

miles of Rudok itself. The news was soon conveyed there, and the Governor, a native of Lhasa, came out to meet me. He brought presents of tea, sheep, and goats, and was most civil, but begged that I would go back, as he would lose his appointment and be disgraced if it became known that he permitted me to advance further. His politeness disarmed opposition, and my orders, given in writing, were not to get into collision with the Tibetans. We drank a good deal of tea, made in their mode churned with butter and salt, which was always simmering in his tent, and I managed to persuade him to let me ascend a conspicuous peak a few miles further on, and from which I obtained a magnificent panorama of the lake-dotted plain to the eastward of Rudok. We parted excellent friends, and I presented him with a single-barrelled pistol, in return for the presents he had given us. I feel sure that had I been able to get back there the following year, I could, starting from other points, have got very much further to the eastward, and returned again *via* Rudok itself. I was, however, sent to another and equally interesting part of the Himalayas.

This country of Rudok is now, in 1890, to be visited, examined, and reported upon by the Russians. Twenty-seven years have gone by since I was on its very threshold. In the interval we have had political officers appointed Residents in Leh, we have seen many journeys made by English officers and English traders to Yarkand, and yet no one has penetrated into Rudok and all that unknown country on the north and north-east which is much nearer. It does not say much for our British energy that a Russian is now to enter this area, and is now perhaps surveying within almost, I may say, a stone's-throw of our own border, which we have made no attempt to get into and know. Perhaps M. Grombchevsky may not succeed, perhaps he may lose his life, but that does not detract from the activity and devotion the Russians are at present giving to the exploration of Central Asia down to the Himalayan chain, or prevent their doing so. If they from their base can do this, why can we not ourselves? We have been content to send in natives of India, but this is not the same thing as sending European officers, for in one case the information obtained is purely topographical, no actual knowledge of physical features is gained, nothing from a military point of view, and no personal acquaintance is made with the people which might be of political or other advantage hereafter. Proceeding to the north-west of Ladak, where the Russians have lately been exploring, it appears extraordinary, with the knowledge the Government of India possessed of the vast system of glaciers of the Mustakh, south of the main range, that no attempt has been made during the past twenty-five years to finish that tract of country, and map the glaciers which descend on the north or Yarkand side, and trace the rivers flowing from them, which would be easy to accomplish, and with little or no danger of interruption. This I consider would be of far more importance and of infinitely greater interest scientifically than spending thousands of rupees on large-scale surveys of Indian hill stations and cantonments, or the resurvey of parts we know well on larger scales.

Although the Indian Survey and the Quarter-Master-General's department have made us acquainted with vast tracts of country, yet much more might have been explored if persistent efforts of every kind, along the line of the Himalayas from Kashmir to Assam had been made during the past thirty years, and if the Government of India had given encouragement to officers who were able to survey and to make the most of their opportunities to do so. I can remember when many such good opportunities have been lost, owing to a contrary policy, for fit men ready to go have not been wanting; also, when such opportunities have been taken, and at a time when the Government would not have given their sanction had it been applied for, as, for instance, when Mr. Johnstone, an uncovenanted assistant of the Kashmir Survey party proceeded to Yarkand alone, and returned in safety in 1864, bringing back a large addition to the then complete blank of intervening country, and fixing with some exactitude the position of the large cities he visited. We thus have left and are leaving to Russian subjects, who have the good wishes and countenance of their Government, to survey tracts of country lying upon our line of frontier, and we shall probably see them the first of European nations to plant their feet in Lhasa. They go to work on the right system, for much more can be done by single individuals in a quiet way, with a few carriers and attendants, than by organizing large unwieldy missions, with a little army of camp-followers and sepoys, such as it was proposed to send from Darjiling some few years ago. Such preparations become mag-

nified into an army with aggressive aims, certain to arouse political difficulties; it is a burden on the resources of the country it has to pass through, and the possibility of misunderstandings and quarrels arising over the collection of and payment for the same.

We might have been working for years past to the northward, in many directions, by small exploring parties, and have now possessed an intimate knowledge of the physical features of the country, and its zoology, fauna, and flora, such as the Russians do in their thorough manner, but which our Government appears not to understand the value of, eminently unscientific as it is. After all, disagreeable though it be to see opportunities lost, those who do appreciate scientific methods of work must thank Russian explorers, such as Prejevalsky, and now Grombchevsky, for the light they have, in the last few years, thrown on the geography and natural history of Central Asia, from Siberia south towards British India.

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#### Variability in the Number of Follicles in *Caltha*.

IT is easy to understand, supposing a tendency to variability, that characters of little value (as the colours of certain domesticated animals) might vary considerably, because not kept in check by natural selection. If it does not matter to a species whether it is unicolorous or spotted, for instance, one can see how both varieties may coexist without any tendency to the formation of a new species, and it might be rather an advantage than otherwise that individuals should differ from one another. But those parts connected with so important a function as the reproduction of the species would, one might suppose, be rigidly guarded over by the survival of the fittest, and any great variability in the number of offspring would hardly be expected within the limits of a species.

That such variability exists, however, we have abundant proof. The variability in the number of follicles in the Ranunculaceæ is astonishing. Coulter ("Manual of Botany of Rocky Mountain Region") gives the pods of *Caltha* as from 5 to 12; but this does not nearly represent the amount of variation. *Caltha leptosepala*, DC., is very abundant at West Cliff, Colorado, and this year I examined a number of specimens of the flowers, and counted the follicles, with the following result:—

Follicles.	Specimens.
2	1
3	7
4	4
5	11
6	3
7	11
8	10
9	7
10	4
11	5
12	1
13	5
14	3
15	1
Total	73

It thus appears that 73 flowers presented as many as 14 variations in the number of follicles, and curiously, the odd numbers are more numerous than the even, in the proportion of 47 to 26.

Miss Lowther and Miss Byington, of West Cliff, were good enough to search for variations other than those tabulated above, and they succeeded in finding specimens with 1, 18, 23, and 25 follicles respectively.

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September 16.

#### The Origin of Mélinite and Lyddite.

(Picric Acid.)

IN your issue of the 4th inst. (p. 444) there occurs the following sentence:—

"Although picric acid compounds were long since experimented with as explosive agents, it was not until a very serious accident occurred, in 1887, at some works near Manchester, where the dye had been for some time manufactured, that public attention was directed in England to the powerfully explosive nature of this substance itself."