

FLORULÆ SALVAGICÆ TENTAMEN.

Ta

N.º

Para a Livraria  
da Universidade de Coimbra

Offerece com toda a consideração  
o B. do Cartão de Seiva

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FLORULÆ SALVAGICÆ  
TENTAMEN;

OR

A LIST OF PLANTS

COLLECTED IN

THE SALVAGES OR SALVAGE ISLANDS

BY

S<sup>B</sup> CONSTANTINO CABRAL DE NORONHA

AND COMMUNICATED BY

THE BARÃO DO CASTELLO DE PAIVA.

BY

R. T. LOWE, M.A.

Casa  
Gab.  
Est.  
Tab.  
N.º




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UNIVERSIDADE DE COIMBRA

JARDIM BOTANICO

VIRO PERILLUSTRI

BARONI CASTELLO DE PAIVA,

QUI

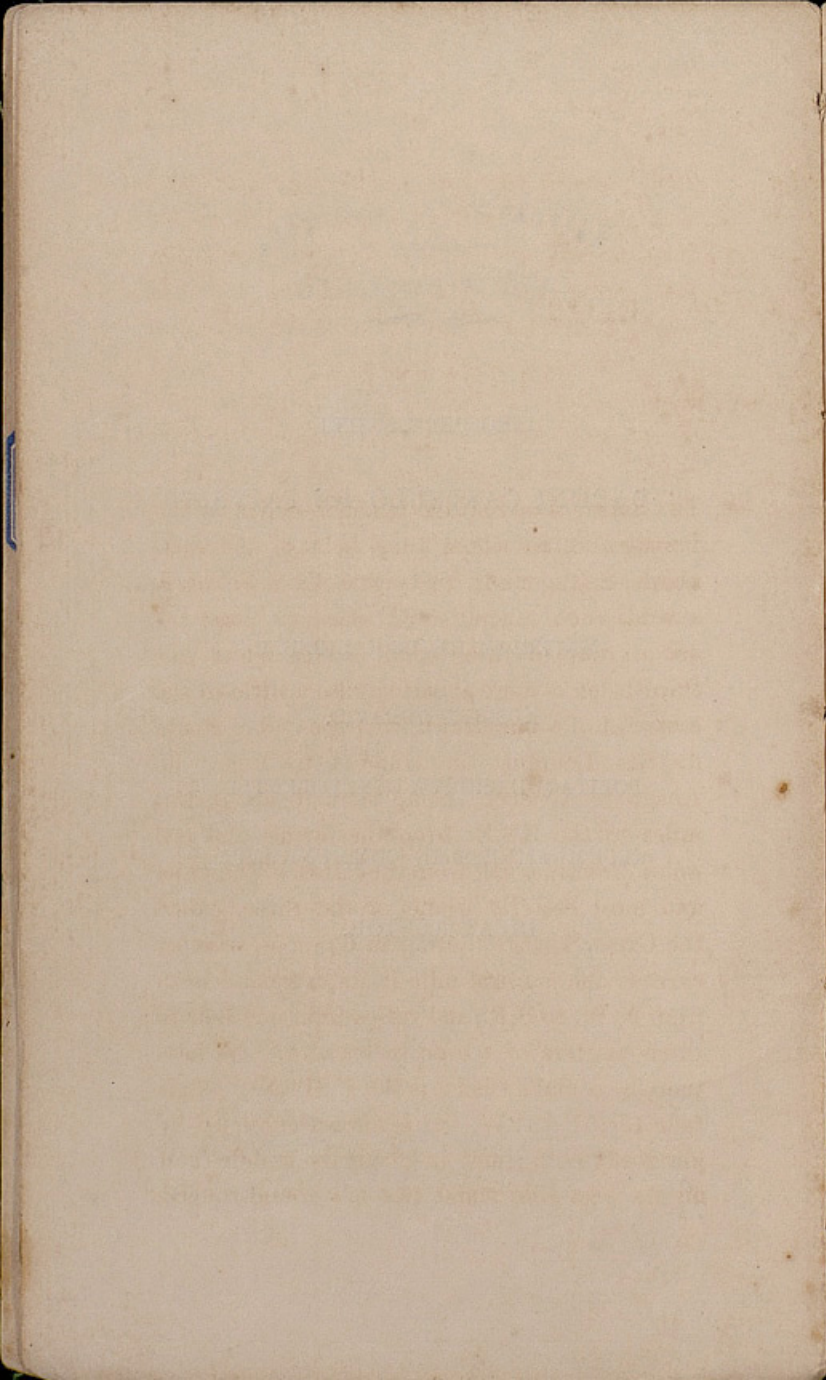
MATERIAM HUIUSCE LIBELLI

ADSCIRE CURAVIT,

SOLITAQUE PRO SUA BENEVOLENTIA

MECUM AMICISSIME COMMUNICAVIT,

DICAT AUCTOR.



## FLORULÆ SALVAGICÆ

### TENTAMEN.

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THE Salvages or Salvage Islands—called by the Portuguese, to whom they belong, and Spaniards, Selvagens in the plural, from *Selvagem* a wild, rude, uncultivated place or person—are a group of three small barren islets (the third being a mere shoal) situate a little to the eastward of a line drawn from the end of Ponta de São Lourenço in Madeira to Punta de Anaga in Tenerife, being distant about 150 miles to the S.S.E. from the former and 100 miles directly north from the latter. The chief and most easterly island of the three, called the Great Salvage (*Selvagem Grande*), scarcely exceeds one nautical mile in its extreme length from N.W. to S.E., and varies from one-half to three-quarters of a mile in breadth. Its latitude, by Vidal's Chart, is  $30^{\circ} 7' 31''$  N.; longitude  $15^{\circ} 51' 20''$  W. It is almost encircled by low rocky cliffs; and in about its middle and on its west side stand two low round-topped

hills, each not rising apparently more than 200 or 300 feet above the level of the sea, and called respectively "o Piton dos Tornozêlos" and "o Pequeno Piton." Eight or nine miles (nautical) to the south-west of it is the Little Salvage (Selvagem Pequeno), a low narrow bank widening south-westwards, about three miles long and three-quarters of a mile broad in its widest part, with a single abrupt castellated craggy-topped hill, called "o Grande Piton," a little below the middle. The third of these islets is one mile further to the west of the Little Salvage. It is about three-quarters of a mile long and half as broad, being in fact little more than a shoal or small low sandy bank or hummock, and, though called in Vidal's Chart "Little Piton," seems to have no proper Portuguese name at all.

There are no regular or constant inhabitants on any of these islands; but in summer, which is the only season when they can be safely visited, they are resorted to by their owner from Madeira or by men employed by him for the purpose of collecting Barrilha (soda prepared from *Mesembrianthemum crystallinum* L., *M. nodiflorum* L., and *Sueda fruticosa* (L.)), Orchil (*Roccella tinctoria* (L.)), and Cagarras (*Procellaria Anglorum* Temm.)—these birds, dried and salted, being much esteemed by the



poorer classes in Madeira. Occasionally these islands are also visited for fishing-purposes by a few Portuguese (Madeiran) or Spanish (Tenerifan or Lanzarotan) fishermen; but the scarcity of water prevents any long-continued residence, there being no regular or permanent springs capable of furnishing more than a very scanty supply in any of the islands. Thus they are quite uncultivated, except for Barrilha, and support only a few goats and rabbits.

These desolate and remote islets are surrounded on almost all sides with dangerous rocks and reefs, making them at most seasons difficult of access, though in the Great Salvage there is a sandy bay on the east side and a tolerable landing-place in fine calm summer weather. Thus, though I have passed in winter several times very near this unexplored microscopic archipelago, I have never had an opportunity to land and ascertain how far, or otherwise, its scanty vegetation might agree with that of the Canaries or Madeira.

I have received therefore, at various successive times within the last six or seven years, with the greater satisfaction from my energetic friend the Barão do Castello de Paiva, several small and very roughly dried collections of plants made at his request, and chiefly, or almost entirely, in the Great Salvage, during several

periodical visits, extending from June to October 1860 to 1868, by the son of its present proprietor, Morgado João T. Cabral de Noronha, of Madeira; who, though not a botanist, has proved himself to be a diligent and attentive observer. From these materials, of unquestionable authenticity, the following list has been carefully drawn up.

## I. PHÆNOGAMOUS PLANTS.

### A. DICOTYLEDONS.

#### I. RANUNCULACEÆ.

##### 1. NIGELLA DAMASCENA L.

Europe, Mad., Canaries; not Cape Verdes.

#### II. FUMARIACEÆ.

##### 2. FUMARIA MURALIS Sond.

A fine-leaved glaucous state of the plant (=var.  $\alpha$  (2) Fl. Mad. i. 14) with often recurved pedicels shorter or not longer than their bracts.

Europe, Mad., Can.; not Cape Verdes.

#### III. CRUCIFERACEÆ.

##### 3. SISYMBRIUM OFFICINALE (L.).

$\alpha$ , siliquis pubescentibus.

Europe and Can. The smooth-podded var.  $\beta$  only in Mad., but neither in C. V.

## 4. ALYSSUM MARITIMUM L.

*β. canariense* DC. (*Koniga*) Fl. Mad. i.

31. *Lobularia maritima* WB. i. 92. *Koniga intermedia* Webb Spicil. Gorg. 100.

This forms large round compact densely cespitose grey mat-like masses, 1-2 feet in diameter. It has only one or two seeds in each cell of the pouches.

Mad. and Can.; not C. V.

5. SENEBIERA DIDYMA (L.) *β.*

Apparently very abundant like the last.

Europe, Mad., Can., and C. V.

## IV. FRANKENIACEÆ.

## 6. FRANKENIA LÆVIS L.

*a. hebecaulon* Lowe Fl. Mad. i. 48.

Apparently very common.

Europe, Mad., Porto S<sup>to</sup>, Can.; not C. V.

## V. CARYOPHYLLACEÆ.

## 7. SILENE GALLICA L.

*γ. anglica* Fl. Mad. i. 51.

Europe, Mad., Can., and C. V.

## 8. SILENE INFLATA Sm.

*γ. maritima* Fl. Mad. i. 53.

Europe, Mad., Can.; not C. V.

## 9. LEPIGONUM FALLAX Lowe.

*Spergularia fallax* Fl. Mad. i. 56.

Mad., Can., W. Indies; not C. V.

10. POLYCARPON TETRAPHYLLUM L. fil.  
Apparently very abundant.  
Europe, Mad., Can., and C. V.

## VI. MALVACEÆ.

11. MALVA PARVIFLORA L.  
*a. pubescens* Lowe Fl. Mad. i. 65.  
Europe, Mad., Can., and C. V.

## VII. OXALIDACEÆ.

12. OXALIS CORNICULATA L.  
Europe, Mad., Can., and C. V.

## VIII. LEGUMINACEÆ.

13. PEDROSIA PAIVÆ Lowe. *Trevina*.

Suffruticulosa pallide cinerea dense brevissimeque adpresso-pubescens, ramulis gracilibus elongato-decumbentibus, aliquando intricato-dumosis, adpresse pubescentibus; foliis distincte petiolatis, foliolis stipulisque conformibus parvis tenuibus anguste lineari-lanceolatis deorsum attenuatis sursum latioribus obtusiusculis vel ramulorum florentium acutis, 6-8-plo longioribus quam latis; pedunculis axillaribus solitariis distinctis unifloris; leguminibus rectis cylindricis æquis glaberrimis breviusculis (vix uncialibus) polyspermis; seminibus fere 30 minutis compresso-orbicularibus.

Hab. vulg. in Ins. Salvagica Majore.

In colour of foliage and shape of leaflets most resembling the Canarian (Tenerifan) *P. sessi-*

*lifolia* (DC.); but the leaflets are much finer and smaller, *i. e.* only 2-3 or 4 lines long and scarcely ever more than one millimetre or half a line wide. It belongs, moreover, by its short 1-flowered or very rarely 2-flowered peduncles to a different group or section of the genus, and it is abundantly distinct from every species of that group. Only a single late autumnal flower remains on one of the specimens. The standard in this is dark yellow (*flavus*), but with a decided dusky greenish-brown or dark olive tint; the wings and keel are pale, the former with a trace of purple, but the latter tipped with yellow, not with black. On the whole, however, the earlier flowers probably will prove not to differ materially in colour from those of its proper group, *viz.* that of *P. macrantha* and *P. argentea* Lowe.

This new *Pedrosia* is in several respects a more than ordinarily interesting and important acquisition, being not only quite peculiar to the small and isolated rocks of the Salvages and not found in either of the nearest adjacent Canarian or Madeiran archipelagos, both so rich in other species of the genus, but belonging also to a section of *Pedrosia* well represented in the more distant islands of Madeira, but of which no species has occurred in the nearer Canarian group.

It therefore stands in much the same relation to the Madeiran and Canarian floras as the remarkable apterous genus *Deucalion* Woll. (one species of which is peculiar to the South Deserta of Madeira and the other to one of the Salvages themselves) does to the Madeiran and Canarian insect faunas. An acquisition therefore of such interest in exemplifying a certain correlation or agreement between the botanical and entomological distribution of species in these two groups of islands, may serve for an appropriate testimonial to the unflagging ardour in collecting and generosity in imparting his continual fresh materials both in entomology and botany which so honourably distinguish my much esteemed friend and correspondent the Barão do Castello de Paiva.

#### IX. CRASSULACEÆ.

##### 14. UMBILICUS PENDULINUS DC.

Fl. Mad. i. 322.

Europe, Mad., Can. ; C. V., very rare.

##### 15. MONANTHES BRACHYCAULON (Webb).

*Petrophytes brachycaulon* Webb et Berth. Phyt. i. 202, t. 36 B. 2. *Sempervivum Loweii* Paiva! in Seem. Journ. of Bot. v. 21.

Hab. in Ins. Salvagica Majore rariss. Elsewhere in the Canaries only; not uncommon on the north side of Tenerife on walls and rocks.

Before seeing specimens, and judging only from the description, I entirely failed to apprehend the true relations of this plant, when, in Dr. Seemann's Journal of Botany v. 22, I suggested its possible affinity with *Sedum cæruleum* Vahl. Its proper place and name became, however, immediately apparent on subsequent inspection of authentic specimens of the plant itself from the Great Salvage, kindly communicated by my friend the Barão do Castello de Paiva.

#### X. MESEMBRIANTHEMACEÆ.

##### 16. MESEMBRIANTHEMUM NODIFLORUM L.

Fl. Mad. i. 306.

##### 17. — CRYSTALLINUM L.

Fl. Mad. 307.

Both these are common in Mad. and the Can., but do not occur in the C. V.

##### 18. AIZOON CANARIENSE L.

Fl. Mad. 304.

Mad., Can., C. V.

#### XI. UMBELLACEÆ.

##### 19. AMMI MAJUS L.

*γ. tenuifolia* Lowe Fl. Mad. i. 351.

Europe, Mad., Can.; not C. V.

##### 20. ASTYDAMIA CANARIENSIS (Spr.).

Webb et Berth. Phyt. Can. ii. 162, t. 76.

A generally diffused littoral or maritime plant in the Canaries, but not found in any of the Madeiran or Cape Verde islands.

21. *MONIZIA EDULIS* Lowe.

Fl. Mad. i. 365 ; Hook. fil. in BM. t. 5724.

The reappearance in the Salvages of this fine Desertan plant, with its elegant fern-like foliage, is very interesting, and counterbalances exactly with respect to Madeira the affinity expressed by *Astydamia* of the Salvagic to the Canarian flora. Sr C. C. de Noronha remarks that it is found in the clefts of rocks and also amongst stones, that the flowers are purplish ("roxa"), and that it is called "Aipo da rocha."

XII. RUBIACEÆ.

22. *SHERARDIA ARVENSIS* L.

Europe, Mad., Can. ; not C. V.

23. *GALIUM APARINE* L.

Europe, Mad., Can., and C. V.

24. *RUBIA FRUTICOSA* Ait.

A universal and peculiarly Can. pl. ; not found in Mad. or C. V.

XIII. COMPOSITACEÆ.

25. *GNAPHALON SAXATILE* (L.).

Fl. Mad. i. 438.

Europe, Mad., Can. ; not C. V.



## 26. SCHIZOGYNE SERICEA (Willd.).

WB. ii. 218.

Universal and abundant in the Canaries ; not found in Mad., the Cape Verdes, or elsewhere.

## 27. SENECIO INCRASSATUS Lowe.

Fl. Mad. i. 446.

A plant entirely peculiar to the Madeiran islands and only represented in the Canaries by *S. crassifolius* Willd.

## 28. CHRYSANTHEMUM SEGETUM L.

Fl. Mad. i. 458.

Europe, Mad., Can. ; not C. V.

## 29. KERNERIA PILOSA (L.).

Fl. Mad. i. 474.

Mad., Can., C. V. ; not Europe.

## 30. CENTAUREA MELITENSIS L.

Fl. Mad. i. 508.

Apparently common.

Europe, Mad., Can., and C. V.

## 31. MICROLONCHUS SALMANTICUS L.

Fl. Mad. i. 509.

Europe, Mad., Can. ; not C. V.

## 32. SONCHUS ASPER Vill.

Fl. Mad. i. 546.

Europe, Mad., Can. ; not C. V.

33. CREPIS (*Barkhausia*) DIVARICATA Lowe.Var. *a. robusta*? Fl. Mad. i. 555.

A mere scrap without flowers, but most probably the pl.

Peculiar to the Madeiras; not in the Canaries or C. V., but represented in the former by *C. Loweii*  $\beta$  Schultz in WB. ii. 461, t. 123.

#### XIV. PRIMULACEÆ.

##### 34. ASTEROLINUM LINUM-STELLATUM (L.).

WB. iii. 174; DC. Prodr. viii. 68.

Europe and Can.; not Mad. or C. V.

Apparently abundant.

##### 35. ANAGALLIS ARVENSIS L. ?

A scarcely determinable scrap only.

Europe, Mad., Can.; C. V. (Chr. Sm.).

#### XV. ASCLEPIADACEÆ.

##### 36. PERIPLOCA LÆVIGATA Ait.

WB. iii. 15.

This common Canarian and Cape Verde shrub is not found in Madeira. Thus the Salvages are its northern and the Cape Verdes its southern Atlantic-island limits.

It is called in the Canaries "Cornical," from the curious hard wide-spreading straight slender horn-like follicles.

#### XVI. BORAGINACEÆ.

##### 37. ECHIUM PLANTAGINEUM L.

Europe, Mad., Can.; not C. V.

## XVII. SOLANACEÆ.

## 38. LYCOPERSICUM CERASIFORME Dun.

Mad., Can., and C. V. In the two former, merely naturalized; in St. Iago of the Cape Verdes overspreading miles of mountain tracts.

## 39. SOLANUM NIGRUM L.

The specimen is without flowers or fruit.  
Europe, Mad., Can., and C. V.

## 40. NICOTIANA TABACUM L.

Naturalized in Mad., Can., and C. V.

## XVIII. SCROPHULARIACEÆ.

## 41. LINARIA SPURIA Mill.

Europe, Mad., Can., and C. V. (sec. Forster, 1782; but not found since in the C. V. by any other botanist).

## 42. SCROPHULARIA ARGUTA Ait.

WB. iii. 131.

Common to the Madeiran, Canarian, and Cape Verde islands; not found in Europe.

## XIX. OROBANCHACEÆ.

## 43. PHELIPÆA LUTEA Desf.

Desf. Fl. Atl. ii. 61, t. 146; J. A. Schm. Fl. Verd. 249.

Outer or middle and longer at least of the 3 ovate-oblong or ovate-lanceolate br. longer than

or as long as the 5 flat (or subundulate only at the edges) broadly obtuse or rounded inner sep. Tube of cor. narrow cylindric, abruptly bent and widely campanulate at top above the flexure; lobes spreading, broadly rounded or transversely oval.

N. Africa and Cape Verdes; not Mad., Can., or Açores.

#### XX. PLUMBAGINACEÆ.

##### 44. STATICE PECTINATA Ait.

WB. iii. 177.

Can. and Cape Verdes; not Mad. or Açores.

#### XXI. CHENOPODIACEÆ.

##### 45. SUEDA FRUTICOSA (L.).

Most abundant. This is the third and least esteemed of the three plants used in making soda or barrilha.

Europe, Mad., Can., C. V. (S. Antão).

*S. maritima*, J. A. Schm. Fl. Cap. Verd. 173 (not Linn.).

##### 46. CHENOPODIUM MURALE L.

Apparently very common.

Europe, Mad., Can., and C. V.

##### 47. BETA PROCUMBENS Chr. Sm.

WB. iii. 197.

Mad., Can., and C. V.

## XXII. POLYGONACEÆ.

48. RUMEX PULCHER L.  
Europe, Mad., and Can. ; not C. V.
49. EMEX SPINOSUS L.  
Europe, Mad., and Can. ; not C. V.

## XXIII. EUPHORBIACEÆ.

50. MERCURIALIS AMBIGUA L.  
Europe, Mad., Can. ; not C. V.
51. RICINUS PALMA CHRISTI L.  
The Castor-oil plant.  
Europe, Mad., Can., and C. V.

## XXIV. URTICACEÆ.

52. URTICA MEMBRANACEA Poir.  
Europe, Mad., Can., and C. V.

## B. MONOCOTYLEDONS.

## XXV. SMILACACEÆ.

53. ASPARAGUS SCOPARIUS Lowe.  
Primit. et Novit. Fl. Mad. 11 ; WB. iii. 326,  
t. 226.  
Mad., Can., and C. V.

## XXVI. LILIACEÆ.

54. SCILLA HYACINTHOIDES L. ?  
Mad. only ; not Can. or C. V.

Not having seen this in fl., it may possibly prove to be the *Can. S. hæmorrhoidalis* WB. iii. 336, t. 230.

## XXVII. GRAMINACEÆ.

55. *GASTRIDIDIUM LENDIGERUM* (L.).

56. *HOLCUS LANATUS* L.

57. *MELICA CILIATA* L.

58. *CYNOSURUS ECHINATUS* L.

59. *VULPIA SCIUROIDES* Gmel.

Apparently very abundant.

60. *HORDEUM MURINUM* L.

61. *LOLIUM PERENNE* L.

62. — *TEMULENTUM* L.

*β. arvense* Bab.

All the foregoing grasses are common to Europe, Mad., and the Canaries; but only 55 and 59 have hitherto been found in the Cape Verdes.

## II. CRYPTOGRAMOUS PLANTS.

## XXVIII. FILICACEÆ.

63. *ASPLENIUM MARINUM* L.

Europe, Mad., Can., and C. V.

64. *PTERIS AQUILINA* L.

Europe, Mad., Can., C. V., &c.

## XXIX. ALGACEÆ.

65. SARGASSUM BACCIFERUM (Turn.).  
 66. CYSTOSEIRA ABIES-MARINA (Gmel.).  
 67. ZONARIA TOURNEFORTII Lamx.  
*Z. flava* Ag.  
 68. LIAGORA COMPLANATA Ag.  
 69. GALAXAURA OBLONGATA (Sol. et Ell.).  
 Cf. *G. lapidescens* (Sol. et Ell.).

## XXX. LICHENACEÆ.

70. RAMALINA SCOPULORUM (L.).  
 Forma foliacea abnormalis.  
 71. ROCCELLA TINCTORIA Ach.  
 72. — FUSIFORMIS (L.).  
 73. PARMELIA PERLATA (L.).  
 74. — PARIETINA (L.).

All these Lichens are common to Europe, Mad., the Can., and C. V.

The foregoing list, however small and incomplete, containing not a single Trefoil, Vetch, Medicago, or Euphorbia, and omitting doubtless many others of the smaller common weeds and grasses of Madeira or the Canaries, yet contains probably most of the characteristic or peculiar plants of the Salvagian Flora. It may therefore serve to show that, abstracting com-

mon weeds and plants of more general distribution, the remaining characteristic plants of the Salvages indicate a much closer affinity of their flora with that of the Canarian than with that of the Madeiran group. Thus *Monanthes brachycaulon* (Webb), *Astydamia canariensis* (Spr.), *Rubia fruticosa* Ait., *Schizogyne sericea* (Willd.), *Asterolinum Linum-stellatum* L., *Periploca lævigata* Ait., and *Statice pectinata* Ait. are all (except the 5th) common and universal Canarian species not one of which occurs in Madeira or the adjacent islands; whilst on the other hand, *Monizia edulis* Lowe, *Senecio incrassatus* Lowe, with perhaps *Crepis divaricata* Lowe and *Scilla hyacinthoides* L., are the only Salvagic plants peculiar otherwise to the Madeiran group, and not found in the Canaries. The non-occurrence in this list of the South-Desertan *Chrysanthemum hæmatomma* Lowe, or of the North-Desertan and Madeiran *Teucrium heterophyllum* Hérit. and *Jasminum odoratissimum* L., or, again, of such common sea-cliff Madeiran shrubs as *Helichrysum obconicum* DC. and *H. melanophthalmum* Lowe, is especially remarkable—being plants so striking and conspicuous that they could not well be overlooked.

And so again it is very noticeable that here, on this narrow area, meet as it were on neutral



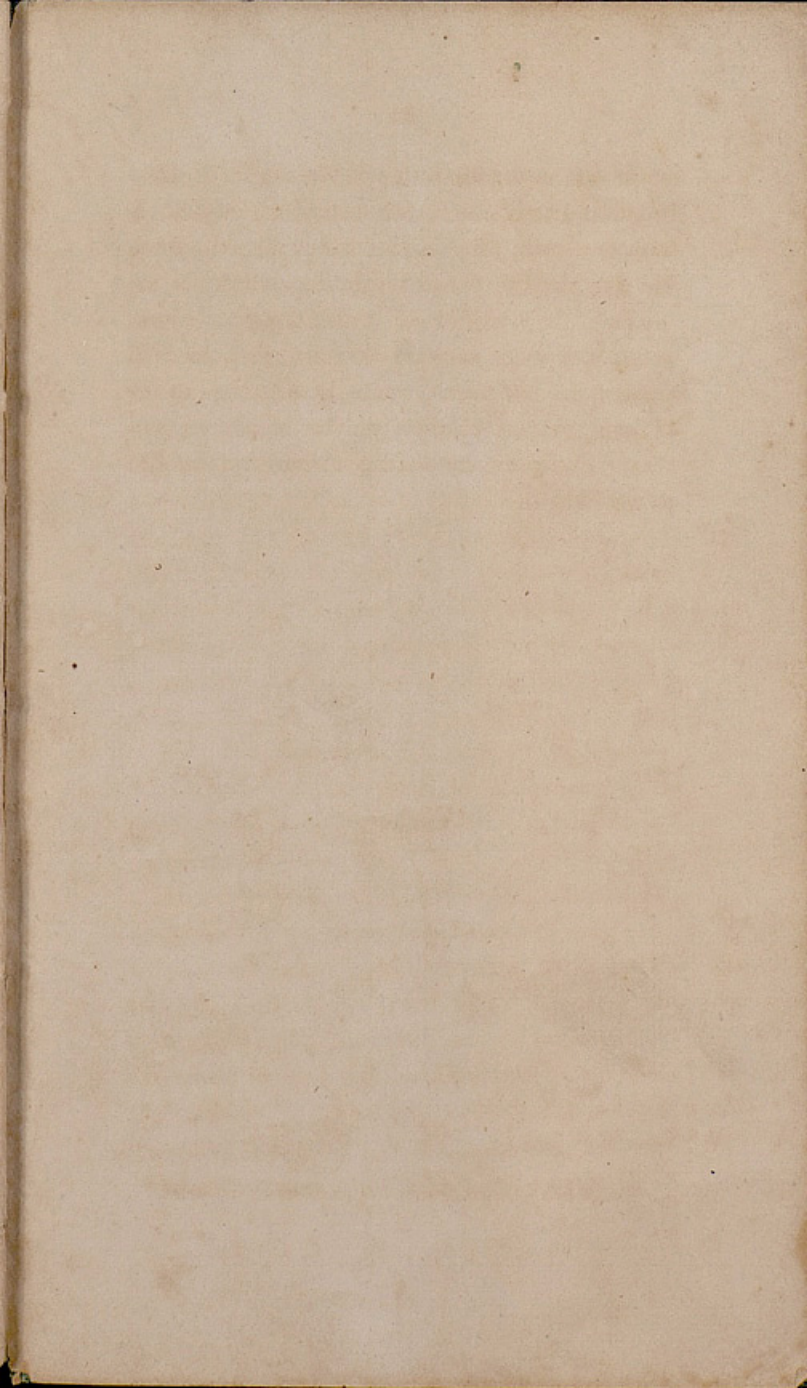
ground the peculiarly Madeiran *Monizia edulis* and Canarian *Astydamia canariensis*, each preserving entirely its own special character, and neither interpenetrating further the proper territory of the other.

Another noticeable point is the discovery in these small islets of a new *Pedrosia*, perfectly distinct from all its numerous congeners in either Madeira or the Canaries, the Cape Verdes or elsewhere. Thus, in this isolated little group of mere barren sea-rocks, separated by 100 miles or more of ocean from the nearest land, we find a leguminous plant, an apterous large beetle (*Deucalion oceanicus* Woll.) and a good-sized land-shell (*Helix ustulata* Lowe) which exist, recent or fossil, in no other part or portion, far or near, of the known world, and whose presence in these remote and unfrequented little islets, falling in with a crowd of similar facts observable in the Açorian, Madeiran, Canarian, and Cape Verde archipelagos, and familiar to those who have paid any continuous close and local attention to their Botanical, Helicological, and Entomological peculiarities, remains still most inadequately explained by modern popular theories of isolation through submersion, accidental transport, "natural selection," &c. &c.

It only remains for me to offer to S<sup>r</sup> C. C.

de Noronha, in the name of the Barão do Castello de Paiva and other botanists, conjointly with my own, the thanks which are so much his due for the present valuable materials towards a first sketch of the Salvagian Flora, and to express an earnest hope that he will pursue, in his future visits to a group so interesting in its relation to the Madeiran and Canarian archipelagos, the discoveries he has so well begun.

THE END.





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