

BOTANICAL EXPLORATIONS OF VICTOR JACQUEMONT  
(1801-1832)

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The article gives an account of the botanical explorations made by Victor Jacquemont, a French naturalist, during the years 1828-1832. His explorations mainly included regions from Calcutta to Delhi and the Himalayas, the Punjab and Kashmir and finally Delhi to Bombay where he died on 30th July, 1832. His collections, which are preserved at the Natural History Museum at Paris, comprised 4,787 entries having 1,185 species. Today a large number of species commemorate the name of Victor Jacquemont in the Indian flora. One hundred and eighty-four species were described by Decaisne and Cambessedes as new from his collections, many of which are today in synonymy. As more and more monographs are being prepared his collections are being examined critically for the types and syntypes. His observations made on the phytogeography of some regions are very interesting and a few examples have been provided in the text.

INTRODUCTION

Victor Jacquemont (1801-1832) was one of the few French naturalists to have visited the Himalayas in the early nineteenth century. His researches cover almost all the branches of science: Botany, Zoology, Geology, Geography, Meteorology and Human Sociology. His name is placed along with Hooker and Thomson and other scientific explorers of the world. While working at the Natural History Museum at Paris, the author had the opportunity to consult Jacquemont's collections and writings on the vegetation of India. Though much has been said about his life and letters, his collections did not receive much attention since Cambessedes and Decaisne published their results under the title *Plantae Asiaticae Quas in India Collegit V. Jacquemont* as volume 4 of his book *Voyage dans l'Inde* (1844). It is, therefore, considered proper to give an account of his collections with particular reference to his writings on phytogeography; in these pages a brief description of his life has also been included.

*Early Years of Victor Jacquemont*

The personal appearance of Jacquemont was peculiar and noticeable so that people who had seen him once remembered him without any difficulty.

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His fine stature was not, however, accompanied by any corresponding development of the muscles, which in his case were the reverse of the athlete's, yet he was wiry and capable of surprising endurance. He amused himself in his letters by describing his meagre person in the flowing robes of the East.



*b.* 5th Aug., 1801

VICTOR JACQUEMONT

*By courtesy: N. H. Museum, Paris*

*d.* 30th July, 1832

surmounted by a pale face with spectacles and a long moustache, shaded by a great wide-brimmed straw hat. He could maintain health on short rations, a most valuable achievement for a traveller. To conciliate the goodwill of the

stranger's nature had endowed him with a singularly musical and persuasive voice, to which few could listen without yielding to the charm.

This singularly gifted person was born on 8th August, 1801, and studied medicine and later devoted himself to the science of Botany and Agriculture without any definite plans. This decided him to travel. He made a number of excursions in the French, Swiss and Italian Alps, the West Indies and other parts of the world. The authorities of Jardin des Plantes at Paris proposed him to undertake a tour of India with a view to study its ethnology, geology and botany on a salary of £240 a year, which he readily accepted. He had an extraordinary faculty for thrift and was able with cheerfulness and grace and without loss of dignity to put up with the most limited resources.

His letters supply the chief materials for his biography and is a memorial to his capacity for work. In the cabin of a ship, rolling and pitching on the Atlantic, under a thin tent in the freezing air on the snowy Himalayas and beneath the pitiless blaze of the summer in Central India he wrote with the same vivacity, the same frankness and ease, the same unflinching charm. His literary faculty could be a fortune to professional men of letters and yet he never knew that he possessed any literary talent or skill: he thought of himself as a wandering savant, writing to his friends to beguile loneliness, to cheat the sense of distance by turning his thoughts to those he had left in Europe and to keep the friendship he valued alive until his return.

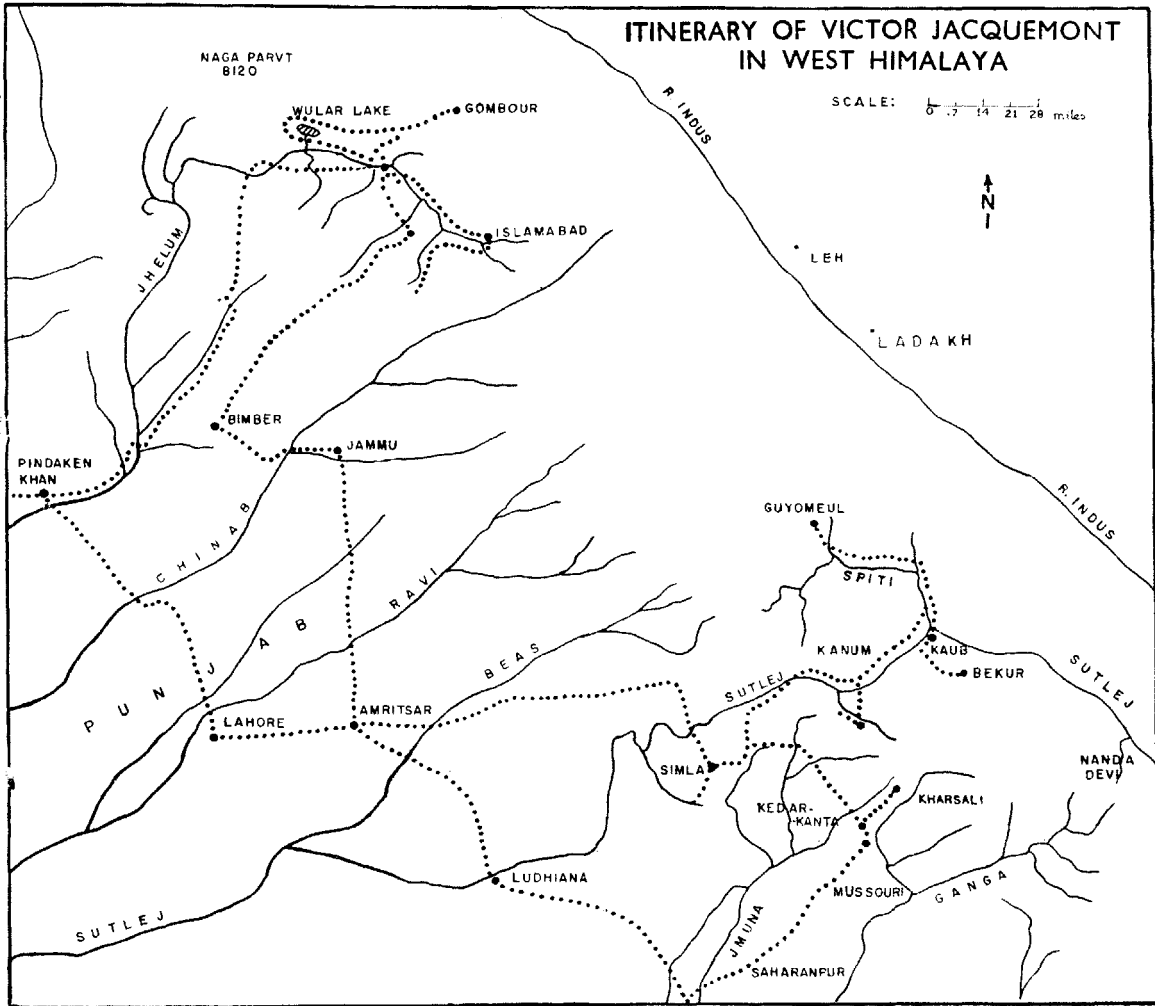
His scientific reports, which are remarkable for their copiousness and ability, must have been penned with the idea of publication, but the part of his correspondence, of most interest to the general reader, was written with no such idea: the letters consist simply of the outpourings of an affectionate nature to friends and family connections. If Jacquemont could have foreseen that a day would come when hundreds of his most frank and intimate letters would be in the hands of ten thousand readers, he would have written with more reserve and we would have really missed the opportunity of studying the nature of the man.

### *Explorations in India*

In August 1828 Jacquemont embarked for India at Brest and arrived at Calcutta on 5th May, 1829. After availing himself of his introduction with the rich collections of Indian vegetation in the Company's Botanical Garden, later known as Royal Botanic Garden at Calcutta, he made his way towards Delhi on 20th Nov. . . . a Friday evening, a day of evil omen! He reached Delhi on 5th March, 1830; from Delhi he soon started for the Western Himalayas and commenced a course of travel, the accounts of which read like a romance (*see map*).

Jacquemont's establishment was nearly as he could make it in proportion to the smallness of his means. Jacquemont had six servants, all counted,

which, as he facetiously remarked (comparing small things with great), made exactly a thousandth part of the vast travelling establishment which moved with the British Governor-General in India. Of course, Jacquemont had never been served by such a numerous establishment of domestics in life, yet such is the effect of comparison, that he felt himself poorly provided.



Victor Jacquemont completed his explorations in three stages. In the first stage in 1830 he covered regions of the Western Himalayas including Dehra Dun, Garhwal, Bashahar and Simla, the second part of his explorations covered regions of the Punjab and Kashmir including Tibet and the last part of his journey in 1832 brought him to Bombay from Delhi via Ajmer and Neemuoh, during which he explored the Ajanta and Ellora Caves and the Salsette Islands.

His observations on the ecology of animals and plants, agriculture and ethnobotany, of the regions he visited, are most interesting even today. While exploring the regions of Kedarkanta in Tehri-Garhwal he wrote :

‘The forest comes to an end at 3,500 m. Here climate is the only factor which limits the tree vegetation. As a matter of fact it stops on the slightly inclined slopes covered with a thick layer of fertile soil: at the same time the neighbouring crests provide shelter from the tempests of the summit. In spite of all these favourable circumstances and the southerly exposure where snow disappears undoubtedly in the first days of April, the forests stop here at the same altitude as near Kharsali, as observed by me. The similar altitudes of the two localities, however, are not under the same climate. The difference is further confirmed by the enormous quantity of snow that I began to find above Kharsali, from 3,000 m. All the forest zones since the level not yet reached by the trees of average mountains, *Rhododendron arboreum*, *Carpinus nepalensis*, *Alnus obscura*, *Quercus castanoides*, etc. . . . all these zones had been covered with snow. One could, therefore, say that here the temperature is not the most essential factor of the climate for the vegetation and that it is the degree of rarification of the air that dominates the other atmospheric influences to which the vegetation is subjected. But the forest that covers the summit of Chour, a lofty mountain almost as high as Kedarkanta, contradicts this interpretation.’

From Kashmir he writes: ‘The climate of the valley has a surprising resemblance with that of the Lombardi. It has the same distribution of cold and the warmth, of the dryness and the humidity in different months of the year. It goes without saying that this remarkable analogy in climate brings about a similarity in the vegetation; above all, it is true of the aquatic plants. With the exception of a few Indian species that have ascended there, I do not know how the rest are European.’

His observations on the ethnobotany of the sub-Himalayan region are of great interest. He writes: ‘Men who do not know even the art of pottery subsist on a small lentil that is cultivated also in the plains, but it is most often replaced by Bengal-gram (*Cicer arietinum*). The lentils are dried on fire and slightly roasted so that they can be eaten. This is all they do for preparing their food. The horses, too, are usually fed on the same grains.’

Very few travellers have had more of that sustained and resolute heroism which steadily pursues ill rewarded labour despite adverse conditions. During his Himalayan expedition he was more poorly fed than ever and the necessities of mountain travel had caused such a reduction in his comforts that his camp was a little better than a bivouac and he suffered both from cold and hunger, as well as the physical strain of hard pedestrianism, yet his scientific labour went on day by day and all his hours were occupied. Four times he crossed passes at a height of 6,000 m (18,000 ft). The camp life and the complete

severance from his own past, the strange customs and speech round him made the traveller sometimes doubt about his own identity and suspect that in the land of transmigration of soul, some other soul had taken possession of his body. The adventures which befell Jacquemont during his long wanderings are sketched with much vivacity in his letters. The indomitable courage, energy, the graceful tact, the complete devotion to his work, the buoyancy amidst great hardships . . . all these are indicated here and excite our admiration.

### *Botanical Results of Exploration*

After the death of V. Jacquemont at Bombay on 30th July, 1832, the Natural History Museum, Paris, received the manuscript and the catalogue of his collections during the journey. The manuscript is present in the form of notebooks, bound in three parts in the library of the museum under the accession number Per-K-g 10, with the following details :

Vol. 1. From Calcutta to Delhi and the Himalayas, Nos. 101-2528.

Vol. 2. Punjab and Kashmir, Nos. 1-1541.

Vol. 3. Delhi to Bombay, Nos. 1-818.

There is a separate volume enumerating his notes on *Hortus calcutensis*.

The collections of Jacquemont which arrived later comprised 4,787 entries which were inscribed by Adrien de Jussieu from his herbarium. These collections were evaluated to comprise about 1,185 species, out of which 184 were described and sketched in his memoirs as most interesting and rare. The duplicates of his collections were distributed in other principal herbaria of the world. Many of the species described by Cambessedes and Decaisne are now in synonymy, since many of these were earlier collected by Roxburgh, Hamilton, Royle and others and were not represented in the Paris herbarium. It was in 1834 that Wallich distributed the duplicates of the plants collected under the auspices of the East India Company to different herbaria of the world. R. Wright in 1834 published his famous work which was also ignored by the workers of the Paris Museum. This is perhaps the main reason why many of the species described as new are now in synonymy.

Today a large number of species commemorate the name of Victor Jacquemont in the *Flora of British India*<sup>1</sup> where reference is also made to Jacquemont's herbarium. Some of those species were named by Jacquemont

<sup>1</sup> *Farsetia jacquemontii* Hook. f., *Dianthus jacquemontii* Edgew., *Acacia jacquemontii* Benth., *Prunus jacquemontii* Hook. f., *Pyrus jacquemontii* Decaisne, *Heracleum jacquemontii* C. B. Clarke, *Cynanchum jacquemontianum* Decaisne, *Vitis jacquemontii* Parker, *Blumea jacquemontii* Hook. f., *Senecio jacquemontianus* Benth., *Euphorbia jacquemontii* Boiss., *Parrotia jacquemontii* Decaisne, *Dioscorea jacquemontii* Hook. f., *Asparagus jacquemontii* Baker, *Allium jacquemontii* Blume, *Stipa jacquemontii* Jaub. and Spach., *Calamogrostis jacquemontii* Hook. f., *Triopogon jacquemontii* Stapf., *Agropogon jacquemontii* Hook. f.

himself<sup>1</sup> while others were subsequently described under other names<sup>2</sup>. As Jacquemont himself writes: 'The materials that I have collected are still crude. It will take three to four years of work in Paris to accomplish my task. Till then I shall be without the right of the heritage of those who will die'; he could not finish his work and study his collections himself before destiny took him away from the world.

A Swiss botanist, J. D. Choisy (1833), in his monograph of Convolvulaceae created the genus *Jacquemontia* in honour of V. Jacquemont, collected from South America (T: *J. azurea* (Rich.) Choisy), and now there are about 100 species of this genus all coming from tropical America. As more and more monographs are being prepared, his collections are being examined in detail critically for the types and syntypes. *Xylostemma purpureum* has been recognized by Hooker but placed in *Lonicera*; *Saxifraga jacquemontiana* Decaisne in the same way has now been maintained as a distinct species. Burkill while re-examining *Dioscoreas* maintained *D. jacquemontiana* as a distinct species. LeRoy while examining the types of *Celtis eriocarpa* maintained that it is a distinct species different from *C. australis* var. *eriocarpa*. The same is true of *Betula jacquemontiana* Spach which has earlier been united with *B. utilis* of Japan and is probably a close variant. Similarly *Corylus colurna* of Europe is a species different from the Himalayan *C. jacquemontii* Decaisne. Creation of the genus *Sorocerus*, established by Stebbins in 1940, after the specimens described by Decaisne under the name *Prenanthes glomerata* (No. 1513, Jacquemont, MSS. No. 2) like *Dubyaea* show that the herbarium of Jacquemont is still full of interesting scientific material which can play a positive role. What will interest most to the readers is his acute power of observations made about more than a hundred years ago which still stands unshaken with the time as can be seen by his remarks: 'The influence of the latitude is felt here on the vegetation up to the vicinity of the zone of perpetual snow, before which all the vegetation stops. The last fragments of the forests

<sup>1</sup> *Ranunculus lobatus* Jacquem., *Lychnis cancellatus* Jacquem., *Rubus macilentus* Jacquem., *Potentilla ambigua* Jacquem., *Oxytropis tatarica* Jacquem., *Lonicera spinosa* Jacquem., *Artemisia minor* Jacquem., *Artemisia macrosepala* Jacquem., *Tanacetum tenuifolium* Jacquem., *Scutellaria prostrata* Jacquem., *Urtica hyperborea* Jacquem.

<sup>2</sup> *Primula spathulacea* Jacquem. . . *P. elliptica* Royle  
*Allium nivale* Jacquem. . . *A. govianianum* Wall. ex Hook.  
*Iris tigrina* Jacquem. . . *I. hemaonensis* Wall. ex Royle  
*Tulipa undulata* Jacquem. . . *T. chrysantha* Boiss.  
*Astragalus microphyllous* Jacquem. . . *A. cirrifolium* Royle  
*Ribes viridiflorus* Jacquem. . . *R. himalensis* Decaisne  
*Ribes erectum* Jacquem. . . *R. acuminatum* Wall.  
*Ribes glossularioides* Jacquem. . . *R. alpestre* Decaisne  
*Lonicera spinosa* Jacquem. . . *L. affinis* Jacquem. ex Decaisne  
*Glyceria rivularis* Jacquem. . . *G. tonglensis* Clarke  
*Rhododendron dubium* Jacquem. . . *R. leidotum* Wall. ex Royle

that we find at higher elevation in the Alps are composed only of the conifers, either of the firs or of the larch. Their dark and sorrowful uniformity have something gloomy which is in harmony with the desolation of the sites where they grow. In the Himalayas, some Amentaceae and perhaps some other trees mix with the conifers as far as the upper limit of forests.

'In spite of this variety of trees, the flora is monotonous as compared to that of the Alps, up to the same altitude. This poverty is the result of the uniformity of the sites and the stations. The elevation is only one factor of habitat of the plants. There are many others like the nature of the soil, its humidity, the exposure, the aspects and their various complication; the general uniformity of the vegetation is here governed by that of the sites.'

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