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latter, 110 were Mosses. I shall likewise be able to give the temperature of Hammerfest, and details respecting its climate—thanks to an intelligent merchant residing there, who communicated to me his meteorological observations made regularly during five years.

From thence I returned to Alten, and from Alten to Tromsø, to visit the lofty Alps of Tromsødelia. I then went over to the islands of Loffoden, passing the dreaded Westfiord. After stopping at Bodø I followed the western coast of Norway till I reached Trondjem. I herborized around Trondjem as I had done round Bodø, and visited the Dovrefield, where I stayed several days, and made an ample harvest of plants. Thence I had just descended into the plain of Nissen, when I was seized with paralysis. Fortunately all my excursions were finished; I was no longer amongst the wilds of Lapland, but where medicines and medical aid were at hand. I will not stop to tell you all my sufferings during forty miserable days of illness, nor afflict you by complaining. What I most dreaded was the obstruction of the Gulf of Christiania by frost, and the impossibility of getting away. However, by the blessing of God, I was well enough to embark on the 4th of October, and reached this on the 4th of November.

[We are happy to be able to add that Professor Parlatore's health is daily improving. He is finishing his interesting memoir, begun before his departure, on the Egyptian (or rather Nubian) and the Sicilian Papyrus, which he finds to be two distinct species, and he will shortly recommence the publication of the 'Flora Italiana.']

Notes on the Botany of the CAPE DE VERD ISLANDS; extracted from a letter of DR. C. BOLLE to William Willson Saunders, Esq., dated

Santa Cruz de Ténériffe, Nov. 10, 1851.

The Cape de Verd Islands, on one of which I established my headquarters, are singularly cut off from communication with the continents of either world, and from one another. There is no regular post to this groupe, and but little intercourse is carried on among them. From the island of St. Nicholas, where my time was chiefly spent, to St. Vincent, at which the steamer touches, the distance, as to time, is as great as to England! I lived in a most sequestered way for several months, and chiefly regretted it because of the difficulty of sending plants to you, for I could have made many valuable additions to your garden and

greenhouse if I had been able to transmit the cases so as to suit the arrival of the steam-ship. Certainly the Gorgades of the ancients are among the most picturesque spots in the world, and their deep and closely-shut valleys, watered by narrow streams, presented to my delighted eyes all the riches of a tropical vegetation. But everywhere the sea-coast is one sandy desert, partially and scantily decked, during the few weeks of rainy season, with transient verdure, chiefly consisting of Grasses and a few Leguminous plants of small dimensions. The more elevated situations assume somewhat of the character of the Canary Islands in their flora; but the species are neither numerous nor showy. Many of the natural families have but one representative: such is the case with the *Geraniaceæ*, *Amaryllideæ*, and *Lycopodiaceæ*. A single *Allium*, which, growing near gardens, was probably introduced, is the only bulbous plant which I discovered. There are no forests: either they never existed, or the imprudence of the inhabitants or the ravages caused by goats have destroyed them. The *Euphorbia Tuckeyana* grows by thousands, to the exclusion of almost every other shrub on the mountains, which it covers with a dwarfed coppice; while here and there some Gum Dragon-trees adorn the crest of a lofty rock; and the sea-beach, near the mouths of torrents, produces the *Tamarix Senegalensis*. Add to these the *Jatropha Curcas* and the Wild Fig-tree (*Ficus Lichtensteinii*), and you have the entire catalogue of the *Dendrologia* of the Cape de Verd Islands. *Acacia Arabica* and *Dichrostachys nutans* are nothing better than bushes.

I might go on in the same strain, and prove to you how hard a step-mother Dame Nature has been to this Archipelago; but I will only say that if my voyage had been connected with any views of pecuniary remuneration, it would have been an utter failure; but as this was not the case, I do not regret the time I spent at St. Nicholas and St. Vincent. I was cheered by much kindness received at the hands of excellent people, and I enjoyed perfect health. The herbarium which I collected will enable me to add many species to those previously known. Still, considering the paucity of the flora, the extreme drought of the year, the short-lived character of the vegetation, and the scourges of fever and famine, which are perennial visitants of the Cape de Verd Islands, I determined on shortening my visit to them. Ten years would be required to investigate thoroughly the natural history of the groupe; for the brief season of the annual rains is but too little to

enable the botanist to explore each island; and there are ten! It is highly probable that there is little variety in their productions. St. Nicholas, which was the chief scene of my labours, is the largest, loftiest, and most fertile in the groupe: no opportunity of going to Fayo was ever presented, and St. Jago and St. Antonio were then suffering from pestilence; while, at St. Vincent, where a flourishing town will probably soon arise, at one of the finest ports of the Atlantic, there was hardly the possibility of remaining, for want of accommodation and provisions. Mr. Kendall, the British consul, was occupying a miserable hut, his own house having been destroyed by a hurricane; and I was compelled to pay a dollar a night, for permission to shelter myself in the cottage of a negro, where there was no bed.

And now to refer to the plants which I sent you: the most interesting is the *Sarcostemma Daltoni* (Decaisne) which is a long-stalked, pendent, leafless *Asclepiadea*, graced, in the months of August and September, with innumerable branches of pale yellow flowers. It is a rooting species, easy of culture and increase, and it requires much sun and heat and almost no moisture. It forms the chief characteristic of the littoral vegetation, where the coast is dry, burning, and African in aspect, and adorns the rocks with its thick garlands. Then comes a Crassulaceous plant, with rosettes of large glaucous leaves and yellow blossoms: it is a native of the mountainous region, and consequently must receive less warmth and rather more water than the *Sarcostemma*. A *Nephrodium*, with tuberous roots, is pretty and certainly new; *Asplenium Canariense*, *Notochlæna Marantæ*, *Davallia Canariensis*, and an *Aspidium* (I think *odoratum*) with large silky rhizomes, must be kept rather dry. There is a scrap of the wild *Aloe* of the Islands, some roots of a little-known Umbelliferous plant, which seems to be the *Tetrapleura insularis* of Parlatore, and four small specimens of *Euphorbia Tuckeyana*, which have little chance, it is to be feared, of surviving the voyage; bulbs of an *Umbilicus*, probably *horizontalis*; and seeds of *Poinciana pulcherrima*, and of a lovely *Cassia*; last, not least, tubers of the only *Orchidea* of St. Nicholas, which I could never detect in flower or seed, its season of inflorescence being perhaps the spring; it requires shade and moderate warmth, and is doubtless new: I shall enjoy to see it bloom with you.

In order to gratify you, I have charged my conscience with the murder of some of the few Dryads of the Cape de Verds:—they are so small in stature that you will pronounce them quite elfin! The next

steamer shall convey to you samples of the woods of *Dracæna Draco*, *Euphorbia Tuckeyana*, *Tamarix Senegalensis*, *Acacia Arabica*, *Dichrostachys nutans*, *Ficus Lichtensteinii*, &c., also some packets of seeds. The whole, however, is so trifling, that I am almost ashamed to offer it.

From the Cape de Verd Islands I came to this place, and hoped to spend part of the winter amid its southern scenery, where noble woods and your favourite succulents abound. M. Berthelot, one of the kindest of men, promises to direct my excursions, and assures me that I shall visit valleys hitherto untrodden by the foot of any naturalist. Armed with your saw and accompanied by one man, I shall explore the Laurel groves of Ténériffe. I can hardly suppose that all the succulent plants which grow here have found their way into European gardens; and this island is also rich in *Liliaceæ*, in species of *Scilla* and *Asphodelus*. There are also several kinds of land shells, of which I could see but three species in the Cape de Verd Islands, and a single fluviatile shell.

On the increase of temperature in the Flowers of VICTORIA REGIA.
Translated from the 'Neue allgemeine deutsche Garten- und Blumenzeitung' (New German Garden and Flower Gazette, by EDWARD OTTO, Curator of the Botanic Garden at Hamburg). Part II. of 7th year, 1851.

At the request of Professor Lehmann, who thought he had formerly noticed an increase of temperature in the flowers of *Nymphæa alba* at the moment of opening, as compared with that of the surrounding atmosphere, we made experiments in this garden (the Hamburg Botanical Garden) with the *Victoria regia* on the 24th of September last (1851), which produced the following striking results.

The temperature in the hothouse being $17\frac{1}{4}^{\circ}$ Réaum., and that of the tank being $16\frac{1}{2}^{\circ}$ Réaum., the thermometer on being plunged into the flower at the moment of expanding its anthers, at 7h. 11min. p. m., rose to $21\frac{1}{2}^{\circ}$ Réaum., the bulb being placed among the anthers. On being sunk into the blossom below the anthers, a decrease of temperature took place gradually.

In thus preliminarily noticing the above fact, we deem it proper to say, that owing to the number of visitors who crowded to see the plant in flower, it was impracticable to pursue the experiment any further. It was made on the fourth flower that had opened. On a subsequent