

Robert Lloyd Praeger's Crassulaceae: a commentary on possible type specimens in the National Botanic Gardens, Dublin, and on illustrations in the Royal Irish Academy, Dublin

Author(s): E. Charles Nelson

Source: *Bradleya*, 11():91-106.

Published By: British Cactus and Succulent Society

<https://doi.org/10.25223/brad.n11.1993.a7>

URL: <http://www.bioone.org/doi/full/10.25223/brad.n11.1993.a7>

BioOne (www.bioone.org) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/page/terms_of_use.

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

Robert Lloyd Praeger's Crassulaceae: a commentary on possible type specimens in the National Botanic Gardens, Dublin, and on illustrations in the Royal Irish Academy, Dublin

E. Charles Nelson
National Botanic Gardens, Glasnevin,
Dublin 9, Ireland

Summary. Robert Lloyd Praeger's work on Crassulaceae (*Aeonium*, *Aichryson*, *Monanthes*, *Sedum*, *Sempervivum*) is outlined; he studied living and cultivated plants and did not collect and preserve herbarium specimens. The existence of some of the original drawings made from living plants by Miss Eileen Barnes for Praeger's publications is noted, and their significance as likely types is discussed. A new combination is published, *Aichryson x aizoides* (Lam.) E. C. Nelson, for the plant commonly named *Aichryson x domesticum* (Praeger) Praeger.

Zusammenfassung. Die Arbeiten von Robert Lloyd Praeger mit den Crassulaceae (*Aeonium*, *Aichryson*, *Monanthes*, *Sedum*, *Sempervivum*) werden vorgestellt. Er studierte lebendes Kulturmaterial und sammelte oder präparierte keine Herbarbelege. Er wird auf die Existenz einiger der Originalzeichnungen hingewiesen, die Fräulein Eileen Barnes für Praegers Publikationen angefertigt hat, und ihre Bedeutung als mögliche Typen wird diskutiert. Schliesslich wird für die gängigerweise als *Aichryson x domesticum* (Praeger) Praeger bezeichnete Pflanze die neue Kombination *Aichryson x aizoides* (Lam.) E.C.Nelson publiziert.

Introduction

Robert Lloyd Praeger (1865 - 1953) was by training an engineer and for a time pursued a career in civil engineering but in 1893 he abandoned that profession to become assistant librarian in the National Library of Ireland, Dublin; after 1905 he was also the librarian in the Royal Irish Academy, and in 1920 succeeded to the position of Librarian (i.e. director) of the National Library. He retired early in 1923, and thereafter devoted his time to the pursuit of natural history and to writing. Praeger was one of Ireland's leading botanists during the first five decades of the present century; his principal interest was the geographical distribution patterns of native Irish plant species, but he also undertook studies in the Crassulaceae especially *Sedum* and *Sempervivum* sens. lat., publishing monographs on these in 1921 and 1932 respectively.

Inevitably the study of succulent genera is difficult



Fig. 1, Robert Lloyd Praeger, c. 1930: the original print of this photograph, reproduced by permission of the Royal Horticultural Society of Ireland, is inscribed 'R. Ll. Praeger and his best find - *Aeonium nobile*, new species & new section of the genus *Sempervivum*, from the cliffs of Palma, Canary Islands'.

because the plants are not amenable to traditional herbarium techniques - their fleshy nature means that they cannot easily or successfully be preserved as herbarium specimens, and thus there is a proper tendency to study wild populations in situ and plants in cultivation. A corollary is that type specimens are not often preserved in herbaria, even for recently named taxa.

Praeger's research on *Sedum* and *Sempervivum*

Except in the case of sequences of herbarium specimens of Asian species (Praeger 1919b, 1921b), Praeger worked on living plants in wild habitats and on a vast collection of cultivated individuals. In a series of brief horticultural notes (cited in the bibliography of this paper) as well as in the prefaces to his monographs, Praeger explained his general methods.

The English horticulturist, Revd Henry Nicholson Ellacombe, had persuaded Praeger to undertake the task of reviewing the taxonomic status of the stonecrops in cultivation. As a beginning, in 1914 Praeger published a note in *The Gardeners' Chronicle* about the confusion of names in *Sedum*, and afterwards 'hundreds of sedums... passed through [his] hands' (Praeger 1916). He studied *Sedum* cultivars grown in England at the Royal Horticultural Society's garden, Wisley, and received assistance from all parts of the world. A list of *Sedum* spp. in cultivation in Britain and Ireland was issued (Praeger 1916) and he appealed for further materials to be sent either to Dublin or Wisley. In a summary of three years' work Praeger (1917a) acknowledged the polymorphic and plastic nature of many *Sedum* spp., and the plethora of names (many being synonyms) applied to the plants in cultivation. He noted that

these plants do so badly that herbarium specimens are often nearly useless to help with identification, and can seldom be used without the exercise of great care, and without reliance only on critical characters, which are often minute.

While cultivating stonecrops was relatively easy, there were pitfalls too - 'the readiness of the plants to invade their neighbours' territory resulted in confusion of the labels unless much care was exercised.' Praeger 'begged, borrowed and bought' living specimens for his studies and was able to acquire about 1,500 separate plants, each of which was grown until it flowered; he examined as many again in other gardens, both public and private. By the spring of 1917, Praeger had 'boiled down' *Sedum* to 'about 130 species, to which must be added about 15 species more which still await description.' Chinese materials from the Revd Edouard-Ernest Maire, Pro-Vicar Apostolic of Yunnan, received in 1915 and 1916 proved to contain many unnamed taxa; some plants were raised from seed at the Royal (now National) Botanic Gardens, Glasnevin, and at Kew and Wisley, but a few had not blossomed by the winter of 1916-17 (Praeger 1917a). At the end of 1916, Praeger wrote that 'Another season will, it is hoped, suffice to run down most of these, when they will be, like all those which have preceded them, figured by my friend Miss E. Barnes, and a full description drawn up' (Praeger 1917a).

Just as he studied *Sedum* spp. mainly as cultivated plants, Praeger employed the same techniques when later he tackled *Sempervivum* and its congeners, publishing a preliminary list (Praeger 1924b) followed by occasional notes on nomenclature and taxonomy as his work proceeded. Praeger (1932) was explicit in the preface to the monograph on the group:

[because] much herbarium material is of little assistance in the naming of [*Sempervivum*]

species... the use of living material, full descriptions, comparative notes, and figures acquires a special value, and... I have used all of these aids to the greatest possible extent.

He made several lengthy excursions to Europe to study wild populations (in Switzerland, Austria and Italy (Tirol), and Bulgaria), and paid special attention to the Canary Islands, which he visited twice (March to May 1924 (Praeger 1924c, 1928c), and February to May 1927 (Praeger 1928b, 1929)), and to Madeira where he stayed for one week in March 1924 (Praeger 1925a: 205). On these trips Praeger collected living specimens - the stories of searching for *Sempervivum* in the wild and of bringing plants to Ireland were told by Praeger in some of his 'popular' articles (e.g. Praeger 1924a, 1924c, 1930b).

Cultivated plants and herbarium specimens in Glasnevin

Dr Lloyd Praeger's own garden was at Lisnamae, Zion Road, Rathgar, one of the southern suburbs of Dublin. Few records of this garden survive, apart from occasional photographs and the fragments that may be gleaned from his numerous articles in *Irish Gardening* and *The Gardeners' Chronicle* and his monographs and books. That he grew most of the *Sedum* taxa there may be inferred from his remarks in the *Sedum* monograph (Praeger 1921a). As for *Sempervivum* and related genera, many of the tender taxa were grown at the National Botanic Gardens, Glasnevin, on the north side of Dublin city.

The garden at Lisnamae does not exist now and thus Praeger's own collection of Crassulaceae is not extant: by February 1945, Praeger reported that 'My own collection [of *Sedum* and *Sempervivum*] is quite dispersed and to some extent replaced by other groups in which I became interested subsequently' (*in litt.* R. Ll. Praeger to G. D. Rowley 21 February 1945). At the National Botanic Gardens, Glasnevin, none of the stonecrops and house-leeks in cultivation today can be traced directly to Praeger's studies; a few plants survive that *probably* were from Praeger's original introductions (e.g. *Sempervivum kosaninii*), although it is also possible that some of these apparent survivors are later re-introductions from gardens and nurseries.

What about his herbarium specimens? There are two herbaria in Dublin, at the School of Botany, Trinity College, Dublin (TCD), and the Irish National Herbarium in the National Botanic Gardens, Glasnevin (DBN). The latter was originally (and during Praeger's time) in the National Museum of Ireland and was transferred to Glasnevin in 1970; it also now includes the herbarium which once belonged to the Royal College of Science, Dublin (later the Department of Botany, University, College, Dublin). There are no specimens of Crassulaceae connected with Praeger's studies in TCD.

At the National Botanic Gardens (DBN), I can state categorically that there are

(i) no specimens of *Sedum* or *Sempervivum* (and related genera - *Aeonium*, *Aichryson*, *Greenovia*, *Jovibarba*, *Monanthes*, *Rosularia*) collected by Praeger in European or Macronesian habitats, except for a single

specimen of *Aeonium nobile* (see notes below).

(ii) no specimens of *Sedum* or *Sempervivum* (and related genera) gathered from plants cultivated in the National Botanic Gardens, Glasnevin, or at Lisnamae during the years 1914 to 1932

(iii) very few specimens annotated by Praeger - those which are annotated are non-European taxa represented by specimens collected by other botanists

(iv) only one specimen (*A. Henry 3079*) cited by Praeger in his many publications.

These facts present considerable problems for taxonomists bearing in mind the rules of nomenclature which require types for all botanical names. The simple conclusion is that few of Praeger's validly published names, at specific or subspecific levels, can be typified with herbarium specimens - the names which can be typified by contemporary herbarium specimens are those for which, in the protologues, Praeger definitely cited preserved specimens, and in most of these cases the types are in the Royal Botanic Garden, Edinburgh (E). A series of specimens in the Royal Botanic Gardens, Kew, apparently collected during visits to the Canary Islands bear dates which do not accord with Praeger's recorded field-work, and must be treated with circumspection (see Appendix II).

Thus botanists working on these genera are obliged to seek other kinds of materials to typify Praeger's taxa. In this context it is of considerable importance to recall Praeger's explicit statement (1917a: 12; quoted above) that drawings had been made of many *Sedum* taxa before January 1917, and his later note (Praeger 1932) of

special obligations to Miss Eileen Barnes, of the National Museum, Dublin, the artist to whom the figures of [*Sempervivum* etc.] are due; her patience and skill in portraying the plants and making analyses of the flowers etc. have resulted in drawings which add very greatly to whatever value the present account possesses.

Eileen Barnes's drawings

Little is recorded about Miss Eileen E. Barnes; she was employed in the National Museum of Ireland as an artist - the museum's register of officers does not include any biographical information about her, merely noting that she was engaged for two shilling and two pence per hour, raised to two shillings and sixpence in May 1937, with an 'Emergency bonus' of three shillings per week from October 1943 ('The Emergency' was an Irish euphemism for World War II). Her dates of appointment and retirement are not known. According to Scannell (1976) Miss Barnes worked in the Art and Antiquities departments of the museum, as well as for the Natural History Section. Praeger was not a member of the museum's staff, and it is not known how he commissioned her. Eileen Barnes also illustrated a few of Praeger's articles on native Irish pteridophytes (Praeger 1917e, 1919c). *Sedum barnesianum* from the eastern Himalaya was dedicated by Praeger (1921b) to 'Miss Eileen Barnes, to whose industry and skill I owe drawings of nearly two hundred species of *Sedum*.'

It is important to record that most of the original

pen drawings of *Sedum* spp. by Eileen Barnes are extant in the Royal Irish Academy, Dublin, and are included among papers left to the Academy by Praeger; the exact circumstances of the bequest are not recorded. A partial list of Praeger's reliquia, now preserved in the Royal Irish Academy, was published as an appendix to a bio-bibliography of Praeger by Collins (1985; cf. Nelson 1986). The *Sedum* drawings were noted - but neither identified nor attributed to the artist by Collins (1985) - as

R.I.A. Trunk no. 8: item 64' - Bundle of envelopes containing a number of line drawings of plants specimens [sic.] labelled... "i) *Sempervivum epiteium* [?epigaeum](?), ii) *Sedagemina* [*Seda genuina*] - yellow, iii) *Sedagemina* - not yellow (?), iv) *Rhodiola* Tel.Aug.Mss."

This strange inscription is quite irrelevant to the content of the envelopes. Miss Barnes's drawings - the precise contents of the envelopes - are listed in the appendix to this paper.

Annotations on some of the drawings, many dated before the publication of Praeger's series of papers on *Sedum* and his final monograph, demonstrate that they were executed from cultivated plants (there are two exceptions). Therefore the original drawings for Praeger's new species, especially those that are explicitly dated before the publication date of the respective protologues, may be deemed 'original material' and could be selected as lectotypes in lieu of herbarium specimens.

Barnes's pen-and-ink drawings were not altered in any way when published (cf. Praeger 1921a) - however, a few are annotated for printing indicating that they were reduced. Thus the printed *Sedum* illustrations exactly replicate the Royal Irish Academy manuscripts, except for annotations such as dates and putative names (these are transcribed in Appendix I). There are no unpublished drawings by Barnes among the Royal Irish Academy manuscripts.

Other drawings by Eileen Barnes - but not always explicitly attributed to her - illustrated several of Praeger's other papers but the pen-and-ink originals for these are not in the Royal Irish Academy. Among the 'missing' drawings are those which illustrated the *Sempervivum* monograph (Praeger 1932), and the following:

PRAEGER (1919b). On species of *Sedum* collected in China by L. H. Bailey in 1917.

PRAEGER (1921b). Some Asiatic sedums in the Edinburgh Herbarium; with supplementary notes from Kew and the British Museum.

PRAEGER (1929). *Semperviva* of the Canary Islands area.

PRAEGER (1930a). Two new *Semperviva* from Macedonia.

Conclusion

Praeger's work on *Sedum*, *Sempervivum* and related genera remains a corner-stone for modern taxonomic studies in Crassulaceae. He preferred to study growing plants and did not preserve herbarium vouchers so that typification of taxa described by Praeger presents many difficulties. However his reliquia in the Royal

Irish Academy, Dublin, include materials of possible value to taxonomists.

186 of the original drawings of *Sedum* taxa prepared by Eileen Barnes survive and a few of these may serve as types when no relevant herbarium specimens can be traced; all of these drawings were published in Praeger's *Sedum* monograph (1921a). However, many of Barnes's original pen-and-ink drawings (e.g. of *Sempervivum* ssp.) are not among Praeger's papers in the Royal Irish Academy and their present whereabouts has not been discovered. While the original *Sedum* drawings do not differ from the printed versions, the original manuscript, *not* the published drawing, should be designated as the type.

Investigation of Praeger's Crassulaceae revealed that several nomenclatural changes may be required, including one affecting the familiar and common garden plant known as *Aichryson x domesticum* 'Variegatum' (cloud grass). A new cultivar name is also proposed.

Aichryson x aizoides (Lam.) E. C. Nelson comb. nov.
basonym - *Sempervivum aizoides* Lamarck, Encyclopédie methodique, botanique 3, 290: 1789.
synonyms - *Sempervivum tortuosum* DC. non Ait., *S. domesticum* Praeger, *Aichryson x domesticum* (Praeger) Praeger, *Aeonium domesticum* (Praeger) Berger, *Aeonium aizoides* (DC.) Berger, *Sedum aizoides* DC.

Aichryson x aizoides var. *aizoides*
synonym - *A. x domesticum* var. *aizoides* (Lam.) Praeger

Aichryson x aizoides var. *domesticum* (Praeger) E. C. Nelson stat. & comb. nov.
basonym - *Sempervivum domesticum* Praeger, Journal of botany 65, 211: 1927.

The common variegated cultivar of this hybrid is correctly *Aichryson x aizoides* var. *domesticum* 'Variegatum'.

Sedum brevifolium var. *quinquefarium* 'Edinburgh' is proposed for the distinctive clone described by Praeger and illustrated by Barnes, to distinguish it from other wild or cultivated plants with leaves in fives.

Acknowledgements

My thanks are due to the staff in the Royal Irish Academy, Dublin, National Museum of Ireland, Dublin (especially Mairead Dunleavy), Royal Botanic Garden, Edinburgh (especially David Long), and the Royal Botanic Gardens, Kew (especially Susyn Andrews), for their assistance. I also acknowledge the work of Miss Christine Houston (formerly of the Royal Irish Academy, Dublin) who prepared a manuscript list (now in the National Botanic Gardens, Dublin) of Miss Eileen Barnes' drawings; her list was the basis for Appendix I. The permission of the council of the Royal Irish Academy for this author to examine Praeger's papers (including all the Barnes drawings) is also gratefully acknowledged. The final version of

the paper was written following meticulous refereeing by L. Springate; my thanks to him for extracting me from some nomenclature quagmires. Any errors remaining are mine alone.

Bibliography and references

- BURCHARD, O. (1928). Ein neues dunkelrot blühendes *Aeonium* der Kanarischen Inseln. In Repertorium specierum novarum regni vegetabilis 25: 52-52 + tab. xliii.
- CHAMBERLAIN, D. F. (1972). *Sedum*. In DAVIS, P. H. (editor), Flora of Turkey and the East Aegean Islands. Volume 4: 224-243. Edinburgh University Press, Edinburgh.
- COLLINS, T. (1985). Floreat Hibernia. A bio-bibliography of Robert Lloyd Praeger 1865-1953. Royal Dublin Society, Dublin (cf. review by Nelson 1986).
- EGGLI, U. (1988). A monographic study of the genus *Rosularia* (Crassulaceae). In Bradleya 6 supplement.
- HENSEN, K. J. & GROENDIJK-WILDERS, N. (1986). An account of some sedums cultivated in Europe. In The Plantsman 8: 1-20.
- LIU, HO-YIH. (1989). Systematics of *Aeonium* (Crassulaceae). In Special Publications Number 3 National Museum of Natural Science. Taichung, Taiwan.
- NELSON, E. C. (1986). [Review of] T. Collins. Floreat Hibernia. A bio-bibliography of Robert Lloyd Praeger 1865-1953. In Archives of Natural History 13: 334-336.
- NYFFELER, R. A taxonomic revision of the genus *Monanthes* Haworth (Crassulaceae). In Bradleya 10: 49-82.
- OHBA, H. (1975). A revision of the eastern Himalayan species of the subgenus *Rhodiola* of the genus *Sedum* (Crassulaceae). In OHASHI, H. (editor), The flora of eastern Himalaya. Third Report. University of Tokyo Press, Tokyo. pp 283-362.
- OHBA, H. (1978). Generic and infrageneric classification of the Old World Sedoideae (Crassulaceae). In Journal of the Faculty of Science, University of Tokyo, sec. III 12 (4): 139-198.
- PRAEGER, R. LI. (1914). The misnaming of sedums. In Gardeners' Chronicle 56 (series 3: November 21): 334-335.
- (1915). Notes on the sedums. In Proceedings of the Belfast Naturalists' Field Club 2 (7): 179.
- (1916). A preliminary list of the species of *Sedum* in cultivation. In Gardeners' Chronicle 60 (series 3: August 19): 92-93 (incorrectly cited by Collins (1985), item 480).
- (1917a). Three years' work at sedums. In Irish gardening 12: 11-12.
- (1917b). Some new species of *Sedum*. In Journal of Botany 55: 38-44.
- (1917c). Notes on *Sedum*. In Journal of Botany 55: 211-215.
- (1917d). On the affinities of *Sedum praegerianum* W. W. Sm., with a tentative classification of the section *Rhodiola*. In Proceedings of the Botanical Society of Edinburgh 27: 107-119.
- (1917e). *Equisetum littorale* in Ireland. In Irish

- Naturalist 26: 141-147.
- (1918a). *Sedum pyramidale*. In Irish gardening 13: 145, 180 (illustration).
- (1918b). Notes on *Sedum* - II. In Journal of Botany 56: 149-152.
- (1919a). Notes on *Sedum* - III. In Journal of Botany 57: 49-58. (incorrectly cited in Collins (1985), item 518).
- (1919b). On species of *Sedum* collected in China by L. H. Bailey in 1917. In Proceedings of the Royal Irish Academy 35 B (1): 1-8, + 3 plates.
- (1919c). *Asplenium adiantum-nigrum* var. *acutum*. In Irish Naturalist 28: 13-19.
- (1921a). An account of the genus *Sedum* as found in cultivation. In Journal of the Royal Horticultural Society 46: 1-314. (reprinted 1967 (Plant monograph reprints). J. Cramer, Lehre. Wheldon & Wesley, Codicote. Stechert-Hafner Service Agency, New York).
- (1921b). Some Asiatic sedums in the Edinburgh Herbarium; with supplementary notes from Kew and the British Museum. In Notes from the Royal Botanic Garden, Edinburgh 13: 67 - 101 + plates clxx-clxxx. (not cited in Collins 1985).
- (1924a). A Fuerteventura diary. In New Phytologist 23: 216-221.
- (1924b). Sempervivums - a preliminary note. In The Garden 88: 399-400. (not cited in Collins 1985).
- (1924c). Hunting sempervivums in the Canary Islands. In The Garden 88: 762-764. (not cited in Collins 1985).
- (1924d). *Sedum lancerottense* R. P. Murray. In Journal of Botany 62: 306. (incorrectly cited in Collins (1985), item 577).
- (1925a). Notes on Canarian and Madeiran *Semperviva*. In Transactions of the Botanical Society of Edinburgh 29: 199-217.
- (1925b). The home of *Sempervivum arboreum* L. In Journal of Botany 63: 40-43.
- (1926). Homeward bound. In Irish Statesman 7: 229-230. (reprinted in Praeger 1930b: 108-113).
- (1927a). Chahorra at Haria. In Irish Statesman 8: 330-332. (reprinted in Praeger 1930b: 38-41).
- (1927b). What is *Sempervivum tortuosum*? In Journal of Botany 65: 209-213.
- (1928a). The morning mail. In Irish Statesman 10: 206-208. (reprinted in Praeger 1930b: 22-27).
- (1928b). The Canarian *Sempervivum*-flora: its distribution and origin. In Journal of Botany 66: 218-229.
- (1928c). Hunting sempervivums. In Journal of the Royal Horticultural Society 53: 281-290.
- (1928d). On some doubtful species of the African section of the *Sempervivum* group. In Proceedings of the Royal Irish Academy 38 B (1): 1-24 (incorrectly cited in Praeger (1932) as Proceedings of the Royal Irish Academy 28).
- (1929). *Semperviva* of the Canary Islands area. In Proceedings of the Royal Irish Academy 38 B (15): 454-499 + plates ix - xvi (incorrectly cited in Praeger (1932) as Proceedings of the Royal Irish Academy 29).
- (1930a). Two new *Semperviva* from Macedonia. In Bulletin de l'institut et du jardin botaniques de l'université de Belgrade 1: 209-214. (cited as 1929 by Collins (1981) but dated 20. II. 1930 at head).
- (1930b). Beyond soundings. Talbot Press, Dublin.
- (1932). An account of the *Sempervivum* group. Royal Horticultural Society, London. (reprinted 1967 (Plant monograph reprints). J. Cramer, Lehre. Wheldon & Wesley, Codicote. Stechert-Hafner Service Agency, New York).
- SCANNELL, M. J. P. (1976). Botanic art and some Irish artists. In Capuchin Annual [for 1976]: 100-111.
- TREHANE, P. (1989). Index hortensis volume 1: perennials. Quarterjack Publishing, Wimborne.

Appendix I

Catalogue of original drawings of *Sedum* spp. by Eileen Barnes in Royal Irish Academy, Dublin

Pt. I Alphabetic listing

Name on drawing	publ fig.no	RIA mss.no	date inscribed on mss drawing
acre L.	143	113a	
acre var. majus Masters	144	113b	
adenotrichum Wall.	89	71	1918.07.10.
adolphii Hamet	80	64	
aizoon L.	55	43	1915.07.17.
aizoon	56	44	
aizoon x kamtschaticum	57	45	
alamosanum S.Watson	69	55	
albertii Regel	108	83a	
alboroseum Baker	41	33	
album L.	102	79	1915.06.15
album var. micranthum			
sub-var. chloroticum	103	80a	1916.08.15.
allantoides Rose	81	65	1915.07.13.
alpestre Villar	150	119 up	
alsinefolium Allioni	92	74	1915.06.20.
altissimum Poiret	159	126	1915.06.10.
amecamecanum Praeger	122	95	1916.05.09.
amplexicaule DC.	163	130	
anacamperos	52	42A	
anglicum Hudson	101	80b	
annuum L.	182	145 right	
anopetalum DC.	160	127	
bellum Rose	75	59	
bhutanense Praeger	13	9	
bhutanense	14	10	
bourgaei Hemsley	82	66	1915.08.20.
brevifolium DC.	99	78a	1915.07.16.
brevifolium			
var. quinquefarium			
Praeger	100	78b	
bupleuroides Wall.	16	12	1915.05.31
cauticum Praeger	48	39	
celiae Hamet	153	122	
cepaea L.	171	136	1915.06.29.
chanetii Leveille	90	[no number]	
chanetii	91 upper	73 upper	
chauveaudii Hamet	129	102	
cockerellii Britton	71	57 left	1915.08.10.

coeruleum Vahl	180	143 left		lineare Thunb. 1 [no number]		
compactum Rose	96	77b	19??.	lineare	131	104
compressum Rose	135	108		lineare var. robustum		
confusum Hemsley	121	94	1916.04.20.	Praeger	132	105 1916.07.20.
crassipes Wall.	20	16		longicaule Praeger	10	7
crassipes forma ?	21	17		longipes Rose	115	89 1916.01.20.
crassipes var.				lydium Boiss.	106	83b
cholaense Praeger	22	18		magellense Ten.	91 lower	73 lower
cupressoides Hemsley	142	112b		maximum Suter	37	29 1915.09.04.
cyaneum Rudolph	53	42B		mellitulum Rose	70	56 1915.09.30.
dasyphyllum L.	97	77c	1915.06.10.	mexicanum Britton	133	106 1915.04.-
dasyphyllum				monregalense Balbis	93	75 1915.07.19.
var. suendermannii				moranense Kunth	94	76
Praeger	98	77c	1915.07.19.	multicaule Wall.	152	121 1915.07.20.
dendroideum Moc.				multiceps Cosson &		
& Sesse	118	93 lower		Durieu	154[no number]	
divergens S.Watson	126	99	1916.06.10.	nevii A.Gray	87	70 left
diversifolium Rose	77	61				1915.06.15 & 30
douglasii Hook.	151	120		nevii var. beyrichianum		
dumosum Franch.	24	20		(Masters) Praeger	88	70 right
ebracteatum Moc.						1915.06.15 & 30
& Sesse	68	54	1915.10.29.	nudum Ait.	147	[no number]
ellacombianum Praeger	60	48	1915.07.01.	nutans Rose	117	91 1916.03.20.
elongatum Wall.	12	8	1915.08.12.	oaxacanum Rose	146	113
ewersii Ledeb.	45	37	1915.08.12.	oreganum Nutt.	140	12a 1915.07.18.
ewersii var.				oxypetalum Kunth	109	84
homophyllum Praeger	46	38 upper	1915.08.12.	pachuense (Thompson)		
fabaria Koch	39	31		Praeger	67	53 1916.01.
fastigiatum Hook.f.				pachyphyllum Rose	123	96 1916.04.20.
& Thomson	19	15		palmeri S.Watson	134	107
floriferum Praeger	63	50		pilosum Bieberstein	166	132
formosanum N.E.Br.	175	139	1916.10.-	polyrhizum Praeger		
glabrum (Rose) Praeger	66	52		(nom. prov.)	185	146
gracile Meyer	107	82b		populifolium Pallas	78	62
griseum Praeger	84	68	1916.01.-	potosinum Rose	73	58
guadalajaranum				praealtum DC.	120	92 1915.07.19.
S.Watson	83	67	1916.08.03.	praealtum, dendroideum		
gypsicolum Boiss.				& confusum (leaves)	119	93 upper
& Reut.	104	81	1915.06.28.	praegerianum		
heterodontum Hook.f.				W.W.Smith	30	25
& Thompson	7	4		primuloides Franch.	29	24
himalense D.Don	18	14		proponticum Aznavour	112	87
hirsutum Allioni	105	82a		pruinatum Brotero	162	129
hispanicum L.	178	142		pseudospectabile Praeger	42	34 1915.08.25.
humifusum Rose	141	11b		pulchellum Michaux	116	90 1915.07.19.
hybridum L.	65	51		purpureoviride Praeger	15	11
indicum Hamet	167	133		purpureum Link	38	30 1915.08.20.
indicum	168	134		reflexum L.	157	125 1915.06.05.
indicum var. densi-				reflexum var. cristatum		
rosulatum Praeger	170	135a		Hort.	158[no number]	
indicum var. yunnanense				retusum Hemsley	79	63 1915.07.15.
(Franch.) Hamet	169	135b		rhodanthum A.Gray	28	23
japonicum Siebold	149	118		rhodocarpum Rose	114	88 1915.11.-
kamschaticum Fisch. &				roseum Scopoli	4	1
C.A.Mey.	62	49		roseum varieties	5	2
kirilowii Regel	8	5		roseum varieties	6	3
kirilowii	9	6		rotundatum Hemsley	11[no number]	
lancerottense				rubens L.	181	143 right
R.P.Murray	148	117		rubroglaucum Praeger	125[no number]	
leblancae Hamet	183	144	1917.08.29.			1916.09.20.
leblancae	184	145 left		Rupestre group	164	[no number]
lenophylloides Rose	74	57 right		rupestre L.	156	124 1916.06.01.
liebmannianum Hemsli.	95	77a	1915.08.01.	sarmentosum Bunge	130	103

selskianum Regel & Maack	58	46		012	016	bupleuroides	1915.05.31
semenovii Masters	27	22	1915.07.11.	012a	140	oreganum	1915.07.18.
sempervivoides Fischer	165	131	1915.07.01.	013	017	tibeticum	
sexangulare L.	155	119	lower 1915.07.17.	014	018	himalense	
sieboldii Sweet	49	40	1915.10.12.	015	019	fastigiatum	
sieboldii & cauciculum (sepals & carpels)	47	38	lower	016	020	crassipes	
somenii Hamet	176	140	1917.08.03.	017	021	crassipes forma ?	
somenii	177	141	left 1916.09.15.	018	022	crassipes var. cholaense	
spathulifolium Hooker	138	110b		019	023	stephanii	
spectabile Boreau	43	35	1915.09.12.	020	024	dumulosum	
spurium Bieberstein	110	85	1915.07.17.	021	025	trifidum	1915.09.01.
stahlii Solms	127	[no number]		022	027	semenovii	1915.07.11
stellatum L.	174	138b	1916.06.06.	023	028	rhodanthum	
stenopetalum Pursh	161	128		024	029	primuloides	
stephanii Chamisso	23	19		025	030	praegerianum	
stevenianum Rouy				026	033	yunnanense	
& Camus	113	[no number]		027	032	var. valerianoides (male)	
stoloniferum S.T.Gmelin	111	[no number]				yunnanense	
stribrnyi Velenovsky	145	114				var. valerianoides (fem.)	1915.07.11.
taquetii Praeger	40	32		028	034	yunnanense	
			1916.09.13 & 20			var. valerianoides (herm.)	
tatarinowii Maximowicz	50	41	1916.07.-	029	037	maximum	1915.09.04.
ternatum Michaux	85	[no number]	left	030	038	purpureum	1915.08.20.
ternatum var. minus Praeger	86	[no number]	right	031	039	fabaria	
tibeticum J.Hooker				032	040	taquetii	1916.09.13 & 20
& Thomson	17	13		033	041	alboroseum	
treleasei Rose	124	97	1918	034	042	pseudospectabile	1915.08.25.
trifidum Wall.	25	21	1915.09.01.	035	043	spectabile	1915.09.12.
varicolor Praeger	136	109		036	044	verticillatum	
varicolor	137	110		037	045	ewersii	1915.08.12.
versadense Thompson	76	60	1916.05.18.	038			
verticillatum L.	44	36		lower	047	sieboldii & cauciculum (sepals & carpels)	
villosum L.	179	141	right	038			
viscosum Praeger	172	137	1917.07.10.	upper	046	ewersii var.	
viscosum	173	138a				homophyllum	1915.08.12.
wrightii A.Gray	72	57	centre	039	048	cauciculum	
yosemitense Britton	139	111		040	049	sieboldii	1915.10.12.
yunnanense Franchet				041	050	tatarinowii	1916.07.-
var. valerianoides (Diels)				042A	052	anacampseros	
Hamet (male)	33	26		042B	053	cyaneum	
(hermaphrodite)	34	28		043	055	aizoon	1915.07.17.
(female)	32	27	1915.07.11.	045	057	aizoon x kamtschaticum	
zentaro-tashiroi Makino	128	101		046	058	selskianum	
				047	059	middendorffianum var. diffusum & var. middendorffianum	
Pt II. Numerical listing according to the numbering of the manuscript original drawings.				048	060	ellacombianum	1915.07.01.
mss.no	fig.no	name	date on ms drawing	049	062	kamschaticum	
001	004	roseum		050	063	floriferum	
002	005	roseum varieties		051	065	hybridum	
003	006	roseum varieties		052	066	glabrum	
004	007	heterodontum		053	067	pachuense	1916.01.
005	008	kirilowii		054	068	ebracteatum	1915.10.29.
006	009	kirilowii		055	069	alamosanum	
007	010	longicaule		056	070	mellitulum	1915.09.30.
008	012	elongatum	1915.08.12.	057 cent.	072	wrightii	
009	013	bhutanense		057 left	071	cockerellii	1915.08.10.
010	014	bhutanense		057 right	074	lenophylloides	
011	015	purpureoviride		058	073	potosinum	
011b	141	humifusum		059	075	bellum	
				060	076	versadense	1916.05.18.
				061	077	diversifolium	

062	078	populifolium		111	139	yosemitense	
063	079	retusum	1915.07.15.	112b	142	cupressoides	
064	080	adolphii		113	146	oaxacanum	
065	081	allantoides	1915.07.13.	113a	143	acre	
066	082	bourgaei	1915.08.20.	113b	144	acre var. majus	
067	083	guadalajaranum	1916.08.03.	114	145	stribnyi	
068	084	griseum	1916.01.-	117	148	lancerottense	
070 left	087	nevii	1915.06.15 & 30	118	149	japonicum	
070 right	088	nevii var. beyrichianum	1915.06.15 & 30	119			
071	089	adenotrichum	1918.07.10.	lower	155	sexangulare	1915.07.17.
073				119			
lower	091	lower magellense		upper	150	alpestre	
073				120	151	douglasii	
upper	091	upper chanetii		121	152	multicaule	1915.07.20.
074	092	alsinefolium	1915.06.20.	122	153	celiae	
075	093	monregalense	1915.07.19.	124	156	rupestre	1916.06.01.
076	094	moranense		125	157	reflexum	1915.06.05.
077a	095	liebmannianum	1915.08.01.	126	159	altissimum	1915.06.10.
077b	096	compactum	19???.07.12	127	160	anopetalum	
077c	097	dasyphyllum	1915.06.10.	128	161	stenopetalum	
077c	098	dasyphyllum var. suendermannii	1915.07.19.	129	162	pruinatum	
078a	099	brevifolium	1915.07.16.	130	163	amplexicaule	
078b	100	brevifolium var. quinquefarium		131	165	sempervivoides	1915.07.01.
079	102	album	1915.06.15	132	166	pilosum	
080a	103	album var. micranthum		133	167	indicum	
		sub-var. chloroticum	1916.08.15.	134	168	indicum	
080b	101	anglicum		135a	170	indicum var. densirosulatum	
081	104	gypsicolum	1915.06.28.	135b	169	indicum var. yunnanense	
082a	105	hirsutum		136	171	cepaea	1915.06.29.
082b	107	gracile		137	172	viscosum	1917.07.10.
083a	108	albertii		138a	173	viscosum	
083b	106	lydium		138b	174	stellatum	1916.06.06.
084	109	oxypetalum		139	175	formosanum	1916.10.-
085	110	spurium	1915.07.17.	140	176	somenii	1917.08.03.
087	112	proponticum		141 left	177	somenii	1916.09.15.
088	114	rhodocarpum	1915.11.-	141 right	179	villosum	
089	115	longipes	1916.01.20.	142	178	hispanicum	
090	116	pulchellum	1915.07.19.	143 right	181	rubens	
091	117	nutans	1916.03.20.	143 left	180	coeruleum	
092	120	praealtum	1915.07.19.	144	183	leblancae	1917.08.29.
093				145 left	184	leblancae	
lower	118	dendroideum		145 right	182	annuum	
093				146	185	polyrhizum	
upper	119	praealtum, dendroideum & confusum (leaves)		[without manuscript numbers]			
094	121	confusum	1916.04.20.	001		lineare	
095	122	amecamecanum	1916.05.09.	002		stahlia & adolphii (propagation from leaves)	
096	123	pachyphyllum	1916.04.20.	003		(floral diagram)	
097	124	treleasei	1918	011		rotundatum	
099	126	divergens	1916.06.10.	026		trifidum	
101	128	zentaro-tashiroi		031		praegerianum	
102	129	chauveaudii		035		telephium (root)	
103	130	sarmentosum		036		Telephium section (leaves and flowers)	
104	131	lineare		051		anacampseros f. majus	
105	132	lineare var. robustum	1916.07.20.	054		Aizoon section (carpels)	
106	133	mexicanum	1915.04.-	056		aizoon	
107	134	palmeri		061		ellacombianum (leaves)	
108	135	compressum		064		floriferum	
109	136	varicolor		left	085	ternatum	
110	137	varicolor		right	086	ternatum var. minus	
110b	138	spathulifolium		090		chanetii	

111	stoloniferum	
113	stevonianum	
125	rubroglaucum	1916.09.20.
127	stahlia	
147	nudum	
154	multiceps	
158	reflexum var. cristatum	
164	Rupestre group	

Appendix II: Names within Crassulaceae published by R. Ll. Praeger with commentary on specimens and drawings

AEONIUM Webb & Berthel.

A. arboreum (L.) Webb & Berthel. f. *foliis purpureis* Praeger: *Sempervivum*, 160: 1932
The epithet, *foliis purpureis*, is invalid as it is a phrase (Arts. 23.1, 24.2).

A. arboreum f. *foliis variegatis* Praeger: *Sempervivum*, 160: 1932
The epithet, *foliis variegatis*, is invalid as it is a phrase (Arts. 23.1, 24.2).

A. x burchardii (Praeger) Praeger: *Journal of Botany* 66, 222: 1928 [= *A. sedifolium* (Bolle) Pit. & Proust x *A. urbicum* (Hornem.) Webb & Berthel.] (basionym *Sempervivum burchardii* Praeger - see below).
Praeger's statements in his 1928 paper on 'The Canarian *Sempervivum*-flora: its distribution and origin', that

Aichryson, *Aeonium*, *Greenovia*, and *Monanthes* are treated as genera, to which rank they appear to me to be entitled. A few changes in the usual nomenclature have been made, which are necessary under the International Rules... (Praeger 1928b: 220-1)

have been overlooked by subsequent botanists. Therein Praeger listed all species native in the Canary Islands, making a series of new combinations which are valid (Art. 33.2) even though he did not cite the basionym or provide a bibliographic reference. Praeger maintained these combinations in later papers (e.g. Praeger 1929), and although subsequently he cited the 1929 paper as the place of publication of the new combinations, this is not relevant (Art. 34.1(a)).

A. gomerense (Praeger) Praeger: *Journal of Botany* 66, 222: 1928 (basionym *Sempervivum gomerense* Praeger - see below).

The new combination within *Aeonium* was made by Praeger in 1928 not 1929; see under *A. x burchardii* above.

A. lancerottense (Praeger) Praeger: *Journal of Botany* 66, 222: 1928 (basionym *Sempervivum lancerottense* Praeger - see below).

The new combination within *Aeonium* was made by Praeger in 1928 not 1929; see under *A. x burchardii* above.

A. nobile (Praeger) Praeger: *Journal of Botany* 66, 221

(1928) (basionym *Sempervivum nobile* Praeger - see below).

The new combination within *Aeonium* was made by Praeger in 1928 not 1929; see under *A. x burchardii* above.

A. spathulatum (Hornem.) Praeger: *Journal of Botany* 66, : 1928 (basionym *Sempervivum spathulatum* Hornem. Supplementum horti botanici Hafniensis 60: 1819).

The new combination within *Aeonium* was made by Praeger in 1928 not 1929; see under *A. x burchardii* above.

A. subplanum Praeger: *Journal of Botany* 66, 221: 1928 [= *A. canariense* (L.) Webb & Berthel. var. *subplanum* (Praeger) Ho-Yih Liu]

Praeger's notes 'on the flower of this plant were unfortunately lost in a squall on a cliff on Palma'; furthermore 'plants brought home in 1924 [had] not yet [1928] bloomed, and on [his] second visit to Gomera in 1927 the plant was not yet in flower.' Praeger (1928: 221) concluded that '... the inflorescence and flower offered sufficiently distinguishing characters to justify the evidence of the very distinct rosette and leaf that the plant deserves a separate name.'

There is no specimen in DBN either from the Canary Islands or from cultivated plants. A specimen in K labelled 'Above San Sebastian, Gomera, Canary I. R. Ll. Praeger April 1925' is not annotated by Praeger. As he was not in the Canary Islands in 1925, this most probably was gathered from a cultivated specimen (if the label is correct), but there is no evidence that the particular specimens was part of the original material (Art. 7.4) studied by Praeger, although it may have been obtained from living material he gathered in 1924. Thus this 1925 specimen is not a candidate for designation as a lectotype, although this has been done by Liu (1989); it might be designated a neotype.

A. valverdense (Praeger) Praeger: *Journal of Botany* 66, 222: 1928 (basionym *Sempervivum valverdense* Praeger - see below).

The new combination within *Aeonium* was made by Praeger in 1928 not 1929; see under *A. x burchardii* above.

AICHRYSO Webb & Berthel.

A. brevipetalum Praeger: *Journal of Botany* 66, 221: 1928

Described from a plant cultivated in the National Botanic Gardens, Glasnevin, 'ex seminibus ortis in Barranco del Rio [Insula La Palma] lectis Maio 1927'; no voucher herbarium specimen is extant in DBN, and there is no drawing in RIA. A neotype may be required.

A. dichotomum (DC.) Webb & Berthel. f. *foliis purpureis* Praeger: *Sempervivum*, 112: 1932

The epithet, *foliis purpureis*, is invalid as it is a phrase (Arts. 23.1, 24.2).

A. x domesticum (Praeger) Praeger: Journal of botany 65, 211: 1927 (basionym *Sempervivum domesticum* Praeger - see below) (= *A. x aizoides* (Lam.) E. C. Nelson)

Praeger should have made a new combination based on Lamarck's name, *Sempervivum aizoides* following his decision that Lamarck had described the same hybrid (Praeger 1928d: 29; 1932: 108). By citing (Praeger 1932: 108) *Sempervivum aizoides* Lam. as a synonym (i.e. basionym) for *Aichryson x domesticum* var. *aizoides*, he made an illegitimate new combination.

As long as Lamarck's plant and Praeger's *Aichryson x domesticum* are considered to represent the same hybrid, albeit of obscure garden origin, the correct binomial is *A. x aizoides* (Lam.) E. C. Nelson - this new combination is made above because it does not appear to have been made elsewhere.

A. x domesticum var. *aizoides* (Lam.) Praeger: *Sempervivum*, 108: 1932 (basionym *Sempervivum aizoides* Lamarck: Encyclopédie 3, 290: 1799) (= *A. x aizoides* (Lam.) E. C. Nelson var. *aizoides*)
Praeger's combination is illegitimate - see above.

A. x domesticum f. *foliis variegatis* Praeger: *Sempervivum*, 108: 1932

Again the epithet, *foliis variegatis*, is invalid because it is a phrase (Arts. 23.1, 24.2).

The 'bright little plant, a favourite in cultivation, with leaves edged with a broad margin of silver...' (Praeger 1932) is currently named *A. x domesticum* 'Variegatum'.

A. tortuosum (Ait.) Webb & Berthel. (not *A. tortuosum* (Ait.) Praeger)

The combination *Aichryson tortuosum* was validly made by Webb and Berthelot (the basionym *Sempervivum tortuosum* Ait. Hortus Kewensis 2, 148 (1789) is explicitly stated) in *Histoires naturelle des Iles Canaries*, III, 184: 1840. Irrespective of the later misapplication (Art. 55.2.) of that binomial, the authority '(Ait.) Praeger' should not be used (see e.g. Praeger 1932: 104).

MONANTHES Haw.

M. anagensis Praeger: Transactions of the Botanical Society of Edinburgh 29, 216: 1925

Praeger described this species following a visit to the Canary Islands in the spring of 1924 when he observed plants in their native habitats and collected living specimens that were subsequently grown in the National Botanic Gardens, Glasnevin. No voucher herbarium specimens were prepared for any of these plants, and none was illustrated

Nyffeler (1992) has designated a specimen collected by Bourgeau (E) as the neotype.

M. brachycaulos (Webb & Berthel.) Lowe f. *fasciata* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 491: 1929
Praeger found fasciated plants 'resembling a small

Sedum reflexum f. *monstrosum*' on Gran Canaria; no voucher specimen nor drawing appears to be extant. A neotype may be required.

M. brachycaulos f. *ramosa* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 490: 1929

A 'striking variety' found on Tenerife and Gran Canaria; no voucher specimens or drawings appear to be extant. A neotype may be required.

M. laxiflora (DC.) Bolle f. *minor* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 494: 1929

Praeger evidently observed this in cultivation but no voucher specimen nor drawing is extant. A neotype may be required.

M. laxiflora f. *foliis aureis* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 494: 1929

The epithet, at forma level, is invalid as it is a phrase (Arts. 23.1, 24.2).

Praeger (1929b) remarked that this had 'leaves wholly yellow or mottled yellow and green, an extremely rare phenomenon in *Sempervivum* and related genera.'

M. pallens (Webb) Christ var. *silensis* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 495: 1929

No voucher specimen nor original drawing of this variety from western Tenerife is extant. A neotype may be required.

M. pallens f. *ramosa* Praeger: Proceedings of the Royal Irish Academy 38 B 15, 495: 1929

No voucher specimen nor drawing of this is extant. A neotype may be required.

M. pallens f. *fasciata* Praeger: *Sempervivum*, 232: 1932

No voucher specimen nor drawing of this is extant. A neotype may be required.

SEDUM L.

Original drawings of *Sedum* taxa are extant (cited below as RIA mss), and may serve as a types when suitable herbarium specimens are not available.

Praeger (1917) stated explicitly that his 'descriptions have been drawn up from living material, and most of the plants have been studied during several successive seasons': that statement applies to the majority of taxa and precludes the existence of holotypes, except for a series of Asian species described from herbarium specimens in E and K.

There are no herbarium specimens in DBN from Praeger's own garden, and moreover few specimens in the collections that have been annotated by him. Only one specimen (*Henry 3079*) in DBN is mentioned by Praeger, and remarkably the only sheet of this gathering in DBN is not annotated in any way by Praeger.

It should be noted that there are some specimens in DBN which were gathered from the living collections in the National Botanic Gardens, but these again have

little relevance to this commentary - without exception these poor specimens date from the late 1930s.

In the following list, nomenclature has not been updated; modern opinions about the status of Praeger's taxa can be obtained in e.g. Ohba (1975, 1978).

S. alboroseum Baker f. *foliis margine-variegatis* Praeger: Journal of the Royal Horticultural Society 46, 90: 1921

The epithet *foliis margine-variegatis* is invalid as it is a phrase (Arts. 23.1, 24.2).

No specimen is extant in DBN, but Praeger (1921) cited a specimen in K ('Hort. Justus Corderoy Oct. 14. 1904').

This variant, perhaps best deemed to have been a cultivar, does not appear to have survived in gardens (cf. Hensen & Groendijk-Wilders 1986, Trehane 1989); Praeger stated it was of 'no great merit'.

S. ambiguum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 69: 1921

Praeger used herbarium specimens in the Royal Botanic Garden, Edinburgh, when describing a series of Asiatic species, including *S. ambiguum*; thus the type specimens are in E.

For this species three collections were cited in the protologue - *Kingdon Ward 391* (annotated 'type' by Praeger), *Forrest 15049*, and *Schneider 1362*. As Praeger has annotated one sheet, it may be considered the lectotype.

S. amecamecanum Praeger: Journal of Botany 55, 43: 1917

Described from plants cultivated at the Royal Horticultural Society's garden, Wisley, having been received there as '*Sedum*, no. 06.10.' from Dr J. N. Rose who informed Praeger it had been collected at Amecameca, Mexico, by C. A. Purpus, in January 1906 (Purpus 108). The original drawing for fig. 122 (Praeger 1921a) dated 9 May 1916 (RIA mss no 95) may serve as a type.

S. anacampseros L. f. *majus* Praeger: Journal of the Royal Horticultural Society 46, 104: 1921

Praeger received this form 'from the Alps' through E. A. Bowles. There is no original drawing for fig. 51 (Praeger 1921a) in RIA; a neotype may be required.

S. anglicum L. var. *minus* Praeger: Journal of the Royal Horticultural Society 46, 182: 1921

This 'very pretty and distinct little plant' came from E. A. Bowles. There is no original drawing in RIA; a neotype may be required. This variety is still in cultivation (Trehane 1989).

S. anoicum Praeger: Journal of Botany 57, 52: 1919

The original drawing for fig. 89 (Praeger 1921a) (RIA mss no. 71) is dated 10 July 1918 and labelled '*adenotrichum*'; it might serve as a type. Living material was obtained from Murray Hornibrook of Abbeyleix, County Laois, Ireland, whose garden was dismantled in the early 1920s. Praeger was mistaken in describ-

ing Hornibrook's plant as a new species.

S. atuntsuense Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 71: 1921

Praeger cited two gatherings (*Kingdon Ward 37, 962 E*) in his protologue (for further comments under *S. ambiguum* above). Praeger annotated *Kingdon Ward 962* as 'type'; it may be deemed the lectotype.

S. baileyi Praeger: Proceedings of the Royal Irish Academy 35 B 1, 4: 1919

Praeger had an opportunity to study herbarium specimens (representing 11 numbers) collected by Liberty Hyde Bailey in China (Jiangxi, Hubei, Henan provinces) in 1917, and following this study he named three new species (see also *S. limuloides*, *S. quaternatum* below).

Only one gathering (*Bailey Sedum no. 2*) is cited in the protologue. There is no specimen in DBN, and no drawing in RIA; type material will be in either New York Botanical Gardens or the Gray Herbarium where Bailey's Chinese specimens were deposited.

S. barnesianum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 72: 1921

This species was described from herbarium specimens collected in the eastern Himalaya (*Rohmoo Lepcha 434*; '*Native collector*'; E) (for further comments under *S. ambiguum* above); the first of these specimens was annotated 'type' by Praeger and may be deemed the lectotype.

This species is dedicated to Eileen Barnes, the artist, 'to whose industry and skill I owe drawings of nearly two hundred species of *Sedum*.'

S. bellum Rose ex Praeger: Journal of the Royal Horticultural Society 46, 141: 1921

Praeger received plants of this species variously labelled '*S. farinosum*' from Washington and New York, and '*S. bellum*' from Washington. Praeger attributed the binomial to Rose, and cited Rose's description of *S. farinosum* (Contributions from the US National Herbarium 13, 297: 1911) as well as noting the illustration (fig. 54) which Rose published.

The original drawing for fig. 75 (Praeger 1921a) (RIA mss no. 59) is not dated, but it is not relevant anyway in selecting a type for *S. bellum*.

The authority of binomial *S. bellum* is frequently stated as Rose, but the publishing author was Praeger; under Art. 46.3. I believe the authority should read Rose ex Praeger which can be abbreviated to Praeger. However currently there is much discussion about the use of ex and in (see Taxon 42, 140-155: 1993 and consequent alterations to the International Code).

S. bhutanense Praeger: Journal of the Royal Horticultural Society 46, 43: 1921 (= *S. cooperi* Praeger non Clémenc)

Two drawings are extant and both bear the name *S. bhutanense*: RIA mss no. 9, undated, shows the habit (reproduced as fig. 13 (Praeger 1921a)), and RIA mss no. 10 (fig. 14 (Praeger 1921a)) is of dissected flowers and leaves. Praeger stated that he described this 'from

specimens which flowered at Glasnevin and in [his] own garden in 1918'; he had seen other plants growing in Kew, Edinburgh and Bees' Nursery, Chester.

S. bhutanicum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 73: 1921 (= *S. cooperi* Praeger non Clémenc)

See comments under *S. bhutanense* and *S. cooperi*. It is not clear why Praeger (1921b) altered the epithet from 'bhutanense' to 'bhutanicum'; the former name has priority over *S. bhutanicum*.

S. brevifolium DC. var. *quinquefarium* Praeger: Journal of the Royal Horticultural Society 46, 180: 1921

The original drawing for fig. 100 (Praeger 1921a) (RIA mss no. 78b) is not dated, yet in the absence of a herbarium voucher it may be designated as the lectotype.

Praeger's material of this variety came from the Royal Botanic Garden, Edinburgh, where it was cultivated as *S. dasyphyllum*. I propose that the clone in cultivation today which exactly matches Praeger's description and Barnes' illustration should be named *S. brevifolium* var. *quinquefarium* 'Edinburgh', to distinguish it from other clones with leaves in fives including naturally occurring quinquefarous plants.

S. caucolicum Praeger: Journal of Botany 55, 41: 1919

The original drawing for fig. 48 (Praeger 1921a) (RIA mss no. 39) is not dated. Praeger received material from cliffs on the southern coast of Tezo, Japan, through Prof. Miyabe, Sapporo, as '*Sedum* sp. aff. *S. Sieboldii*, with opposite leaves and early-flowering habit.'

S. concinnum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 75: 1921

The description was based on *Forrest 10319*; the holotype, annotated 'type' by Praeger, is in E.

S. cooperi Praeger: Journal of Botany 57, 49: 1919 (non *S. cooperi* Clémenc; = *S. bhutanense* Praeger)

See commentary under *S. bhutanense* above. R. E. Cooper collected material in Bhutan during 1914 (coll. no. 3517; 'mossy rocks at 13,000 feet').

Praeger was obliged to give his species a different name because Clémenc had already published the binomial *Sedum cooperi*.

S. crassipes Wall. var. *cholaense* Praeger: Journal of Botany 57, 50: 1919.

'Received, in the form of either roots or seeds from Darjeeling and Edinburgh Botanic Gardens and from Lissadell Nursery [County Sligo]', according to Praeger. Cooper introduced it from the Chola Valley, East Sikkim (*Cooper*, 923). The undated original drawing (RIA mss no. 18), reproduced as fig. 22, may serve as a type.

S. dasyphyllum L. var. *suendermannii* Praeger: Journal of Botany 57, 50: 1919

The original drawing for fig. 98 (Praeger 1921a) (RIA

mss no. 77c) dated 19 July 1915 and inscribed '*rivulare* my plant... var. *suendermannii*' may serve as a type. Praeger (1919) commented that he had cultivated 'a large series...the most distinct is a plant distributed by F. Sundermann, of Lindau, under the name *S. rivulare*... collected... in Spain - I believe in the Sierra Nevada'. This variant is now considered to be a cultivar, *S. dasyphyllum* '*Suendermannii*' (cf. Hensen & Groendijk-Wilders 1986).

S. ellacombianum Praeger: Journal of Botany 55, 41: 1917

The original drawing for fig. 61 (Praeger 1921a) showing foliage, is not in RIA. Another original drawing (RIA mss no. 48) for fig. 60 (Praeger 1921a) was based on two sources - a plant originally from the Royal Horticultural Society garden, Wisley (drawn on 1 July 1915), and Praeger's own plant (according to the inscription, details were drawn on 12 July).

On this occasion Praeger did avail of herbarium specimens and cited two: one in the Natural History Museum, London (BM) ('a small specimen from Hance's Herbarium, collected as *S. kamtschaticum* at Hakodate, Japan, by Maximowicz in 1861) and one in the Royal Botanic Gardens, Kew ('labelled '*Sedum* _____, Kew Gardens, Sept. 19. 1901. Legit N. E. Brown...'); one of these could be selected as a lectotype.

S. ewersii Ledeb. var. *homophyllum* Praeger: Journal of the Royal Horticultural Society 46, 96: 1921

Praeger received living specimens from the Royal Botanic Gardens, Kew, the Royal Horticultural Society garden, Wisley, Chelsea Physic Garden, and E. A. Bowles, 'in all cases under the name *cyaneum*'. The original drawing for fig. 46 (Praeger 1921a) is labelled 'Wisley "Cyaneum"' (RIA mss no. 38 (upper)) and dated 12 August 1915; this may serve as a type.

The current opinion (cf. Hensen & Groendijk-Wilders 1986) is that this is a cultivar, *S. ewersii* '*Homophyllum*'.

S. floriferum Praeger: Journal of Botany 56, 149: 1918

This was raised at the Royal Botanic Gardens, Kew, from seeds collected 'at or near Wei-hai-Wei [and] sent to Kew by Mr. Liardet in 1911'; Praeger obtained a plant from Kew and grew it in his own garden. The original drawing for fig. 63 (Praeger 1921a) (RIA mss no. 50) is not dated; the original for fig. 64 (Praeger 1921a) is not in RIA.

Praeger also cited 'an abnormal and curious specimen... from Hance's herbarium... labelled "Chifu, aest. 1872 (F. B. Forbes)"...' (K), stating that it 'may be referred to *S. floriferum*'.

S. griseum Praeger: Journal of Botany 55, 43: 1917

The original drawing for fig. 84 (Praeger 1921a) (RIA mss no. 68) may serve as a type. It is annotated '*Bourgaei* G. Jany '*16 Griseum*' - I interpret this as meaning that it was drawn in January 1916 at Glasnevin (signified by 'G') which accords with Praeger's note that the species flowered in January and February, and, not being hardy in Ireland, it

required greenhouse protection. Praeger's sources were the New York Botanic Garden whence he obtained a plant labelled '*S. Bourgaei*, No. 2', and Haage & Schmidt of Erfurt whose plant was named '*S. farinosum*'.

S. hispanicum L. var. *minus* Praeger: Journal of the Royal Horticultural Society 46, 301: 1921

The original drawing for fig. 178 (Praeger 1921a) (RIA mss no. 142) is not dated.

This variety, labelled 'b' in the published figure (lower left), was described as 'the small, glaucous form long used for carpet-bedding under the name of *S. glaucum* or *S. Lydium glaucum*'.

Hensen & Groendijk-Wilders (1986) placed *S. hispanicum* var. *minus* in synonymy under *S. bithynicum* Boiss., whereas Chamberlain (1972) considered *S. bithynicum* was merely a variety of *S. pallidum* Bieb.

S. horridum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 83: 1921

The description was based on *Forrest 5055*; the holotype, annotated 'type' by Praeger, is in E.

S. indicum Hamet var. *densirosulatum* Praeger: Journal of Botany 57, 57: 1919

The original drawing for fig. 170 (Praeger 1921a) (RIA mss no. 135a), which may serve as a type, is not dated; the plant was raised from seeds sent from China by Maire. There are herbarium specimens in the Royal Botanic Garden, Edinburgh, including material from Maire, which Praeger annotated.

S. indicum var. *luteorubrum* Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 84: 1921

The description was based on *Forrest 13377*; the holotype, annotated 'type' by Praeger, is in E.

S. kirilowii Regel var. *rubrum* Praeger: Journal of the Royal Horticultural Society 46, 37: 1921

Praeger cited *S. rhodiola* DC. var. *linifolia* Regel & Schmalh. as a synonym, and thus his epithet is illegitimate (Art. 63); he should have made a new combination within *S. kirilowii* at varietal level using *S. rhodiola* var. *linifolia* as the basionym.

Hensen & Groendijk-Wilders (1986) list this as a cultivar, *S. kirilowii* 'Rubrum', and it is distinguished by having 'rich brown-red' flowers (Praeger 1921a).

S. limuloides Praeger: Proceedings of the Royal Irish Academy 35 B 1, 2: 1919

Only one gathering (*Bailey Sedum no. 5*) was cited by Praeger (see commentary under *S. baileyi* above). There is no specimen in DBN, and no drawing in RIA; type material will be in either New York Botanical Gardens or the Gray Herbarium.

S. lineare Thunb. var. *robustum* Praeger: Journal of the Royal Horticultural Society 46, 229: 1921

The original drawing for fig. 132 (Praeger 1921a) (RIA mss no. 105), annotated '*lineare* var Hamburg 20/7/16'; it may serve as a type. Praeger obtained living material from the Hamburg Botanic Garden.

S. longicaule Praeger: Journal of Botany 55, 39: 1917
The original drawing for fig. 10 (Praeger 1921a) (RIA mss no. 7) is not dated; this taxon was discovered by Praeger in H. J. Elwes' garden. The RIA drawing may serve as a type.

S. longistylum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 87: 1921

Praeger cited a specimen, *Wilson 3640*, from the Royal Botanic Gardens, Kew (K); this is the holotype.

S. macrocarpum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 88: 1921

Praeger cited two specimens in E (*Farrer 1168*, *Kingdon Ward 3412*) and one specimen in K (*Wilson 2527*). Praeger annotated Kingdon Ward's collection (3412 E) as 'type' and it may be deemed the lectotype.

S. mairei Praeger: Journal of Botany 57, 53: 1919

In the protologue Praeger stated that this was 'raised at Glasnevin in 1916 from seed sent by Rev. E. E. Maire from Tong-Tchouan, 2900 metres, in 1915. The plants flowered, one in October, 1916, and the rest in August, 1917. They died in the autumn of 1917...' There are no herbarium specimens in DBN.

There are two original drawings, and both are labelled '*somenii*' (Praeger (1921a) realized he had been misled into believing this was a new species). RIA mss no. 140 (reproduced as fig. 176 (Praeger 1921a)) is annotated 'G plant 3.8.17' and shows a flowering plant; RIA mss no. 141 (left) (for fig. 177 (Praeger 1921a)) is inscribed 'G plant 15.9.16. Sp. A carpels abnormal'. One of the drawings may be selected as a type of *S. mairei*.

S. mekongense Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 89: 1921

The description was based on *Forrest 14537*; the holotype, annotated 'type' by Praeger, is in E.

S. middendorffianum Maxim. var. *diffusum* Praeger: Journal of the Royal Horticultural Society 46, 117: 1921

Praeger cited no source for this except the general one - 'in cultivation at Petrograd and in British gardens'. The original drawing for fig. 59 (Praeger 1921a) is extant (RIA mss [not numbered]) and may serve as a type.

This taxon is now considered to be a cultivar, *S. middendorffianum* 'Diffusum' (Hensen & Groendijk-Wilders 1986).

S. polyrhizum Praeger: Journal of the Royal Horticultural Society 46, 308: 1921

Praeger (1921a) named this 'tentatively', the epithet being prefaced by a question mark; thus the binomial *Sedum polyrhizum* was not validly published. The original drawing for fig. 185 (Praeger 1921a), annotated '*polyrhizum* (nom. prov.)', is RIA mss no. 146.

S. pseudospectabile Praeger: Journal of Botany 55, 40: 1917

Praeger stated that this was 'grown at Edinburgh

from seeds collected by Prof. I. Bayley Balfour in 1910 at Chinwangto, on the sea-coast due east of Peking. Received also from the University Botanic Garden, Sapporo, Japan, under the name of *S. spectabile*. The original drawing for fig. 42 (Praeger 1921a) (RIA mss no. 34) may serve as a type; it is dated 25 August 1915.

S. pseudostapfii Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 91: 1921
This 'peculiar little' species was described using *Cooper 440* from Sikkim; the holotype, annotated 'type' by Praeger, is in E.

S. purpureoviride Praeger: Journal of Botany 55, 39: 1917

Praeger received this from the Royal Botanic Garden, Edinburgh, 'with the label "*Sedum* sp. Yunnan Forrest.', and he described the species, 'excepting the hermaphrodite flowers', when it bloomed in 1916. The original drawing for fig. 15 (Praeger 1921a) (RIA mss no. 11) is not dated. Herbarium material collected by Forrest (14512 E), annotated by Praeger, is in E.

S. pyramidale Praeger: Journal of Botany 55, 42: 1917 (= *S. chanetii* Lév.)

Praeger noted that this 'remarkable species was collected in 1915 by Mr. Reginald Farrer on roofs and rocks (especially the former) at and about Siku, Kansu, 6400-8000 feet (Farrer, no. 336). Apparently not of easy culture; but a fine flowering specimen was sent to me last September [i.e. 1916] by Mr. E. A. Bowles...' He used Bowles's material to prepare the description. However, the species had already been named by Lévillé as *S. chanetii*, so Praeger's name is superfluous.

There are two original drawing of this species in RIA (mss nos. 73 upper and unnumbered), both labelled *S. chanetii*; a type may be required for Praeger's name and one of the original drawings could be selected as a lectotype.

S. quaternatum Praeger: Proceedings of the Royal Irish Academy 35 B 1, 6: 1919

One gathering (*Bailey Sedum* no. 9) was cited (see commentary under *S. baileyi* above). There is no specimen in DBN, and no drawing in RIA; type material will be in either New York Botanical Gardens or the Gray Herbarium.

S. robustum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 93: 1921

Praeger studied one specimen in K (*Monbeig s.n.*) and two specimens in E (*Forrest 5087, 5088*); he annotated *Forrest 5088* as 'type' and it may be deemed the lectotype.

S. rubroglaucum Praeger: Journal of Botany 57, 51: 1919

The original drawing for fig. 125 (Praeger 1921a) (RIA mss [no number]) may serve as a type; it is dated 20 September 1916.

Prof. H. M. Hall sent Praeger a living plant from

Yosemite in June 1915, and it flowered in the following year.

S. spathulifolium Hook. var. *majus* Praeger: Journal of the Royal Horticultural Society 46, 238: 1921

This was described from living plants obtained from several sources including E. H. Walpole of Mount Usher, County Wicklow, Ireland. A rosette is included in fig. 138 (Praeger 1921a) (RIA mss 110b); the original drawing is annotated 'checked 9th June 1917' and may serve as a type as no herbarium specimens are known.

S. spathulifolium var. *purpureum* Praeger: Journal of the Royal Horticultural Society 46, 239: 1921

This is currently regarded as a cultivar, *S. spathulifolium* 'Purpureum' (cf. Hensen & Groendijk-Wilders 1986); Praeger described the variety from cultivated plants received from Kew and the Royal Horticultural Society's garden, Wisley. No herbarium specimens and no drawing are extant; a neotype may be needed.

S. taquetii Praeger: Journal of Botany 56, 151: 1918

Abbé E. J. Taquet collected this species in Korea. In 1915 Praeger received a single plant labelled '*Sedum* sp. Korea spont., Abbé Taquet. Wein. Dendrol. Ges. 1913.' from the botanic garden of the University of Uppsala, and he had this 'under observation for two seasons'. The original drawing for fig. 40 (Praeger 1921a) (RIA mss no. 32), dated 13 and 20 September 1916 may serve as a type.

S. telephium L. f. *roseo-variegatum* Praeger: Journal of the Royal Horticultural Society 46, 86: 1921

This variegated plant was known to gardeners as 'var. *bittoniense*' having originated in Canon Ellacombe's garden, according to Praeger (1921a). However there is no evidence that the epithet *bittoniense* was validly published. The epithet *roseo-variegatum* is valid - it is not a phrase (Arts. 23.1, 24.2) - and can be retained as a form name; a neotype may be required.

'Roseo-variegatum' can be used as a cultivar name although this particular plant is apparently no longer cultivated (cf. Hensen & Groendijk-Wilders 1986). Trehane (1989) stated that *S. telephium* 'Roseo-variegatum' is a synonym for *S. alboroseum* 'Medio-variegatis', but his authority for this is not known.

S. ternatum Michx. var. *minus* Praeger: Journal of the Royal Horticultural Society 46, 161: 1921

This 'very dwarf form [sic] ...probably an indigenous American' plant came from Canon Ellacombe's garden, and evidently was described from cultivated material. The original drawing for fig 86 (Praeger 1921a) is in RIA (it is the right-hand drawing on an unnumbered sheet), and it may serve as a type.

S. trientaloides Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 95: 1921

Praeger cited a single collection (*Kingdon Ward 1770*) in the protologue; there are two sheets of this gathering, annotated 'type' by Praeger, in E.

S. triphyllum Praeger: Journal of Botany 57, 54: 1921
S. triphyllum is a Chinese species, originally 'raised from seed collected by Rev. E. E. Maire on "rochers a mi-mont, altitude 2990 metres," near Tong-tchouan [Yunnan], in 1915.' Plants blossomed at the Royal Botanic Gardens, Glasnevin, and in Praeger's garden during August 1917. No drawing of this species is in RIA, nor is there any herbarium specimen in DBN. A neotype will be required.

S. variicolor Praeger: Journal of Botany 57, 54: 1921
Like *S. triphyllum*, *S. variicolor* was raised from seed collected in Yunnan, China, by Maire (Tong-tchouan, Eboullis des rochers des pics, altitude 2800 metres). The original drawing for fig. 137 (Praeger 1921a) (RIA mss no. 110) is not dated yet may serve as a type.

S. venustum Praeger: Notes from the Royal Botanic Garden Edinburgh 13, 97: 1921
Praeger listed five specimens from E, as well as one in K (Pratt 60); a specimen (Kingdon Ward 764a E), annotated 'type' by Praeger, may be deemed the lectotype.

S. verticillatum L. var. *nipponicum* Praeger: Journal of Botany 56, 152: 1918
There is no drawing of this variety in RIA. Praeger stated that he knew a single plant which had been cultivated in the Royal Botanic Gardens, Kew, for many years.

S. viscosum Praeger: Journal of Botany 57, 57: 1921
The protologue reads: 'Seed received from Päre E. E. Maire from Yunnan, its habitat being "murs humides, ombrages, de Kin-tchong-chan, alt. 2990 m." The plant flowered at Kew, Glasnevin, and in my own garden in 1916 and 1917, behaving often as a biennial, but very likely normally annual in duration...A specimen in the National Herbarium, Dublin, labelled *S. drymarioides* and collected in Hupeh by A. Henry (no. 3709) is clearly referable to *S. viscosum*.'
Henry's specimen is extant in DBN. While it is not annotated by Praeger, and still bears only the name *S. drymarioides*, it could serve as a type. A more appropriate choice may be the original drawing for fig. 173 (Praeger 1921a) (RIA mss no. 137); dated 10 July 1917, it was prepared at Glasnevin presumably from a living plant.

SEMPERVIVUM

Although Praeger's monograph on *Sempervivum* sens. lat. and several of his papers were illustrated with drawings, none of the original pen-and-ink drawings was found among the Praeger reliquiae in the Royal Irish Academy. In the case of *Sempervivum* spp. the option of selecting an original as a type specimen is not available, and it is probable that in most cases neotypes will be required; of course, the published illustrations are candidates for neotypes.

S. burchardii Praeger: Transactions of the Botanical

Society of Edinburgh 29, 202: 1925 [= *Aeonium x burchardii* (Praeger) Praeger]

There is no evidence in the protologue that Praeger saw or collected this taxon (now known to be a hybrid) during his 1924 visit to the Canary Islands; stating that 'Dr. Burchard cannot yet supply any information...' [my italics], Praeger indicated that Burchard had found this plant on Tenerife ('Valle de Masca, in montibus Teno') during January 1923.

Unless an herbarium specimen collected by Burchard and annotated by Praeger can be found, a neotype will be required (none was found or designated by Liu (1989)).

S. christii Praeger: Transactions of the Botanical Society of Edinburgh 29, 204: 1925 [= *Aeonium canariense* (L.) Webb & Berthel. var. *palmense* (Christ) Ho-Yih Liu]

Praeger, when treating this taxon as a species of *Sempervivum* provided the binomial *S. christii* as he could not use *Sempervivum palmense*. However his binomial is pre-dated by *Sempervivum x christii* Wolf (Bulletin des travaux de La Murithienne; société valaisanne des sciences naturelles fascs 16-18, 29: 1889; Wolf's name for a naturally occurring hybrid between *S. gaudinii* Christ (= *S. grandiflorum* Haw.) and *S. montanum* L. was published without a description (nomem nudum). Praeger (1932) proposed *Sempervivum propinquum* (see below) to replace his binomial *S. christii*.

Praeger's *S. x christii* may be invalid if Wolf's binomial was subsequently validly published - it then becomes a later homonym (Art. 64.1) (cf. Praeger 1932: 79, 136) - but I have not made an exhaustive search of Swiss and Italian floras for it.

S. domesticum Praeger: Journal of Botany 65, 212: 1927 (= *S. tortuosum* DC. non Ait.) [= *Aichryson x domesticum* (Praeger) Praeger: Journal of Botany 65, 212: 1927; = *A. x aizoides* (Lam.) E. C. Nelson]
Praeger proposed this name for a plant incorrectly called *Sempervivum tortuosum*; in the same paper, Praeger proposed the combination in *Aichryson*. However, an earlier epithet, Lamarck's *S. aizoides* (Encyclopédie methodique, botanique 3, 290: 1789) which Praeger cited as a synonym for *Aichryson x domesticum*, was available (see above under *Aichryson*).

S. gomerense Praeger: Transactions of the Botanical Society of Edinburgh 29, 205-6: 1925 [= *Aeonium gomerense* (Praeger) Praeger]

This was seen by Praeger in 1924 on Gomera; no voucher specimen or contemporary illustration is extant, so a neotype will be required. Liu (1989) suggested that Praeger may have used cultivated material when describing the species.

S. kosaninii Praeger: Bulletin de l'institut et du jardin botaniques de l'université de Belgrade 1, 210: 1930

While Praeger appeared to cite a wild-collected specimen, in the prefatory remarks to his paper he clearly

stated that he had studied living specimens which had bloomed in 1929; the plants came from the 'Botanic Garden at Beograd when I visited it in 1926...' Kosanin gave Praeger the species and we must assume they were cultivated in Dublin. As no herbarium specimens, derived from cultivated materials and dating from 1929 appear to be extant, the drawings published in the paper may have to serve as a type. The original drawings for this species and *S. macedonicum* (see below) are not among Praeger's papers.

S. lancerottense Praeger: Transactions of the Botanical Society of Edinburgh 29, 207: 1925 [= *Aeonium lancerottense* (Praeger) Praeger]

Praeger found this on Lanzarote during his 1924 visit to the Canary Islands; no voucher specimen or contemporary illustration is extant so a neotype will be required.

S. x lineatum N. E. Br. ex Praeger: Proceedings of the Royal Irish Academy 38 B 1, 10: 1928

S. x lineatum A. Berger ex Praeger: Proceedings of the Royal Irish Academy 38 B 1, 10: 1928

Both these names are *nomina nuda*, manuscript names published by Praeger above commentaries on an herbarium specimen annotated by N. E. Brown (K), and a plant Praeger received from La Mortola.

S. macedonicum Praeger: Bulletin de l'institut et du jardin botaniques de l'université de Belgrade 1, 212: 1930

The comments concerning *S. kosaninii* apply equally to this species; no specimens nor original drawings are among Praeger's reliquia in Dublin institutions.

S. nobile Praeger: Transactions of the Botanical Society of Edinburgh 29, 208-9: 1925 [= *Aeonium nobile* (Praeger) Praeger]

Praeger's description of *Sempervivum nobile* was prepared from living plants seen in 1924 on Palma during his visit to the Canary Islands. No specimens gathered in 1924 are known to be extant, and there is no drawing in RIA; a neotype will be required.

Praeger (1929) recounted how he collected this plant: 'When I first saw it... Dr Burchard, who was with me... discouraged me from climbing the rocks to obtain specimens. It was only when I brought a plant down to the road below that he recognized it as something unfamiliar'.

That statement must be read as indicating that he collecting at least one living specimen.

In the protologue Praeger noted that 'no flower was obtained...' but he was able to describe the general form of the inflorescence and, in detail, the individual fruits because he saw and presumably collected at least part of an infructescence. Some fragments of an infructescence of *Aeonium nobile* were found among Praeger's papers in the Royal Irish Academy, and have been transferred to the herbarium in the National Botanic Gardens, Glasnevin (see Collins 1985: 147 ('Contents of R.I.A. trunk no. 8: 54')). These fragments, collected in Barranco de Los Gomereros, Palma, during March 1928, are only a part of Praeger's collection on

that occasion - there are duplicates in BM and K (2 sheets) (Liu 1989: 71). Praeger's protologue of this taxon was published in 1925, so these are not type specimens although they were placed loosely in a type cover at K.

A. nobile bloomed in the Royal Botanic Garden, Edinburgh, during 1927. Burchard (1928) obtained flowers at the type locality in June 1928.

Praeger first made the combination *Aeonium nobile* in *Journal of Botany* 66, 221 (1928); this is valid (Art 33.2) even though he did not cite the basionym or provide a bibliographic reference. Standard sources (e.g. Liu 1989) erroneously cite Praeger (1929) as the place wherein the new combination was made.

S. propinquum Praeger: *Sempervivum*, 136: 1932 (= *S. christii* Praeger) [= *Aeonium canariense* (L.) Webb & Berthel. var. *palmense* (Christ) Ho-Yih Liu]

Praeger added this gloss under a summary of the synonymy of *Aeonium palmense*:

'In renaming... *S. Christii*, I overlooked the pre-occupation of this designation by a European hybrid. I now suggest for it, if placed under *Sempervivum*, the name *S. propinquum*.'

Liu (1989) did not include the binomial in his synonymy of *Aeonium canariense* var. *palmense*.

S. pulvinatum (Burchard) Praeger: Transactions of the Botanical Society of Edinburgh 29, 214: 1925 (basionym *Aichryson pulvinatum* Burchard: Repertorium speciesum novarum regni vegetabilis 13, 57: 1913) [= *Aichryson tortuosum* (Ait.) Webb & Berthel.]

Both Burchard's binomial and Praeger's combination within *Sempervivum* are valid, although under current taxonomic treatments of *Sempervivum* and *Aichryson*, these names are superfluous.

S. valverdense Praeger: Transactions of the Botanical Society of Edinburgh 29, 211: 1925 [= *Aeonium valverdense* (Praeger) Praeger]

There is no extant herbarium specimen from Hierro collected by Praeger in 1924 in DBN, nor is there any original drawing in RIA. Liu (1989) designated a specimen in K, dated February 1925 as a lectotype but in my opinion this cannot constitute original material (Art. 7.4.) although it may have been gathered from a cultivated specimen originally collected by Praeger in 1924; this might be designated as a neotype. Another specimen, labelled 'root from Valverde, Hierro, ex hort. R. L. Praeger June 1926' (K), would be an equally suitable candidate as a neotype.