WILEY

The Lengths of the Greatest Rivers

Author(s): Edward Heawood

Source: *Proceedings of the Royal Geographical Society and Monthly Record of Geography*, New Monthly Series, Vol. 9, No. 4 (Apr., 1887), pp. 252-253

Published by: [Wiley](#) on behalf of [The Royal Geographical Society \(with the Institute of British Geographers\)](#)

Stable URL: <http://www.jstor.org/stable/1801224>

Accessed: 10/06/2014 16:42

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

The Royal Geographical Society (with the Institute of British Geographers) and Wiley are collaborating with JSTOR to digitize, preserve and extend access to Proceedings of the Royal Geographical Society and Monthly Record of Geography.

<http://www.jstor.org>

CORRESPONDENCE.

The Band-i-Amir Lakes and Moore's Bendemeer.

IN the article on Captains Maitland and Talbot's journeys in Afghanistan, in the February number of the 'Proceedings' (p. 104), it is said that, "An excursion was made to the celebrated Band-i-Amir lakes, which are mentioned by the poet Moore," in the following passage :—

"There's a bower of roses by Bendemeer's stream,
And the nightingale sings round it all the day long;
In the time of my childhood 'twas like a sweet dream,
To sit in the roses and hear the birds' song."

The writer of the article forgets that to reach Moore's "Bendemeer's stream," not "lakes," one must go to Persia, to the neighbourhood of Shíráz. Moore, in a footnote to the passage referred to, says it is "a river which flows near the ruins of Chilminar."

In fact, the Band-i-Amír referred to in the article in the 'Proceedings'—which also is known by another name, and will be described in my 'Notes on Afghánistán,' as soon as they are allowed to see the light—has nothing whatever to do with "that bower on the banks of the calm Bendemeer!" of Lalla Rookh. The "river," so-called, of Moore's poem, was a *band* or dyke, but not a *band* in the usual acceptation of that word as used in India, but a stone structure of considerable architectural beauty, "the like of which," the Muhammadan historians say, "the world did not contain," erected over the river Kur, near the city of Shíráz, for the purpose of irrigating the numerous gardens and vineyards in the plain north-west of the city, in which there literally were "bowers of roses," and also for drinking purposes.

It was the munificent work of the great Amír, 'Uzd-ud-Daulah, Abú-Shujá'-i-Kai-Khusrau, the Buwiah or Dilamí, sovereign of Fars, and who caused many other works of public utility to be erected. He came to the throne in 338 H. (949-50 A.D.), and died in 372 H. (982-83 A.D.).

It is dangerous to jump at conclusions, in geographical and historical matters especially, from an apparent similarity in names.

H. G. RAVERTY,
Major.

The Secretary, R.G.S.
11th March, 1887.

The Lengths of the Greatest Rivers.

CAIUS COLLEGE, CAMBRIDGE,
Feb. 17th, 1887.

IN connection with General Tillo's estimates of the lengths of great rivers, given in the 'Proceedings' for the present month, it may be interesting to notice the different results we obtain as to their relative lengths, when the minor windings of the streams are left out of consideration. Not only will the order of length of the eight rivers given be greatly altered, but the rivers themselves included in the list will be different. And, indeed, by so doing we obtain a more correct idea of their comparative importance, since the lengths obtained will correspond more nearly with the extent of country drained, or, at any rate, with the extent of their basins from source to mouth. It seems unsatisfactory that a river should take a high place on the list from mere accidental circumstances which cause it to take a tortuous course.

The proportion which the true length of a river bears to that of its general course

varies immensely according to such circumstances. As a general rule of course, the greater the slope of the country, the fewer windings will there be, except where the stream is constantly deflected, in passing through a hilly country. Again, a river of great volume will, owing to its width, gain less by the small curves which would not appear in an ordinary map. As examples of the two extremes in this respect we may take the Rio Purus, which along its general course measures only about half its true length, and the St. Lawrence, in which the difference is inconsiderable. In an imperfectly surveyed country the true length can be roughly computed, by ascertaining the average ratio between the two measurements in the case of two well-known rivers. Captain Blakiston, from his observations on the Yang-tsze, suggested 1·3 : 1 as this ratio; * but owing to the extreme tortuosity of one part of the river, this difference seems slightly above the average. It may be observed that when a river flows through a nearly flat alluvial plain, the tendency is for the windings to be gradually increased, as the force of the current wears away the concave side of the curve, while the projecting points are lengthened.†

Of the eight rivers of General Tillo's list, those which owe their position in it mainly to the windings of their stream, are the Mississippi, Mackenzie, and Amur;‡ while the Congo takes a lower place than that to which the length of its general course would entitle it. In the case of the Amazon this latest estimate corresponds more nearly with the rougher measurement than that given in most lists a few years ago, in which, in spite of its great breadth, a proportion of over 1 in 2 was added on for windings not appearing in a small-scale map. The order in which the same eight will be put down on the other plan, and the approximate lengths of their general course, will be—(1) Nile, 3100 miles; (2) Yang-tsze-kiang, 2750; (3) Yenesei-Selenga, 2700; (4) Amazon, 2600; (5) Mississippi and Congo, 2500; (7) Amur, 2200; (8) Mackenzie, 1800. The Mackenzie now falls far short of, and the Amur is equalled by several rivers not included in the above list, viz. the Hoang-ho, Lena, Obi-Irtish, and Mekong, while the Niger and Parana are very little behind these. These measurements are to a certain extent proportional to the direct distances from source to mouth, in which respect the Nile far surpasses any other river.

It is often said that the rivers of Asia are inferior in length to those of America owing to the position of the mountain ranges near the centre in the former case, and near one side in the latter. But from the above figures we see that the Asiatic rivers, in spite of the conformation of the country, would quite equal those of America, were it not for the much greater tortuosity of the latter. Of course the reason mentioned, together with the fact of the vast area of inland drainage in Asia, accounts for the non-existence there of rivers far surpassing those of any other part of the world, which the immense size of the continent would lead us to expect. Such a river might have existed, even with the present disposition of the main ranges, if the depression of Lob Nor had not prevented the drainage of Eastern Turkestan from reaching the sea, or if the drainage into the Sea of Aral had been carried on into the Obi, which last some have conjectured to have been the case in ancient times.

I may notice that if, as is laid down in the map embodying the results of A—k's surveys, the Nak-chu-kha of Tibet flows into the Lan-tsang-kiang instead of the Lu-kiang, the Mekong ought probably to have a place among the eight longest rivers in the world.

EDWARD HEAWOOD.

* 'The Yang-tse,' p. 296.

† Ibid., p. 97.

‡ At one part of the Upper Amur a voyage of 20 miles brings one back to a point half a mile from the starting-point (*vide* Bates' 'Illustrated Travels,' i. p. 247).