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THE  
JOURNAL OF BOTANY,  
BRITISH AND FOREIGN.

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VOL. XXXVII.

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ILLUSTRATED WITH PLATES.

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LONDON:  
WEST, NEWMAN & CO., 54, HATTON GARDEN.  
1899.

invested with a halo of Saprolegniaceous fungi, the growth of which can then be studied for weeks. The flies, however, should first be dipped in spirit to remove the air, and then washed in water to remove the spirit; for otherwise they float high and dry on the surface of the water. When flies are abundant, a store of them should be killed and desiccated, to enable the cultures to be carried on through the winter.

My thanks are due to Miss A. L. Smith for her kind help in the determination of the specimens.

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## CANARIAN AND MADEIRAN CRASSULACEÆ.

By R. P. MURRAY, M.A., F.L.S.

***Sedum lancerottense***, sp. nov. Glabrum, tortuosum, foliis subovoideis, floribus breviter pedicellatis in cymam anfractam bipartitam terminalem scorpioideam bracteata dispositis; sepalis 5, obtusis; staminibus 10.

Hab. In rupibus abruptis el Risco dictis ins. Lancerottensis.

In May 1892 I obtained a single specimen of this species, leafless, and with only the remains of a cyme, on the cliffs of el Risco in Lanzerote. It is a most interesting addition to the Canarian flora, which, though so rich in *Sempervivum*, has till now possessed not a single *Sedum*, with the exception of the widely spread South European *S. rubens* L. *Sedum lancerottense* is nearly allied to *S. nudum* Ait. and *S. fusiforme* Lowe, both endemic in Madeira. To the former of these it perhaps comes nearest by its leaf characters and in the number of its stamens, but it differs widely in habit. Leaves pale green. Cymes remarkably wavy, almost recalling the arched internodes of *Ranunculus reptans* L. Perennial. Described from cultivated specimens.

***Sempervivum percarneum***, sp. nov. S. caule frutescente, ramoso; foliis anguste spathulatis glabris, acuminatis, serrato-ciliatis; floribus carnosis in thyrsum latum digestis; ramulis puberulis; calycis puberuli dentibus lineari-triangularibus; squamis perigynis inconspicuis (aut nullis).

Hab. In insulis Canariensibus.

One of the most conspicuous plants of the genus in Gran Canaria. It is difficult to understand how it has so long remained without a name. It grows abundantly about Guia, and also in and near the Caldera de Bandama, both these localities being in the north of the island. The only specimen which I have seen from any of the other islands is at Kew, where it is placed in a packet marked "*S. Youngianum* Webb." The sheet is labelled, I believe, in Gay's handwriting, from whose herbarium it was received, "fleurs violettes Ile de Fer, in rupestribus el Golfo, 2 Mai 1855. H. de la Perraudière," and bears a MS. name. It agrees exactly with Canarian specimens. There is a single sheet of *S. percarneum* in Webb's herbarium at Florence. To show the confusion into

which these plants have fallen, it may be worth while to notice the mixture of species which have been associated with it. There are two packets each labelled *Æ. Doramæ*. The first contains (so far as my notes record) only one sheet from Gran Canaria. It is a plant with the habit of *S. barbatum*, and was at first so labelled. Can it represent the *Æonium Bentejui* of Webb's syn. ined., of which nothing definite seems to be known? The second packet contains three sheets:—No. 1, a plant with yellow flowers and glandular pedicels, marked "*Æonium Doramæ* ?? " A second label with the suggestion of *S. holochrysum* has been crossed out. No. 2 is, if I rightly remember, the same. No. 3 is marked "332 *S. ciliatum* Willd. fleurs rougeâtres. Gd. Canaria." Nos. 1 and 2 are probably *Æon. Manriqueorum* Bolle (= *Æ. Doramæ* Webb), that is, in my belief, *S. arboreum* L. No. 3 is *S. percarneum*. This is a very easily recognizable species, quite distinct from all others in the colour of its flowers, and in the peculiar slight, almost scurfy clothing of the flowering branches. Mr. Gelert, who was kind enough to make a re-examination for me of fresh specimens in 1896, could find no "perigynous glands." I sometimes thought that I could detect them, but was never quite satisfied as to their presence. Flowers in May.

SEMPERVIVUM ARBOREUM L. Lowe (Man. Fl. Mad., 337, 338) says that he found this species abundantly and apparently quite wild in two or three islands of the Canarian archipelago; and quotes Tenerife (Barranco de Martianez), Hierro (El Golfo), and Lanzerote (El Valle). There are specimens from Tenerife and Hierro at Kew, but I cannot think that they are rightly referred to *S. arboreum*. Indeed, so far as the Barranco Martianez is concerned, I feel perfectly sure that *S. arboreum* does not occur there, but that *S. holochrysum* was mistaken for it. I think that the Hierro plant is also probably *S. holochrysum*. The Kew specimens from both localities seem to have the panicle branches quite glabrous, which would not accord with *S. arboreum*. I have not seen the Lanzerote plant. But in 1894 (April 30), I gathered a plant at El Dragonal in Gran Canaria which I was able with considerable assurance to refer to *S. Manriqueorum* (Bolle) = *S. Doramæ* (Webb), a plant which I now believe to be identical with *S. arboreum* L. It agrees perfectly with a Portuguese specimen of this latter, and is well distinguished from any other Canarian species of this group by the clothing of the panicle, which is well described by Lowe as 'furfuraceo-puberulous.' My plant grew on a wall, close to a small hamlet, so that the locality may not be quite above suspicion, though I do not think it had been planted. It was in fair quantity, but only one specimen was in flower. Bolle says of his *Æonium Manriqueorum*, 'Hab. in Canaria Magna frequens: La Vega de S. Brigida: Barranco de Tenteniguada: El Dragonal: Monte Doramas.' It is a great satisfaction to have solved (as I hope) the problem of the original home of *S. arboreum*. I believe that all the European and North African localities quoted for it are open to doubt, and I suspect that "garden escapes, naturalized," would be their proper description.

**SEMPERVIVUM BARBATUM** Chr. Sm. This species derives its name from the long capillary adventitious rootlets with which it is said to be clothed, but I have never seen such a specimen, and most of the Canarian species of the genus are liable to the same peculiarity under certain circumstances. There is only a single sheet of the species in Webb's herbarium. The specimen has no radicles, and is labelled "Hort. Paris." My own plant, collected above Agua Mansa, in Tenerife, shows no trace of them, and Bourgeau's exsiccata under this name are in the same condition, so far as I have seen them. I can in no way distinguish these Tenerife plants from those which I collected in many places in Palma, which are the *Æonium cruentum* of Phyt. Can. Probably *Æ. Bentejui* Webb and *Æ. strepsicladum* Webb Berth. should also be placed under *S. barbatum*, which, being the oldest name, must be retained, however inappropriate to the usual condition of the species.

**SEMPERVIVUM MEYERHEIMII** (Bolle). In 1859 Bolle described (Bonpl. vii. 239), under the name of *Æonium Meyerheimii*, a *Sempervivum* from Madeira which does not seem to have been since noticed by any other botanist. In June, 1895, I found a few plants, which I think may belong to it; at least the single root which I was able to coax into flower answers fairly well to his description, as does also the locality "in rupestribus apricis non procul ab urbe Funchal." My plants were collected near the base of the sea-cliffs, about two miles to the east of that town. I believe that they were of hybrid origin (*S. glandulosum* × *glutinosum*), and that they do not constitute a distinct species. The inflorescence is quite that of *S. glandulosum* Ait., while the leaves are much nearer those of *S. glutinosum* Ait., and do not form a flat rosette as in *S. glandulosum*. The ciliæ, which are nearly as broad as long, and transparent, also agree with those of *S. glutinosum*. The few plants which I saw all grew close together, and both the supposed parents are exceedingly common in Madeira. I should add that the peculiar and (from a collecting point of view) most unpleasant viscosity of *S. glutinosum* was entirely absent.

Hybrids seem to be extremely rare in the genus, but I see that Nyman quotes two or three in his *Conspectus*.

**SEMPERVIVUM PAIVÆ** Lowe (Hook. Bot. Mag. t. 5593). This is the oldest name: *Æonium Castello-Paivæ* Bolle is the same plant.

**SEMPERVIVUM SEDIFOLIUM** H. Chr. (*Aichryson sedifolium* Bolle. *Greenovia sedifolium* Webb, syn. ined. ex Bolle.) I found this species very sparingly in Palma, on rocks by the roadside near Candelaria, in June, 1892. It was before this known only from one spot in Tenerife, La Hermita de Masca, near Santiago. The habit is much like that of *S. Saundersii* H. Chr.

**SEMPERVIVUM TABULÆFORME** Haw. We must, I think, on the whole, hold Lowe correct in supposing a mistake to have been made in ascribing this species to Madeira. Haworth's description is very brief, and runs thus:—"S. tabulæforme, subcaulescens foliis densissime imbricatis et in planum rotundatum absolute

depressis, ciliatis nudis. Hab. in Madera." But the leaves in the Madeira plant are always more or less pubescent, whereas in the allied species, so common on the north coast of Tenerife, they are always glabrous, which I suppose to be what Haworth means by "*nudis*." Therefore I follow Lowe in adopting *S. tabulæforme* as the name for the Canarian plant, especially as no great stress can be laid on the accuracy of localities in Haworth's time.

At a later date the Tenerife plant has received two other names: *Æonium Berthelotianum* Bolle (Bonpl. 1859) and *Sempervivum macrolepum* H. Chr. (taken up from Webb, syn. ined.). It is quite certain that these two names refer to the same plant. I have examined both in the localities ascribed to them (they are only a few miles apart) by their respective authors.

I am unable to say whether Lowe is correct in his statement that *S. glandulosum* Ait., so often supposed to be Haworth's plant, occurs in small quantity, intermixed with abundance of *S. tabulæforme*, between Icod de los Vinos and Garachico (Tenerife). I have only seen the latter there.

*SEMPERVIVUM VISCATUM* H. Chr. The representative in Gomera of the Tenerifian *S. Lindleyi* H. Chr., under which I think it should be placed as a geographical race or subspecies. Bolle distinguishes it by the more sparing pubescence, the brighter green of the leaves, the weaker resinous smell, and the floral divisions, 12- instead of 6-partite. This last character was taken from dried specimens, but he believed it to be constant. It is, however, not so. In all that I was able to examine (May, 1894) the calyx was 6-partite. The leaves are, however, distinctly longer and narrower than in *S. Lindleyi*. The other differences pointed out by Bolle seem to be of little moment.

Dr. Christ seems to have been the first author to place several of the Canarian species in their correct genus (*Sempervivum*) in the list published by him in Engler's Bot. Jahrbüchern, 1887. I have therefore ascribed them to him. They were for the most part originally published under *Æonium*.

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### WAYFARING NOTES IN RHODESIA.—No. III.

BY R. FRANK RAND, M.D., F.L.S.

(Continued from Journ. Bot. 1898, p. 348.)

SEPTEMBER may be regarded as the first month of spring in Mashonaland. In Matabeleland, lying to the S.W., the season is about a fortnight later. Few rains have fallen at this time, October being the first month in which they may be confidently looked for. The veldt, black hitherto from the veldt fires, is now bright with the early spring flowers. These come up in advance of the rains. Notable among the trees which are coming into foliage is the Masasa (*Brachystegia*), whose remarkably rich spring tints have already been referred to.

*temulum*, *Chrysanthemum segetum*, *Festuca pratensis*, *Galium verum*, *Geranium parviflorum*, *Hieracium umbellatum*, *Hydrocotyle vulgaris*, *Leontodon hirtum*, *Melissa Nepeta*, *Primula officinalis*, *P. acaulis*, *Salix monandra* (*purpurea*), *S. triandra*, *Sisymbrium Nasturtium*, *Stellaria uliginosa*, *Thlaspi arvense*, *Trifolium arvense*, and *Valeriana officinalis*.

Withering, in *Bot. Arr.* ed. 3 (1796), also refers to the following:—*Anemone Apennina*, *Carex ventricosa*, *Centaurea Cyanus*, *Cerastium pumilum*, *Helleborus viridis*, *Iberis nudicaulis* (*Teesdalia*), *Melittis Melissophyllum*, *Poa procumbens* (Withering's "*rupestris*"), *Ranunculus arvensis*, *Saxifraga oppositifolia*, *Scilla autumnalis*, *Trifolium ochroleucum*, and *Veronica triphyllus*.

This leaves the following to be accounted for, apparently published in the years 1796, 7, or 8, viz.:—*Agrostis setacea*, *Bromus diandrus*, *Cerastium tetrandrum*, *Chenopodium rubrum*, *Cistus guttatus*, *Datura*, *Fumaria capreolata*, *Galeopsis versicolor*, *Glaucium corniculatum*, *Lathyrus Nissolia*, *Lobelia urens* (under which Curtis refers to "October 18. 1796" as "two years since"), *Melica nutans*, *Ophrys anthropophora*, *Orchis fusca* (*purpurea*), *O. bifolia*, *Poa retroflexa*, *Primula farinosa*, *Pulmonaria maritima*, *Salvia Verbenaca*, *Saxifraga Hirculus*, and *Trifolium scabrum*.

Mr. Daydon Jackson (*Journ. Bot.* 1881, 309) refers to "a full list" of these plates having been drawn up by the late Mr. Pryor. This I have not seen, though I have benefited by the hints contained in Mr. Jackson's paper.

W. A. CLARKE.

### SHORT NOTES.

***Sempervivum hierrense*, sp. nov.**—S. caule erecto, simplici; foliis anguste spathulatis glabris, submucronatis, serrato-ciliatis; floribus carnosis in thyrsum latum digestis; ramulis puberulis; calycis puberuli dentibus lineari-triangularibus; squamis perigynis conspicuis.

Hab. In ins. Ferroensi Canariensium.

When describing *S. percarneum* (p. 201), I stated that there existed at Kew a specimen of that species from the island of Hierro, adding, "it agrees exactly with Canarian specimens." Since then I have visited Hierro, and examined living plants. In consequence I find myself compelled to withdraw what I had written. The plants of Grand Canary and Hierro turn out to be quite distinct, although indistinguishable in the dried state without careful dissection, which I had not the opportunity of making. The differences may be thus stated:—

*S. percarneum*: fruticose, much branched. Perigynous scales none.

*S. hierrense*: unbranched, at least normally: apparently once flowering; scales conspicuous, quadrate.

I find the petals in *S. hierrense* pale flesh-coloured, with green medial stripe. It grows somewhat sparingly on rocks and walls at

Valverde and on rocks at "el Golfo" (*H. de la Perraudière*). Unfortunately the plants which I had procured for cultivation were destroyed, the friend to whose care I had committed them having kept them for six weeks in a bucket of water! Another plant which I have lately seen in one of its original stations is *S. strepsicladum* H. Chr. I am more than ever convinced that it cannot be separated from *S. barbatum*.—R. P. MURRAY.

HAMPSHIRE PLANTS. — During a recent visit to the New Forest, I came across *Polypodium Phegopteris* growing most luxuriantly in boggy ground shaded by bushes. The patch extended for about two hundred yards, and the only other ferns near were *Lastræa dilatata* and *L. spinulosa*. I believe it is not previously recorded as a Hampshire plant. Near Fawley I found *Brassica Cheiranthus* growing along a hedgebank on the moorland for several hundred yards, probably nearly a furlong, in some abundance, but more than four miles from the sea. A specimen collected in the same locality in June, 1883, by Messrs. H. & J. Groves is in the British herbarium of the Pharmaceutical Society.—E. M. HOLMES.

CRITICISMS OF THE 'CYBELE HIBERNICA,' ED. 2.—Mr. Marshall contends that too many plants were treated as suspects, and that other suspected plants have been dealt with too rigorously. I should scarcely have offered any remarks on the subject, but that I do not wish to be included amongst those who support his contention. This disclaimer does not commit one to approval of the views taken by Mr. More and the editors in each and every case. There are cases in which, if I or anyone else were called on to decide, the verdict would differ in some degree from that of the *Cybele*. The scepticism of the *Cybele* is, however, preferable to the hasty conclusion that, because a plant is found growing "wild," therefore it must be native. As regards many members of our flora, there is no question more difficult than that of status. This was so much felt in the preparation of the *Flora of North-east Ireland* that it was decided not to adopt the dagger or asterisk as used by other authors, but to include in an appendix such as were certainly introduced either accidentally or intentionally in our district. For the rest the facts were stated, and readers were left to form their own judgments. Increasing experience warns one that plants may appear spontaneously in such circumstances that we can scarcely conjecture the means by which they come. A local puzzle of this kind is afforded by *Hieracium Auricula* on the Cave Hill, near Belfast. I have known it there for three years: it is not spreading. It is an unattractive plant, not to be found in gardens, nor likely to have come with seed, and there are neither gardens nor cultivation for some considerable distance. Most probably it will die out in a few years, but, if not, some one may claim it as a native. Mr. Marshall refers to *Helianthemum vulgare*, and enquires if there is a well-attested case of it being planted out anywhere. No doubt, in Antrim. Glendarragh is not in a limestone district: no rock rose can be found there now, and if it ever grew there outside a rockery it must have been planted, as many other native and non-native plants were, to