

ture of the Chitichun area and adjoining portions of Hundés have been worked out more fully by a new exploration of this exceedingly interesting country. I scarcely need say that it would be of special interest and well worthy the expenditure of money and time to further explore a territory exhibiting such peculiar structure. For the present we must be satisfied with the discovery of the latter, which had not previously been recognised in India, but must leave its thorough explanation to our successors.

A note on the Allah-Bund in the north-west of the Rann of Kuchh,¹ by R. D. Oldham, A. R. S. M., F. G. S., Superintendent, Geological Survey of India (with plate I.)

All who have read Sir Charles Lyell's Principles of Geology will be familiar with the account of the great earthquake of Kuchh in 1819, by which a considerable area of the Rann of Kuchh was depressed, and a strip of land, known as the Allah Bund, was supposed to have been elevated.

In 1872, the Memoir on the Geology of Kuchh, by Mr. A. B. Wynne, of the Geological Survey of India, was published,² in which it was argued that the Allah Bund was not in fact an elevated tract, but that it merely had the appearance of such when viewed from the south, and represented the comparatively steep slope connecting the area which had been depressed from that which had remained unchanged in level. This view was subsequently adopted by Professor Suess, who threw over his original view that the Allah Bund was the manifestation of a deep seated fold at the surface,³ and in his *Antlitz der Erde* unreservedly accepted Mr. Wynne's suggestion.⁴ During the recent move of the offices of the Geological Survey, a tracing of

¹ Wrongly spelt Cutch, Kutch, Kuch, and Kuchchh.

² *Memoirs*, Vol. IX, pt. i.

³ *Die Entstehung der Alpen*, 1875, p. 152.

⁴ *Das Antlitz der Erde*, Vol. I, 1885, p. 61.

Captain Baker's original map, referred to by Mr. Wynne,¹ was discovered; and as this survey is most distinctly at variance with Mr. Wynne's view, which the classic authority of Professor Suess' work is likely to make universally accepted, it has been thought worth being published, that the evidence may be appreciated at its true value.

The accounts of the various examinations of the Allah Bund need not be repeated here, as full references will be found in Mr. Wynne's memoir, but a brief abstract will enable what follows to be better appreciated. On the 16th June 1819, the great earthquake occurred, by which a large portion of the Rann north of Lakpat was depressed and immediately flooded by the inrush of the sea. At the same time the inhabitants of the fort of Sindri, on the margin of the Rann, saw a long elevated mound, where the surface had once been a plain, extending east and west for a considerable distance, and separating, as it were, the waters of the Puran from the sea.

So far there is no difficulty; of the depression of the Rann and of the appearance of what looked like an elevation, there can be no doubt; but the question to be decided is whether this apparent elevation was in reality a barrier, as implied by the name Allah Bund, or Dam of God, or whether the appearance was deceptive.

Owing to feuds between the Governments of Sind and Kuchh the former had, after several unsuccessful attempts, succeeded, about 1802, in permanently blocking the channel of the Indus, which once flowed by Lakpat and out by the Kori mouth. As a consequence of this there was no water flowing in the channels across which the Allah Bund was raised, and there was nothing to show whether there was an actual elevation of the ground or not. In 1826, however, there was a great flood of the Indus, which broke through all artificial barriers, and forced its way along the old channel, cutting a passage for itself through the Allah Bund.

Such, briefly, is the history of this interesting feature, but of all the

¹ Memoirs IX, p. 36.

accounts and examinations of it one alone is based on such a survey as would render it possible to say whether there had been any elevation or not. This one is the report by Captain Baker, of the Bengal Engineers, in 1844,¹ whose statement is very precise, that the bund rises some 20 feet above the water of the Sindri lake and that from this elevation it gradually slopes to the northward till it becomes undistinguishable from the plain.

Against this definite statement the only argument which can be brought is that of Mr. Wynne, that if there had been such an elevation, the floods of 1826, instead of forcing their way through the Bund, should have accumulated on its northern side and found their way round, and not through, the supposed barrier. He urges that the recorded facts become intelligible only on the supposition that the fall which existed originally between the northern margin of the elevated tract and its southern boundary of maximum elevation, was great enough to leave a slope sufficient to enable the stream to follow its old direction. As the width of the Allah Bund is put at 10 miles and the elevation of its southern face at 20 feet, this would necessitate an original fall of more than 2 feet per mile, or double that of the whole Indus from Attock to the sea.²

This argument is a telling one, but it must be remembered that though the height of the dam is given by some authorities as 20 feet, the statements of different accounts not only vary greatly, but in every case represent the total apparent elevation on the south side of the barrier, and consequently represent the sum of the depression on the south and the elevation, if any, on the north. According to Captain Baker's survey, of which a reduced copy will be found on plate I, the total elevation on the north could not have been more than 10 feet at the place where the Puran cuts through the bund. Supposing this to have been the amount of the elevation, and the channel to have had this depth—as might well have been the case

¹ Trans. Bombay Geol. Soc., VII, 186-188. (1846.)

² Memoirs IX, p. 42.

in spite of the long period during which it was dry—it would have been quite possible for the flood waters to have forced their way through the old channel instead of forming a new one round the end of the elevation, said to be some 50 miles long. There would certainly be some ponding up of the flood waters above the barrier, but this might easily have been regarded as a natural accompaniment of the flood, or have escaped notice altogether, as the country had been depopulated.

On the other hand, and opposed to the arguments which can be urged against an elevation, we have the map and section, and the very definite statement, evidently based on careful levelling, that there was an actual upward slope of the ground immediately behind the southern scarp of the Allah Bund. There seem, consequently, good grounds for maintaining the older view that the Allah Bund was an elevated tract, but there can be no doubt that the estimates of its height do not correctly represent the amount of elevation, but of the sum of this and the depression which certainly took place to the south. The former cannot have exceeded 10 feet, the latter amounted to as much or more, and the two together represent the estimates of the height of the barrier as seen from the south, estimates which range up to 20½ feet.

*Geology of parts of the Myingyan, Magwe and Pakokku Districts, Burma, by G. E. Grimes, Assistant Superintendent, Geological Survey of India.*¹ (With Pls. 2 and 3).

Part 1.—Geology of the Yenangyat Oil-field and its extension.

In the Myingyan district, upper Burma, in the country south of the village of Kanthit-kon (Lat. 20° 42' N., Long. 94° 56' E.) a range of hills, formed of miocene and pliocene beds, bent into an anticlinal arch, rises up from the

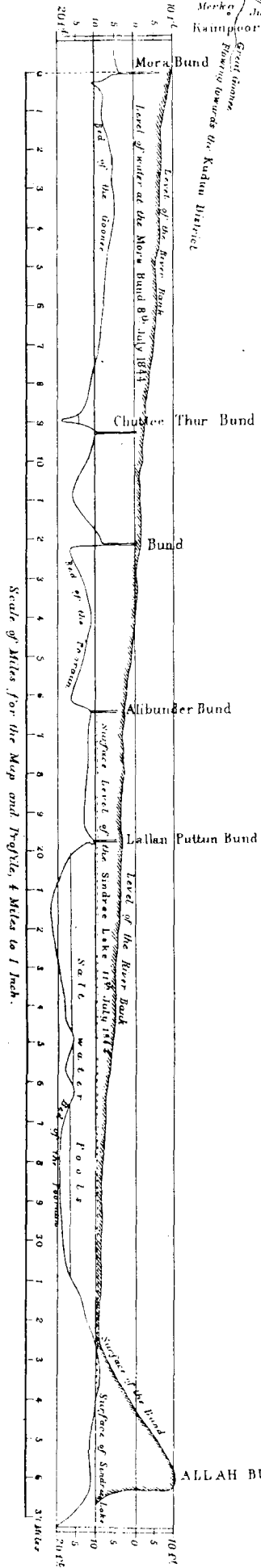
¹ Mr. GRIMES died of cholera, at Thayetmyo, Burma, on the 11th April 1898.

MAP

of Part of Lower Sindh

Showing the Situation of the Bunds on the
GOONEE AND POORAN.

Scale 4 Miles to 1 Inch.



Profile taken along the Beds of the Goonee and Pooran Rivers from the Mora Bund to the Sindree Lake
Scale of distances 4 Miles to an Inch. Scale of Heights 40 feet to an Inch.

