



Index seminarum

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Index Seminum

*Utrecht University
Botanic Gardens
The Netherlands*



Universiteit Utrecht

No. 57-2015-16

UNIVERSITEITSBIBLIOTHEEK UTRECHT



4160 2917

Utrecht University
Botanic Gardens

P.O. Box 80.162
3508 TD Utrecht
The Netherlands

Index Seminum No. 57 - 2015-16

Internet Orders: <http://botgard.bio.uu.nl>
(including many pictures)

In response to the Convention on Biological Diversity (CBD), the Utrecht University Botanic Gardens supplies seeds and other plant material in accordance with the Code of Conduct for Botanic Gardens and similar collections. We are IPEN-member (International Plant Exchange Network) and can exchange material with other IPEN-members without bi-lateral agreements. For a list of current IPEN-members check the web-site of BGCI (Botanic Gardens Conservation International).

http://www.bgci.org/resources/History_of_IPEN/

Non IPEN-members have to return the "*Agreement on the supply of living plant material for non-commercial purposes leaving the International Plant Exchange Network (IPEN version 2b)*" which must be signed by **authorized staff**. This agreement can be made valid for 1, 3 or 5 years and is printed on the back-side of the order form.

Notes on ordering:

- Correspondents are asked to use the order-form provided, **which must be signed by authorised staff**, and send it to the address mentioned upon it. Furthermore, they should check with their own authorities concerning import-regulations and include any necessary permits with their order.
- The first distribution will be shortly after **March 1, 2016**. Many seeds of limited amount will be out of stock shortly afterward, so please order before this date. Requests, with a maximum of 25 packets will be handled in sequence of entry.

Staff

General Department:

Ing. Arie Oudijk,
General Director *A.Oudijk@uu.nl*

Drs. Akkie J. Joosse,
Communications Officer *A.J.Joosse@uu.nl*

Mrs. Petra vanden Beemt
Secretary *P.M.J.vandenbeemt@uu.nl*

Curators' Department:

Drs. Hans Persoon *J.G.M.Persoon@uu.nl*
Curator and Deputy Director

Drs. Eric J. Gouda *E.J.Gouda@uu.nl*
Curator and Research

Mr. Lennart Everts *M.L.Everts@uu.nl*
Assistant

Educational Department:

Drs. Nick.A.J.Meijdam *N.A.J.Meijdam@uu.nl*
Education officer

Ir. Ruth C. de Visser-de Jonge, *R.C.deVisser@uu.nl*
Coordinator Theme Garden Project

Technical/collecting staff (Utrecht)

Gerard van Buiten *G.vanBuiten@uu.nl*
Hortulanus

Roel Vonk *R.Vonk@uu.nl*

Ton G. Werensteijn *A.G.Werensteijn@uu.nl*

Fred H.J. Siesling *F.H.J.Siesling@uu.nl*

Garden location

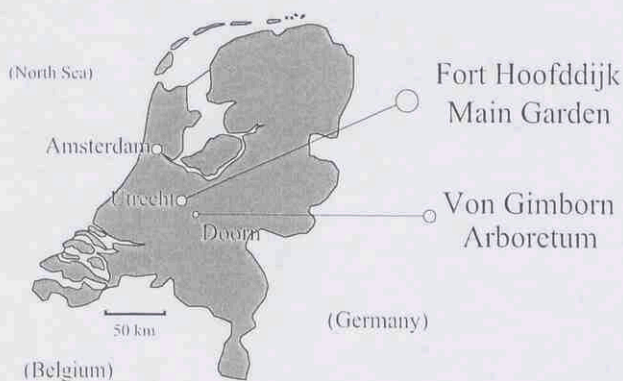
- Utrecht: Fort Hoofddijk (University Centre)

Further (collecting) gardeners for Utrecht: G.E. Bruinenberg, I. van Capel, A. Jacobs, W. Jansen, A.A. Jongerius, R. Koops, , H.W.M. Noordman, H.B. Spoor and B. Valstar.

Situation and climate:

Geographical position of the Main Garden	52° 06' N : 5°11' E
Altitude	2 m above sea level
Geographical position of the Von Gimborn Arboretum	52° 00' N : 5°20' E
Altitude	3 m above sea level
Mean daily minimum of the coldest month	- 0,6°C
Mean daily maximum of the warmest month	+ 21,6°C
Highest temperature	+ 36,8°C *
Lowest temperature	- 24,8°C *
Average rainfall	803 mm

*Monitored since 1849



From the Curator's Department

With the presentation of this Index Seminum No. 57-2015-16 we take the opportunity, as usual, to inform you on the latest developments in Utrecht University Botanic Gardens.

In general, the activities of the curators are divided in the following main groups:

- Hans Persoon [HP]: Systematic Garden, Theme Garden, Central Route and student courses.
- Eric Gouda [EG]: Greenhouse Collections (focal point: Neotropical Collections) and the Rock Garden

Specializations:

In the framework of the National Plant Collection (NP), Utrecht University Botanic Gardens are maintaining specializations on the following groups and taxa:

- Flora of the Neotropics: [EG] Flora of the Guianas, with special emphasis on:
Bromeliaceae *Orchidaceae* *Costaceae*

- *Annonaceae* (Research Collection) [EG]
- *Cecropiaceae* [EG]
- *Rhipsalis* [EG]
- *Aeonium* [EG]
- Alpines [EG]
- *Penstemon* [EG]
- *Eriogonum* [EG]
- selected woodland plants (*Arisaema*, *Asarum*, & *Trillium*) [EG]

These specializations are given extra attention regarding verification, nomenclature, wild source material, etc.

We are especially interested in material from natural sources of the groups and taxa mentioned above. We seek cooperation with gardens with identical specializations. If you are interested, please contact us and we will provide additional information.

Bromeliaceae:

Study and development in the *Bromeliaceae* collection has several focus points. In the first place the *Bromeliaceae* research project for the "Flora of the Guianas" and for the Flora of Ecuador: we try to grow all possible species from this area. Beside this, the *Tillandsioideae* collection (as Subfamily of the *Bromeliaceae*) is part of the National Plant Collection (NP). The genus *Tillandsia* of the Andian countries (especially Bolivia & Equador) has a special attention because of the various taxonomic problems on species level in these areas. To increase the general knowledge about the recognised genera in the Family we try to grow representatives from all genera. It is evident that our Bromeliaceae Collections will increase dramatically in both size and quality.

Arisaema:

The last few years we have been very active with this group, increasing the number of wild collected species in the collection. Some areas, like the Peat Garden, have been improved to grow more Arisaemas. International contact with various *Arisaema* (*Araceae*) specialists caused considerable improvement of the collection.

Last but not least, the living collections have been enriched this year. Many new accessions from natural sources replaced accessions from cultivated origin, as part of the long-term collection strategy to replace plants of cultivated origin for wild-collected stock.

Codes used

Verification:

The seeds in this list have been taken from verified plants and only if we were reasonably sure that cross-pollination with related species would be unlikely.

Verification codes used:

- 0= not been determined by any authority;
- 1= determined by comparison with other named plants;
- 2= determined by a taxonomist or other competent person;
- 3= determined by a specialist (taxonomist working on that group)

Explanation of provenance codes of the plants:

- W=** Accession of wild source (treat as 'Z' because the donor plant is cultivated in our B.G., except W*, which is wild collected seed, distributed as such.)
- Z=** from a wild source plant in cultivation.
- G=** Garden origin.

IPEN-Number:

The first two positions are the iso-code of the country of origin. xx means: country of origin unknown.

The next position is a digit meaning: special restrictions (1) or not (0).

The next position is the abbreviation of the garden introducing the material in IPEN (in this seed-list only u).

The rest consists of the internal accession number:

The first four digits of it indicate the year of registration, (1900 = unknown year of entry).

The next two characters are coding for the garden location or specific group of plants: **GR**=Green houses; **BL**=Rock Garden; **ZG**=Orig. Von Gimborn Arboretum; **RD**=Woody Plants; **SL**= Seedlist only; **ZE**=Annuals and Biennials; **ZS** and **ZB**= Perennials.

The other five digits are a sequence number within a year.

The IPEN-number as a whole stays attached to the accession, wherever it may go, so that it is always possible to trace back its origin.

The * at the end of the description is followed by the seed-list collecting year.

Aceraceae

1. 3W *Acer tataricum* ssp. *ginnala* (Maxim.)Wesm.
[IPEN kr0u-1983RD00272] South Korea , Republic of
Korea, Chungchong Pukto Prov., Songnisan National
Park, south side valley between two mts; 82-10-14. ,
Coll.: B.E.C. 292 *2015

Agavaceae

2. 2G *Doryanthes palmeri* A.W.Hill
[IPEN xx0u-1973GR00602] *2013
3. 2G *Phormium tenax* J.R. & G.Forst.
[IPEN xx0u-1973GR00695] *2013

Apiaceae

4. 1W *Eryngium yuccifolium* Michx.
[IPEN us0u-2002BL00542] United States,
Michigan , Ingham county, MSU Prairie Planting,
naturalized area, dry. , Alt.: 256 m. 04/10/2001 *2015

Araceae

5. 3W *Arisaema ciliatum* var. *liubaense* Gusman & Gouda
[IPEN cn0u-1989BL00077] China, China
South-Central, Sichuan , Liuba , Alt.: 3600 m. , Coll.:
Teune, C. 369 14/09/1981 *2014
6. 2G *Arisaema ciliatum* var. *liubaense* Gusman & Gouda
[IPEN xx0u-1987BL00172] *2015
7. 2G *Arisaema tortuosum* (Wall.) Schott
[IPEN xx0u-1997BL00427] *2015

Aristolochiaceae

8. 2Z *Aristolochia littoralis* Parodi
[IPEN sv0u-1992GR00988] El Salvador , Acajutla.
*2013
9. 2W *Aristolochia trilobata* L.
[IPEN gf0u-1992GR00904] French Guiana , Sa l. ,
Coll.: Mori, S. 22351 *2013

Asteraceae

10. 2Z *Anthemis tinctoria* L.
[IPEN tr0u-1994BL00525] Turkey,
Turkey-in-Europe , Turkey, Ala Dag. , Alt.: 1800 m. ,
Coll.: Böhme, G. s.n. *2015
11. 2Z *Aster pyrenaicus* Desf. ex DC.
[IPEN fr0u-2002BL00804] France , Dept. Haut
Pyrenees, Centre d'Ecologie, Montagnarde, Gabas ,
Coll.: Ern,H. 7249 *2015
12. 1Z *Berkheya cirsiifolia* (DC.) Roessler
[IPEN ZA-0-IB-008865] South Africa *2015
13. 1Z *Berkheya purpurea* Benth., Hook.f. & Mast.
[IPEN za0u-2005BL01021] South Africa ,
Drakensberge *2013
14. 2Z *Buphthalmum salicifolium* L.
[IPEN de0u-1988BL00148] Germany, Riedenburg
(Althm hltal), unterhalb des Dieterzhofener Berges
bei Riedenburg. *2015
15. 2Z *Leontodon hispidus* L.
[IPEN gr0u-2008BL00482] Greece , Konitsis , Coll.:
KIT Tan 7784 *2015

Berberidaceae

16. 2W *Vancouveria hexandra* (Hook.) C.Morren & Decne.
[IPEN us0u-1996BL00784] United States, Oregon ,
Forest Park/Hoyt Arboretum. , Alt.: 240 m. *2015

Betulaceae

17. 2W *Betula lenta* subsp. *lenta*
[IPEN ca0u-1986RD00002] Canada, Ontario ,
Niagara Reg., Louth Tp., only verified population in
Canada, steep slope above Lake Ontario; 1985. , Alt.:
88 m. *2015

Brassicaceae

18. 2W *Alyssoides utriculata* (L.) Medik.
[IPEN xx0u-2014BL00177] Caucasus , Coll.: Tyge
W. Böcher *2015
19. 2W *Alyssoides utriculata* (L.) Medik.
[IPEN ch0u-1964BL00214] Switzerland , near
Martigny, during excursion; 1958. *2015

Bromeliaceae

20. 3W *Aechmea angustifolia* Poepp. & Endl.
[IPEN pe0u-2011GR00868] Peru , without locality ,
Coll.: Karel Knize (Peru) s.n. *2013
21. 3W *Aechmea angustifolia* Poepp. & Endl.
[IPEN ec0u-2012GR00300] Ecuador , Alt.: 1154 m. ,
Coll.: Jan Verkade *2013
22. 2W *Aechmea aquilega* var. *aquilega*
[IPEN sr1u-1999GR00107] Suriname , Parimaribo
(Suriname Riv.) , Coll.: Gouda, E.J. 99-41 1999
*2014
23. 3Z *Aechmea coelestis* var. *coelestis*
[IPEN br0b-1850397] Brazil, Brazil South, Santa
Catarina , Joinville near Campo Alegre, Rio de Julio ,
Alt.: 750 m. , Coll.: Leme, E. 1650 *2015
24. 3W *Aechmea coelestis* var. *coelestis*
[IPEN br0u-1997GR00639] Brazil, Brazil Southeast,
Rio de Janeiro , Teresopolis , Coll.: Leme, E. 1922
*2015

Bromeliaceae (cont.)

25. 3W *Aechmea nudicaulis* var. *nudicaulis*
 [IPEN ve0u-2005GR01419] Venezuela , N.
 Venezuela , Coll.: Peter Bak s.n. 2003 *2014
26. 3Z *Aechmea recurvata* var. *recurvata*
 [IPEN py0u-2009GR00305] Paraguay , Alto Parana,
 Itabo *2015
27. 3W *Aechmea setigera* Martius ex Schultes f.
 [IPEN gf0u-1998GR00682] French Guiana, Mataroni
 (Timeberg); 98-03-23 , Coll.: Moonen, J.(FG) 201
 *2015 "
28. 3W *Aechmea* x '*pseudonudicaulis*' Leme
 [IPEN br0u-2009GR00733] Brazil , Coll.: Alvim
 Seidel (Brazil) 1047 *2015
29. 3G *Billbergia zebrina* (Hernert) Lindl.
 [IPEN xx0u-2006GR00673] *2015
30. 3W *Catopsis floribunda* L.B.Sm.
 [IPEN NL-0-U-1996GR00401] Netherlands Antilles,
 St.Eustatius , from edge of the Quill. s.n. *2014
31. 3W *Fosterella penduliflora* (C.H.Wright) L.B.Sm.
 [IPEN bo0u-1996GR00123] Bolivia , near
 Lawuinillas, Monte Agudo. , Coll.: Gouda, C.S.
 95-32b *2014
32. 3G *Guzmania monostachia* var. *alba* Ariza-Julia
 [IPEN XX-O-FRP-17793] *2013
33. 3Z *Guzmania roezlii* (E.Morren) Mez
 [IPEN xx0u-2004GR01095] Ecuador , Alt.: 500 m. ,
 Coll.: Rauh, W. 34701 08/1973 *2014
34. 3W *Pitcairnia altensteinii* (Link, Klotzsch & Otto) Lem.
 [IPEN ve0u-2006GR01032] Venezuela ,
 N.-Venezuela, rancher station National Park Henri
 Pittier near Aragua and Carabobo *2013
35. 3W *Pitcairnia aureobrunnea* Rauh
 [IPEN EC-1-U-2006GR00038] Ecuador, Prov. El
 Oro , Road Passaje - Catamayo (not main road) , Alt.:
 1020 m. , Coll.: E.J.Gouda & J.Manzanares 05-29
 23/11/2005 *2015

Bromeliaceae (cont.)

36. 3W *Pitcairnia caricifolia* Mart.ex Schult.f.
[IPEN ve0u-2005GR01552] Venezuela , Ilu (weide)
Tepui *2014
37. 3W *Pitcairnia flammea* var. *floccosa* L.B.Sm.
[IPEN br0u-2012GR00681] Brazil, Brazil Southeast,
Rio de Janeiro , mun. Campos, Morro do Côco , Alt.:
150 -250 m. , Coll.: Walter Till 11140 04/02/1995
*2015
38. 3Z *Pitcairnia flammea* var. *glabrior* L.B.Sm.
[IPEN br0u-2001GR00086] Brazil , Teresopolis
*2014
39. 3W *Pitcairnia flammea* var. *roezlii* (E.Morr.) L.B.Sm.
[IPEN br0u-2000GR00771] Brazil, Brazil Southeast,
Guanabara , Rio de Janeiro City , Coll.: Leme, E. s.n.
*2014
40. 3W *Pitcairnia grafii* Rauh
[IPEN ve1heid-102579] Venezuela , E Tachira, SW
of El Capacho, down to San Antonio , Alt.: 1000 m. ,
Coll.: Graf, H. Venezuela s.n. (R64680) 27/02/1993
*2015
41. 3Z *Pitcairnia hitchcockiana* L.B.Sm.
[IPEN EC-0-U--2006GR01008] Ecuador , Mera ,
Alt.: 1300 m. , Coll.: Fläschendräger, A. s.n.
20/04/1995 *2015
42. 3Z *Pitcairnia imbricata* (Brongn.) Regel
[IPEN gt0u-2005GR00894] Guatemala , 20 km from
Guatemala City towards el Rancho , Alt.: 800 m. ,
Coll.: Radtke/Moldenhauer 183 *2015
43. 3Z *Pitcairnia imbricata* (Brongn.) Regel
[IPEN GT-0-B-2794993] Guatemala , dept.
Guatemala, CA9 to El Rancho, 24 km behind ciudad
de Guatemala , Alt.: 750 m. , Coll.: Radtke &
Moldenhauer 167 *2013

Bromeliaceae (cont.)

44. 3W *Pitcairnia imbricata* (Brongn.) Regel
[IPEN GT-0-B-2794993] Guatemala , dept.
Guatemala, CA9 to El Rancho, 24 km behind ciudad
de Guatemala , Alt.: 750 m. , Coll.: Radtke &
Moldenhauer 167 *2014
45. 3G *Pitcairnia maidifolia* (C.Morren) Decne.
[IPEN XX-0-U-2012GR00709] Colombia , Dagua ,
Alt.: 1400 m. , Coll.: Piet van Beest (BCG) s.n. *2013
46. 3W *Pitcairnia megasepala* Baker
[IPEN CO-0-U-2012GR00707] Colombia , Dagua ,
Alt.: 1000 m. , Coll.: Piet van Beest (BCG) *2015
47. 3W *Pitcairnia pulverulenta* Ruiz & Pav.
[IPEN PE-0-U-2010GR00611] Peru, Reg. Junin ,
Road NW. of San Ramon, to Pampa Hermosa Lodge
Alt.: 922 m. , Coll.: Gouda, E.J. & R. 10-09
17/07/2010 *2014
48. 3W *Pitcairnia villetaensis* Rauh
[IPEN co0u-2000GR00646] Colombia , Bogota -
Villeta , Alt.: 900 m. , Coll.: Rauh, W. 37089 *2013
49. 3W *Pitcairnia yaupi-bajaensis* Rauh
[IPEN pe0u-2010GR00625] Peru, Pasco , Road SW.
of Oxapampa to Cerro Ulcumano , Alt.: 2196 m. ,
Coll.: Gouda, E.J. & R. 10-23 22/07/2010 *2015
50. 3G *Racinaea fraseri* (Baker) Spencer & L.B.Sm.
[IPEN xx0u-2007GR01052] *2014
51. 3W *Racinaea rothschuhiana* (Mez) M.A.Spencer & L.B.Sm.
[IPEN CR-0-U-2012GR00292] Costa Rica *2013
52. 3W *Tillandsia bartramii* Elliott
[IPEN MX-0-U-2000GR00733] Mexico, S.L.Potosi. ,
Coll.: Ehlers, Renate EM850301 *2015
53. 3W *Tillandsia bartramii* Elliott
[IPEN mx0u-2000GR00736] Mexico , (Ver.?),
Cordoba. , Coll.: Ehlers, Renate EM79759 *2015

Bromeliaceae (cont.)

54. 3W *Tillandsia caliginosa* W.Till
[IPEN bo0u-1998GR01073] Bolivia , near
Cochabamba or Sucre?; nov.1989. , Coll.: Gouda,
C.S. s.n. *2015 "
55. 3W *Tillandsia capillaris* Ruiz & Pav.
[IPEN BO-0-U-1999GR01036] Bolivia , (or Peru),
without locality. EG-251 *2015
56. 3W *Tillandsia chapalillaensis* Ehlers
[IPEN mx0u-2004GR00599] Mexico, Mexico
Southwest, Nayarit , near Chapallila, South of Tepic
15, km 18/19 , Coll.: Ehlers, Renate EM041501
18/02/2004 *2015
57. 1W *Tillandsia chapalillaensis* Ehlers
[IPEN ME-0-U-2000GR00731] Mexico, Mexico
Southwest, Nayarit , near Chapallila, South of Tepic
*2014
58. 3Z *Tillandsia chapalillaensis* Ehlers
[IPEN mx0u-1997GR00664] Mexico *2015
59. 3W *Tillandsia extensa* Mez
[IPEN PE-1-HEID-130109] Peru , Cochabamba, on
the ground , Alt.: 3400 m. , Coll.: Rauh, W. 20559
27/08/1967 *2014
60. 3W *Tillandsia juncea* (Ruiz & Pav.) Poir.
[IPEN MX-0-U-2004GR00692] Mexico, Mexico
Northeast , Hidalgo, Tamaulipas or Coahuila. *2015
61. 3G *Tillandsia myosura* Griseb. ex Baker
[IPEN XX-0-U-1999GR01403] *2015
62. 3W *Tillandsia polystachia* (L.) L.
[IPEN mx0u-2007GR01372] Mexico , Cd. Valles to
Cd.Maute, Near Gustavo Garmendia 1985 *2015
63. 2W *Tillandsia schiedeana* Steud.
[IPEN hn0u-1994GR02192] Honduras , without
locality. *2014
64. 3G *Tillandsia straminea* Humb., Bonpl. & Kunth
[IPEN xx0u-1998GR01773] *2014
65. 3G *Vriesea saundersii* (Carr.) E.Morr. ex Mez
[IPEN xx0u-2006GR01612] *2013

Bromeliaceae (cont.)

66. 3W *Werauhia gigantea* (Mart. ex Schult.f.) J.R.Grant
[IPEN CO-0-U-2014GR00538] Colombia ,
Amazonia, Letitia, Choco Dagua , Coll.: Piet van
Beest (BCG) 2011 *2014

Cactaceae

67. 3W *Rhipsalis baccifera* (J.Mill.) Stearn
[IPEN sr1u-1975GR00357] Suriname , no further
details! , Coll.: Lindeman, J.C. 09/1975 *2015
68. 1G *Rhipsalis baccifera* subsp. *horrida* (Baker) Barthlott
[IPEN xx0er-207-607] *2015

Campanulaceae

69. 2Z *Asyneuma canescens* (Waldst. & Kit.) Griseb. & Schenk
[IPEN gr0u-2008BL00486] Greece , Mt. Timfrestos
*2015
70. 2W *Lobelia thapsoidea* Schott
[IPEN br1u-2009GR01315] Brazil, Brazil Southeast,
Espirito Santo , Santa Teresa , Coll.: Maas, P.J.M. et
al. s.n. 04/05/2009 *2013

Capparaceae

71. 2W *Cleome viridiflora* Schreb.
[IPEN bo1u-1999GR00209] Bolivia , Coll.: Maas,
P.J.M. et al. 8803 *2013

Caprifoliaceae

72. 2W *Scabiosa cinerea* subsp. *cinerea* Lapeyr. ex Lam.
[IPEN it0u-1994BL00090] Italy , Puglia,
Promontorio del Gargano, NE Coast, ca. 2 km. ESE
Coppo dei Fossi, Macchie , Alt.: 150 -200 m. , Coll.:
Gigerl, P. 09/1992 *2009

Caryophyllaceae

73. 2Z *Dianthus gallicus* Pers.
[IPEN fr0u-1992BL01341] France , Morbihan. *2015
74. 2Z *Dianthus subacaulis* subsp. *subacaulis*
[IPEN fr0u-1994BL01124] France , Hérault,
Felines-Minervois *2015
75. 1W *Drypis spinosa* L.
[IPEN hr0u-2005BL00106] Croatia , Velebit
Bot.Garden , Coll.: S. Kovačela s.n. 10/09/2002
*2010

Crassulaceae

76. 3W *Aeonium haworthii* Salm-Dyck ex Webb & Berthel.
[IPEN es0u-1992HR31893] Spain, Canary Is.,
Tenerife , Teno region, NE of Portela Alta, along the
road , Alt.: 690 m. , Coll.: Thiede 04/09/1989 *2012
77. 3W *Aeonium arboreum* var. *rubrolineatum* (Svent.) H.-Y.Liu
[IPEN es0u-1992HR31856] Spain, Canary Is.,
Gomera , Barranco del Agua, along the road from Las
Hayas to El Cercado , Alt.: 850 m. , Coll.:
Poppendieck 89-7 20/07/1989 *2012
78. 3W *Aeonium sedifolium* (Webb ex Bolle) Pitard & Proust
[IPEN esOu-1992HR31479] Spain, Canary Is.,
Tenerife , Teno region, exact provenience unknown ,
Coll.: H.'t Hart (also HTH) HRT-31479 *2012
79. 1W *Sedum ewersii* Ledeb.
[IPEN in0u-2006BL00191] India, Himachal Pradesh
Borderlands of W.Tibet (from Lahoul), Chandra
Valley , Alt.: 4450 m. , Coll.: Chadwell, C. et al.
5288 2005 *2015
80. 3W *Sedum obtusifolium* C.A.Mey.
[IPEN tr0u-1993BL00010] Turkey , Prov. Bolu, 20
km S. of Gerece,, W. of the road to Kizilcahaman. ,
Alt.: 1350 m. , Coll.: Alpınar, K. & H.'t Hart 33
*2015

Crassulaceae (cont.)

81. 2W *Sempervivum tectorum* subsp. *tectorum*
[IPEN fr0u-1987BL00178] France , Lautaret. 1986
*2015

Cupressaceae

82. 2W *Cupressus torulosa* D.Don
[IPEN np0u-2002RD00103] Nepal , Himalaya.
Mustang, Tukuhe area, Forest zone. , Coll.:
Chadwell, C. et al. 4046 2001 *2011

Geraniaceae

83. 1W *Pelargonium alchemilloides* (L.) L'H,r.
[IPEN za0u-2011ZS00378] South Africa , Balloch,
Balloch Farm (near S border of Lesotho) *2015

Iridaceae

84. 2Z *Gladiolus palustris* Gaud.
[IPEN es0u-1996BL01038] Spain , probably from
N.Spain, without details. , Coll.: Gouda, C.S. s.n.
*2015
85. 2Z *Iris orientalis* Mill.
[IPEN tr0u-1995BL00188] Turkey , Prov. Samsun,
near Ladik. *2015
86. 2W *Iris sintenisii* subsp. *sintenisii* Janka
[IPEN bg0u-2003BL01006] Bulgaria , Black Sea
coast, Perla N of Primorsko village. , Alt.: 2 m. *2015
87. 2Z *Iris sintenisii* subsp. *sintenisii* Janka
[IPEN bg0u-1995BL00180] Bulgaria , Eastern
Sredna Gora Mts , Coll.: Sterz *2015

Lamiaceae

88. 1Z *Nepeta sibthorpii* Benth.
[IPEN gr0u-2000BL01105] Greece , Peloponnes,
Nomos Arkadias, Mandinia, Kardara/ Mt.Menalon. ,
Alt.: 820 m. M 5869 *2014
89. 1Z *Salvia dichroantha* Stapf
[IPEN tr0u-2006BL01620] Turkey KB 119 *2015
90. 2Z *Sideritis syriaca* L.
[IPEN gr0u-2008BL00498] Greece , Euboea *2014
91. 2W *Stachys pradica* (Zanted.) Greuter & Pignatti
[IPEN ch0u-1988BL00339] Switzerland ,
Switzerland, Valais, Gd. St. Bernard. , Alt.: 2300 m.
*2014

Liliaceae

92. 2Z *Allium angulosum* L.
[IPEN fr0u-1995BL00214] France , Presvosges.
*2015
93. 1W *Disporum smithii* (Hook.) Piper
[IPEN us0u-1996BL00788] United States, Oregon ,
Forest Park/Hoyt Arboretum. , Alt.: 230 m. *2015
94. 2W *Erythronium dens-canis* L.
[IPEN fr0u-1998BL01374] France , Ain, mnt. du
Vuache (environ au sommet). , Alt.: 1100 m. *2015
95. 1G *Helonias bullata* L.
[IPEN xx0u-1998BL00254] *2015
96. 0G *Lilium monadelphum* M.Bieb.
[IPEN xx0u-2013BL00790] *2013
97. 2W *Maianthemum racemosum* (L.) Link
[IPEN us0u-1999BL00238] United States, Michigan ,
Ingham County, Mesic S Forest; 98-09-23. , Alt.: 265
m. *2015
98. 2G *Trillium albidum* Freeman
[IPEN xx0u-1990BL01147] *2015

Liliaceae (cont.)

99. 2W *Trillium flexipes* Raf.
[IPEN us0u-2008BL01795] United States, Tennessee
*2015
100. 2U *Trillium grandiflorum* (Michx.) Salisb.
[IPEN xx0u-2002BL00679] *2014
101. 2G *Trillium kurabayashii* Freeman
[IPEN xx0u-2000BL00131] *2015
102. 2G *Veratrum album* L.
[IPEN xx0u-1965BL00228] *2015

Menispermaceae

103. 2W *Menispermum canadense* L.
[IPEN us0u-1997RD00161] United States, Michigan
Ingham County, Mesic Southern Forest, Sitename:
Sanford Woodlot, coll.: 96-10-16. , Alt.: 253 m.
*2010

Onagraceae

104. 1G *Fuchsia boliviana* var. *boliviana*
[IPEN xx0u-2007GR00871] *2013
105. 3W *Fuchsia paniculata* Lindl.
[IPEN pa0u-1980GR00318] Panama, Panam ,
Chiriqui Mt.wood near Guadeloupe, 2 km N of Cerro
Punta. , Alt.: 1800 m. , Coll.: Maas, P.J.M. et al. 4985
21/10/1980 *2014

Paeoniaceae

106. 2Z *Paeonia obovata* Maxim.
[IPEN cn0u-2009BL01134] China , Coll.: Chen Yi
P-114 *2015

Papaveraceae

107. 2Z *Papaver spicatum* var. *spicatum*
[IPEN tr0u-1977BL00058] Turkey , no further details
! *2014

Plantaginaceae

108. 2W *Veronica spicata* subsp. *spicata*
[IPEN fr0u-2008BL00643] France , Lautaret , Alt.:
2000 m. *2015

Plumbaginaceae

109. 2G *Limonium minutum* (L.) Fourr.
[IPEN xx0u-1984BL00199] *2011

Polemoniaceae

110. 1W *Polemonium pauciflorum* S.Watson
[IPEN us0u-2009BL00514] United States, Arizona ,
Cochise Co. , Alt.: 2073 m. , Coll.: Alan Bradshaw
(Alplains) 70095.17 *2014

Ranunculaceae

111. 1W *Anemone rivularis* DC.
[IPEN xx0u-2004BL00172] Himalaya , NW. , Coll.:
Chadwell, C. et al. 4587 2003 *2015
112. 2W *Clematis songorica* var. *songorica* Hook. & Arn.
[IPEN mn0u-2010BL00552] China, Inner Mongolia
*2012

Rosaceae

113. 2W *Rosa arvensis* Huds.
[IPEN nl0u-1994RD00736] Netherlands, Prov.
Limburg , Epen, 'onderste bos' , Coll.: Kruit,
Leonieke *2015

Rubiaceae

114. 1W *Cephalanthus occidentalis* L.
[IPEN us0u-1994RD01206] United States,
Massachusetts , Hatfield, Holyoke. *2015

Saxifragaceae

115. 1G *Peltoboykinia watanabei* (Yatabe) Hara
[IPEN xx0u-2002BL00017] *2014
116. 2W *Saxifraga cherlerioides* var. *rebunshirensis* (Engl. & Irmsch.)
Hara
[IPEN jp0u-1997BL00485] Japan , Hokkaido, Mt.
Nishi-kumaneschiri-dake, Katoh-gun. *2015

Scrophulariaceae

117. 2W *Antirrhinum majus* subsp. *majus*
[IPEN it0u-2006BL00424] Italy , Mesina, Taormina
07/2001 *2011
118. 2W *Digitalis ferruginea* L.
[IPEN gr0u-2006BL00502] Greece, Peloponesos ,
Mt. Killini *2012
119. 2Z *Digitalis ferruginea* subsp. *ferruginea*
[IPEN tr0u-2000BL00393] Turkey , N.-Anatolia,
Bithynia: Ala-Dag, Kartalkaya 10 km before ski
station. , Alt.: 1600 m. *2011
120. 2W *Digitalis viridiflora* Lindl.
[IPEN bg0u-2002BL01044] Bulgaria , Eastern
Rodopi. , Alt.: 1700 m. 25503 2002 *2012
121. 1Z *Paulownia elongata* S.Y.Hu
[IPEN cn0u-2006RD00581] China , no further details
*2015
122. 2W *Penstemon barbatus* var. *barbatus*
[IPEN us0u-1996BL00222] United States, Oregon
*2015

Scrophulariaceae (cont.)

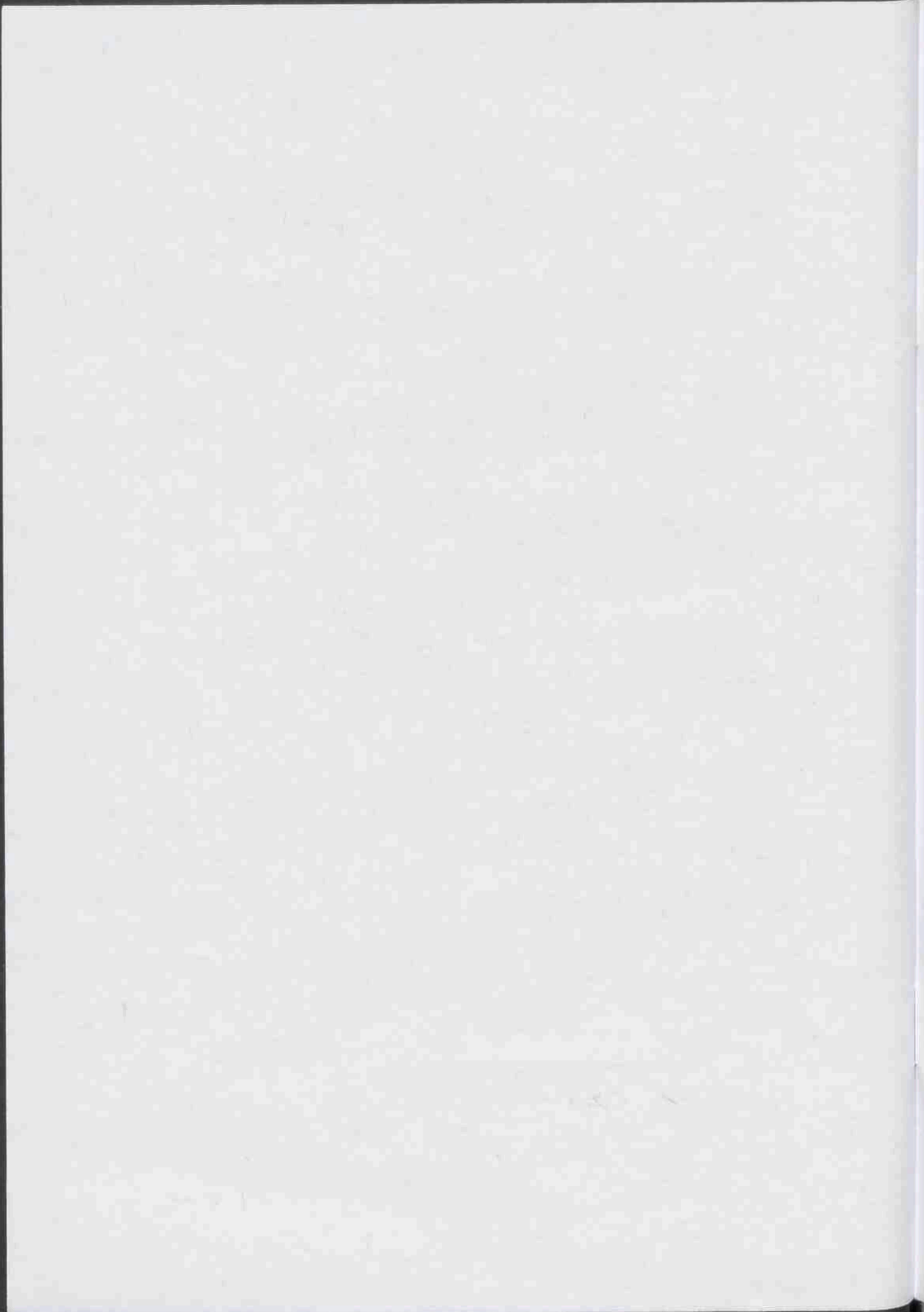
123. 1W *Penstemon cardwellii* T.J.Howell
[IPEN us0u-1991BL00700] United States, Oregon ,
Multnomah Co., no further details! , Alt.: 1080 m.
*2013
124. 2W *Penstemon digitalis* Nutt.
[IPEN us0u-1995BL01112] United States, Michigan ,
Ingham county, roadbank above seep , Alt.: 259 m.
*2015
125. 2W *Penstemon euglaucus* English
[IPEN us0u-1999BL01169] United States, Oregon ,
USA, Oregon, Santiam Pass. *2013
126. 2Z *Penstemon tubiflorus* Nutt.
[IPEN us0u-2011BL00995] United States, Missouri ,
Rock Hill *2013
127. 1Z *Phygелиus aequalis* Harv. ex Hiern
[IPEN za0u-2004BL01363] South Africa, Free State ,
Mt. Aux-Sources, Witsiehoek Mt. Resort , Alt.: 2300
m. , Coll.: Lesotho-Edinburgh-Gothenburg Botanical
Expedition 315 *2011

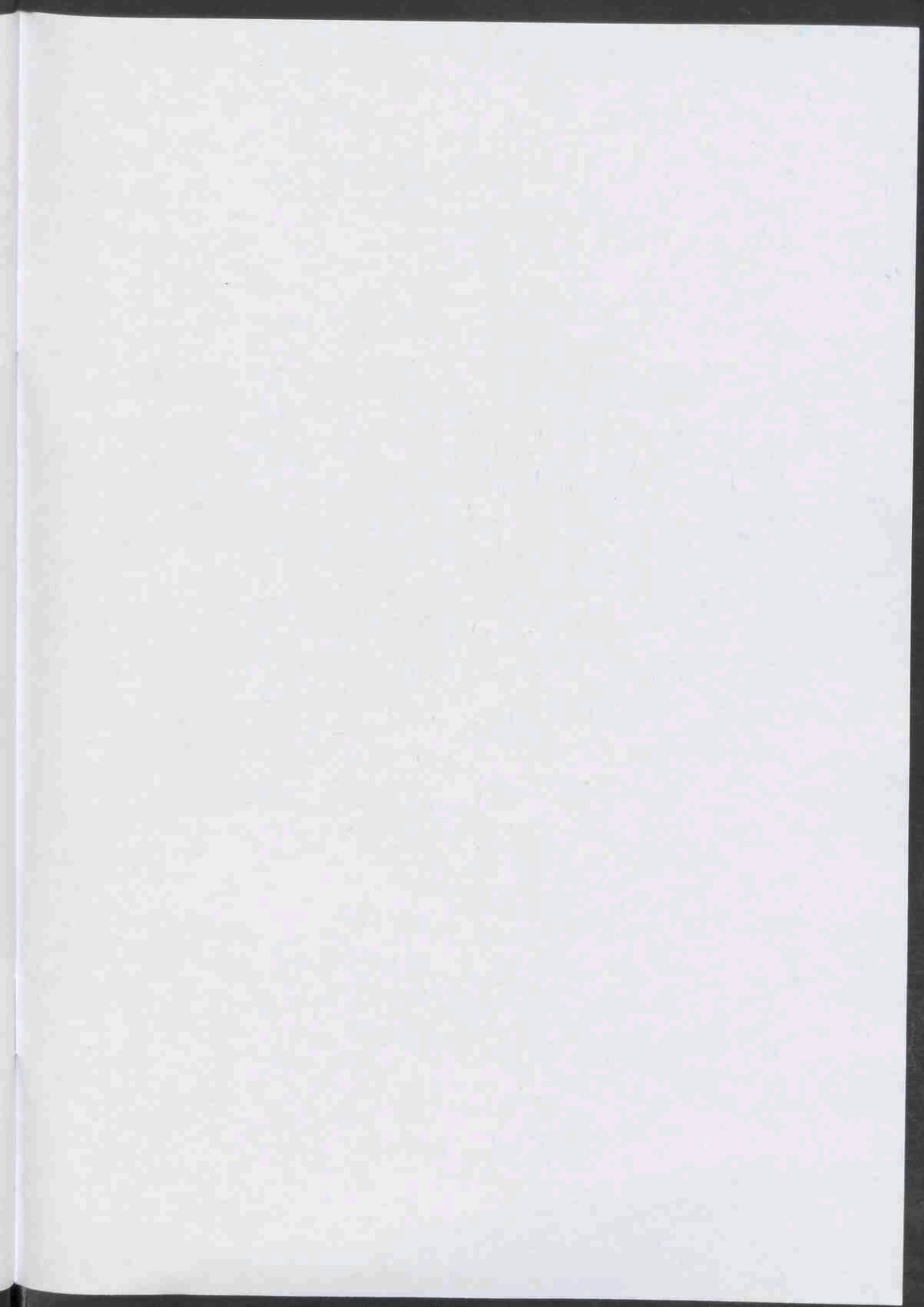
Sterculiaceae

128. 1G *Abroma augusta* (L.) L.f.
[IPEN xx0u-1987GR00028] *2013

Verbenaceae

129. 2G *Phyla nodiflora* (Kunth) Green
[IPEN xx0u-2008BL01557] *2013







the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million, and the number of people aged 75 and over has increased from 4.5 million to 6.5 million (Office for National Statistics 2000).

There is a growing awareness of the need to address the needs of older people, and the UK Government has set out a strategy for the 21st century in the White Paper on *Ageing Better: Our Future* (Department of Health 2000). This strategy is based on the principle that older people should be able to live independently, and to be able to contribute to society. It is also based on the principle that older people should be able to live in their own homes, and to be able to live in their own communities.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) sets out a number of key objectives for the 21st century. These objectives are: to ensure that older people are able to live independently; to ensure that older people are able to contribute to society; to ensure that older people are able to live in their own homes; and to ensure that older people are able to live in their own communities.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key actions to be taken to achieve these objectives. These actions are: to improve the quality of care for older people; to improve the availability of care for older people; to improve the financial security of older people; and to improve the social inclusion of older people.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key challenges to be faced in the 21st century. These challenges are: the increasing number of older people; the increasing number of people living in their own homes; the increasing number of people living in their own communities; and the increasing number of people who are unable to live independently.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key opportunities to be seized in the 21st century. These opportunities are: the increasing number of people who are able to live independently; the increasing number of people who are able to contribute to society; the increasing number of people who are able to live in their own homes; and the increasing number of people who are able to live in their own communities.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key messages for the 21st century. These messages are: older people should be able to live independently; older people should be able to contribute to society; older people should be able to live in their own homes; and older people should be able to live in their own communities.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key conclusions for the 21st century. These conclusions are: the increasing number of older people; the increasing number of people living in their own homes; the increasing number of people living in their own communities; and the increasing number of people who are unable to live independently.

The White Paper on *Ageing Better: Our Future* (Department of Health 2000) also sets out a number of key recommendations for the 21st century. These recommendations are: to improve the quality of care for older people; to improve the availability of care for older people; to improve the financial security of older people; and to improve the social inclusion of older people.