



---

A New Map of Transbaikalia

Author(s): P. Kropotkin

Source: *The Geographical Journal*, Vol. 24, No. 4 (Oct., 1904), pp. 463-466

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

Stable URL: <http://www.jstor.org/stable/1775957>

Accessed: 14/09/2014 11:57

---

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)* is collaborating with JSTOR to digitize, preserve and extend access to *The Geographical Journal*.

<http://www.jstor.org>

conclusions on this vexed difficult subject. Mr. J. A. Hutton's paper on "Cotton-growing in the Empire" was of geographical as well as economic importance, for the geographical aspect is of fundamental importance in the problem of the extension of the cotton-producing area. Mr. J. A. Baines discussed the distribution of rural population in India, in Section F. The proposed barrage of the Thames, on which Mr. J. Casey spoke to the engineers, will probably have physical geographical as well as economic geographical results, if it is built. Sir Richard Temple's plan for a uniform scientific record of the languages of savages should interest all travellers; Mr. Edgar Thurston's account of the ethnographic survey of Madras all historical geographers; and Mr. Edmond Demolins' social classification those who study problems of social geography. These were communicated to Section H. In the Botanical section the stimulus which came in part from the geographers towards the study of ecological problems is producing excellent results, as the papers by Prof. Tansley, Dr. W. G. Smith, and Messrs. Lewis and Woodhead show. This section was fortunate enough to have a paper by Prof. Engler, of Berlin, on "Plants of the North Temperate Zone in their transition to the high mountains of tropical Africa."

The most important communication outside the Geographical section which had a geographical interest was probably the address given by Sir John Eliot, as President of the sub-section of Astronomy and Cosmical Physics, in which he dealt with the climatology of India—an address too full of important points to be summarized in the present report.

---

## A NEW MAP OF TRANSBAIKALIA.

By Prince P. KROPOTKIN.

THE just-published twenty-fifth part of the 'Geological and Mining Explorations along the Line of the Siberian Railway' (St. Petersburg, 1904, 4to, pp. 46), which is edited by the Russian Geological Committee, contains a new map of Southern Transbaikalia, in two and a half sheets, on the scale of 1 : 840,000, *i.e.* 13 $\frac{3}{4}$  miles to the inch. The map has been made, under the supervision of Prof. V. A. Obrucheff and his assistants, A. P. Gerasimoff and Prince Hedroitz, by Y. M. Barannikoff; the General Staff of Eastern Siberia and the Mining Administration, as also the head of the Baikal Hydrographical Survey, graciously supplying all the surveys and cartographic materials which they had in their possession. An explanatory text, containing the list of all the spots for which there were astronomical observations of latitudes and longitudes, as also a map showing the character of the different surveys which were available for the different portions of the region, are given by A. P. Gerasimoff with his text.

A mere glance at the map shows how much it is in advance of all previous work of the kind. The material has been most conscientiously and ably utilized, and for most of the region the river-network may be taken as quite reliable. There are, of course, large spaces, even in Southern Transbaikalia, which remain still imperfectly mapped, and are very poorly known as regards their orography; but immense progress is already realized by this new map.

Great attention has also been paid to the orography of the region. "As regards the situation and the directions of the mountain ranges," M. Gerasimoff writes, "the present map widely differs from the maps which are now in circulation, because under the name of ranges we did not understand disorderly running water-partings traced between the rivers, but such upheavals as are in strict causal

dependence upon the general geological structure of the country and the direction of the tectonic lines, which are very often decisive in the determination of the present forms of the relief of Transbaikalia. In most cases those water-partings which, owing to their relative or their absolute altitudes, or to some other characteristic features, have received separate names from the local population, are nothing but portions, or even spurs of the tectonic ranges. Consequently, it was necessary to trace a number of ranges which do not exist on previous maps. To such orographic units new names were given (Cherski's, Erman's, Argunski range, etc.), or local names were extended to them (Zaganski, Tsagandaban, Borshovochnyi, etc.).

"If we consider the directions of the ranges of mountains, the now-published map will here also, in some of its portions, stand in distinct contradiction with existing representations. To give one instance, and not to encumber this sketch with too many such instances, I shall only point to the Yablonovoi Khibet, which is usually represented as a water-parting between the tributaries of the Arctic and the Pacific ocean, and consequently is traced along the water-parting between the Ingoda and the Chikoi, the Ingoda and the Khilok, the Chita and the Konda; and between the basins of the Ingoda and Shilka on the one side, and that of the Lena on the other, although the tectonic lines which have determined its differentiation have quite another direction, and only for a short distance coincide with the Yablonovoi range of the old maps. What we call the Yablonovoi range is the water-parting between the Chikoi and the Khilok (the Malkhanski range), the Khilok and the Ingoda, the Chita and the Konda, the Karenga and the Vitim; it runs further on in a north-eastern direction into still unexplored regions. Another instance is the Adun-chalon, which is usually drawn as a long range running east-north-east; in reality it is a quite small massif, surrounded on all sides by wide lowlands" [high plains?—that is, plains of about 2000 feet in altitude—P. K.].

These few lines already give an idea of the importance of the new map. I will only permit myself one remark. I am delighted, of course, to see that the ideas which I expressed thirty years ago concerning the Yablonovoi range being continued in a due north-eastern direction, from the spot where it is crossed by the high-road to Chita, and not going to join the imaginary Stanovoi range,\* are confirmed now by such high authorities as Gerasimoff and Obrucheff, of whom the latter has not only perfectly well studied all the previous explorations of Transbaikalia, but has also personally visited that portion of the Vitim and the Karenga. But I may be permitted to ask whether the map is right in considering the Malkhanski range, between the Khilok and the Chikoi, as a continuation of the Yablonovoi? This last, between the upper Khilok and the Ingoda, where we know it best, represents quite distinctly the south-eastern border-range of the upper terrace of the plateau. Now, my idea was, and is still even more than before, that a border-range having the same orographic character is continued south-westwards, through the Sokhondo, between the sources of the Menzia, right-bank tributary of the Chikoi, and the Balja, left-bank affluent of the Onon (cf. altitudes of Fuss), to the Kentei and the Burulyndaba, to the south-east of Urga, where we again find an escarpment, quite homological with the one which we cross on approaching the town of Chita from the west. If this supposition be correct, then

---

\* See The Orography of Asia, in *Geographical Journal*, February, 1904, pp. 197-199, and with more detail in 'Orographie de la Sibérie, précédée d'une introduction et d'un aperçu sur l'orographie de l'Asie,' published by the Geographical Institute of Brussels, 1904, pp. 77-86.

all the upper course of the Chikoi, from its sources to its bend at the mouth of the Jerghei, must lie on the *upper terrace of the plateau*, and therefore must be 1000 feet higher than the tributaries of the Onon, such as the Kyra river at the Kyrinski post, or the Kirkun river at Kirkunski. On the contrary, if this supposition be incorrect, then there must be no general difference between the altitudes of the region situated between the sources of the Khilok and its middle course (the *upper terrace*, in my view) and the valley of the upper Onon, which, by my supposition, flows on the *lower terrace* of the plateau. Further exploration of this region will therefore be most welcome, but we can already say that what we know about it from the altitudes of Fuss seems rather clearly to support the just-expressed view.\*

The observations of Fuss reveal the existence of an escarpment, homological, on the one side, with the Kentei escarpment, and on the other with the Yablonovoi escarpment which faces the town of Chita. Is this merely an accidental homology, which surely must be shown on a map, but has no geological reason; or have we not here one more instance of the fact indicated by Gerasimoff in the above quotation—namely, that the orography of Transbaikalia is closely connected with the tectonic features?

Another remark which I will venture to make concerns the lower course of both the Argun and the Shilka. This part of the map is not yet finished, and the corresponding half-sheet seems to be but a temporary sketch; but we see on it, in long. 122° E., the inscription, placed in a direction from north-west to south-east, "Great Khingan Range." It is for the first time that the Great Khingan is placed in this position and in this portion of the territory, and no doubt the compilers of the map must have had some reasons for giving this quite new position to the great range. That there may be a range running north-west to south-east, and crossing the Argun and the Shilka, we certainly shall have no reason to question, if the geologists who have explored Transbaikalia do come to such a conclusion; but that this range should be *a continuation of the Great Khingan*, i.e. of the border range of the lower terrace of the plateau, which we know perfectly well from Kalgan to the sources of the Gan, where I crossed it in 1864, seems now to be extremely doubtful, not to say quite impossible. In order to admit that the eastern border-range of the upper terrace of the plateau makes this bend, we should require to find to the north-east of this new Khingan the lower Manchurian terrace of the plateau, while we know perfectly well from Usoltseff and Orloff that on the Oldoi we have a continuation of the *upper terrace of the plateau*, i.e. marshy plains over 3000 feet high. At any rate, in order to give such a new position to the Great Khingan, we ought to have at least some surveys between the upper

---

\* This is how I summed up the observations of Fuss: "The series of altitudes determined by Fuss gives a very neat idea of this escarpment. Leaving aside the observations made at the bottom of the valley of the Chikoi, which is pretty deeply sunk in the plateau, after having run a long course over its surface, we see that at the sources of the Katantsa the plateau reaches altitudes of 2900 feet; further on, the road, which goes eastwards, attains the altitude of 3500 feet, as it follows the Menzia; then it reaches the height of the pass across the Yablonovoi, and descends into a longitudinal valley; further on it crosses a range of mountains which runs parallel to the above escarpment, and reaches a height of 4500 feet—similarly to the range which runs on the left bank of the Chita and the right bank of the Ingoda [Gerasimoff has named it the Cherski range]; and, finally, the road issues on the lower, steppe-terrace of the plateau, where altitudes of 3000 feet are met no more on its surface, but where we find a steppe of from 2000 to 2500 feet of average altitude" ("General Sketch of the Orography of Eastern Siberia," in *Zapiski* (Memoirs) of Russian Geogr. Soc., 1875, vol. v. p. 48; 'Orographie de la Sibérie,' Brussels, 1904, p. 79).

Gan, where I crossed it (the most northern place where the Great Khingan has hitherto been crossed), and the place where we find the Great Khingan now on the map of Transbaikalia. Have such surveys been made? Or, is this simply a new local name which lately began to be given to these mountains (it did not exist in 1865, when I crossed this region), just as since the last Boxer war the name of "Little Khingan" has been given to the mountains which were formerly known as the Ikhuri-alin? As this part of Gerasimoff's map of Transbaikalia is only provisional (the mountains are not yet traced on it, and the above inscription stands on a white space), we are sure that MM. Gerasimoff and Obrucheff will take these remarks of a fellow-worker in good part, and perhaps, by insisting upon the necessity of sending an expedition to the northern parts of the Great Khingan, will settle at last the exact position of this extremely important landmark.

---

### THE ANNUAL RAINFALL OF THE BRITISH ISLES.\*

DR. MILL has made another valuable contribution to the geography of the British Isles in this new paper. The rainfall of our islands has been discussed by Dr. Buchan and the late Mr. Symons among others, and recently Dr. Buchan prepared new maps for the months and the year based on twenty-five years' means, which were published in Bartholomew's 'Atlas of Meteorology.' Dr. Mill's data are not merely for a longer period, but they are discussed and mapped in much greater detail than has been done in previous papers on our rainfall.

Dr. Mill takes up, first of all, the question of the length of time rainfall observations must have been taken before means of sufficient stability are obtained to make the tables and the maps based on them thoroughly satisfactory representations of this element of climate. Dr. Hann has recently shown for Padua, Klagenfurt, and Milan that a thirty years' mean differs only about 2.6 per cent. from one three to six times as long, and a forty years' mean still varies 2.3 per cent., but a twenty years' mean differs 5.2 per cent. from the longer one. Dr. Mill finds that, for five British stations, the successive means for the thirty years beginning 1830, 1840, 1850, 1860, and 1870 are 98.6, 98.4, 100.3, 103.1, and 101.3 per cent. of the 70 years' mean. Hence the thirty years' mean 1870-99 may be taken to give a very close approximation to the true mean, and this he adopts as the basis of his work.

It is unnecessary to detail the checks applied to the returns to ensure their accuracy; suffice it to say that Dr. Mill has presented in tabular and cartographic form the most reliable and complete account of the rainfall of the British Isles yet published. The maps, as is proper in such a work as this, show only such results as can be deduced from the figures themselves, and it lies with the geographer, should he require it, to construct a map which will take into account the variations introduced by configuration and exposure. As it is, Dr. Mill's maps can be interpreted largely by configuration and wind maps without any question of personal bias entering into the estimation of the significance of configuration or air-movements on the distribution of rainfall as shown on the map. His map of annual rainfall agrees in the main with those already published. It is unnecessary to recapitulate the main characteristics of these maps. In many details, however, the new map reveals interesting features not previously shown. Among them may be cited

---

\* "On the Distribution of Mean and Extreme Annual Rainfall over the British Isles," by Hugh Robert Mill, D.Sc., LL.D., with an abstract of the discussion upon the paper. *Minutes of Proc. of Inst. of C.E.*, clv. pp. 3-88.