

An Account of the Earthquakes which occurred at the Cape of Good Hope, during the month of December, 1809; with a Meteorological Table, from the 4th to the 27th: and an Appendix containing Notices of Shocks which have occurred at various other periods. By W. L. VON BUCHENRODER, Esq. Member of the Institution. Abridged by the Author, from the more detailed Statements read at one of the Meetings of the South African Institution.

THE occurrence of Earthquakes at the Cape of Good Hope on the 4th of December, 1809, as well as during several successive days, is yet remembered by numerous residents of the Colony; but as far as I know, few, if any, of the various facts connected therewith, or of the different phenomena which took place have been collected and recorded. It may, therefore, not be uninteresting to preserve a faithful account of what was observed, particularly as from the propensity of man, to exaggerate any uncommon occurrence, (which was fully exemplified at that period,) as well as from the lapse of time, it will be in a few years more, if not altogether impossible, at least highly difficult to obtain a correct statement of the occurrences as they took place. With such a view the following remarks are submitted to the Institution, and if those Members who were in the Colony at the time in question, would furnish in like manner, their individual observations, the object to be wished, might readily be accomplished.

4th December, 1809.

Nothing uncommon was observed in Cape Town, either on that day or on those immediately preceding it. The weather was fine, clear, and as might be expected at the season, very warm. But although it was fine in Cape Town, there was observed throughout the day, as well as during the two or three immediately preceding it, a thick haze over the eastern shore of Table Bay. The wind during the day was S. S. E. and blew a fresh breeze.

In the evening, a little after ten o'clock, three shocks, each accompanied by a tremendous noise, were felt, within the space of a minute or two. When the first took place I was sitting in a large company, all the members of which started simultaneously and hastened to the door, the majority exclaiming that a powder magazine must have blown up, while one gentleman called out that it was an earthquake, adding, he was acquainted with such, from having experienced some on his voyages to the West Indies. While we were standing in the street, the second shock took place, which was felt much stronger; was accompanied by a louder, and very

tremendous noise, that continued longer than the first; and resembled the report or sound, that would be produced by a great many pieces of Ordnance fired off by a train, at a little distance. The sound was somewhat hollow, and ended with a rumbling noise, but was not followed by any distinct echo.

This second shock roused all the inhabitants, who came running into the streets in great consternation, many of them even undressed from having been in bed. Within the space of about a minute, a third shock, but not nearly so violent as the second, and even less so than the first, took place, accompanied also by a similar noise, but less loud, of shorter duration, and more rumbling.

The shocks, as well as the sounds, particularly the rumbling, seemed to come from the North, and to go towards the South. Nothing was perceived however of the wavelike motion of the earth, which has been frequently observed in other countries to accompany earthquakes: and the sensation of the shocks, was such as is occasioned by the explosion of a powder magazine, or the discharge of heavy artillery.

The wind which had been blowing a fresh breeze from S. S. E. changed at the same time to N. N. W. and then followed a calm. The sky was very clear, the stars shone with great brilliancy, and numerous meteors were observed. In Table Bay nothing was remarked except a heavy swell.

About ten minutes after the third shock, a rumbling noise was again heard, and a shock felt, but inferior, as well in loudness as violence, to any of the former. I, myself, as well as most of the inhabitants, continued either standing or walking in the streets, where we heard rumbling sounds from time to time, till about one o'clock in the morning. During that time it continued calm, with the exception of now and then gusts of variable winds.

5th December.

In the morning a little after seven o'clock, another shock was felt, accompanied with a sound like thunder. The wind was variable, chiefly westerly, and in light gusts.

In walking through the streets of Cape Town, I observed that nearly all the buildings had suffered, more or less, from the shocks during the preceding night, as was evinced by numerous cracks in the walls, the traces of which are yet perceptible in many houses. These were irregular as to direction, and extended generally four, six, or more feet, from the top of the walls, and in a few instances even nearly down to the foundations. Although such were visible on both sides thereof, yet they did not amount to open clefts, and I do not know any instance in Cape Town, of a house having received so much damage as to have required it to be rebuilt. The parapets of many were at that time ornamented with figures, urns, &c.

of stucco, like to what may yet be seen on a few, and in some instances, fragments of those had fallen, and the people were here and there busy in taking down others. I heard also that an old chimney or two had tumbled. No cracks or fissures were observed in the ground in Cape Town.

There were (as might be expected) a variety of reports in circulation with regard to what was seen and heard, most of which were unworthy of attention; yet I cannot omit remarking that many persons concurred in affirming that they had seen large meteors, witnessed their explosions, and experienced the instantaneous shocks, and heard the reports caused thereby. In occurrences like the above, the unadorned narrative of the simplest people is found frequently the most useful in order to come to a matter of fact; wherefore I am induced to give a statement, as it was made unanimously by several slaves, who resided at a house above Green-point, near the corner of Lion's Head. They stated "that they saw something like a wagon illuminated by numerous lights proceed swiftly from the opposite side of Table Bay, or from the direction of Saldanha Bay; that it ascended half-way up Lion's Head, and then turned towards the Marine Villa; that it descended again and burst when near the sea, and that immediately thereon they felt a shock and heard a tremendous noise."

In Cape Town several people had seen a flash, wherefore, they took the first shock and noise for an uncommon loud clap of thunder, and were only alarmed by the repetition thereof. A farmer on the road near Rondebosch, stated "that he saw a meteor or fire ball, proceed towards and strike the Devil's Hill," and that immediately thereafter the second shock (if I recollect right) occurred.

At about half-past twelve o'clock, a loud report or clap was heard, and a shock was felt. The sky at that time was very clear, and the weather warm; with light airs from N. W. In the afternoon a little before five o'clock, a rumbling, protracted, and moderately loud sound was heard, but no shock was perceived. A few fleecy stationary clouds were observed, which disappeared in the evening. Many inhabitants were busy in pitching tents, and some in placing wagons, in the squares of Cape Town, in which they slept during some weeks. The night was very fine and calm, the sky without clouds, and the stars shone uncommonly clear.

Much interest was excited by what was said to have been observed at Jan Biesjes Kraal, and at Blauweberg's Valley. It was stated, "that the earth had opened, that volcanic eruptions had taken place, that craters had been formed, and that lava had issued!" Numbers of persons flocked to these spots, and I went also on the 9th to examine them, but what I found fell considerably short of what I expected.

from the wonderful accounts I had heard, yet was nevertheless remarkable and interesting. Near the Kraal I found rents and fissures in the ground, one of which I followed for about the extent of a mile. In some places they were more than an inch wide, and in others much less. In many places I was able to push into them, in a perpendicular direction, a switch to its full length, of three or four feet. By the people residing in the vicinity, I was informed, that they had observed these fissures on the morning of the 5th December, in some instances three and four inches wide, and that one person had been able to push the whole length of an iron rod used to fix curtains upon into them, and that others had been able to do the same with whip-handles of even ten feet in length.

The house at the Kraal in question, (the residence of a Mr. Bantjes,) I found to have suffered so much, that it was not habitable, and consequently had been evacuated. In the walls were numerous clefts; by which they were rent completely asunder, so that I could put a stick from one side to the other in many places. The clefts extended from the top to the bottom, and corresponded with fissures in the ground.

At Blauweberg's Valley, I found the sandy surface studded with innumerable holes, resembling in shape, but in nothing else, craters in miniature. These holes were from six inches, to a foot and a half, and some even three feet in diameter, and from four inches to a foot and a half deep; of a circular form, and the sides sloping to the centre. They were lined with a crust of bluish clay, of about a quarter of an inch in thickness, which had been baked by the sun, and according to its nature had cracked and curled up in fragments, which however adhered still to the sloping sides of the holes. I reckoned seven of these holes, of different dimensions, in an area, contained within a circle, which I drew around me with a walking stick, and which might have been somewhat more than ten feet in diameter.

The appearance of the bluish baked clay, which had given rise to the story of lava! was easily accounted for, from the rain (a great quantity of which had fallen in the preceding season) having been prevented by the substrata from penetrating and sinking deep into the ground, so that under the sandy surface, a considerable quantity of water had collected, in which a portion of the substratum of clay had become dissolved, and which had been forced up through the loose sand, by the concussions which took place.

The people at Blauweberg's Valley, stated, that "they saw jets of coloured water spout from these holes, to the height of six feet, in the night of the 4th of December, at the time that the shocks were felt."

TABLE shewing the height of the Barometer and Thermometer, the nature and direction of the Winds, the state of the Weather, the number and nature of the Shocks, the number and character of the Sounds, and the other Occurrences of general interest, between the 4th and 27th of December, 1809.

Date.	Hour.	Minutes.	Wind.		Thermo- meter.	Barom- eter.	Direction.	Strength.	Weather.	No. and nature of the Shocks,	No. and character of sounds or noises which occurred.	REMARKS.
4	8	30	p.m.	30	12	79	S.S.E.	fresh breeze.	fine and clear.			
10	8	p.m.	29	67	77	N.N.W.	calm.	calm.	do.			
10	19	p.m.	29	66	76	variable	calm with gusts.	calm with gusts.	do.	three strong ones.	loud reports.	
5	7	8	a.m.	do.	76	W.	light gusts.	light.	do.	not so strong.	rumbling.	
12	28			29	77	80	N.W.	do.	do.	slight.	like thunder.	
4	50	p.m.	29	70	80	N.N.W.	do.	do.	do.	moderate.	loud claps	
8	0	p.m.	do.	76	76	do.	calm.	calm.	clear.		long rumbling.	6½ minutes past 4 p.m. New Moon.
6	5	38	a.m.	29	80	75	N.W.	fresh breeze.	a few clouds.	slight.	rumbling.	A few fleecy clouds towards N.W.
7	0	a.m.	do.	do.	77	do.	do.	do.	very clear.	do.	do.	
1	6	p.m.	29	90	79	do.	calm.	calm.	do.			
5	21	p.m.	do.	do.	78	W.N.W.	do.	do.	do.	no shock.	slight rumbling.	
5	25	p.m.	do.	do.	78	do.	do.	do.	clear.	do.	do.	
8	0	p.m.	29	96	75½	N.W.	light.	light.	do.			
7	6	0	a.m.	30	05	72½	do.	nearly calm.	do.			
12	0			30	10	76	N.N.W.	do.	do.			
1	0	p.m.	do.	do.	76	do.	do.	do.	do.	very slight.	slight rumbling.	
7	0	p.m.	29	90	74	W.S.W.	light.	light.	do.			
10	55	p.m.	30	15	74	do.	do.	do.	do.			
11	2	p.m.	do.	do.	74	do.	do.	do.	do.	slight.	like thunder.	The wind changed in the forenoon.
8	2	27	a.m.	do.	72	do.	do.	do.	do.	no shock.	do.	
6	0	a.m.	do.	do.	73½	do.	do.	do.	do.	do.		
12	0			do.	76	S.S.E.	do.	do.	do.			
3	7	p.m.	30	10	76½	S.E.	light.	light.	do.	slight.	rumbling.	A thick haze on eastern horizon.
7	0	p.m.	do.	do.	75½	do.	do.	do.	do.			
9	6	0	a.m.	30	00	74	W.N.W.	do.	do.			
12	0			do.	79	N.W.	do.	do.	do.			
6	30	p.m.	29	95	77	S.E.	nearly calm.	light.	do.	moderate.	loud claps.	

10	1 30 a.m.	29 95 77	S.S.E.	fresh breeze. gale. light.	do. do. do. do. do. do.	no shock.	slight rumbling.	Many meteors seen. Table Mountain covered with [clouds]. Table Mountain covered with de- [scending] clouds.
11	5 0 a.m.	29 92 75	do.	strong gale.	do.		two, slight rum- bling.	
12	7 0 p.m.	29 96 78	do.	nearly calm.	do.	slight.	two, like reports of ordnance.	
13	5 0 a.m.	29 98 79	S.	light breeze.	do.	slight.		
14	9 0 p.m.	30 00 77	S.E.		do.			
15	12 90 a.m.	do. 75	W.	do.	do.	Three.—One strong and two slight.	one loud clap, and two fainter ones.	The first shock lasted 30 seconds.
16	2 0 a.m.	do. 75	W.	light.	do.	hardly perceptible.	like thunder.	
17	6 0 a.m.	30 02 76	variable	do.	some clouds. thunder clouds. clear.			
18	6 14 a.m.	30 04 76	do.	nearly calm. fresh breeze. nearly calm.	few clouds. do. do. clear. do. fine clear. do. do. over clouded. do. do. very much ditto. over clouded.			
19	9 17 a.m.	30 05 80	W.	do.	do.			
20	12 0	do. 81	W.N.W.	do.	do.			
21	8 0 p.m.	30 04 75	S.W.	do.	do.			
22	5 0 a.m.	do. 74	W.S.W.	do.	do.			
23	1 0 p.m.	do. 76	do.	do.	do.			
24	7 0 p.m.	do. 75	S.W.	do.	do.			
25	5 0 a.m.	30 00 70	do.	light.	do.			
26	8 0 p.m.	29 92 77	N.W.	very light.	do.			
27	5 0 a.m.	29 95 74	S.S.E.	do.	do.			
28	1 0 p.m.	30 00 80	do.	light.	do.			
29	8 0 p.m.	29 95 78	N.W.	do.	do.			
30	5 0 a.m.	29 94 77½	N.E.	nearly calm.	do.			
31	12 0	30 00 78	N.W.	light.	do.			
32	8 0 p.m.	do. 75	do.	do.	do.			
33	5 0 a.m.	do. 76	do.	do.	do.			
34	12 0	30 05 80	do.	nearly calm.	do.			
35	6 0 p.m.	do. 76	N.N.W.	do.	do.			
36	5 0 a.m.	30 14 74	N.W.	do.	do.			
37	7 0 a.m.	30 20 76½	do.	do.	do.			
38	12 0	do. 78	do.	do.	do.			
39	9 0 p.m.	30 15 75	S.S.E.	gale.	do.			
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Date.	Hours.	Minutes.	Barom. eter.	Therm. meter.	Wind.		Weather.	No. and Nature of the shocks.		No. and character of sounds or noises which occurred.	REMARKS.
					Direc- tion.	Strength.					
19 th	5	0 a.m.	30 10	73	S.S.E.	gale.	clear.	no shock.	like thunder.		Table Mn. covered with clouds. Wind abated, and towards noon [became nearly calm. Towards evening the wind fresh- ened and blew a gale; it blew a gale when the noise was heard, then became calm, and continu- ed so till 5 o'clock, when it was perceived it had changed.
	9	0 a.m.	do.	83	S.E.	light.	do.				
	1	0 p.m.	30 08	80	do.	calm.	do.				
	7	0 p.m.	30 03	75	do.	gale.	do.				
20 th	3	31 a.m.	do.	75	do.	calm.	do.	over clouded.			Cloudy during the day, with now and then showers of rain. At 45½ minutes past 8 o'clock p.m. full Moon. In the night the wind changed.— [Table Mn. covered with clouds. Towards evening the wind increas- ed and blew a gale in the night.
	5	0 a.m.	30 06	74½	W.	light.	do.				
	12	0	30 01	76	N.W.	nearly calm.	do.				
	10	0 p.m.	30 00	75½	do.	light.	do.				
21 st	5	0 a.m.	29 08	74	do.	nearly calm.	over clouded.	just perceptible.	like thunder.		The wind changed to E.N.E. Haziness on the eastern horizon. Thick haze on ditto, now and then gusts of wind from S.W. which veered to S.S.E. and blew a gale at noon. Table Mountain, during the whole day, covered with heavy clouds, and it blew a gale.
	6	0 a.m.	do.	70	S.	light.	rain.				
	1	0 p.m.	30 05	70	W.	do.	do.				
	8	0 p.m.	30 03	75	W.	do.	over clouded.				
22 nd	5	0 a.m.	30 00	72	S.S.E.	moderate.	clear.	no shock.	slight rumbling.		A few clouds to the S. Dark heavy clouds to the N.W.
	4	0 p.m.	do.	80	do.	light.	do.				
	8	0 p.m.	do.	69	do.	gale.	do.				
	5	0 a.m.	29 96	74	do.	light.	fine clear.				
23 rd	12	0	29 97	85	do.	nearly calm.	clear.				
	4	10 p.m.	29 90	80	E.N.E.	light.	do.				
	8	0 p.m.	do.	78	variable	do.	do.				
	5	0 a.m.	29 92	75	N.N.W.	nearly calm.	do.				
24 th	12	0	30 04	79	S.S.E.	gale.	do.				
	6	0 p.m.	30 11	74	do.	do.	do.				
25 th	5	0 a.m.	30 15	73	do.	do.	do.				
	12	0	30 12	75	do.	do.	do.				
26 th	8	0 p.m.	30 05	67	do.	do.	do.				
	5	0 a.m.	29 94	66	N.W.	nearly calm.	do.				
	12	0	29 93	80	do.	calm.	do.				
	9	0 p.m.	29 94	68	do.	gusts.	clouds.				
27 th	5	0 a.m.	29 91	70	W.	calm.	over clouded.	no shock.			
	1	0 p.m.	30 00	74	S.W.	light.	clear.				
	7	0 p.m.	29 90	68	do.	do.	do.				
	11	32 p.m.	do.	68	do.	do.	do.				

APPENDIX

The statements relative to the occurrences in June, 1811, are made from my own personal observation; but those regarding the others are from records of a more or less perfect description.

On the 4th of September, 1695, between seven and eight o'clock in the evening, an earthquake was felt in Cape Town, which seemed to go towards the interior of the colony, and to be of longer duration in some places than in others. It occasioned nowhere any injury.

On the 5th of September, 1739, at two o'clock in the morning, a shock was experienced in Cape Town, which lasted but a few minutes, and was accompanied by a loud noise like thunder.

On the 7th of September, of the same year, or two days after the last alluded to, a fire-ball fell. It ascended the west side of the Lion's Rump, and burst behind the Devil's Hill, with a report like a cannon shot.

On the 11th of July, 1766, a little before two o'clock, a strong earthquake was felt, which was followed by a noise like loud thunder. Its duration was very short, and its direction was from the West to the East. In Simon's Bay its effects were so strong, that the sick in the hospital declared unanimously that they felt the bedsteads move under them, and knock against the walls, and that they were on the point of running out of the house. It occasioned, however, no damage, with the exception of causing some old cracks in the gables to open again.

On the 7th of January, 1811, at six o'clock in the morning, a very slight shock was experienced by several persons in Cape Town.

On the 2d of June, 1811, at about 11 o'clock, A.M. an earthquake was felt in and near Cape Town, which was attended with a report like the discharge of a piece of ordnance. Within a few seconds of that, a second shock and report took place, which were more violent than those of the first, and the former appeared to me to be about as strong as the first shock on the 4th of December, 1809, while the noise or report resembled more that which accompanied the one at a quarter past six A.M. of the same month, viz. short and sharp, without either a rumbling or hollow sound. In estimating its loudness, it ought, however, to be observed, that the noise or report on the 4th of December, was heard during the stillness of the night, while this was heard not only during the hum and bustle of the day, but at a time when the troops were returning from a field day, and marching through the streets with bands playing. The weather at the time of the occurrence in question, was uncommonly warm; the thermometer at ten o'clock stood at 70, and there was a complete calm, with every where a thick haze.

On the 19th of June, a little before ten o'clock, A.M. a slight shock was felt, accompanied by a hollow rumbling sound, which seemed to proceed from the North and extend towards the South, and lasted but a few seconds.

On the 14th of April, 1826, at about seven o'clock in the morning, a slight shock was felt in Cape Town.