

Letter to Thomas Maclear, 15 February, 2 March 1856

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Near Tete or Nyunkwe on
the river Zambesi 15th Feby 1856

Thomas Maclear, Esquire

My Dear Sir

If a note sent by way of Angola reached its destination you will be aware of my having returned again to Linyanti - so little time was allowed by my Arab postman for writing I could not send all the observations made in the North. But those which remained unsent refer chiefly to places of little interest as Bango, a town South East of Kabango - Town of Shinté or Kabompo - confluences of the Loéti & Njoko - ^ Town of Sesheké - &c - the present letter is therefore intended to give you some idea of the country East of Linyanti, so that performing your dry calculations you may have something else for the imagination than the very interesting powers of $p = x^2$ &c. &c.

We descended the Leeambye from Sesheke in November last in company with a large convoy of Makololo - the confluence of the Chobe and it is about ^ 15 or 20 miles below Sesheké but I could get no observation - the new moon peeped out from among the clouds enough only to let us know it must have been visible but for clouds the night before. About ten miles lower down we came to the beginning of the rapids which end in Mosioatunya. Leaving the canoes we now marched about twenty miles along the bank to Kalai, otherwise named the island of Sekaté. As it was decided by those who know the country well through which the river flows in front that we should avoid the hilly country there both on account of tsetse and the ruggedness of the path, and turn away to the North East to meet the river when it has become placid again, I took a canoe at Kalai and went down to see the most wonderful sight I have seen in Africa - the "smoke-sounding" falls of the Leeamby or Zambesi - the direction was S.S.E and the distance 7 or 8 miles from Kalai - I

mention this because all the observations were made at the latter spot - When within six miles of the falls

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Five or six columns of vapour are seen ascending exactly as occurs in extensive grass burnings in Africa - and close behind them stands a range of low tree covered hills. The River is here of great breadth - probably a thousand yards and covered with islands of great beauty in consequence of being clothed with magnificent masses of Tropical Forest. When close to the falls we got a little light canoe and men well acquainted with the eddies in the fast flowing water and went to an island situated in the middle of the river and edge of the lip over which the broad Zambesi rolls. This cannot be done except when the water is low - creeping to the verge we peer down into a gulph from which an immense body of vapour rushes up and find it is a rent made in the hard basaltic bed from bank to bank - and the river of a thousand yards leaps down a hundred feet and is suddenly compressed at the bottom into fifteen or twenty Excuse my using the same language to you as I do in trying to convey an idea of the thing to some of my friends native of the island called Anglia - If we imagine the Thames filled with low tree covered hills from the Tunne[...] to Gravesend - the bed of hard basaltic rock instead of London mud and a rent or fissure made therein from one end of the tunnel to the other down through the keystones of the arch - and the pathway 100 feet from the surface instead of what it is - If we suppose farther the rent having its lips from 60 to 80 feet apart and prolonged from the left hand bank away to Gravesend - and the Thames leaping bodily into the gulph - forced to change its course and flow in the narrow space at the bottom from the right to the left bank - then turn a corner and go boiling and roaring through the hills - And we have something of what takes place with the Zambesi. When it emerges 30 or 40 miles distant from its place of confinement it flows broad and placid again away to the N.N.E. or N - E. till it reaches the Latitude of 15° 37' South - I have said 100 feet deep but this requires explanation - When looking at the perpendicular walls of the fissure we see the opposite lip has a straight edge, while that over which the water tumbles is serrated partly

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because a little worn by the torrent and partly because several pieces have fallen in. Looking down on the right of the island where most of the waterstream precipitates itself at low water we see a dense white cloud only with two bright rainbows on it - (It was at midday we visited it & the Declination of the sun and Latitude of the place about equal) On the left a large piece has fallen in and from that appearing above the foam I conjecture the depth. The vapour rushes up with a force sufficient to lick up completely several little rills which run down from the other side into the fizzle & When it reaches 300 or 400 feet in height it loses its steam colour and becomes dark to descend in a sharp smart shower which soon wets one to the skin - the falls were formerly used as places of worship by three chiefs who then lived in the vicinity - the constant roar must have inspired feelings of awe - When the river is in flood it is said to sound like distant thunder ten miles off - Trade does not seem to have extended itself to these parts for one of these chieftains graves may now be seen on Kalai ornamented with seventy large elephants' tusks planted round it - there are thirty over the resting places of his relatives Indeed through the whole Batoka country ivory was employed to make bracelets and gravestones only. Sun and rain soon rot them. The chiefs had too a great love for "ornamenting" their towns with human skulls - I counted between fifty and sixty such mounted on poles in one village - they were rooted out of their island fastnesses by Sebituane.

Our route then led us away to the North East untill we reached the hills through which the Bashukulompo river flows before joining the Zambesi - It is called Kahowhé and farther down the river Kafué & Kafurwé. Pursuing our course along the left bank we came among Tsetse and lost all our oxen except two untaught ones, so I have to march on foot - the usual mode of travelling is by canoes and there being no pathway boring continually through tangled thorny jungle is excessively tedious - About 1° below the confluence of the Kafué we came to that of the Loangua (Loangwa) both of which ^ streams are said to form but one river in the North West - the Kafue is about 300 yards broad - the Loangua double that but being in flood when we crossed it the actual distance across the ford was at least half a mile We found the ruins of a church exactly at the confluence

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A building on a hill on the opposite side of the Zambesi

must have been a fort and there are eight or ten large establishments of stone in ruins on the left banks of both rivers - the broken church bell contains no date and I could not ascertain from the present inhabitants the name of the station From two Portuguese traders I have met since I learn that it is Zumbo - It is impossible to conceive a finer trading station than this must have been - Besides being very beautiful from having a fine tree covered hill named Mazausue behind there is a magnificent view of the broad Zambesi and its tributary Loangua in front and there is water carriage in three directions beyond one of them to Mosilikatze - another to the Bashukulompo and by the Loangua to near Cazembe in Londa - Indeed Pereira went thither by this route - A mango tree measuring fifteen feet in circumference in one of the gardens was with the exception of some Tamarind the only vegetable relics I could discover. I wonder much why the Portuguese had abandoned so fine a station The natives said they were now visited by Babisa traders only - we got farther down we learned that Caffre Wars were fashionable here too - and that the Portuguese being unable to make the mother country foot the bills they had been for the last two years shut up in their fort at Tete. I cannot pretend to a knowledge of the causes of this uncomfortable state of things - "Uncomfortable" rather for me for I have unwittingly lugged myself into the midst of the belligerents - We have seen the women and children sent away several times - and parties of men pouring in to certain points during whole nights But they have generally come to the conclusion that "after he had been allowed to pass so many tribes unscathed, it would be a pity to have it said his progress had been stopped here" In which wise conclusion I most heartily coincided - The river generally is densely peopled by a strong muscular race of

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negroes, much addicted to agriculture. We see both men and women constantly employed in the gardens, and as the soil is extremely fertile they raise large quantities

of grain - the maize is nearly of the same size as American seed I have seen sold in Cape Town - And they have been most liberal to both my men and self - Indeed had they been otherwise we should have starved for my company consists of 113 persons. The Tsetse has been the barrier to their possession of cattle - yet should the large game which now abounds, be exterminated, I imagine the insect must cease to exist, for it leaves a spot impregnated with effluvia from man - and would then have no sustenance - There are several tribes of Caffres among them - When I say " Caffres" I mean men of the Zula family - No one calls Basuta or other Bechuanas by that term unless he wishes it to be tacitly understood that he has travelled or lived among people equal to those who have been glad about the brave British soldier so roughly - It is noticeable that the tribe which drove the good men of Tete into their fort is of the real Caffre or Zulah tribe - And firearms & gunpowder are now contraband all along the coast. as at the Cape. The missionaries ~~too~~ have had no hand in it here - neither has cattle stealing for there were none to steal - What else can we do now but turn up the whites of our eyes and exclaim, " Caffre wars are ordained by the immutable decrees of Heaven, and in engaging therein we labour under the same "terrible necessity" as the American professor of chemistry (said he was) to dismember quickly, the the man he murdered" the native laws are very strict - the boundaries of the lands of each chief are well known and clearly defined by numerous Torrent beds or "sand rivers". If anyone kills an elephant the half which lies on the ground belongs to the lord of the soil, and should the huntsman commence cutting up before a man comes from the chief to give permission, he loses both carcase and tusks. This law and others equally stringent apply to both natives and Europeans -

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I must now give you a sketch of the physical geography of the region which has come under my observation - When I mentioned in my last the curious phenomenon of the Lotembua flowing from Dilolo in two directions I had the whole excogitated and ready, but had not yet mustered courage enough to bare my back to the critical scourge of you knowing philosophers - a short time afterwards however I found by perusal of a speech made by Sir R.

Murchison before the R. Geog. Society so long ago as 1852 the same views clearly expressed - As I arrived at the conclusions by a route wholly my own and have such an eminent forerunner I have now no hesitation in expressing them - In 1843 I sent a paper to the Rev^d D^r Buckland in which I trace the gradual desiccation of the Bechuana country to the elevation of the country to the westward, And indicated the course of a large river which flowed from North to South exactly as the Leeamby does now - that the period of this flow was geologically recent I inferred from observing that it flowed into a large Lake which must have been discharged when the Orange River found a fissure made for it - (As described by Campbell it is not a waterfall, but a deep rent as at Mosioatunya) And at its point of confluence with the Lake there are several conical hills of amygdaloid which caused an eddy and the deposit of a mound of calcareous tufa containing a mass of fossil bones which from being like those of the zebra or buffalo I conjecture to be recent. I have been remarkably unfortunate in geologizing - when I discovered this mound I had not even a hammer with me and would not spoil the beautiful teeth &c. which stood out in bold relief on the rock. Many years afterward my other duties led me back to that part and fully armed I felt as a keen Antiquarian would, if he expected to meet a manuscript history of the world by Methusaleh

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with an appendix containing an account of the Flood by Ham one of the survivors - you will not think this exaggerated when you reflect that I had been peering at rocks for many a day in a country where there is no road making or quarrying or even torrents laying fossils bare, and this was the only instance in which Fossil bones gladdened my sight. But an express came from Kuruman - the son of another missionary was dangerously ill - I galloped a hundred miles back to find him in his grave, And never had and now probably never will have an opportunity of visiting that part again (it is near Bootchap and the mound is known to Rev^d H. Helmore of Likatlong who would willingly shew it to any scientific traveller) To crown my geological misfortunes some epiphyses & other loose portions of bones I picked

up, with specimens to illustrate the geology of the Interior though taken to England by Rev H. M. Methven were stolen from the railway before they reached the venerable D^r's hands, the thief, it is supposed, thinking the box contained plate! And the Boers at Kolobeng finished the remainder, I am not aware whether any public use were made of that paper - But you will further on percieve the connection there exists between this part of the continent and that beyond Lake Ngami - the one is a basin partially filled up with eruptive rocks - the other is really of a basin or trough form at the present time - In going North the presence of large Cape heaths and Rhododendrons made me imagine that we were travelling on an elevated table land and the sudden descent of at least a thousand feet into the valley of the Quango seemed to confirm the idea - But having hopes of meeting an Ane[...]-roid or Barometer at Loanda I did not try my only other resource for measuring elevations viz. the point of ebullition of water - Being disappointed by the autocrat of all the Russias requiring the presence of my friend

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I was obliged to trust to the Thermometer and as I tried to use it always at the same hour of the day and when the temperature of the air in the shade was the same I hope the results may be taken as an approximation - As I have not a table for reducing the degrees to feet I must give you the degrees them[-]-selves. Well, the highest point of Pungo Andongo is the most westerly observation in measuring an oblong ridge which lies parallel to and about 300 miles from the West coast - It cannot be less than 20° of latitude long and from it arise the Coanza and Quango on the North West - the Loeti on the South - the numerous rivers which unite and form the Chobe - the Embarral or River of Loebe on the South West - & the Casai and its many feeders on the East

Brisk Ebull
 Top of Rocks of Pungo Andongo 4210^H 204
 Top of Tala Mungongo — (3151) 206
 Bottom of descent of ditto — (2097) 20[...]
 Bottom of Eastern ascent (3680) 20[...]
 Top of ditto ————— (5278)20[...]
 Dilolo ————— (4741) 20[...]
 Confluence of Leeba & Leeambye — (4741) 20[...]

Average of many obs^{ns} at Linyanti (~~3839~~³⁵⁷¹4051) 20[...]

[Quoted from] Lake Ngami — (2624) -207°(?) 3151 20[...]

[memory] Kolobeng — (3945) 204½(?) 3680 20[...]

[doubtful]

If you do not reject my instrument in toto the ascent of Tala Mungongo which to the eye is much higher is in reality lower and not much higher than Lake Ngami which is certainly in a hollow - Indeed I believe when we were looking at the Rhododendrons we were nearly on the crest of the ridge and the Quango has given us a section of it shewing it is composed of red clay slate (scotticé Keebe) Then Dilolo forms a sort of partition in the valley which exists between this the Western and a similar ridge which we have found about 10° Eastward

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for all the rivers and rivulets turn Northerly or Southerly from that point according as they belong [to] the Western or Eastern outgoing drains of the country - the Lotembua alone sends a portion of its waters to the Atlantic and another portion to the Indian Ocean The general direction of the chains of hills, and the dip, of the old rocks which contain impressions of algae only, or the ripple mark with no fossils, being towards the centre of the continent shew that the present form is very antient. The eruptive rock on which Kuruman stands brought up fragments of these bottom rocks in its substance Geologically the country around and North of Kuruman forms part of a great primaeval valley. It was therefore with much satisfaction I noticed Sir R.M. mentioning with approbation the views of M^r Bain who is really a geologist and not a mere dabbler in the science like myself - I am however dosing you with my observations and cogitations with a specific object in view. If you cannot demolish my theory I mean to give some useful advice to all who may attempt to explore or civilize Africa - So be patient -

When we left Kalai we went a little North into the bed of the Lekoné a rivulet which joins the Leeamby a few miles above Kalai. Going up its bed it seems wonderfully like what may have been the bed of the

Leeambye before the formation of the Fizzure - but after
 going ten or twelve miles we left the valley on our right
 or South. I give the observations on the Eastern ridge
 here Bed of the Lekoné near the falls - Brisk Ebullition (3945) $204^{\circ}\frac{1}{2}$
 Marimba's after leaving Lekoné ——— 4608 $203^{\circ}\frac{1}{4}$
 Near source of Unguesi ————5009 $202^{\circ}\frac{1}{2}$
 Banks of the Kalomo - (top of ridge) 5278 202°
 Naka Ahanto on Eastern descent from Ridge (4210) 204°
 Banks of the Kafué or Bashukulompo R. (3415) $205^{\circ}\frac{1}{2}$
 Top of the hills at Semalembue's (4078) $204^{\circ}\frac{1}{4}$
 Bottom of D° (3288) $205^{\circ}\frac{3}{4}$
 Banks of Zambesi near conf^{ce} of Kafué (1571) 209°
 ——— at — of Loangwa (1440) $209^{\circ}\frac{1}{4}$

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Here it may be remarked that the Lekoné flows in the
 contrary direction to the Zambesi or Leeamby and so d[oes]
 the Unguesi which indeed joins that river above
 the commencement of the rapids at which we left
 the canoes - The Kalomo on the top of the ridge flow[s]
 South - the Mozuma the first rivulet on the Eastern
 side flows Easterly and then the rivulets flow away
 into the Kafué Suppose the bed of the Lekoné
 or we may say the ancient bed of the Zambesi
 to have suffered little or no change of elevation by
 formation of the fizzle then the elevation being onl[...]y
 a little more than that of Linyanti we see the machin[ery]
 by which a vast lake was collected which embraced
 in its bosom, most of the ^ bed of the Chobe - Lake Ngami and
 much of the country from Nchokotsa Eastwards - this
 is abundantly evident otherwise for the whole of the
 space thus indicated is covered over with a thick
 bed of soft calcareous tufa with which the water[s]
 formerly seem to have deposited most copiously -
 and considerably to the South West of Ngami if an
 anteater digs his burrow shells are thrown up
 identical with those now living in the Zambesi &
 Zouga It is also pretty certain the waters ^ pent up in
 Barotse Valley were discharged by the fizzle of Gonye
 and there are other ^ fizzle falls in the country as one in
 the Kabompo or Leeambye beyond Masiko's and
 another in the Bashukulompo river -

That these ridges are much farther North than
 my enquiries extend may perhaps be inferred
 from the Congo or Zaire being exceedingly narrow
 where Captain Tackey turned yet Commander
 Bedingfield informed me that it yields an extraordinary
 large amount of water to the ocean - Indeed no sounding
 can be found with ordinary lines near the mouth
 though the stream is rapid and perfectly fresh - I h[ave]

referred already to the fissure outlet of the Orange River
Information got from Arabs from Zanzibar
and the Makololo who went on a ~~trading~~ marauding expedition
to the East or E N E of Masiko while we were
at Loanda may be cited as next best to
actual observation - the Arabs say a large river
flows from the East or country of Banyassa
(N'yassa) to the South West and passing near

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Cazembé joins the Leeambye. The Banyassa live on
a hilly country and have no Lake in their own land
but to their NNW the large Lake Tanganyéka is
situated and that is connected with another still
farther North and is named Kalagwé (Garague?)
(I am writing now in the most profound ignorance of
all that may have been done there during the last few
years) My arab friend goes ~~but~~ either round the end of
Tanganyenka or is taken across it the distance
being three days and the canoe is punted the whole
way. It is ten days North East of Cazembe - Is it
unreasonable to suppose these large shallow
collections of water are aught else but the result
of tropical rains - the fissures in the Eastern
ridge not yet being deep enough to produce
perfect drainage

The Makololo when in their Eastern foray
were accompanied by the above referred to Arab -
and when near Sebolamak[...]ea they found a
large river coming from a distant ridge to which
the Arab directed their attention saying "When we
see that we always know that we are only about
to begin our descent of ten or fifteen days to the
sea" - the same river named Lokanka spreads out
into a Lake called Shuia (Shooeea) which gives off
two rivers - these uniting with the Kafue again divide
and form it and the Loangwa - the situation is that
assigned to Lake Maravi - But the country being
full of reedy marshes shews clearly, with the directions
of the Loapola and Lokanka, that there too the basin
form prevails - the strike of the rocks of the Eastern
ridge makes me suppose it trends away to the
North East - this agrees with what both the arab &
Makololo report -

Now like the postscript of a lady's [...] letter comes
the Kernel of the whole of this verbiage - Both Eastern
and Western ridges are decidedly salubrious ~~While~~
while the valley is as decidedly deadly. Criminals
who were doomed by the Portuguese to the Black

rocks of Pungo Andongo were believed to be

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undergoing a much severer punishment than those who were sentenced to transportation to the coast But these same rocks are now known to be in the healthiest District in Angola - And Bihé still farther in is more salubrious still. It is the same with the Eastern ridge - We saw neither a marsh nor a fount[...]ain] on it, and though I have been for a month on the Zambesi I have ~~had~~ suffered nothing from fever this however is partly owing to having had wheaten bread and not the mere starch of Londa manioc & bird's seed. Zumbo was healthy - not because it was elevated for the country is all low - the ranges of hills which run all along on each side of the river are not so high as the ridges we left behind - If then these salubrious ridges run much farther to the North than my enquirie[s] extend it may be recommended to all those who engage in scientific pursuits or in enterprises of commerce and benevolence to endeavour to ascertain if these may not be directed from sanatoria on these elevations. It is worth enquiry at least - the Niger expedition may have turned back when within fifty miles of such a desirable position for its stricken and prostrate members - I anticipate water carriage to within 2° of the Makolo[lo] by means of flat bottomed boats - the chief obstruction are rapids and I have seen none yet equal to those below the Barotse valley. And if this can be effected during a healthy part of the year I expect to be able to pursue our plans in good health - I am not so much elated by the feat of crossing the continent being nearly accomplished as might be expected the end of the geographical feat is but the beginning of the missionary enterprise - that I may be honoured to do some good to this poor degraded trodden down Africa is a wish in which you will I doubt not cordially join -

Reached Tette 2^d March pretty well tired from marching through a rough stoney country without path Portuguese very very kind, thanks to M^r Duprat - Kind remembrance to M^{rs} M. & family, Mann Morton &c David Livingston