



**David Lindsay**

*Journal  
of the Elder  
Exploring  
Expedition, 1891*



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## FINAL REPORT.

On my arrival at Warrina I found that Mr. Leech, the second officer, had the evening before when wrestling sprained his knee.

The medical officer next morning reported that if a bed could be arranged on a camel during the march and perfect rest allowed Mr. Leech while in camp, for about three weeks, there would be no risk in taking him on, and that he did not consider the injury serious enough to necessitate Mr. Leech being left behind.

Arrangements were made for Mr. Leech's comfort on the march and in camp, and five weeks later he was able to dispense with the crutches.

The death of poor Bowden, at Cootanoorinna, a week after the expedition left Warrina, was an unfortunate loss to the expedition, as he was a man of long experience in the bush and with camels, and might have given valuable help in the troublesome times which followed.

We left Warrina on the 2nd May, 1891, were detained seven days in the vicinity of Cootanoorinna by rains, a week at Arcoellinna Well through the stupidity of the Afghans in losing seven camels.

We followed Chamber's pad and road to a few miles north-west of Chamber's Bluff, when we left it and travelled straight for the Everard Ranges, distant about thirty-six miles, which were reached on the 2nd of June.

Mount Illbillie, the highest point in the Everard Ranges, is a trigonometrical station, and the point decided upon as the starting point, from where, according to the printed instructions, we were to proceed "thence on a *westerly*

course into the section of unexplored country marked (A) on the plan." Formation, granite with diorite dykes. The country was in good condition owing to recent rains. Water in nearly every gully.

From Illbillie we proceeded westerly, examining and fixing the position of all hills, and marked the southerly limit of the hills. Flying parties were detached at various points, as shown on the map, until we reached the province boundary, where we expected to find a range of mountains thirty miles long. At the position assigned to this range—the Blyth Range—only a group of detached hills was found, with a few rockholes in granite outcrops four miles to south and south-west.

Having left the country which had been visited by rains and entered a region so dry as to lead us to the conclusion that no rain had fallen for two or three years, we went on to the range of which Skirmish Hill forms the south-western end in the hopes of finding water, but again met with disappointment, for the country was still drier; even the spinifex, or, more properly speaking, the porcupine, was dead and the mulga nearly so. Mr. Wells here rejoined us, and reported that the country to the south was all sandhills and sandstone ridges, with small quantities of water in rockholes. We now considered our best course was to go to Fort Mueller and Bailee Spring, form a depôt, according to our printed instructions, from which to detach parties northerly into block B to search for Gibson, and southerly into block A, exploring and searching for water. Fort Mueller being absolutely dry, I went west and found at Forrest's rockhole, and at some holes unseen by the previous

explorers, a fair supply of water, while the sandhills were covered with the green waterbush (*Pollechia Zeylanica*). After watering the camels at a rockhole found near Borrow's Hill we moved on and formed a depôt, sending the spare camels some fifteen miles back to depasture on the waterbush.

From the depôt; (camp 33) Mr. Wells went south-west; Mr. Leech north-west into block B to look for traces of Gibson—owing to the lapse of years it was not surprising that the search proved fruitless; I and Mr. Streich rode around and through the Barrow Ranges, only finding one small rockhole. Then Dr. Elliot and I went west, visiting Barlee Spring, which was practically dry, and all the watering places discovered by Giles and Forrest to the west side of the Warburton Ranges; when, finding all the waters dried up and all the rockholes empty and evidences of the thought having been long continued, I concluded that no water would be found at the Sutherland Ranges. 100 miles further on, and that Alexander Spring would certainly be dry also, I decided to return to the depôt. I have since learnt from Mr. W. W. Mills that in 1883 he found Alexander Spring dry.

Mr. Wells returned, reporting miserable country with only very few small rockholes. At one place, 130 miles south-west, he left 300 gallons of water in a hole. Our position was somewhat perplexing, as we had not enough water to give the camels a drink and to fill up our casks; there was none for a reasonable distance behind us. The few natives we saw were living on the rockholes, and those, with whom we got speech said no water to the south and south-west. But as a good number of natives had made towards Mount Squires

from all directions, and as there were evidences of rain having fallen on that mountain during the last three months, we considered it likely that a closer search in the gullies and gorges would result in the discovery of some waters. After full consideration we decided that if we could get enough water in the neighborhood by emptying all the rockholes, to go across to Queen Victoria's Spring by way of the rockhole found by Mr. Wells.

We proceeded south to Mount Squires, having brought in the camels, which had been now three weeks without water, and after searching found abundance of water. Gave the camels a drink, sent water twenty-five miles on the intended course, gave the camels another drink, filled all our water vessels and headed for Queen Victoria's Spring on the other side of the Great Victoria desert and distant about 400 miles. My journal and map give full details of the country. No sign of minerals so far.

When we reached the rockholes found by Mr. Wells we found a mob of natives camped there and the quantity reduced to 90 galls. of very dirty water. Gave it to the camels and proceeded over a useless country of sandhills and sandstone ridges all through to Queen Victoria's Spring. The fine growth of *Eucalyptus endesmioides* (desert gum) extending for over 100 miles gave the country a very pleasing aspect, but there were very few stock bushes and no grass. In latitude 29° 20', 270 miles from Mount Squires, the eastern edge of good pastoral country was touched. The geologist expressed his opinion that water would be found by sinking, and he also reported "an extinct mound spring", the position of which I have shown on the map. The average

height of the plains is about 1,600ft. or 1,700ft., while the mountain tops reach to a height of 2,500ft. above sea level; the lowest noted flat was 750ft. above sea level and Queen Victoria's Spring is 836ft., showing a very considerable fall.

Queen Victoria's Spring was reached on the twenty-fifth day at a distance of 393 miles from Mount Squires, and found to be dry. Our position now was somewhat critical, for the camels had been twenty-five days without water and were not only thirsty, but leg-weary. To go north back into the desert was not possible, and the only safe course to take was to make for the nearest certain water, which, after consulting the map, was found to be at Fraser Range, 125 miles distant. It was questionable whether the camels would travel another week without water. A well was sunk 15ft. deep and 60 gallons of water obtained, to which we added 40 gallons out of the casks, enabling the camels to have  $2\frac{1}{2}$  galls. each. When about half way to the range we passed out of spinifex and entered a good country of rich red soil, producing many good stock bushes, including saltbush and bluebush, but all extremely dry. Fine forests of high mallee and eucalypti were passed through. At twenty-nine miles we crossed a belt of country worthy the attention of prospectors.

On the thirty-fourth day we reached Fraser Range, having travelled 537 miles from Mount Squires without loss of camels or equipment. One camel died the day we reached Queen Victoria's Spring from urinic poisoning. Up to this point we had travelled 2,710 miles, of which 1,813 miles were through unexplored country.



From October 4th to the 2nd November the party was encamped at Fraser Range, during which time I went on horseback to Esperance Bay, 160 miles distant, to report progress by telegraph to the council of the Royal Geographical Society. I obtained the consent of the council to go *viâ* Hampton Plains, when, if no water was found there, to go west until water was found.

On the 2nd November we started again, and travelled ninety-eight miles through new country to Mount Monger, and then twenty miles to Hunt's slate well. All the country very well adapted for stock, but no surface waters, and now suffering from a long drought. The inability of our native guides to show us any water, and the camels having been seven days without water, and eating saltbush every day, it was absolutely necessary to go west along Hunt's route to find water. When Hunt was exploring here in 1864 he sank wells, constructed dams and tanks at which to form depôts, and it was at some of those wells that I hoped to find water. All the officers saw the gravity of our position, for our camels were really looking worse than when we reached Fraser Range, and the weather was very hot. All agreed as to the necessity of again making for known water. I did not consult them on the matter, as there were only two courses to pursue—one leading on to certain destruction and loss of the whole party, and the other the course we followed, which took us to within thirty miles of Southern Cross township before sufficient water was obtained, viz., at Karoling. Unfortunately there was only a limited amount of camel food and an abundance of *Gastrolobium*—a dreaded

poison bush, which prevented us remaining more than one day.

Karoling is about 250 miles from the edge of the unexplored country, and it was quite impossible for us to attempt to go there. The country was suffering from drought, and all our camels were in a very low and weak condition, as was clearly shown when a week later, at a suitable spot, I had to order a fortnight's rest for them.

Our only course now was to make our way as direct as possible to the Murchison through the outer edge of the settled country, where we could get water at moderate stages from the settlers' wells, doing away with the necessity of carrying large quantities of water. We had a stage of ninety miles without water, from Elichapatten to Pindeburra Well, which occupied us, owing to the dense thickets and the weak state of the camels, seven days. We then followed a dray track to Broad's Station, fifty-three miles. Then across country a day's stage to the Nalbaralla, Well, when a dray track served us for half a day, when we again made across Country to Watson's Station, from where a new track was followed to Coodardy Station on the Murchison-Geraldton road.

As soon as I established a dépôt at Annean Station and made necessary arrangements for supplies, &c., I started for Geraldton to place myself in direct telegraphic communication with the council. The journey of 330 miles was accomplished in ten clays, and after a few telegrams had passed between the council and me I was much distressed at receiving imperative instructions to return to

Adelaide to consult with the council. I felt that a loss of time and much needless expense would accrue.

Before leaving Geraldton I wrote full instructions to Mr. Wells what to do during my absence. Fortunately for him, the night after he left with a light party to examine the unexplored country lying to the east of our dépôt, in accordance with my instructions, the three years' drought broke up and splendid rains fell all over the country, so that he was enabled to send the water team back to the dépôt and travel fast and far, accomplishing in the six weeks he was away a very important work; he travelled 834 miles, discovered some fine ranges and bays, a large extent of pastoral country and some auriferous country, but no permanent surface waters.

Briefly, the country traversed is from Welbundinum Well (the dépôt camp), which is about forty miles east of Annean station, for fifty miles, good pastoral country, crossing the Montagu Range, 2,260ft. above sea level. Then a narrow belt of sand ridges with spinifex was crossed (fourteen miles in width), when good pastoral country was again entered, extending for 170 miles to the eastward; at fifty miles (in the good pastoral country) auriferous country was met with, extending for 100 miles easterly, the lay of the country being northwest and south-east, with fine hills and ranges and two large gum creeks, in one of which, the Erlistoun, Mr. Wells considered a permanent soakage exists. There can, I think, be very little doubt that water is to be obtained at reasonable depths, making this country worthy the attention of the pastoralist. Then sixty miles of sand ridges were traversed, when auriferous country was again met with.

Then for forty miles the hills and ridges and good pastoral country broken by belts of sandy spinifex country continued, when the edge of the Great Victoria Desert was entered upon, and nothing could be seen to the east but sand ridges whose spinifex-covered surface was relieved by the bright green foliage of the desert gums and by black patches of mulga. Mr. Wells then travelled north-east over sand ridges for sixty-two miles, when he turned west for twenty-four miles to a long range (the Ernest Giles) having a north and south trend and an elevation of 2,170ft. above sea level, surrounded by good stock country. Descending the western slopes a belt of sand ridges, broken by mulga-covered hills, continued for twenty-eight miles to a long narrow salt lake (Lake Wells), which is surrounded by high hills and splendid pastoral country, extending for 120 miles westerly, and as far north as could be seen; small patches of sandy country to be seen to the southward. Then twenty-two miles of sandy country was crossed and good pastoral country was entered upon, extending for 160 miles to the depôt at "Welbundinum Well", passing at thirty-six miles a spot where permanent water is considered to exist.

The pastoral country discovered is equal to that now occupied by settlers on the Murchison, and no doubt will ere long be taken up and stocked with cattle. The auriferous country will probably be found capable of supporting a fairly large population, which will hasten on and render profitable the stocking of those extensive valleys which, according to the description given, consist of "rich chocolate loam covered good stock mulga, acacias, saltbush, and grass."

Immediately on Mr. Wells' return to the Murchison he proceeded, in accordance with the instructions awaiting him, to disband the expedition, which was most unfortunate, as the drought having now broken up all over Western Australia, the remainder of the unexplored regions in Australia could have been quickly and easily examined.

#### NATIVES.

Of the natives little need be said, as no doubt the medical officer will hand in his full report. During the whole expedition very few were met with. Four men in the vicinity of the Everard Ranges were the first seen; they were friendly, and travelled with us for some weeks. Then one old man was seen, and then about 110 miles from the Everard six men visited us speaking the same language and practising the same rites of circumcision and incision. These left us quickly, and a week later we had thirteen natives in the camp, friendly and with the same habits and customs, medium stature, but strong and healthy and in good condition. No women or children were seen. For the next sixty miles we had with us numbers varying from three to thirteen. Many footprints of women and children were seen. At Pernamo Hill they refused to go any farther, saying there was no more water. The next natives seen were an old man and old woman near Skirmish Hill; the next at camp 33, in the neighborhood of which between fifty and 100 or more were living at the different rockholes. Women and children were seen, but all were so frightened that no Communication could be held with them. The men, fine fellows some of them, were very afraid and excited and wanted us to leave their district, but they showed no



hostility to us. Mr. Wells saw a few on the sandhills. Mr. Leech surprised some in block B, and I saw some to the westward. At Mount Squires we were visited by twelve men, most of them of fine physique, who were very frightened. I gave them some presents, and they left. Next seen were in the sandhills at a rockhole, where they attacked Mr. Wells and myself, but we were able to overcome their hostile intentions and hold friendly intercourse with them. At the rockholes 120 miles south-west of Mount Squires we surprised a mob, who were inclined to attack us, but were overawed by our numbers and the camels. After a little trouble we talked with the men and gave them some red handkerchief's. So far as we could ascertain in the few minutes we had with them their language and customs were still the same as those seen farther back. No more natives were seen until we reached Fraser Range Station, where many were employed by a dam sinker. The dialect spoken was quite different, and they were an inferior type, being smaller and not so well formed. A woman and a man—brother and sister—were seen, both having six toes on each foot and six fingers on each hand. From Fraser Range on to the Murchison natives were only seen at the stations. As many words as possible were obtained from them on every opportunity, and I beg to attach a list of words as obtained by Mr. Wells and myself. Mr. Wells saw one woman east of the Murchison, but she was too afraid to give any information.

#### SUMMARY OF WORK DONE.

From May 2nd to June 2nd, 1891. we travelled to reach starting point, 255 miles. From June 6th to October 3rd,

1891, we travelled through unexplored country, 1,813 miles; through explored country searching for water, &c., 306 miles; flying trips same routes afterwards travelled by caravan, 336 miles. From October 4th to November 2nd, 1891, in dépôt at Fraser Range. From November 2nd to November 26th, 1891, through new country, ninety-eight miles; looking for water in explored country, 225 miles. From November 27th to December 7th, 1891, resting camels near Golden Valley. From December 7th, 1891, to January 3rd, 1892, travelling through mapped country, 412 miles. From January 4th to February 22nd, 1892, resting camels, taking stores from Moorowie to Murchison, and shifting dépôt. From February 23rd to April 4th, 1892, flying trip (by Mr. Wells) through unexplored country, 834 miles. Total, 4,279 miles, which gives an average rate of travel for eleven months, that is from May 2nd, 1891, to April 4th, 1892, including all stoppages, of nearly fifteen miles per day. Area explored and mapped, over 80,000 square miles. Total mileage through unexplored country, 2,745 miles.

In conclusion, I unhesitatingly affirm, without fear of contradiction, that the course pursued under the circumstances of prolonged drought was on each occasion right and proper. When at Mount Squires had we spent any more time in searching for water the camels would have been unfit for the long journey to Queen Victoria's Springs, and the weather would have been so hot that the camels would have been unable to do such a long distance without water. Had we returned from Mount Squires and gone northwards we should still have had the drought to contend

with, much time would have been wasted, and all the arrangements upset.

With the training our camels had undergone, I considered the risk of going the 400 miles to Queen Victoria's Spring was a fair one to take—every member of the party was with me in that decision; and the fact that I was able to lead the whole caravan 150 miles further without any loss of camels and equipment was a sufficient proof that my judgment was sound, and that had Queen Victoria's Spring not failed us we should have easily, from there as a depôt, completed the examination of block A, and been only two or three weeks' behind time at the Murchison depôt. When on the western side of the desert we found that the drought had been on for three years, and the natives living on water obtained out of roots; it would have been madness to have attempted to take the caravan across direct to the Murchison. And the camels were quite unfit to be sent out searching for water.

The vicinity of Fraser Range was not a suitable place for a lengthened stay, as the bushes were very dry and provisions for the party could not easily be obtained. That, when Hampton Plains failed us, the course followed of going to the Murchison, where was plenty of feed and water for the camels and provisions for the party, and from where the remaining portion of block A could be easily attacked and examined by lightly-equipped parties, was the proper one, was proved by after events. Even if the drought had not broken up I could, as I advised the council from Geraldton, have gone on with the work and completed the exploration of Australia. But when the drought broke up we were in a splendid position, and all our camels were fat and fit to go

on, and if I had been allowed to fill the vacancies in the party and continue the work I have no hesitation in saying that not only would block A have been examined and probably new goldfields opened up for Western Australia, but blocks B, C, and D would have been explored by this date.

The abandonment of the expedition was a terrible disappointment to me. That men who had so little sense of their duty to their leader and to their generous employer should have been the primary cause of the break up of such a splendidly-equipped expedition, causing the opportunity of completing in such a thorough manner the exploration of those extensive unknown regions in Australia to be lost, is a matter that not only those intimately associated with the expedition, but geographers throughout the world, must ever regret.

I desire again to place on record my full appreciation of the splendid loyalty and assistance of Mr. L. A. Wells, the surveyor, and afterwards second officer, and also of the loyalty, good behaviour, and willing attention to his duties shown by Alfred Warren. I have, &c.,

DAVID LINDSAY.

Adelaide, October 4th, 1892.

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## **JOURNAL OF THE ELDER SCIENTIFIC EXPLORING EXPEDITION, 1891.**

*(Equipped solely at the cost of Sir Thomas Elder, G.C.M.G., for the purpose of completing the exploration of Australia.)*

The party is constituted as follows:—David Lindsay, F.R.G.S., &c., leader; F. W. Leech, second officer; L. A. Wells, surveyor and third officer; Victor Streich, geologist, mineralogist, and meteorologist; R. Helms, naturalist and botanical collector; F. J. Elliot, medical officer and photographer; A. Warren, cook; R. Ramsay, assistant; A. P. Gwynne, assistant; W. Bowden, assistant (died at Coota.); Hadji Shah Mahomet, jimador in charge of camels; Mahyedin, Afghan camel driver; Alumgool, camel driver; Mahmoud Azim, camel driver; Abdul, camel driver (took Bowden's place); forty-four camels (ten riding and thirty-four pack camels); four pairs 20-gall. water kegs = 160 galls.; four pairs 25-gall. water kegs = 200 galls.; four pairs 3-gall. canteens = 24galls.; water bags, and buckets, &c.

### **April, 1891]**

*April 22nd.*—F. W. Leech, L. A. Wells, V. Streich, R. Helms, A. Warren, R. Ramsay, and A. P. Gwynne left Adelaide by the early train for Warrina, stopping at Farina to take on the camels by special train. There being only twenty-two camels fit to take, Mr. Phillipson telegraphed to Taighe Mahomet, at Hergott Springs, to have additional camels awaiting the train. Mahomet had only twenty-five out of which to pick twenty-two. It can be seen that the whole forty-four were not specially selected.

*April 27th.*—Dr. Elliot and I left Adelaide on Monday, April 27th, 1891. We reached Warrina on the 29th, in the evening, and found very little done towards getting away. Mr. Leech had the evening before sprained his knee when wrestling. Dr. Dickenson, of Warrina, considered it serious, but Dr. Elliot said that if I could do without Mr. Leech's services for a few weeks he would soon be well, and it was perfectly safe to take him on.

*April 30th.*—Examined the camels and although there were a few I would rather not have had, on the whole the team was a good one.



Those purchased at Hergott were rather poor, but one advantage was that there were a goodly number of suitable riding camels.

**May, 1891]**

*May 1st.*—Engaged with the loading at Warrina. Bowden unwell, having a very bad cold. 9 a.m., bar. 30.010, ther. 75°.

*May 2nd.*—Left Warrina at 1.45 p.m., after being photographed by Mrs. Dickenson. Made a bed on one of the camels for Mr. Leech; the doctor had obtained a pair of crutches for him. Camped at a spring two miles east from Nilpena H.S. At 9 a.m., bar. 30.100, ther. 61°.

*May 3rd.*—Travelled over level good country to a spring two miles east from Cootanoorinna, H.S. Distance travelled ten miles. Killed a bullock for the Afghans; cut it up and salted it. At 9 a.m., bar. 29.990, ther. 69°.

*Monday, May 4th.*—Preparing meat and hide pack bags. Bowden worse. Dr. Elliot advised his being sent up to the station, which was accordingly done, Ramsay and Gwynne acting as nurses night and day. Leech also was at the station, Mr. MacDonald being most kind, making us welcome and doing all he could to assist us. The doctor stayed at the station to look after Leech and Bowden. At 9 a.m., bar. 29.950, ther. 66°.

*Tuesday, May 5th.*—Camped near Cootanoorinna. Mr. Streich asked me to lend him a camel to go and look at some hills three or four miles away. I told him that Mr. H. Y. L. Brown, the Government Geologist, had already reported on this country, and I wanted the riding camels to have as much rest as possible in the early part of the journey; besides Mr. Streich could not manage a camel, and we were all too busy to spare a man to accompany him. Mr. Helms busy collecting. At 9 a.m., bar. 29.945, ther. 66°.

*Wednesday, May 6th.*—Still busy with the loading and boxes, getting everything in proper order. I miss the assistance of Mr. Leech and Bowden very much, as only Mr. Wells understands what is needed. At 9 a.m., bar. 29.945, ther. 67°.

*Thursday, May 7th.*—Left camp at spring, two miles east of Cootanoorinna Station, at 11.20 a.m. Prevented leaving earlier owing to the late arrival of the camels. At the station Dr. Elliot photographed the caravan, and Mr. Helms left a packet of botanical specimens to be

forwarded to Adelaide. Took 1,000lbs. weight of dry salt beef and 38lbs. fresh. Poor Bowden is almost unconscious, and the doctor says a few hours will decide his fate. If he recovers we will not be able to take him on with us. This is sad. news, and makes our start anything but cheerful. Resumed our journey at 2.20, leaving Dr. Elliot, Mr. Leech, Gwynne, and Bowden at the station. Camped on the creek about ten miles distant at 4.30, the caravan arriving at 5 p.m. Clear hot day, with some heavy clouds low down on the horizon. At 9 a.m., bar. 29.940, ther. 65°.

*Friday, May 8th.*—At camp. Ther. 61°, bar. 29.975. During the night, at 2 and 4 o'clock, thunderstorms, with about  $\frac{1}{4}$ in. of rain and a southerly wind. Being quite unexpected, we were unprepared, and all sleeping out, so that the members of the company had an unpleasant experience putting up tents and covering up the loading in the rain. A big fire and billy of hot coffee warmed us, and we made light of the discomfort. Morning broke dull and threatening, but no rain fell until midday. The whole party were inexpressibly shocked when a messenger came with the melancholy intelligence that Bowden had died at 6 p.m. last evening. Sent an Afghan in with camels for the gentlemen at the station, also instructions *re* disposal of Bowden's effects, &c., and wrote to the hon. secretary Royal Geographical Society, Adelaide. As the doctor informed me previously that Bowden would be unable to go on with us I had sent Hadji in to engage another Afghan, as I knew of no white man available to take the vacant place. A very good man, Abdul, arrived. Raining in afternoon.

*Saturday, May 9th.*—Rained all night and all day, up to 4 p.m. Bar. 30.200, ther. 53° at 9 a.m. Had we not left the spring we would have been stuck up for a week in a most miserable camp; no firewood, no shelter, no feed, and very boggy all around, whereas we have all those desiderata here.

*Sunday, May 10th.*—Camp ten miles W.N.W. of Cootanoorinna. Ther. 56°, bar. 30.600. Held service, and then Messrs. Wells, Streich, and I walked up the creek to see how the flood waters were. Took off our boots and crossed a dozen water channels. A tremendous lot of water coming down the creek, but our camp is safe, as the biggest body of water passes down on one side, and we could get our goods out on the

other to the tableland if necessary. Messrs. Leech, Elliot, and Gwynne came out from the station, bringing a mail, the last we shall get until we reach the settled districts in Western Australia.

*Monday, May 11th.*—Same camp. Ther. 50°, bar. 30.110. Mr. Wells and I went, away to see if the ground was hard enough for the camels, and to find, if possible, a crossing to the other bank. We returned at sundown successful, but had a very wet and boggy ride. Paddy Fitzpatrick, a Central Australian with his blackboy came out to see if he could get on in place of Bowden. I was indeed sorry that I had engaged the other Afghan, as Fitzpatrick would have been a splendid addition to the party, Sent a mail back with him.

*Tuesday, May 12th.*—Cloudy, threatening for rain; ther. 55°. bar. 30.200. We are very anxious to get out of this flooded valley, as in the event of another inch of rain falling, we would be unpleasantly situated; not that we would lose our goods, for the flood waters move so slowly that we would be able to remove everything in time. Started at 10.20; got safely on to the tableland on the south side of Cootanoorinna Creek at 11.45. I then rode on ahead to find, if possible, a better crossing to the creek. At 1.35 had all the camels safely across on to the north side of the creek, just east of the trig. We had some difficulty, as some of the camels fell down in the boggy ground. We proceeded up the S.W. back of the Arkaringa Creek for nine miles, a very great deal of water laying about and the country very soft. We had a few drops of rain. The wind was very cold, veering round from east to north. Camped at 4.30 on good. feed. Saw one emu who successfully escaped from about eleven shots fired at him. Turkey were numerous, but very wild.

*Wednesday, May 13th.*—The morning broke clear and fine; ther. 53°, bar. 29.980.—Wind, slight from south. Started at 9.35, and travelled steadily up the Arkaringa Creek. Lots of water laying about—very heavy travelling. Camped about one mile from No. 1 Well, making a stage of about eighteen miles at 4 p.m. Some of the Cootanoorinna cattle about. An undulating stony country, with very good feed, salt cotton, and other bushes. Mulga and gidyea and box trees on the watercourses, and the two-mile wide valley of the Arkaringa. Few wood ducks.

*Thursday, May 14th.*—Cold and clear, wind N.W. to south; ther. 55°, bar. 29.960. Started at 9.25, passing No. 1 Well in one and a half miles; still following up the valley of the Arkaringa. As the waterholes were becoming less frequent, we filled up two casks. At midday we crossed to N.E. side of the creek, and found a country most beautiful to the eye of the pastoralist—good rains having fallen some two months ago—salt, cotton, and other bushes, with Mitchell grass, gidyea and box trees; a loose loamy soil. On the right a high tableland with bluff escarpment and very peculiar shapes. Slopes from the hills, beautifully clothed with vegetation. Valley of the creek two miles wide. Fresh horse and cattle tracks. Camped at 4.25. very lovely sunset.

*Friday, May 15th.*—During the night the sky became partially overcast with clouds. Very heavy dew.. Started at 9.20 along moist flat. Crossed to south side of Arkaringa Creek. Passed numerous clay waterholes. Followed a dray track; at 11.30 came to a well with the timbering nearly all destroyed by white ants. An open flat with good vegetation extending to the northwards. Open stony downs, very well grassed and clothed with cotton and saltbush, mulga, gidyea, box, and willows. The whole country looking extremely well. Camped at 4.20. Very cloudy, and looking like rain. As the sun set the clouds lifted, and the sky cleared very much. Hadji was breaking in one of the young bullocks, which he says will make a very good riding camel. I do not approve of his method of breaking; he knocks and rushes the poor beast about too much. At 9 a.m., bar. 29.835, ther. 55°.

*Saturday, May 16th.*—Cloudy, very threatening for rain; wind. Started at 9.17, having put all the loading on in half an hour. Passed over very good country indeed—a tableland and peaked hills of "horizontal beds of red and yellow jasper rock, flintz, quartzite, kaolin, and sandstone porcelanite, resting on gypseous clays of cretaceous age."—H.Y.L.B. At 11.30 we reached a point where the hills come right down on to the creek. The identical hill whose foot is washed by the creek we ascended, and found the "true matrix of the opal a quartzite highly ferruginous."—V. S. There was milk opal in places. It seems to me that this rock is much harder than the Queensland opal matrix. At 12.30 the packs started, and we resumed our journey. The track follows closely the course of the creek, but occasionally leaves it and goes

around a hill. At 3.30 we camped on a very pretty spot on the creek bank; nice waterholes and abundance of good feed for the camels. A flood 8ft. high had recently passed down, forming at one place a very large and deep waterhole, shaded by immense gums—a very cheering sight, and made us hope for some such spot a few months hence, on which to form a dépôt. Most magnificent feed of every sort. Mr. Streich has had some opportunities to-day to study the geological features, whilst Mr. Helms is kept very busy indeed, as, owing to the rains, both insect and plant life are plentiful. Hadji had a narrow escape from a serious accident to-day; he was riding the young bullock, and had dismounted to pick up an empty bottle. When he was about to remount the camel jumped up suddenly, and Hadji lost his hold; his foot remained in the stirrup, and for a few moments his head hung downwards, whilst he held on to the nose line and called to the camel to "wishta". Fortunately the beast lay down without hurting him, but he certainly was in a critical position, and might have had his brains dashed out. Looked like rain. At 9 a. m., ther. 58°, bar. 29.480.

*Sunday, May 17th.*—Morning broke fine and clear. Held Divine service at 9.15 a.m.; all attended. Remained in camp, men and animals enjoying the rest. An afterglow in the western sky lingered long after the sun had disappeared. At 9 a.m., ther. 62°, bar. 29.365.

*Monday, May 18th.*—Fine clear cold morning, heavy dew. Started at 9.23. Abdul is suffering from a swollen groin, having been kicked by one of the young camels. Mahmoud Azim was also kicked a few days ago, and has been very lame. At 12.5 passed a well and left the Arkaringa Creek and travelled over undulating stony downs exceedingly well bushed and grassed with Mitchell and other varieties, mulga, myall, and gidgea, and quondongs, passing between hills with the tableland close on our right. Camped at 5.10, having travelled about twenty miles. Passed numerous claypans with water; very good feed. A camel I was riding last week, and which I noticed went lame if ambling, was, although only carrying a pair of empty watercasks, walking very lame with the off hind leg, the injury evidently being at the hock or knee. It seems that about three of the camels were slightly injured in the trucks. At 9 a.m., ther. 58°, bar. 29.610.



*Tuesday, May 19th.*—Clear fine morning. Started at 9.23. Travelled over rolling stony country exceedingly well clothed with good bushes and grass between table-topped and peaked hills. At one time an extensive view was obtained over about 1,600 square miles. Crossed a branch of the Arkaringa Creek; fine waterholes, and large white gum trees, mulga; then the country changed to tertiary sandy loam, with stony flats; very good stock country. At eighteen miles the change was very marked; at twenty and a half miles camped on the edge of a Bay of Biscay flat covered with water and polygonum, in the centre of which was the Wintana well (water very white), a bastard saltbush growing over the flat. I shot four clucks. The tracks of dogs, kangaroos, and emus were very numerous. At 9 a.m., ther. 54°, bar. 29.360.

*Wednesday, May 20th.*—Abdul is still unfit for work. Ten camels missing this morning. Started at 10.20, taking 40 gallons of water with us, and travelled over a good mulga country, with grass, reddish sandy loam flats, and low sand rises. Tracks of dingo, emu, and kangaroo very numerous. Mahmoud Azim brought eight emu eggs on with him this morning; the contents were extracted and eaten, the shells being saved. Our camp at eighteen miles was situated in dense mulga. At 9 a.m.. ther. 57°, bar. 29.235.

*Thursday, May 21st.*—Camels much split up and difficult to find, although the ground being sandy there can be no possibility of losing any. All the camels but thirteen brought in. Having but little water in camp and no doubt that the other camels would shortly be brought in, we loaded up and started, leaving Hadji and Mahmoud out looking for the camels, Hadji riding; Ramsay being left in charge of the left, loading. In half a mile came on two camels sent them back with Alumgool; and we proceeded for seventeen miles over the same description of country, except that the soil was harder and we crossed some loose stones with a low sandstone range ahead and closing in on our course, which is nearly west now. At 9 a.m., ther. 59°, bar. 29.550.

*Friday, May 22nd.*—At 1.15 a.m. the dog Edward came into the camp, causing us to expect the other members of the party with the lost camels, but when we resumed our journey at 11 a.m. there was no sign of them. Left a canteen with 3 gallons of water in it hanging up a tree. We had to go on to Arcoellinna Well, as we had but little water in

camp. In three miles we touched the sandstone range and worked over a sandy gap and changed our course to north at seven miles, soon entering splendid feed, saltbush and other good green bushes. Reached Arcoellinna Well at 4 p.m., seventeen miles; the packs arriving about half an hour later. We had a good supper of emu egg omelette, wild cabbage, and fresh potatoes. At 8.15 p.m. I started on Misery, taking 4galls. of water; we had no other canteens with us. At 10.50 stopped for half an hour to give Misery a feed, and then on four miles met Ramsay and the others coming along, but seven camels short; they having left their camp at 4 p.m. the day before. Ascertained for the first time that six camels were out of hobbles Mahmoud having brought and then left the camels close to the camp while he went back for some others; they must have at once started off back. Had I known this I would have stayed and soon run their tracks down. I cannot understand why these fellows could not follow the tracks. The men continued their journey on to the camp. I returned with them for four miles, when I turned out on good feed to await their return. At 9 a.m., bar. 29.080, ther. 66°.

*Saturday, May 23rd.*—They reached the camp at 6 o'clock a.m., and immediately made preparations to return on riding camels. At 10 o'clock Hadji on Mr. Wells' camel, Mahmoud Azim on Mr. Streich's, Mahyedin on his own, with a week's rations and 9 gallons of water came. I packed up and we travelled twenty-eight miles farther back, passing old camps at 11.20 and 4 o'clock, having stopped three-quarters of an hour for a pot of tea. Stayed ten minutes at the last camp making everything snug against rain. Camped on top of a sandhill on the lost camels' tracks at 5.10 p.m. At 9 a.m., at Arcoellinna Well, ther. 66°, bar. 28.960.

*Sunday, May 24th.*—Her Majesty the Queen's birthday. Started at 8 a.m., Hadji and Mahyedin, to go along the road to Wintana Well and swamp to see if the camels had made in there for a drink; if not then they would still follow the road back to the Arkaringa Creek and follow that up to the northwards, as the camels making back to Warrina must cross that creek, in which is good water and plenty of feed; Mahmoud and I to follow the tracks to where they were last seen, and endeavor to track them on. If unable to do so, we would make straight on for

Arkaringa Creek, head and follow it down to meet Hadji, thus making a circle around the camels if neither of us found their tracks. Mahmoud led me on for a couple of miles and then said, "Look out for the tracks now." After searching for some time, he said, "I lose them; must make back to camp and start again." He did not know where the camp was. I growled at him for not getting on the tracks at once. It was 10 o'clock when we again left the camp, this time on the tracks. Without any difficulty we tracked them for eight miles, to where Hadji and Mahmoud had lost the tracks, on hard stony ground. This was twelve miles from the camp where the camels strayed from. Hadji had followed the tracks this far on foot, having first knocked up his camel by galloping in and out like a madman through the mulga scrub, and then gave himself up for lost, and Mahmoud found him sitting under a bush with his head between his hands. He started up, exclaiming "I am so glad to see you; I thought I would die." They were both unable to follow the tracks any further, and returned to camp. There were only the tracks of six camels visible. We dismounted, and with much difficulty tracked them for five miles, when we lost the tracks. As the camels had been keeping a very direct course we continued on, and in one mile we came upon a big swamp, at which the camels had not been. Concluding that they must have turned off, we went back to where we had seen the last dung, which was the last sign of them we had seen. Found the spot without any difficulty, and with some careful searching found a little more, the camels having turned sharp to the left. We with great difficulty tracked them over the stony ground for one mile, when we came to another swamp, at which they failed, owing to the soft ground, to get a drink. Followed the tracks up to the same hollow to where two camels had drunk, but the others were not so venturesome, and went away without a taste. A little farther on they left the hollow and resumed the original direction, which we followed for about a mile, when we could not track them any farther owing to the excessively hard ground and stones, the whole country being dense mulga with occasional clay flats with stones and saltbush. Mahmoud wanted me to leave the tracks and go on the Arkaringa Creek, as we were making such slow progress, and the camels had four days' start of us and were without hobbles. I was very loth to leave the tracks. We left the tracks on our right, by making a

detour to the left, and crossed over a stony range for three hours. Twelve miles we rode over soft country, and camped on the very head of the Arkaringa Creek, on rolling stony downs, Bay of Biscay, with good saltbush, herbs, and grass, extending as far as we could see to the east. Mulga; some small waterholes. At Arcoellinna Well. The aneroid barometer read at 9 a.m. ther. 66°, bar. 28.980.

*Monday, May 25th.*—Retraced our steps at 7.30 to some soft ground, which we followed southerly. At one mile we came on a good waterhole; in three miles the first gums appeared, so that we were on the extreme head of the Arkaringa—just where I wanted to be. Followed the creek down for eight miles, which has immense and numerous waterholes, when we found a gum creek coming in from the right, with Hadji's tracks going up it. Followed up that for six miles, when we came to where Hadji had camped last night. Still proceeded, wondering why he had not returned, as it was evident we should soon lose the creek. In about two miles we found we had missed Hadji's tracks, and we could not understand where he had gone to; the country on both banks being very stony it was no use looking for his tracks. After some consideration decided that, as the camels must be inside the circle that we had described, we must go back to where we left the tracks yesterday, and endeavor to follow them out. I was much put out at not meeting Hadji, as I did not know where he would make for. Mahmoud was completely perplexed, and trusted entirely to me to find the place. I just ejaculated, "God guide me right!" and I looked to our right, and saw what appeared a faint smoke arising through the mulga. Called Mahmoud's attention to it, but he could not detect it. After a few moments' watching I decided it was smoke, and presently some crows swept out of the blue ether and circled over the haze. Turned to it, and in half a mile or so found Hadji with the six lost camels, he having found them just previously, having heard during the night a faint tinkling of the bell on one of them. Strange that we should have so shaped our travelling as to meet just where the camels were! I was indeed thankful, as they were six of our best Beltana camels. Having found water and good feed they had been content to stay about for a few days. We steered for Wintana Well, the Afghans not having the slightest idea where it was. In six miles we struck the track, one and a

quarter miles west of the water. We fully expected to find the other camel here, as he had been some days without water. Camped. No signs of the lost brute, which is, I find, a regular "hatter", always poking away by himself. I am much disappointed with the bushmanship of the Afghans. They cannot track any better than I can, and they have no idea of locality; they are easily bushed, and much afraid of losing themselves. I cannot see any reason why the camels could not have been found on the first day if the men had only stuck to the tracks; they must have turned back when within two or three miles of the animals. At Arcoellinna Well. At 9 a.m., ther. 65°, bar. 29.980.

*Tuesday, May 26th.*—Clear, warm, heavy dew. I intend sending one man on with the camels to where the goods are, while the rest of us will endeavor to pick up the tracks of the still missing camel. At 8.45 we started going on south side of the track to intercept any tracks. Hadji and Mahyedin went on the north side of the track and I rode along the track for five miles further, when I turned off on the same side to run a smaller circle around the camp. At 1 o'clock I found the lost camel's track north-west of the camp and followed it for two hours in and out amongst the older tracks until it got mixed up with a lot of others on a hard piece of ground, when I could not pick it up again. Went for Mahmoud, but he could not do so well as I could. Decided that the camel was close. Hadji came on and reported that he had seen the camel's track on the road north of the camp, going away from the camp. He said he had put some bushes on the track to mark the spot. Just at dark the camel came into the camp, evidently attracted by the bells of the others. Thus he had strayed about for six days. He had been on some parakylia, and looked very well. At Arcoellinna Well. At 9 a.m., ther. 65°, bar. 28.600.

*Wednesday, May 27 th.*—I started at 7 o'clock, leaving the others to follow with the loading. At 10.35 passed the old cave; at 11.20 turned out on good roley poley. I saw no sign of Hadji's mark, so conclude he must have been on one of the pads close to the camp instead of on the main track. On again at 12.20 and reached Arcoellinna Well—thirty-six miles. Found everything right. Mr. Leech still on crutches. Mr. Wells had been out to north side of Chambers' Bluff, and recommended our going that route instead of direct to Mount Illbillie. Slight rain in evening and



more during night. During my absence Wa Wee waterhole. had been visited and photographs taken. The water at Arcoellinna is contained in shallow wells 6ft. deep in a watercourse in a gap. Very good water, and I think a fair supply. Mr. Chambers must have had a long camp here as he had erected a very substantial hut. Ther. 67°, bar. 28.940.

*Thursday, May 28th.*—Showery. The camels arrived at noon, but as the showery weather continued I decided not to move on. At 9 a.m., ther. 66°, bar. 28.860.

*Friday, May 29th.*—Threatening for rain. Started at 10.5, and at 3 p.m. drizzling rain began to fall. Reached the Soakage in a gum creek north of Mount Chandler at 4.15 (twenty miles), and camped, rain becoming heavier. Made everything snug. Steady rain from N.E. continued. At 9 a.m., ther. 60°, bar. 28.720.

*Saturday, May 30th.*—Heavy lowering clouds; everything damp and uncomfortable. Hadji was putting the saddles on, when I called his attention to some sore backs. He said, "Put saddles on wet hacks make sores worse." I said, "Go and have your breakfasts, and put the saddles on afterwards." He said that was not their way of doing it. I persisted, and he rattled off a lot of jargon about his business and my business and fifteen years with Mr. Phillipson. Of course I had my way, and we did not start until 10.45, and followed a pad westerly to an old camp, from which we took two augers, three files, one old shovel, one adze, one old axe, a medicine chest, and one bar of steel. Still followed the pad over excellent country with ground very soft owing to the recent rains. At least half an inch must have fallen during the last two days, plenty of water lying about. At ten miles left the pad and travelled on bearing 240°. Camped at 5 p.m., having made about seventeen miles; very good country the whole day. At 9 a.m., ther. 67°, bar. 28.500.

*Sunday, May 31st.*—No rain, but heavy dew. Started at 9 a.m. On bearing 246° to low part of range south-east of Mount Illbillie a fine hill to the south of that mount is in view. Granite broken hills on our right all day, with a black sea of mulga stretching far away on the left. At 3 p.m. passed a native well close to a granite outcrop; at noon we stopped at a granite hill to have a shot at some wallabies while waiting for the caravan to come up. Having made about twenty-three miles we camped at 5.20 on a mulga watercourse, about one mile from a much-