

Burnes, Sir A., (1828) *A memoir and supplementary Memoir of a map of the Eastern Branch of the Indus*. Fol., Bombay. (The original document is listed by T.H. D. LaTouche on page 73 of his 1917 *Bibliography of Indian Geology and Physical Geography*, Geol. Surv. India, Calcutta pp 571. The number of pages of the original folio and its location, are not given, but it is probable that the ms. lies in the Asiatic Society of Bengal and was borrowed and transcribed at Oldham's request in 1924, by Alexander Heron, then DG of the GSI).

The following are extracts relevant to the 1819 Allah Bund earthquake, copied from the 70 page typescript deposited by R. D. Oldham in the Geological Society of London in 1924. (Geol. Surv. Lond. archive reference LDGSL 767). The NW corner of this map is shown below, and later, a simplified version. A 2007 *GoogleEarth* map is shown of the previously ignored, Kaera or Kaera nulla.



### **Memoir: March 1827, Camp at Lucput**

I am not aware of the breadth of the channel at Ullah bund previous to 1819 but it is at present only 120 feet, and this, with only a depth of 15 feet--

The Ameers of Sind acknowledge the right of the Cutch Government to a nulla called "Kaera", which is above Ullah bund, and the place where they collected taxes to the very day of the earthquake in 1819 [Note: It is a singular fact that the boat belonging to the *Tanna* at Sindree was left dry in this nulla the day after the earthquake and, from their being no water to float it out, has been broken up and sold].

The distance from **Lucput to Ullah bund** is by water upwards of fifty miles, though it is much less in a straight line. The river is, at the narrowest part about 100 yards wide and at the widest, which is **Sundo** about two miles; opposite **Lucput** it is not more than 250 yards and at **Ullah Bund** it is only 40 yards. Its depth varies from two to three fathoms of water in all places except **Sundo** where it is only two feet at low, and three, at high tide. Its banks throughout are low and muddy and above the **Misree Peer** (which is about ten miles from Lucput) intersected by numerous nullahs some of which

are from six to eight feet deep. The two principal ones are Kotro on the South side and Chungasir on the North, both within two miles of each other and remarkable as being close to what formerly was a ford across this branch of the Indus.

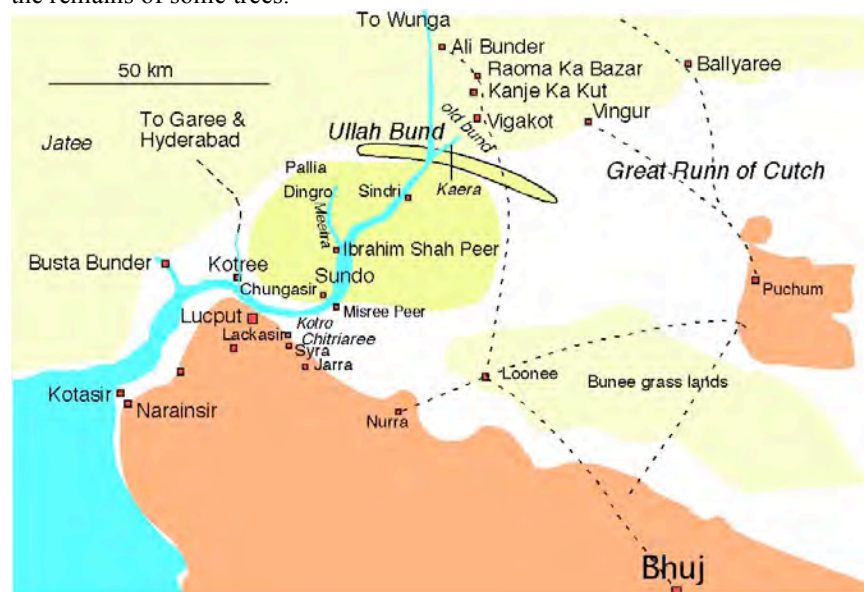
**Sundo** extends up and down the River for a distance of two miles and lies a little higher up than **Chungasir**. The River is here about two miles broad, that is the channel, for the water expands on both directions and the appearance is no longer that of a River, but of a sea and instead of nullas to impede the approach to the banks we have a sheet of water on both sides about half a foot deep, covering a clayey soil and extending many miles both to the East and West. The earthquake is also said to have made this alteration as it was before it equally deep and no wider than other parts of the River.

**Sindree** is situated on the Eastern Bank of the river and is a ruined fort of 150 feet square with four towers and built of burnt bricks. Three of the towers had fallen down and the only one now standing (and it is in a precarious way) is the northwestern on which there is a flag staff. The walls have been two feet thick but this is impossible to say how now. The tower that stands is about 18 feet high and is near the gateway which was on the west side. There is not a vestige of a house remaining and the interior of the fort has become a tank and is filled with salt water, in which there are fish. The only dry spot near the place is where the walls actually stand and which is kept so by the bricks being piled on one another. The river runs close under its walls and it must have been a very valuable position for the government to collect its taxes when the road between it and Cutch, as well as Sind, was open.

A black speck on the horizon to the northeast at about a distance of 5 miles, points out the position of **Ullah Bund**, the embankment thrown up by nature in the earthquake of 1819, previous to which period there was not a single trace of it. It runs due East and West and is said to extend twelve miles Eastward and about two Westward. It is about 10 feet above the level of the River which is at present from 12-15 feet deep and; is composed of soft clay and covered all over with shells and has quite the appearance of having been broken through by some torrent. At present the opening is only from 30-40 yards wide but there are marks of the current having extended during the swell some 200-300 yards to the Westward, while the Eastern side now presents a bank of ten perpendicular feet and looks as if it had been cut by manual labour. The bed of the River is the same as the banks, clay, and the whole soil around appears to be a mixture of it and sand.

A short distance above bund is **Kaera nulla**, a position where the Cutch Government collected taxes before the earthquake and the extremity of their territory on the North. The merchandise was crossed over it in small boats and the beasts of burden that carried it to the nulla, swam across and, being again laden, proceeded to Sindree. At this (from the dry land on both sides of it) the stream again resumes the appearance of a River and though narrow is quite navigable even at this late season of the year (March).

There was even at a very late period i.e. 20 years ago, the remains of an extensive "wand" at Chungaseer and the natives still point out the site of a village on Sundo which they pretend to know by the remains of some trees.



Simplified map of NW corner of Burnes April 1828 map in which he depicts the Allah Bund concave south

## Supplementary Memoir: Lucput August 1828

At Ullah Bund the river is without alteration except at its mouth where it is certainly wider and which is to be accounted for by the west bank being partly washed away as, instead of sloping up, it is now, like the eastern one, perpendicular. I sailed two miles higher up than when last here and found the water to decrease gradually from two and a half fathoms [7.5m] to four feet [1.3m], and ultimately terminate in half that quantity [0.6 m] which I was informed continued up as high as Chuteetur, which is above Ally bunder and twenty miles up where the water comes from the Goonee river, and to which the Doondees, or flat bottomed boats, could now approach.

The greater distance which I ascended the river gave me a clearer view of the effects of the *Nora* as the flood of November 1826 is so called. The banks on both sides are of clay, and as the river comes directly from the north almost without windings, and the sides are perpendicularly cut by the violence of the current, I can compare it to nothing so correctly as a canal, nor does its breadth when a little way up destroy the resemblance, being only sixty feet wide, as I found by actual measurement.

I might have extended my journey farther up but as I had reached the shallow water and fallen in with a boat from Raoma Ka Bazar, the first Scindian village, I judged it more prudent to say for myself *non amplius ibes* than to encounter any of the subjects of the Ameers and, jumping on shore, I retraced my steps to the Ullah bund.

This natural mound so called runs east to west and is certainly the most singular effect of the great earthquake of 1891. It does not appear to the eye more elevated in one place than another, and is a flat tract about eight to ten feet above the level of the water with a surface of saline soil covered with decayed tamarisk bushes, having, its elevation excepted, all the appearance of other parts of the Runn. I found, however, that the mound extends farther than I had before stated for I have been credibly informed by many natives that it stretched as far east nearly as Puchum island, a distance from the river of 24 miles, and crosses the road over the Runn from Loona to Raomo Ka Bazar, a distance 16 miles south of the latter place, where it is about a mile broad, and during the wet weather even made a halting place.

To the westward it is said to extend to Gharee, a distance of 18 or 20 miles which would make its total length nearly fifty miles. It is impossible to define so correctly its breadth as it meets the land, but all describe it of the same nature as that in the neighborhood of the river till near Khanje-Ka-Kot within two miles or so of the **Raoma Ka Bazar**, which 16 miles distant from the mouth of Ullah Bund, where the country is cultivated.

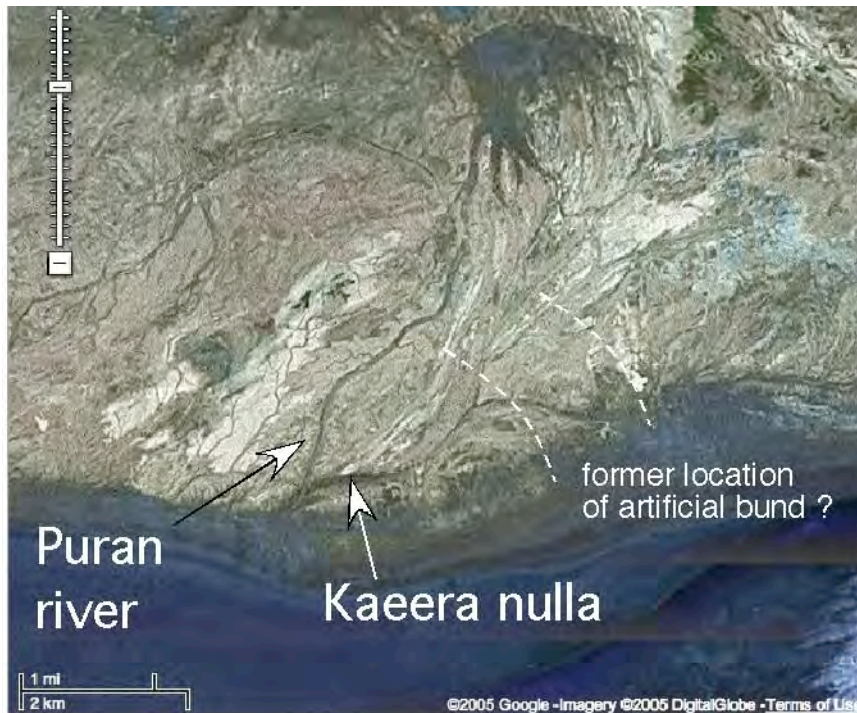


GoogleEarth February 2007 image of the entrance to the Allah Bund.

While traversing the bund, I discovered the remains of an artificial mound on the eastern side of the river about 2 miles from the mouth of the **Kaeera nulla** which runs into the river at **Ullah bund**, and which I learnt was another memorial of that public spirited and enterprising chief Futtih Mahommed, it having been thrown up in his reign to prevent the south westerly winds blowing the water on the road to and from Cutch to Sindree and impeding thereby the passage of merchandize during the monsoon.

The late alterations have of course destroyed it and this road between Cutch and Sind cannot now be said to be open in the rainy season. The old road is underwater and the circuitous one from Loona is always closed upon rain falling during the southwesterly winds.

The shallow part of the river called "*Sundo*" where the channel widens to two miles is still without alteration. It may be recollected that I pointed this out as the effects also of the earthquake for, previous to it, it was as deep as other parts. It seems to me that it has been brought about entirely in the same manner as Ullah bund only with a less concussion of nature and of insufficient force to eject it from the water. It is this barrier alone which prevents "dingies" from ascending either of these branches of the river for, Sundo excepted, there is sufficient water at all other places and I am assured that it is only its existence which keeps this sort of craft below Luckput. As it, however, lies in the channel by which any great body of water from Sind would escape to the sea, it is not improbable that it may hereafter be deepened, it is not shallower now than when left first by the earthquake of 1819.



*This GoogleEarth image brackets a range of locations where Burnes observed an artificial dam blocking the Kaera or Kaera nulla from flooding the road to Vigakot prior to the 1819 earthquake. It is possible the dam lay south of the present northern shore of Lake Sindri.*