

On the Plants of Sulphur Island

By

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The plants of Sulphur Island in the following list were chiefly collected by Mr. Shinnosuke Matsubara, who lately submitted them to me for determination. My friends Messrs Yasushi Kikuchi, Nobutoshi Okada, and Ichirō Shishido, also made some collections of plants in the island, which they kindly showed me.

Of the flora of Sulphur Island, as far as I know, nothing has yet been published; nor have any of us ever before made an examination of the flora. It may not be without interest, then, to publish this list of plants.

The gentlemen, named above, visited Sulphur Island on November 10th, 1887. They remained on it only six hours; and, as each had other special work to do, a very short time only could be spared for collecting plants. Consequently it is very probable that further search would add many more plants to the list here given.

Sulphur Island lies between latitudes $24^{\circ} 44' 29''$ N. and $24^{\circ} 47' 46''$ N. and between longitudes $141^{\circ} 16' 29''$ E. and $141^{\circ} 21' 10''$ E. Its greatest length is about $5\frac{1}{2}$ miles, stretching from south-west to north-east, and its greatest width not more than two. According to Mr. Y. Kikuchi, it is an active volcanic island, consisting chiefly of tufa and basaltic rock. The present volcano is at the south-eastern end of the island, and is almost destitute of any vegetation. On the north-

western side of the active volcano is a low sandy plain, chiefly of volcanic ashes. The plain is covered pretty abundantly with such plants as *Vitex trifolia*, var. *unifoliolata*, *Cassytha filiformis*, *Ipomœa pescaprae*. Next to this plain is a plateau, where vegetation is most luxuriant, consisting chiefly of *Scævola Kœnigii*, and *Pandanus odoratissimus*. *Morinda citrifolia* grows also here. Some of the company found an extinct crater in this plateau. The whole island is quite destitute of fresh water.

The origin of the vegetation of Sulphur island like that of other oceanic islands, must depend upon the action of winds, currents, and birds.

As the island is uninhabited by man, there is less probability of the plants having been introduced through his agency. Its principal occupants are birds, such as *Diomedea nigripes*, *Procellaria*, *Sula*, *Cettia*, and *Hyppipetes*. There is but one species of mammalia, *Pteropus pselaphon*, which also abounds in the Bonin Islands.

The flora of the island is very like that of the Bonin Islands.

Malvaceæ.

1. *Abutilon Indicum*, Don.
Coll. Matsubara and Shishido.

Tiliaceæ.

2. *Triumfetta* sp.?
Coll. Matsubara.

The specimen looks very like *T. rhomboidea*, Jacq., but in the absence of flower or fruit it is impossible to decide as to whether it really is a species of *Triumfetta* or not.

Rhamneæ.

3. *Zizyphus vulgaris*, Lam.
Coll. Matsubara.

Sapindaceæ.

4. *Dodonaea Thunbergiana*, Eck. et Zey.
Coll. Matsubara.

Leguminosæ.

5. *Phaseolus* sp.
Coll. Shishido.

Rubiaceæ.

6. *Morinda citrifolia*, L.
Coll. Kikuchi, Matsubara, Okada, and Shishido.

Compositæ.

7. *Bidens bipinnatus*, L.?
Coll. Matsubara.

Goodenovieæ.

8. *Scaevola Kœnigii*, Vahl.
Coll. Kikuchi, Matsubara, and Okada.

Primulaceæ.

9. *Lysimachia lineariloba*, Hook. et Arn.
Coll. Kikuchi, Matsubara, Okada, and Shishido.

Convolvulaceæ.

10. *Ipomœa pes-capræ*, Roth.
Coll. Matsubara and Shishido.
11. *Ipomœa* sp.
Coll. Shishido and Matsubara.
12. *Convolvulus Japonicus*, Thunb.
Coll. Matsubara.

Solanaceæ.

13. *Solanum biflorum*, Lour.
Coll. Kikuchi and Okada.

Verbenaceæ.

14. *Vitex trifolia*, L. var. *unifoliolata*, Schauer.
Coll. Kikuchi, Okada, Shishido, and Matsubara.

Laurineæ.

15. *Cassytha filiformis*, L.
Coll. Matsubara, Kikuchi, Okada, and Chishido.

Euphorbiaceæ.

16. *Euphorbia pilulifera*, L.
Coll. Matsubara.

Urticaceæ.

17. *Trema orientalis*, Planch. var. *arguta*. Max.
Coll. Matsubara and Shishido.
18. *Bœhmeria biloba*, Wedd.
Coll. Matsubara.

Orchideæ.

19. *Cirrhopetalum*, sp.?
Coll. Matsubara.
20. *Lusia teres*, Blume.
Coll. Matsubara.

Paudaneæ.

21. *Pandanus odoratissimus*, L. f.
Coll. Kikuchi.

Cyperaceæ.

22. *Cyperus* sp.
Coll. Matsubara.
23. *Cyperus* sp.
Coll. Shishido.

Gramineæ.

24. *Ischæmum* sp.?
Coll. Matsubara and Shishido.

Filices.

25. *Davallia tenuifolia*, Sw. var. *Chinensis*, Sm.
Coll. Matsubara.
26. *Pteris quadriaurita*, Retz.
Coll. Matsubara and Shishido.
27. *Asplenium Nidus*, L.
Coll. Matsubara.
28. *Nephrolepis cordifolium*, Sw.
Coll. Matsubara and Shishido.
29. *Nephrolepis* sp.
Coll. Matsubara, Kikuchi, Okada, and Shishido.

