46	—	(Sunr. th. 42.) Clear E. cumu. W.							
	8		30.060		47	—	Clear.		30.040	52	56			
Camp of Greenhill.		6½	29.990		48	W.	Cirrostratus on W. horizon.	9.15						
		8½	30.012		49	N.W.	Clear.		30.000	53.5	56			
		10	30.026		49	—	Cumulus.	8.0	29.995	47.5	55			
June 4.	7½		29.934		49	—	Cirrostratus.							
	8½		30.050		50	—	—	8.0	29.974	40	49.3			
Camp near Golgol Crk.		4	29.840		61	—	(At 12 th. 68. —							
June 4.		7	29.868		55½	—	Cirrostratus.	6	29.922	54.2	59			104
		9	29.860		54	—	Showery.							
— 5.	7		29.740		49	—	Cirrostratus.							
	8		29.720		50	—	—	9	.972	42.2	49			
Camp Red Bank.		5	29.426		59	—	Cumulostratus. Nimbus Shower.	3.20	.848	61.2	57.5			368
		7½	29.360		58	—	Heavy rain.	6.45	.842	46.5	57			
		9	29.426		52	—	—							



Camp Lagoon.	8	29.364	46	—	Slight shower (cirrus.)				
	4	29.446	54	—	Clear, (flying Nimbus.)				
	7	29.518	45	—	Quite clear.				
June 7.	9	29.534	44½	—	—				
	7½	29.570	48	—	Rain. drizzling.				
	8½	29.568	49	—	—				
Camp on Hill.	1	29.510	60	West.	Cumulostratus.				
	4	29.512	56	—	— Showery.				
	6	29.550	53	—	Just after a heavy shower & squall.				
	8	29.590	51	—	Rain.				
June 8.	9	29.590	52	—	—				
	6	29.640	47	S.W.	Clear.				
Camp Lagoon.	7	29.660	46	—	—				
	5	29.752	55	—	—				
	8	29.792	49	—	—				
	9½	29.792	49	—	—				
June 9.	7½	29.876	45	—	—				
	8½	29.876	46	—	—				
Camp Safety.	4	29.840	54	S.	Cumulostratus.				
	7	29.892	49½	—	Clear, after a shower.				
	9	29.904	47	—	Clear.				
June 10.	7	30.034	40	—	(At sunrise ther. 32.)				
	8	30.056	41	—	—				
Chetwynd.	4	30.078	55	—	—				
	8	30.118	42	—	—				
	9	30.124	40	—	—				
June 11.	8	50.142	34	Calm.	(At sunrise ther. 32.) Cumulus.				
	4	30.136	53	—	Cirrus.				
	9	30.056	36	—	Clear.	9.0	30.271	50	54
— 12.	8	30.130	41	N.E.	Cirrostratus.				
Camp of Passage.	4½	30.064	53½	—	Clear.				
	8	30.096	50	—	Cirrus.				
	9½	30.100	49	—	—				
June 13.	8	30.000	43	—	—				
	5	29.920	54	—	—	9	30.185	43	54
	10	29.948	51	—	—	6	.194	59	47
— 14.	8	29.884	49	S.	Continued rain from 2 A.M.				
	10	29.924	54	—	Cirrostratus and Cumulus.				
	Noon.	29.908	56	—	Rain.				
	3	29.888	55	—	— (a shower.)				
	7	29.990	48	—	Stormy.				
							.105	40	46.5

## Meteorological Journal continued.

PLACE AND TIME OF OBSERV	BARO.		THER.	WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.				A.M.	P.M.		OUT.	IN.		
1836.												
June 14.		9½	45	—	Clear.							
— 15.	8	30.164	43½	—	(At sunrise ther. 41.)							
	10	30.210	51	—	—							
		30.190	50	—	—							
	1	30.212	50	—	—							
	5	30.280	50	—	—							
	8	30.280	50	—	—							
	9	30.280	50	—	—							
— 16.	8	30.286	39	—	(At sunrise ther. 36.)							
2nd Camp.	10½	30.266	44	—	(At 12. 52.)	9	30.293	50	53			
June 17.	8	30.254	48	N.	(At sunrise 48.) overcast.	9.0	.273	50	51			
3rd Camp.	6	30.170	52	—	Cirrus.	6	30.215	50	59			
	10	30.218	51	—	—	9	.233	39	55.5			
June 18.	8	30.250	37	S.W.	(Sunrise 31.) Clear.	9	.294	39.5	43			
4th Camp.	7½	30.270	48	—	Cirrus.	9.0	.338	41	52			
	10	30.292	48	—	—							
June 19.	6	30.292	44	—	(Sunrise 40.)							
5th Camp.	6	30.284	54	—	(Noon 54.) Cumulus.	6.0	.324	50	51			20
	10	30.292	51	—	— overcast.	9	.374	39	51.5			
June 20.	8	30.272	38	—	(Sunrise 36.) Clear.	9	30.446	43.2	54			119
6th Camp.	9	30.234	40	—	—							
	10	30.220	39	—	—							
June 21.	7	30.180	34	S.	(Sunrise 29.)							
Flat near river.	8	30.206	36½	—	Fog. (an Iris or bow.)							
	11	30.250	46	—	At ½ past 11 the mist began to rise in the West.	No on.	.400	50	51			
Hill 18 feet above plains.	No on.	30.230	50	—	Fog rising to the West.							
1st Camp.	7	30.144	39	N.	Clear.							
	10	30.142	34	—	(Sunrise 29.)	9	30.426	45.5	51.5			
June 22.	8	30.148	30	E.	—							
	9	30.180	40	—	(Noon 54.)							
Camp on flooded branch.	4	30.126	57	(Calm.)	—							
	7	30.126	43	—	Two meteors falling to southward.							
	10	30.126	41	—	(Sunrise 30.)							
June 23.	8	30.108	35	Calm.	(Noon 57.)							
Camp Creek.	7	30.084	45	—	—							

June 24.	.	8	10	30.078	41	N.	(Sunrise 30.) Cumulus and cirrocumulus in the S.W.
Camp ana-branch.	.	9	4	50.064	43	Calm.	— over Zenith.
June 25.	.	7½	7	29.972	56	E.	Clear.
Camp on Branch.	.	8½	11	29.930	50	—	Cirrocumulus.
June 26.	.	7½	10	29.894	48	—	—
	.	8½	3½	29.768	46	—	Cumulostratus.
	.	8	7½	29.750	47	—	(Sunrise 44.)
	.	9	10	29.614	54	—	Nimbus. Rain.
	.	10	7½	29.604	51	—	Cumulostratus.
	.	11	10	29.578	48½	—	— overcast.
	.	No on.	8	29.424	45	W.	(Sunrise 43.) Overcast. rain.
	.	2	9	29.422	48	—	—
	.	5	10	29.422	47	—	—
	.	8	11	29.430	48	N.W.	—
	.	10	No on.	29.380	50	—	—
	.	10	2	29.360	50	—	—
	.	11	5	29.510	50	—	Rain.
	.	No on.	8	29.336	48	—	Nimbus. Rain just ceased.
	.	8	10	29.320	45	—	—
	.	10	8	29.350	35	—	—
	.	11	10	29.400	40½	S.	(Sunrise 30.) Clear.
	.	No on.	11	29.404	43	—	Hazy.
	.	2	No on.	29.404	43	—	Rain.
	.	6	2	29.386	42½	—	Overcast.
	.	8	6	39.480	39	E.	Steady rain.
	.	10½	8	29.534	39½	N.E.	Cumulostratus.
	.	37	10½	29.596	40	S.E.	— (moonshine.)
	.	41½	8	29.808	37	S.W.	Cumulus (fleecy)
	.	47	9	29.840	41½	—	Clear.
	.	41	7	30.002	47	S.	—
	.	39	9	30.032	41	—	Cirrus.
	.	44	10	30.050	39	Calm.	Clear.
	.	50	11	30.070	37	—	—
	.	46	8	30.156	44	—	(Sunrise 40.) Cumulus.
	.	44	8	30.150	50	S.W.	Cumulostratus.
	.	40	10	30.130	46	—	Clear.
	.	53	11½	30.118	44	—	—
	.	40	8	30.166	40	—	(Sunrise 34.)
	.	40	4	30.178	53	S.E.	(Noon) 51.) Clear, but hazy.
	.	40	9	30.224	40	—	Clear.

47

Camp Pyramid.

Camp on Plain.



July 9.	8	10	29.620	41	—	—	(Sunrise 32.)	Stratus.	—						Rain.	541
Camp on Flat.	9	8 $\frac{1}{2}$	29.700	37	—	—	(Noon 52.)	Clear.	—						Rain.	
July 10.	8	10	29.728	39	—	—	(Sunrise 29.)	—	—							
Camp on Creek.		5	29.694	52	S.W.	—										
		9	29.710	46	S.	—										
July 11.	8	9	29.700	33	E.	—										
Camp on running Creek.		6	29.624	49	S.E.	—										
		8	29.668	49	—	—										
July 12.	8	10	29.628	49	—	—										
Camp on running Creek.		6 $\frac{1}{2}$	29.582	49	—	—										
		9	29.604	49	S.	—										
July 13.	8	10	29.604	49	S.E.	—										
		9	29.608	32	—	—										
— 16.	11	6 $\frac{1}{2}$	29.724	47	—	—										
	no on	9	29.694	39	—	—										
		10	29.712	40	—	—										
	8	10	29.700	43	—	—										
	9	9	29.718	45	—	—										
	11	9	29.746	52	—	—										
	no on	4	29.722	53	E.S.E.	high										
		7	29.704	52	—	—										
	8	9	29.748	42	Calm.	—										
	8	6 $\frac{1}{2}$	29.742	40	—	—										
— 17.	8	10	29.800	47	S.S.W.	—										
Camp in Wood.		8	29.900	54	N.W.	—										
		8	29.896	52	—	—										
		10	29.900	51	—	—										
July 18.	8	10	29.876	50	—	—										
Camp on the Wimmera.		7	29.844	49	S.W.	—										
		10	29.850	50	S.W.	—										
July 19.	7	10	29.854	40	—	—										
	8 $\frac{1}{2}$	9	29.900	52	—	—										
Camp on Plains.		6	29.840	45	S.	—										
	7	8	29.852	40	—	—										
	8	9	29.856	38	—	—										
July 20.	7	10	29.930	38	—	—										
	8	6	29.954	42	—	—										
Camp beyond Lakes.		6	30.006	46	—	—										
	7	10	29.996	36	—	—										
July 21.	7	6	29.930	34	—	—										
	8	6	29.999	40	—	—										
Near Wimmera river.		6	30.044	50	—	—										

Observations at Gidleigh.

Rain.  
Cloudy.

3 P.M. Snow storm.

Fine wind W.S.W

Showery.

S.W. wind.

Drizzling.  
Wind S.W.

Drizzling.  
Wind S.E.

PLACE AND TIME OF OBSERV.	BARO.		THER.	WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.				A.M.	P.M.		OUT.	IN.		
1856.												
July 21.		8 30.044	43	S.E.	Clear.							
		10 30.046	37	—	—			28.262	39	48		
July 22.		7 30.020	30	Calm.	(Sunrise 26.)							
		8 30.038	32	—	—							
Camp W. of Mt. Arapiles.		6½ 29.914	49	—	—			.292	44	46.5	Wind S.E.	477
		9 29.926	42	N.	—			.321	41	46	Drizzling.	
July 23.		7½ 29.912	30	N.E.	(Sunrise 32.) Cirrus in Zenith.							
		8 29.952	44	—	—						S.E.	
		5 29.838	50	—	Cirrostratus.						Cloudy, fine.	
		8 29.838	52	—	Cumulus.			.292	46.5	44		
		9½ 29.860	59	—	—			.321	41.5	44.5		
— 24.		8 29.800	44	—	(Sunrise 36.)	high		.275	46	49		
		Noon 29.756	53	—	—						Calm.	
		7 29.716	50	—	—						Fine.	
		9 29.712	50	—	—			.258	42.5	44		
— 25.		7½ 29.616	50	—	(Sunrise 46.) Cumulostr. (Shwr.)							
Camp Plains.		4½ 29.410	54	Calm.	(Noon 62.) Rain			.149	43	45	Fine day.	781
		7 29.448	53	W.	Cumulus.						Calm.	
		8 29.470	56	—	Cirrocumulus.							
		10 29.470	50	—	Clear.			.156	39.5	44		
July 26.		7½ 29.470	62	Calm.	Thick fog.							
Camp on Oaky Flat.		3 29.402	58½	—	(Noon 59.) Showery cumulostr.							
		8 29.440	52	S.W.	Cirrocumulus.							
		10 29.440	53	—	—			28.040	39	42	Rain in the evening.	649
		29.336	42	Calm.	Thick fog.							
July 27.		7 29.350	51	—	—						Showery.	
		9 29.302	58	S.W.	Cumulus.			28.000	50	46	Heavy rain.	
		Noon 29.268	57	—	Cumulostratus.			27.946	51	56	Heavy rain.	
		7 29.286	53	S.	Nimbus.							
		8 29.276	54	—	Rain.							
		10 29.270	52	—	Cumulus.			.900	46	56		
— 28.		7 29.230	48	S.W.	(Sunrise 46.) Nimbus (rain.)						Rain.	
		11 29.230	50	—	—							
		3 29.184	49	—	—			.700	54	55	Fine.	
		7 29.194	44	W.	Stratus.							

— 29	8	29.204	44	—	—	—	9	.776	44	54	Rain.
Camp on rise.	9	29.206	42	N.W.	Cirrocumulus.	(Sunrise 56.)	Noon	46	46		Wind S.W.
	7	29.250	38	N.E.	Cirrus.	(Noon 52.)	9	.840	40	50	Cloudy, overcast.
July 30.	10	29.272	50	—	—	—	9	.851	45	52	Cloudy.
Camp Sorauren Creek.	8½	29.320	44	S.E.	Cumulus.	(Sunrise 42.)	9.0	.828	42	54	
	4	29.346	48	—	—	—	6	.832	39	50	
July 31.	7	29.528	52	N.E.	Cumulostratus.	(Sunrise 30.)	9	28.858	35	48	
Bank of Glenelg River.	10	29.536	47	W.	Clear.	(Hoar frost.)	9.0	.868	47	46	
	9	29.536	43	—	—	—	9	27.912	42	50	
August 1.	7½	29.524	36	—	—	—	9	.910	42	51	Fine.
	11	29.628	56	—	—	—	9	.906	36	50	
Camp 1½ miles lower.	7	29.568	51	N.	—	—	9.0	.800	46.5	49	Heavy rain.
August 2.	9	29.586	48	—	—	—	9.0	.856	38	51	Wind S.W.
Fish Ponds.	10	29.568	44	—	—	—	9	.800	52	51	Fine.
	7½	29.604	45	E.	Cumulostratus.	(Sunrise 43.)	9	28.076	35	51	
— 3.	11	29.622	54	N.E.	Cumulus.	(Sunrise 50.)	9	.118	46	54	
Pigeon Ponds.	8	29.588	56	N.E.	Cumulus.	(Sunrise 50.)	6				
	9	22.584	55	—	—	—	9				
	7	29.566	50	East.	Nimbus.	(Sunrise 41.)	6				
	5	29.230	48	Calm.	Clear.	(rain in night)	9				
	10	29.308	48	—	—	—	9				
	7	29.200	43	N.W. (High.)	Cir. (rain in night)	(Sunrise 41.)	9.0				
	8	29.232	45	—	—	—	9.0				
	4	29.158	54	—	—	—	9.0				
	8½	29.222	52	N.N.E.	Nimbus.	(Rain.)	9				
	9½	29.212	50	—	—	—	9				
	7	29.292	45	S.W.	Clear.	(after a shower.)	9				
	8	29.336	50	—	—	—	9				
	9	29.386	51	—	—	—	9				
Camp, Narrow Creek.	6½	29.252	51	—	—	—	9				
	8	29.294	48	—	—	—	9				
	9	29.294	45	—	—	—	9.0				
	7	29.424	47	N.W.	Overcast. (Shower.)	(Shower.)	9.0				
	10	29.458	53	—	—	—	9.0				
	11	29.456	54	S.W.	—	—	9.0				
	2½	29.440	58	—	—	—	9.0				
	7	29.484	50	N.W.	Cumulus.	(after a shower.)	9				
	9	29.502	51	—	—	—	9				
	7½	29.520	51	—	—	—	9				
	8	29.534	52	—	—	—	9				
Heath.	6	29.576	51	—	—	—	6				





Station	Time	Barometer	Thermometer	Wind	Clouds	Direction	Barometer	Thermometer	Wind	Clouds	Direction
River Fitzroy.		29.980	65	—	(Noon 60.) Cumulus.	—	.250	49.5	5		
— 15.		29.988	50	—	Clear.	—	.174	44	9		
Swamp.	7	29.976	50	Calm.	(Sun-rise 35.) Clear.	—		49			509
— 16.	8	29.936	42	—	—	—					
Depôt on the Glenelg.	7	29.930	50	N.E.	(Noon 65.) —	—	28.050	46	9		Hard gale N.N.W. and thunderstorm
— 17.	10	29.676	55	—	(Sun-rise 50.) Overcast. Rain.	North (high.)	.000	50	9		
	7	29.630	55	—	Cumulus.	— moderate		51			72
	10	29.490	52	—	Clear (after heavy hail storm.)	— (after shower.)					
	7	29.530	53	S.W.	Nimbus. Showery.	—	27.919	48	9		Fine day.
	8	29.820	47	—	Clear.	—					
	10	29.882	45	—	Slight Shower.	—	28.036	49	9		
	Non.	30.018	38	—	Cumulus.	—					
	2	30.074	48	—	—	—	.128	46	9		
	9	30.122	57	—	(Sun-rise 30.) Clear.	Calm.					
	10	30.126	63	—	—	—					
	7	30.120	61	—	—	—					
	11	30.190	48	—	—	—					
	5	30.200	49	—	—	—					
Boat camp on the Glenelg	7	30.150	38	—	—	—					
— 19.	11	30.230	64	—	(Sun-rise 30.) Clear.	Calm.	.138	47	9		Heavy rain, constant.
	5	30.174	56	—	—	—					
	9	30.206	43	—	—	—					
	7	30.196	33	—	—	—					
	5	30.192	33	—	—	—					
2nd on the Glenelg, 60 feet above the water.	7	30.072	58	—	(Sun-rise 30.) —	South:	.118	51	7		Wind S.E.
	6	30.088	55	—	—	—	.119	39.5	9		Fine.
	8	30.060	51	—	—	—					
	10	29.964	54	—	(Sun-rise 30.) Cumulostratus.	—	.041	52	6		
	7	30.100	47	N.W.	Clear.	—	.054	41	9		Fine.
Camp 10 feet above the Glenelg.	6 $\frac{1}{2}$	30.124	43	—	Cumulostratus.	—					
— 20.	9	30.144	45	—	Cumulus.	—	.042	51	6		
	10	30.136	48	—	—	—					
	7	30.140	48	—	Clear.	—	27.994	54.5	9		Cloudy.
	8	30.102	52	—	Nimbus. Showery.	—	.994	42	6		P.M. fine.
	6	30.082	50	—	—	—					
	8	30.070	49	—	—	—					
	10	30.112	46	—	—	—					
	7	30.104	46	—	—	—	27.995	50	9		
The Depot hill	8	30.012	61	—	—	—					

\* These results show how much the error arising from atmospherical changes at great distances may amount to. These two last observations would place the stations 24 feet and 27 feet respectively lower than the sea at Sydney.

PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.	WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.					A.M.	P.M.		OUT.	IN.		
1836.													
August 22.		5	30.022	55	Calm.	Stratus in the West.		5	27.998	65	62	Fine.	
		6	30.052	53	—	Clear.		6.30	28.038	54	60		
		8	30.070	47	—	—		9	.100	56	52		
		10½	30.056	43	—	(Sun-rise 31.)							
— 23.	7		29.986	34	—	Overcast.		9	.143	45	50		
	8½		30.010	43	North.	Rain.							
		4½	29.830	52	—	—							
	7		29.830	51	—	—							
	8		29.780	50	—	—		9	.100	46	50	Fine.	
	10		29.752	50	—	—							
— 24.	7		29.610	52	— high.	(Sun-rise 50.) Cumulostratus.		9	.082	50	54	Fine day.	
	8½		29.600	55	—	(Noon 60.)		No on.				Calm.	605
Barren Heath.		4½	29.254	67	—	Cumulus.		9	.012	58	63		
		8½	29.404	50	West.	Clear.							
		9½	29.404	50	—	(Sunrise 48.) Overcast. Nimbus.		No on.		54		Shows W.N.W. strong and squally with rain.	424
— 25.	7		29.424	50	—	(Noon 59.) Clear.							
Camp Little Creek.		4	29.620	50	—	Cumulus.							
		8	29.708	50	N.E.	(Sun-rise 42.) Clear.							
— 26.	7		29.820	45	—	Cumulus after rain.		6	28.098	54	59	Fine W.	
	8		29.840	47	— high.	—							
		6	29.710	52	—	Cirrus.							
		10	29.754	51	West.	(Noon 60.) Clear.		6	.172	49	50.5	West.	
Camp under high hill		6½	29.896	59	Calm.	(Sun-rise 36.) Cumulus.		9	.193	46.5	50	Fine.	
— 27.	7		29.858	46	—	—						Southerly.	
		10	29.920	46	N.W.	Clear.		9	.020	39	49		
— 28.	7		29.850	50	N.E. (light.)	Cumulostratus.							
	10		29.823	55	West.	(Sun-rise 50.)		9	27.963	46	49	Fine.	
— 31.	7		29.626	51	— (higher.)	Drizzling rain.		No on.	.942	49	52	South.	
September 1.		9½	29.440	50	—	Cumulus. (Clear in Zenith.)		6	.941	54.5	48		
		11	29.488	51	Calm.	—		9	.946	46	40		
		1	29.550	53	—	—							
		3	29.550	54	—	—							
		7½	29.588	54	—	—							
		10	29.660	53	—	—							
		10	29.660	52	—	—							

Date	Time	Wind	Direction	Force	Barometer	Thermometer	Humidity	Clouds	Remarks
— 2:	7	N.W.	(Sun-rise 38.)	—	29.490	42	—	Overcast.	Fine. N.N.W.
	8	—	—	—	29.474	43	—	—	
	4	—	Clear.	—	29.340	55	—	—	
	8	—	Cirrus.	—	29.314	51	—	—	
	10	—	(Sun-rise 44.)	Continued rain.	29.264	50	—	—	
	7	Calm.	Nimbus.	—	29.250	44	—	—	
	8	N.W. light.	Rain.	—	29.284	45	—	—	
	10	Variable.	Nimbus. Slight rain.	—	29.286	49	—	—	
	Noon.	W.S.W.	Heavy and settled rain.	—	29.305	52	—	—	
	1	—	Nimbus.	—	29.300	50	—	—	
— 3:	2	— high.	—	29.316	48	—	—	—	Hard gale from west, and showery.
	7	—	Cumulus. (Stars appear.)	—	29.412	44	—	—	
	9	Variable.	(Sun-rise 42.)	Cirrus.	29.430	45	—	—	
	6½	—	Clear.	—	29.468	44	—	—	
	8	—	Cirrus.	—	29.510	48	—	—	
	9	S.W.	—	—	29.520	52	—	—	
	6½	—	Clear.	—	29.608	57	—	—	
	9	Calm.	(Sun-rise 35.)	—	29.614	43	—	—	
	7	—	—	—	29.630	39	—	—	
	8	S.E.	Nimbus. (Shower.)	—	29.642	42	—	—	
— 4:	11	—	—	—	29.642	54	—	—	Overcast.
	2	Variable.	Cirrus.	—	29.606	55	—	—	
	4	S.E.	Clear.	—	29.594	54	—	—	
	8	—	—	—	29.646	47	—	—	
	9	—	—	—	29.646	45	—	—	
	10	Calm.	(Sun-rise 33.)	—	29.620	44	—	—	
	7	—	—	—	29.600	38	—	—	
	8	—	—	—	29.596	44	—	—	
	5½	—	—	—	29.734	55	—	—	
	7	—	—	—	29.710	44	—	—	
— 5:	7	North.	(Sun-rise 42.)	Cumulus.	29.722	40	—	—	Fine. 320
	8	N.W.	Nimbus, rain.	—	29.726	45	—	—	
	6	—	—	—	29.390	59	—	—	
	8½	Calm.	Clear.	—	29.410	55	—	—	
	9½	—	(Sunrise 42.)	—	29.430	52	—	—	
	7	—	—	—	29.474	42½	—	—	
	8½	—	—	—	29.632	47	—	—	
	7	—	(Sun-rise 36.)	—	29.662	40	—	—	
	8	S.E.	Light Cirrocumulus.	—	29.700	47	—	—	
	9	—	Clear.	—	29.728	55	—	—	
— 6:	8	N.E.	—	—	29.690	48	—	—	Gloomy. Showery.
	9	— high.	—	—	29.700	50	—	—	
	7	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
	9	—	—	—	28.128	40	—	—	
— 7:	7	—	—	—	—	—	—	—	Fine. 474
	8	—	—	—	—	—	—	—	
Camp Swampy Creek.	7	—	—	—	—	—	—	—	Overcast.
	8	—	—	—	—	—	—	—	
September 8. Camp on Track.	7	—	—	—	—	—	—	—	Showery.
	8	—	—	—	—	—	—	—	
September 9.	7	—	—	—	—	—	—	—	Showery, S.W.
	8	—	—	—	—	—	—	—	
— 10:	7	—	—	—	—	—	—	—	Showery, S.W.
	8	—	—	—	—	—	—	—	

PLACE AND TIME OF OBSERV.	TIME OF OBSERV.		BARO.	THER.	WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A. M.	P. M.					A. M.	P. M.		OUT.	IN.		
1836.													
September 10.		10	29.710	49	N.E. light.	Clear.							
— 11.	7	8	29.640	42	East.	(Sun-rise 40.) Cirrocumulus.							
Camp on the Wannou.	8	8	29.648	45	—	(Noon 58.) Cirrus.							608
September 12.	7½	9	29.580	53	—	— Zenith clear.			28.133	38	46		
On forest hills.	8	3	29.558	49	South.	(Sun-rise 48.) Overcast.			27.979	38	46.5		
September 13.	7	8	29.484	50	— high.	Cirrus. Cumulus in W.							649
Under Mount Abrupt.	8	5	29.474	53	— light.	Cumulostratus.			.874	39	46.5		
September 14.	6½	8	29.276	56	—	Cirrocumulus.			.857	36	48		534
September 15.	8½	9	29.280	53	—	Drizzling rain.							
In the mud.	7	9½	29.326	52	—	(Sun-rise 48.) Cumulostratus.							
September 16.	6½	7½	29.300	50	—	Cirrus.			.718	56	58		
Camp on Swamp.	7	7	29.528	50	S.W.	Nimbus, light rain.			.758	39	50		
September 17.	6½	9	29.214	57	—	—			.781	48	51		
— 18.	8	7	29.244	50	S.S.E.	—			.810	50	54		
September 19.	9½	9½	29.266	49	—	(Sun-rise 35.) Clear.							
September 20.	6½	7½	29.308	41	Calm.	—							
September 21.	7½	2½	29.212	60	S.W.	Cumulostratus.							
September 22.	6½	6½	29.214	51	South.	Clear. Two meteors, with tails.			.861	52	60		656
September 23.	9	9	29.264	52	—	—							
September 24.	7	7	29.276	45	—	(Sun-rise 38.) Cumulus.							
September 25.	7½	3	29.292	55	—	Cirrus.			.930	54	55		
September 26.	9	9	29.166	65	—	Cumulostratus.			.982	46	51		809
September 27.	7	7	29.212	50	—	—							
September 28.	3	3	29.260	50	S.W.	(Sun-rise 48.) —			28.030	52	54		
September 29.	7	7	29.216	57	—	— Showers.							
September 30.	7	7	29.212	52	West.	— Watch stopt.			.049	40	49		
September 31.	9	9	29.200	48	Calm.	Clear.							
September 32.	7	7	29.100	48½	N.W.	(Sun-rise 47.) Cumulostratus.			27.950	57	52		
September 33.	Noon.	Noon.	29.130	51	—	—			.932	60	56		
September 34.	2	2	29.160	55	—	— Showers.							

September 19.	7	29.190	55	—	Cumulus. Clear at intervals.	6	.915	51	52
Downs.	8	29.186	49	—	Clear.				
September 20.	7	29.216	41	South.	—				
Near Salt Lake.	8	29.234	39	—	—		.949	43	51
		29.268	43	—	Cirrus and cirrocumulus.				
		29.270	47	—	—				
		29.194	53	Calm.	Cumulus				
		29.228	54	N.N.W.	Clear. (Cirrus.)				
		29.204	59	—	(Sun-rise 53.) Cirrostratus.				
		29.206	51	—	—				
		29.334	66	N.W.	Cirrocumulus.				
		29.370	68	North.	—				
		29.376	56	N.N.E.	Clear.				
		29.386	56	—	—				
September 21.	7	29.404	52	—	Stratus and cumulus.				
On Salt Lake.	8	29.408	54	—	—				
Fresh water creek.	9	29.474	57	—	Cumulus.				
Camp on trap hill.	9	29.462	57	—	—				
		29.174	67	—	Do. A mackerel sky all day,				
		29.166	64½	Calm.	—				
		29.186	60	—	Cirrocumulus in E. hemisphere.				
		29.164	58	N.E. (light.)	Cumulostratus in the Western.				
		29.168	57	—	Cirrocumulus. (mild air.)				
September 22.	6	29.154	58	—	—				
Camp on Creek.	7	29.050	52	N.N.W.	Cirrus. Stratus in E.				
		29.090	58	—	Cirrus.				
		28.908	70	Calm.	Thunder clouds in W. Thunder.				
		28.922	65	North.	Nimbus. Thunder clouds.				
		28.942	61	N.N.E.	Clear, with scattered cumulus.				
		28.950	60	—	—Sheet lightning in horizon.				
September 23.	6½	28.900	52	Calm.	Thick fog.				
Camp under Zero.	7½	28.912	52	—	—				
		28.504	66	North, high.	Cirrus.				
		28.506	64	—	Clear.				
		28.476	64	—	—				
September 24.	7	28.540	56½	N.W. light.	Overcast. Rain. (Squall.)				
Camp foot of the hill.	8	28.512	54	Calm.	Rain.				
		28.646	52	—	Cumulus.				
		28.730	47½	W.N.W. light.	Clear.				
		28.720	44	Calm.	—				
		28.712	45	—	—				

(Here end Capt. King's Observations at Gid-leigh.)

PLACE AND TIME OF OBSERV.	OBSERV.		BARO.	THER.	WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.					A.M.	P.M.		OUT.	IN.		
1836.													
September 25.	7		28.726	43	W. light.	Cirrus.							
	8		28.756	46	—	—							
	10½		28.756	54	—	Cumulus.							
Camp E. of Green hills.	7		29.154	57	—	—							
	9½		29.156	55	—	—							
Sept. 26.	6		29.152	48	—	— (light.)							
	7½		29.170	50	E. light.	Cirrus in West.							
Camp near Mastoid hills.	3		29.306	62½	W.	Nimbus. Showery.							
Sept. 26.		8	29.366	55	S.	Clear.							
— 27.		9½	29.334	48	—	—							
	6½		29.320	43	—	—							
Bed of river.	7½		29.346	46	—	Cirrostratus in Zenith.							
Top of the bank at do.	10		29.548	59	—	Cirrostratus in the East.							
Camp on river.		6½	29.406	52	—	Cirrostratus.							
		9	29.536	51½	—	Cirrocumulus.							
Sept. 28.	6½		29.526	47	—	Clear.							
	8		29.508	37	—	(S.R. 32.)							
Creek, 636 chains.		1	29.540	44	—	—							
Camp near Mt. Byng.		7	29.326	69	—	—							
		9	28.984	50	—	—							
Sept. 29.	6		28.976	52	—	Cirrus.		8.20	29.923	54	59		1065
	7		28.950	42	Calm.	Clear.		9.15	29.924	52.5	59.2		
Camp S. of Mt. Byng.		3	28.970	52	—	— & Cirrocumulus.			29.939	60	57.5		
		5½	28.768	73	S. light.	—			29.638	71	69		
		7½	28.748	64	—	—							
		9	28.748	53	N. light.	—			28.859	62	60.5		
Sept. 30.	6		28.752	49	—	— (beautiful.)			28.898	55	53.5		
	7		28.762	44	Calm.	—			28.943	59	57		
October 1, on hill.		4	28.782	48	—	—							
at Camp.		7	28.442	83	W.N.W.	—			28.0065	71	69.5		1253
		9	28.530	81	—	Cumulostratus.							
		4	28.484	74	—	—			27.9611	57	56.2		
		7	28.440	61	—	Clear (sheet-lightning.)							
		9	28.430	59	—	Rain (heavy squalls in night.)							
— 2.			28.382	48	—	—							

10	28.376	52	—	Heavy showers of hail, nimbus.	12.15	27.6560	65	595
Noon.	28.374	50	—	Nimbus.	3.15	.6343	51.5	
4	28.364	52	—	Clear.	8.15	.6422	41.5	
6½	28.400	49	W.N.W.	Squally, rain, hailstones.	6	.6383	39.5	
7½	28.440	46	—	Clear.	6.30	27.5969	47.2	
9	28.446	42	—	Squally, nimbus.	7	27.6383	47	
6	28.446	46	—	rain, light.				
7	28.460	48	S.W.	Clear.				
6	29.020	52	—	(S.R. 32.)				
8	29.006	49	Calm.	—				
5	28.898	35	E.	—				
5½	28.800	64	—	—				
5½	28.840	66	—	—				
5¾	28.934	63	—	—				
6	28.684	61	—	—				
8	28.850	56	S. light.	—				841
9½	28.796	51	—	—				
6	28.760	41	Calm.	—	6.15	27.6855	41.5	
7	28.778	46	—	—				
11	29.030	72	W.	—	10.45	27.4984	66.7	607
Noon.	28.780	67	—	—				1071
4	28.972	68	—	—				646
8	29.048	52	high	—	8.40	27.5004	55.5	
9½	29.052	47	light	—				
6	28.966	40	—	Cirrocumulus in W.				
7	28.972	50	—	in zenith.				
4	29.108	65	E.	Nimbus, rain.				
5	29.130	55	—	— continued rain.	6.30	.4531	63	
7	29.142	55	Calm.	Continued rain.	8.45	.4158	57.5	
9	29.162	52½	—	Clear.				
6	29.146	41	—	—				
7	29.150	45	—	—				
4	29.154	57	N.W.	(Noon 60.) Violent squall, rain.	4.45	.2977	53.5	430
8	29.214	55	—	Stormy.				
9	29.244	54	—	—	9	.2839	52	
6	29.440	48	Calm.	Clear.				
7	29.476	50	—	Cumulus.				
2	29.574	61	—	Cumulus of the water of the Bayungun River.	8.0	.6166	59.5	
4	29.574	61	N.	Cumulus.	5.10	.6324	55.5	
10	29.644	55	N.W.	—	11	.6855	48	
6	29.676	52	N.	Light, cumulus.				
8	29.724	55½	—	—				
October 5.								
October 6.								
October 7.								
October 8.								
October 9.								

Beautiful day.

Rain in night, followed by a gale from N.W.

PLACE AND TIME OF OBSERV.	BARO.		THER.		WIND.	STATE OF THE SKY, &c.	Time of ob.		BAR.	THER.		WEATHER.	Height above Sea.
	A.M.	P.M.		DEW PT.			A.M.	P.M.		OUT.	IN.		
1836.													
River level.		29.748	58½		N.	Light Cumulus.							
Camp on Plains.		29.700	68		—	Clear.							
		29.704	64		—	—							
		29.746	57		—	—							
October 10.		29.732	52		—	—							
	6	29.644	49		Calm.	—							
Camp on Ponds.	7	29.644	54		N.E.	(Noon 80½.) Cirrocumulus.							
	5	29.350	80		N.	—							
	7	29.304	74		—	—							
	7	29.298	69		Calm.	Cirrus.							
October 11.		29.326	67		E.	Overcast.							
	6	29.382	56½		S.	Clear.							
Camp under K.	7	29.424	56½		—	—							
	7	29.408	52		E.	—							
October 12.		29.382	48		—	—							
	10	29.330	38		Calm.	—							
Camp on Ponds.		29.392	69½		—	—							
	8	29.158	66		—	Cumulostratus, light rain.							
October 13.		29.112	65		—	—							
	6	29.186	53		N.W.	Now clear, but rain during night.							
Swampy River.		29.224	59		—	Clear.							
Camp on ditto.	5	29.248	61		—	Cumulostratus, with showers.							
	7	29.330	55		—	Clear.							
October 14.		29.350	52		—	—							
	6	29.400	50		Calm.	Cirrocumulus.							
Camp under Pass.	7½	29.432	55		—	Cirrus.							
	7	29.386	60		—	Cumulus.							
October 15.		29.372	54		—	Clear.							
	7	29.374	53		N.W.	Cumulostratus.							
The Ovens.	8	29.396	54		—	—							
	3	29.500	70		—	—							
Camp 10 feet higher.		29.516	59		Tem perature of the water of the Ovens.	—							
	5	29.516	69		N.W.	Clear.							
	7	29.522	59		—	—							
	9½	29.560	56		N.	Cirrocumulus.							



October 16.	6	29.606	54			Clear.
Camp Granite Range.	7½	29.624	56			—
	7	29.092	60			—
October 17.	8½	29.078	57			—
	9½	29.088	54			—
On the Murray.	6	29.096	47			—
	7	29.164	60			—
October 18.	6	29.758	65	Tem perature of the water of the Murray.		Clear.
	9	29.746	57	58		—
Right bank, Murray.	6	29.726	52			—
	11	29.774	80	Tem perature of the water of the Murray.		Cirrocumulus.
October 19.	7	29.532	64	Calm.		Cirrus.
	9	29.496	60	E.		Clear.
— 20. Camp on Ponds.	6	29.480	64	N.W.		Cumulus, or Cumulostratus.
	8	29.520	70	—		(Noon 81.) —
Camp on Creek.	10	29.550	70	—		(Sunset 84.) —
	7		58	—		Cirrocumulus.
October 21.	No on.		80	—		—
	6		67	Calm.		Overcast, light rain.
Camp on Ponds.	No on.		57	—		Cirrus.
	6		82	—		Cirrocumulus.
October 22.	6		70	—		Thunder, nimbus, rain.
	7		64	N.		Cumulus.
— 24. Guy's Station.	6		63	N.W. high		Overcast.
	6		52	S.W.		Continued rain.
			63	Tem perature of the Murrumbidgee.		

## AN ACCOUNT

Of the Number of Pounds of Wool, imported from New South Wales and Van Diemen's Land, from 1820 to 1837, distinguishing each year.

	New South Wales.	Van Diemen's Land.	Both Colonies.
1820 . . . . .	. . .	. . .	99415
1821 . . . . .	. . .	. . .	175433
1822 . . . . .	. . .	. . .	138498
1823 . . . . .	. . .	. . .	477261
1824 . . . . .	. . .	. . .	332907
1825 . . . . .	. . .	. . .	323995
1826 . . . . .	. . .	. . .	1106302
1827 . . . . .	320683	192075	512758
1828 . . . . .	967814	606372	1574186
1829 . . . . .	913322	925520	1838842
1830 . . . . .	973330	993979	1967309
1831 . . . . .	1134134	1359203	2493337
1832 . . . . .	1425657	951131	2376788
1833 . . . . .	1969668	1547201	3516869
1834 . . . . .	2225823	1331715	3557538
1835 . . . . .	2688440	1521861	4210301
1836 . . . . .	3008022	1983786	4991808
1837 . . . . .	4606915	2453610	7060525

NOTE.—The Importation from New South Wales and Van Diemen's Land cannot be stated separately for the years prior to 1827.

## 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.

YEARS.	SHIPS.	TONNAGE.
1820 . . . . .	9 . . . . .	2823
1821 . . . . .	16 . . . . .	4842
1822 . . . . .	33 . . . . .	10793
1823 . . . . .	35 . . . . .	12737
1824 . . . . .	30 . . . . .	11439
1825 . . . . .	42 . . . . .	15576
1826 . . . . .	36 . . . . .	12496
1827 . . . . .	63 . . . . .	23019
1828 . . . . .	80 . . . . .	28122
1829 . . . . .	81 . . . . .	28719
1830 . . . . .	67 . . . . .	23351
1831 . . . . .	78 . . . . .	27623
1832 . . . . .	89 . . . . .	30494
1833 . . . . .	95 . . . . .	30926
1834 . . . . .	90 . . . . .	29567
1835 . . . . .	102 . . . . .	35919
1836 . . . . .	107 . . . . .	36788
1837 . . . . .	128 . . . . .	47240

## 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.

YEARS.	SHIPS.	TONNAGE.
1820 . . . . .	3 . . . . .	1291
1821 . . . . .	4 . . . . .	1349
1822 . . . . .	5 . . . . .	1706
1823 . . . . .	11 . . . . .	3883
1824 . . . . .	12 . . . . .	3968
1825 . . . . .	12 . . . . .	3971
1826 . . . . .	21 . . . . .	7582
1827 . . . . .	19 . . . . .	5439
1828 . . . . .	20 . . . . .	6707
1829 . . . . .	30 . . . . .	8970
1830 . . . . .	26 . . . . .	8668
1831 . . . . .	35 . . . . .	11875
1832 . . . . .	38 . . . . .	12231
1833 . . . . .	42 . . . . .	13407
1834 . . . . .	42 . . . . .	12400
1835 . . . . .	49 . . . . .	16019
1836 . . . . .	59 . . . . .	19195
1837 . . . . .	63 . . . . .	18846

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