

midst of heavy rain, N.E. wind, high barometric pressure, and an abnormal sky-spectrum, you may be interested in hearing how matters quieted down until this Monday, when we have a delightful drying west wind, high floating clouds, and a normal sky-spectrum showing fine lines only.

On Tuesday the 20th then, there was a sensible alleviation of Monday's abnormal spectrum bands, though they were still there; and the weather, though dark, began to clear.

On the 21st and 22nd, the abnormal bands had almost disappeared, leaving the lines proper of the spectrum easily visible, and the weather was fine.

Friday, the 23rd, however, was wet by day and very wet at night; yet the sky-spectrum was good and nearly normal. Note, however, from the Meteorological Journal below,\* that this rain came with a west wind, a low barometer, and a considerable fall of temperature. And the wind has been westerly ever since, and with a normal sky-spectrum.

Hence the intensification of the band on the less refrangible side of D would seem to be thus far identifiable both in London and Edinburgh with warm rain in an easterly wind and under a high barometer.

While, that the said band really was intensified to a very noteworthy degree, and quite abnormally both with respect to the broader band which appears on the more refrangible side of D (or over W.L.L. 5830-5680), and to other telluric manifestations, at sunset—is demonstrated now most satisfactorily by my having just heard from my friend, Prof. P. G. Tait, M.A., whom I had not seen for six weeks before, that he has been independently observing in Edinburgh the very same phenomenon, and almost at the same times, and on the same days. He was much struck too at obtaining the chief abnormal band on the most marked days from all parts of the sky and at all hours, and had considered what it might mean.

He has further pointed out to me since then, that Angstrom's map shows fine telluric lines in the place of the grand smoky band we observed with small spectroscopic power in W.L.L. 6000-5880; but makes them much less, instead of very much more, dark than the well-known 5830-5680 evening band; so that the question [now is, what is it that intensifies the former and not the latter under the meteorological conditions noted?

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July 26 Astronomer Royal for Scotland

Sea-power

I OBSERVE that a correspondent at Giessen asks (NATURE, vol. xii, p. 212) for information as to Sea-power. If he will consult Sir Robert Kane's "Industrial Resources of Ireland" he will find what he wants, with a view to what have been termed "tidal mills." A. C.

Edinburgh, July 26

OUR BOTANICAL COLUMN

THE ADELAIDE BOTANIC GARDEN.—From Dr. Schomburgk's report on the progress and condition of the Adelaide Botanic Garden and Government Plantations during the year 1874, we gather some facts relating not only to the capabilities of the Garden in an educational point of view, but also with regard to the acclimatisation of new plants, many of which are valuable for their economical products, and others as horticultural novelties. In what is called the class ground 130 natural orders are represented and 750 genera. The plan adopted seems to be similar to that adopted in most botanic gardens, namely, by dividing the orders by strips of turf; the aquatic plants, such as the Nymphaeaceae, Vallisneriæ, Butomaceae, Alismaceae, &c.,

are arranged in a basin in the centre. Dr. Schomburgk points out what is apparent to all botanical students, that it is almost an impossibility to lay out a systematic ground perfectly, as the representatives of some orders are composed partly of natives of cool and partly of tropical countries, while other orders are solely tropical plants: the same difficulty also occurs in the lower orders of plants, such as Cryptogams. As Dr. Schomburgk says, it is to be hoped that this comparatively new feature in the plan of the Adelaide Garden will be useful to the students at the University, the foundation of which we are told is now a fact, and so promote the study of botany in South Australia. In the experimental garden great success seems to have been attained in growing the Tussack grass (*Dactylis caespitosa*). As is well known, this plant forms a most nutritious fodder; and it is thought that if it succeeds, it will prove a most valuable acquisition to the scanty stock of good Australian fodder plants. The seed was received in Adelaide in September last, and upon being at once sown soon made its appearance above ground: the quickness of growth is said to be surprising; many of the plants in 4-inch pots showed, at the time of writing the report at the latter end of February, seventy to eighty shoots. About a dozen plants were put out in 6-inch pots, and these in the same period had as many as 123 shoots, the blades of which were remarkably sweet and soft and of a good flavour. Dr. Schomburgk says that he is convinced, though the native countries of the Tussack are much colder than Australia, it will do well in the hills; he has about 1,000 plants in pots, which are naturally sheltered part of the day from the sun, and are also watered; many of the plants are during the day more or less exposed to the sun, but he has observed no difference in their growth. It is remarkable that, notwithstanding all the pains that have been taken, both at home and in Australia, to introduce many of these useful grasses, little or no interest seems to be taken by the colonists themselves in the matter for whose benefit they are specially undertaken.

The Liberian Coffee, about which so much has been said and so much more is expected, has likewise found its way to Adelaide, four healthy plants having been received from Mr. Bull, of Chelsea. Among other economic plants recommended by Dr. Schomburgk for trial in South Australia may be mentioned the Liquorice (*Glycyrrhiza glabra*).

SUMBUL ROOT, the tincture of which is now so frequently prescribed as a stimulating tonic, had, previous to the discovery of the plant in 1869, a peculiar mystery attached to it regarding its origin, and this mystery was all the more intense from the fact that in commerce dealers distinguished Sumbul by two or three different qualities, each of which was said to be derived from different countries. Thus, the best kind was distinctly known as Russian Sumbul, and the second quality as Indian Sumbul, a variety or form of which was also known as China Sumbul, being shipped to England via China, while the Indian kind is brought from Bombay. Of the plant furnishing this Indian or Chinese product we know nothing. The root is described by Pereira in his "Elements of Materia Medica" as being of a closer texture, firmer, denser, and of a more reddish tint than the Russian sort, and of a less powerful odour. The authors of the "Pharmacographia," however, consider it "to be a root different from Sumbul," that is, the true or Russian Sumbul. The mystery regarding the botanical origin of this latter has within the last few years been cleared up by the discovery, in 1869, of living plants in the mountains near Pianjakent, a Russian town eastward of Samarcand. The Botanic Garden at Moscow was fortunate enough to receive a living plant which flowered in 1871, and was thereupon named by Kauffmann *Euryangium Sumbul*. A plant was introduced to the Royal Gardens, Kew, some two or three years since, and planted in the open ground, where it has flourished through the summer, throwing up its strong, bright green *Ferula*-like leaves, and dying down to the earth in winter, during which period it has received artificial protection. Up to the present season the plant has never flowered, but recently it has thrown up a strong and healthy umbel, some seven or eight feet high. It is only in quite recent times (1867) that the Sumbul has been admitted into the British Pharmacopoeia. In the first edition, which was issued in 1864, it was not included. It has now become largely used, and its application is still increasing, being frequently administered in cases where quinine is too powerful. The root is of a soft spongy nature, with numerous interlacing fibres; it has a bitter aromatic taste, and a strong musk-like smell which it is capable of retaining for a great length of time, the specimens contained in the Kew Museum, where they have been for the last twenty-four years, retaining still the odour in a marked degree.

\* Meteorological Journal at 1 P.M. Royal Observatory, Edinburgh.

Date.	Barometer reduced to sea-level.	Attached Thermometer.	Exterior Thermometer, in shade.	Direction of wind.
1875.	inches.	° F.	° F.	
July 20 .....	30.08	60.0	61.5	N.E.
" 21 .....	30.01	62.2	64.7	N.E.
" 22 .....	29.74	63.5	68.1	N.E.
" 23 .....	29.58	61.8	58.9	W.
" 24 .....	29.49	57.4	57.6	W.
" 25 .....	—	—	—	—
" 26 .....	30.24	58.0	60.3	W.