

TAXON

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Phylogenetics, morphological evolution, and classification of *Euphorbia* subgenus *Euphorbia*

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Taxon 62: 291–315

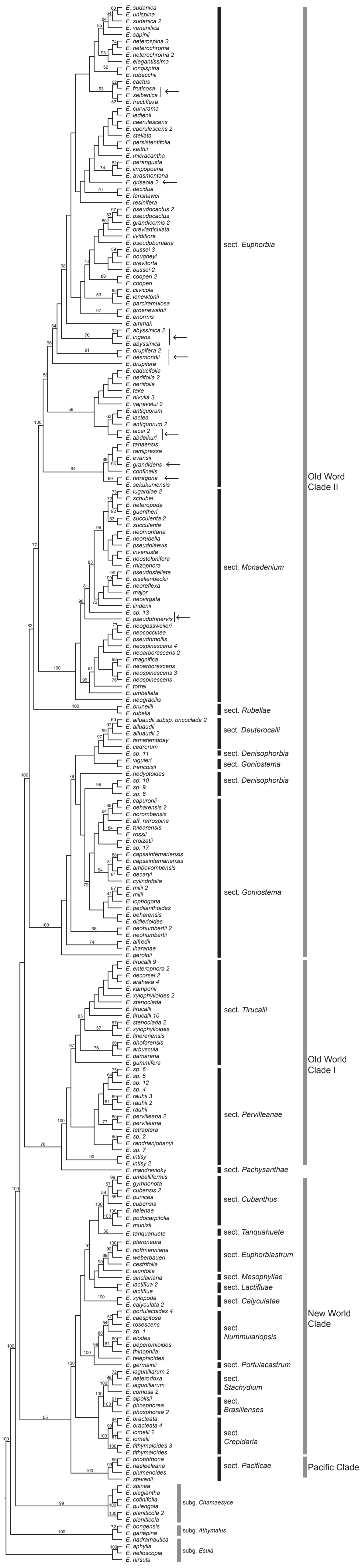


Fig. S2. Maximum likelihood estimation of the phylogenetic relationships of *E. subg. Euphorbia* based on combined *ndhF* and *matK* sequence and indel data (cpDNA dataset). Bootstrap support for clades >50% is given above or below branches. Sections circumscribed in this study are indicated to the right of the taxa, and the four major lineages within *E. subg. Euphorbia* are indicated to the right of the sectional classification. Arrows indicate the species or clades that are differently placed in the ITS tree.

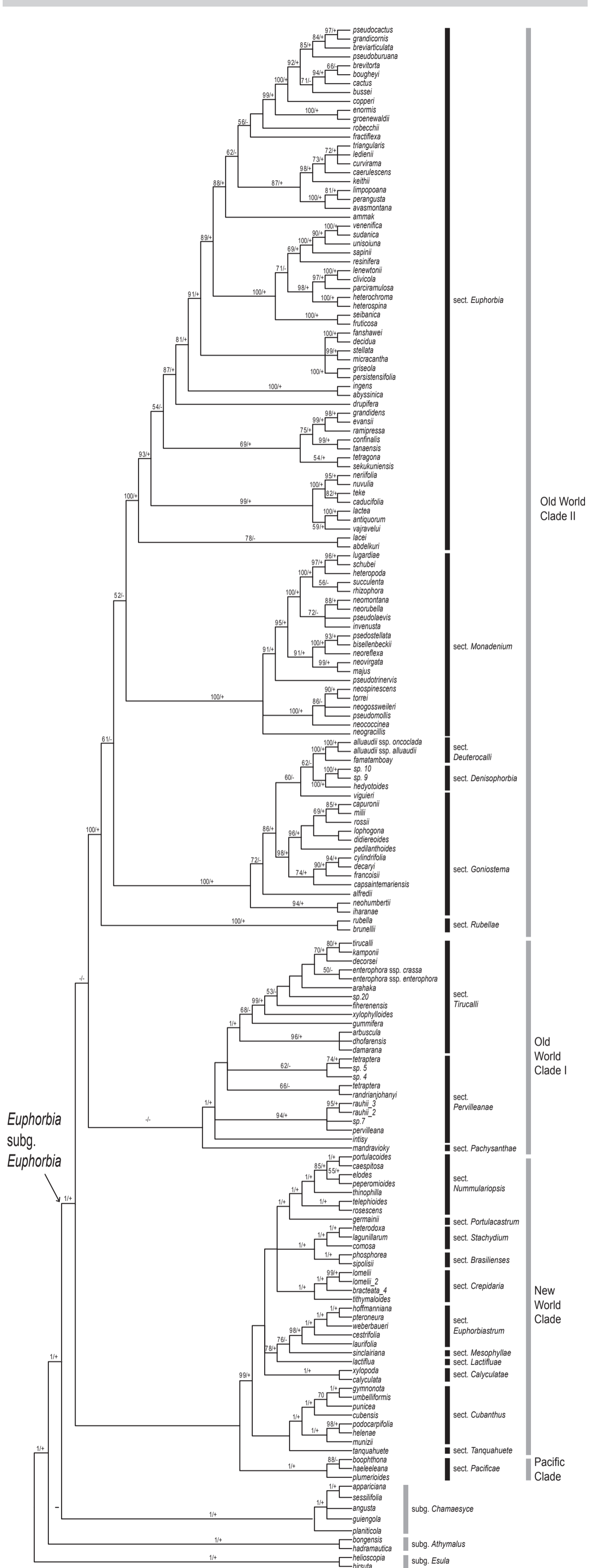


Fig. S3. Majority-rule consensus tree of 50 maximum likelihood searches of the phylogenetic relationships of *E.* subg. *Euphorbia* based on a reduced taxa 3-gene (ITS, *ndhF*, *matK*) dataset. Support for clades appear above branches. Numbers before the dash are bootstrap support > 50% based on 1000 pseudoreplicates and symbols after the dash indicate posterior probabilities (PP) for clades based on the posterior distribution of trees from the MrBayes analysis (plus sign indicates PP ≥ 95%, dash indicates PP < 95%). Sections circumscribed in this study are indicated to the right of the taxa, and the four major lineages within *E.* subg. *Euphorbia* are indicated to the right of the sectional classification.

Appendix S1. Taxon, collector and collection number (herbarium acronym), collection locality, and GenBank accession numbers for ITS, *matK*, and *ndhF* sequences, respectively, used in this study. Sequences without collection information were downloaded from GenBank.

Euphorbia abdelkuri Balf. f., U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7835 (MICH), KC019681, KC019443, KC019836; *Euphorbia abyssinica* J.F. Gmel. 1, Kenya, Rift Valley Province, *Morawetz, J.J.* 372 (EA, K, MICH, MO), KC019616, KC019387, KC019793; *Euphorbia abyssinica* J.F. Gmel. 2, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7821 (MICH), KC019670, KC019431, –; *Euphorbia aequoris* N.E. Br., Netherlands, from private living collection (RVV), originally from South Africa (*J&R* 263), *Riina, R.* 1694 (MA), KC019720, –, –; *Euphorbia alfreddii* Rauh, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7824 (MICH), KC019673, KC019434, KC019827; *Euphorbia alluaudii* Drake, Madagascar, Toliara, *Dorsey, B.L.* 104 (MICH), KC019502, KC019320, KC019746; *Euphorbia alluaudii* Drake 2, Madagascar, Toliara, *Dorsey, B.L.* 133 (MICH), KC019517, KC019328, –; *Euphorbia alluaudii* Drake 3, Madagascar, Toliara, *Dorsey, B.L.* 157 (MICH), KC019531, –, –; *Euphorbia alluaudii* subsp. *oncoclada* (Drake) F. Friedmann & Cremers 2, Madagascar, Toliara, *Dorsey, B.L.* 125 (MICH), KC019512, –, –; *Euphorbia alluaudii* subsp. *oncoclada* (Drake) F. Friedmann & Cremers 2, Madagascar, Toliara, *Dorsey, B.L.* 111 (MICH), KC019503, KC019321, –; *Euphorbia ambovombensis* Rauh & Razaf., Madagascar, Toliara, *Dorsey, B.L.* 144 (MICH), –, KC019335, –; *Euphorbia ambroseae* L.C. Leach, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 258 (MICH), KC019576, –, –; *Euphorbia ammak* Schweinf., U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7813 (MICH), KC019666, KC019427, KC019820; *Euphorbia angusta* Engelm., HQ645222, –, JQ750763; *Euphorbia ankarensis* Rauh, South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (466/92), *Morawetz, J.J.* 306 (MICH), KC019611, KC019382, KC019878; *Euphorbia antiqorum* L., Thailand, Nokhon Sawon, *Esser, H.-J. & M. van de Bult* 08-15 (BKF), KC019593, KC019369, KC019777; *Euphorbia antiqorum* L. 2, U.S.A., Florida, cultivated at Fairchild Botanical Garden, *Yang, Y.* 120 (MICH), KC019741, KC019491, –; *Euphorbia aphylla* Brouss. ex Willd., Spain, Las Palmas de Gran Canaria, *Dorsey, B.L.* 4 (MICH), KC019581, –, –; *Euphorbia apparciana* Rizzini, JQ750877, –, JQ750765; *Euphorbia arahaka* Poiss., Madagascar, Toliara, *Dorsey, B.L.* 176 (MICH), KC019541, –, –; *Euphorbia arahaka* Poiss. 2, Madagascar, Toliara, *Dorsey, B.L.* 177 (MICH), KC019542, –, –; *Euphorbia arahaka* Poiss. 3, Madagascar, Toliara, *Dorsey, B.L.* 178 (MICH), KC019543, –, –; *Euphorbia arahaka* Poiss. 4, Madagascar, Toliara, *Dorsey, B.L.* 135 (MICH), –, KC019330, –; *Euphorbia arbuscula* Balf. f., U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7836 (MICH), –, KC019444, KC019837; *Euphorbia attastoma* Rizzini, Brazil, Minas Gerais, *Mello-Silva, R.* 3195 (SPF), KC019717, –, –; *Euphorbia attastoma* Rizzini 2, AF537511, –, –; *Euphorbia avasmontana* Dinter, South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (263/71), *Morawetz, J.J.* 284 (MICH), KC019602, KC019374, KC019783; *Euphorbia beharensis* Leandri, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7829 (MICH), KC019676, KC019439, KC019832; *Euphorbia beharensis* Leandri 2, Madagascar, Toliara, *Dorsey, B.L.* 137 (MICH), KC019520, KC019331, –; *Euphorbia bicompecta* Bruyns, U.S.A. (cultivated), Massachusetts, *Berry, P.E.* 7976 (MICH), KC019696, –, –; *Euphorbia bisellenbeckii* Bruyns, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7771 (MICH), KC019649, KC019412, KC019810; *Euphorbia bisellenbeckii* Bruyns 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 216 (MICH), KC019565, –, –; *Euphorbia bongensis* Kotschy & Peyr. ex Boiss., Netherlands, from private living collection (RVV), originally from South Africa (*V. de Vries* 288), *Riina, R.* 1695 (MA), –, KC019472, KC019860; *Euphorbia boophthona* C.A. Gardner, Australia, Western Australia, *Harris, W.K.* WKH2215 (BRI), KC019591, KC019368, KC019775; *Euphorbia bougheyi* L.C. Leach, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7788 (MICH), KC019658, KC019418, KC019814; *Euphorbia bracteata* Jacq., U.S.A., living collection at the Huntington Botanical Gardens, San Marino, California, *Berry, P.E.* 7870 (MICH), KC019691, KC019453, KC019845; *Euphorbia bracteata* Jacq. 2, GU214909, –, –; *Euphorbia bracteata* Jacq. 3, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 292 (MICH), KC019578, –, –; *Euphorbia bracteata* Jacq. 4, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7839 (MICH), KC019683, KC019446, –; *Euphorbia breviarticulata* Pax, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7819 (MICH), KC019669, KC019429, KC019823; *Euphorbia brevitorta* P.R.O. Bally, Netherlands, from private living collection (JK), originally from Kenya, *Riina, R.* 1734 (MA), KC019726, KC019478, –, –; *Euphorbia brunellii* Chiov., AF537486, –, AF538203; *Euphorbia bussei* Pax, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 256 (MICH), KC019575, –, –; *Euphorbia bussei* Pax 2, Kenya, Rift Valley Province, *Morawetz, J.J.* 393 (EA, MICH), KC019620, KC019388, KC019795; *Euphorbia bussei* Pax 3, Kenya, K7, Coast Province, *Morawetz, J.J.* 400 (EA, MICH), KC019621, –, KC019796; *Euphorbia cactus* Ehrenb. ex Boiss., Oman, Dhofar, *Morawetz, J.J.* 327 (MICH, ON), KC019615, KC019386, –; *Euphorbia caducifolia* Haines, U.S.A., in cultivation #B94.166, at UC-Davis, California, *Berry, P.E.* 7759 (MICH), KC019648, KC019411, KC019809; *Euphorbia caerulescens* Haw., South Africa, Eastern Cape, *Morawetz, J.J.* 273 (MICH, NBG), KC019601, –, KC019782; *Euphorbia caerulescens* Haw. 2, U.S.A., in cultivation #B81.233 at UC-Davis, California, *Berry, P.E.* 7736 (MICH), KC019635, KC019397, –; *Euphorbia caespitosa* Lam., Argentina, Buenos Aires, *Carrillo-Reyes, P.* 5975 (SI), KC019701, KC019459, –; *Euphorbia calcarata* (Schltdl.) V.W. Steinm., GU214912, GU214835, –; *Euphorbia calcarata* (Schltdl.) V.W. Steinm. 2, GU214917, GU214857, –; *Euphorbia calyculata* Kunth, AF537524, –, AF538221; *Euphorbia calyculata* Kunth 2, Mexico, Michoacan, *Steinmann, V.W.* 3472 (IEB), KC019738, KC019486, –; *Euphorbia capsaintemariensis* (Rauh) Cremers, Madagascar, Toliara, *Dorsey, B.L.* 163 (MICH), –, –, KC019760; *Euphorbia capuronii* Ursch & Leandri, U.S.A., in cultivation #B68.269 at UC-Davis, California, *Berry, P.E.* 7756 (MICH), KC019646, KC019409, –; *Euphorbia cedrorum* Rauh & Hebding, Madagascar, Toliara, *Dorsey, B.L.* 140 (MICH), KC019522, KC019333, –; *Euphorbia cestrifolia* Kunth, AF537521, –, AF538213; *Euphorbia classenii* P.R.O. Bally & S. Carter, U.S.A., in cultivation at UC-Davis, California, *Berry, P.E.* 7811 (MICH), KC019664, –, –; *Euphorbia clivicola* R.A. Dyer, South Africa, Limpopo Prov., *Becker, R.* 976 (MICH, PRE, UNIN), KC019710, KC019465, KC019855; *Euphorbia colligata* V.W. Steinm., GU214920, GU214959, –; *Euphorbia comosa* Vell., AF537503, –, –; *Euphorbia comosa* Vell. 2, –, –, AF538222; *Euphorbia confinalis* R.A. Dyer, South Africa, Mpumalanga Prov., *Becker, R.* 1002 (MICH, PRE, UNIN), KC019703, KC019460, KC019849; *Euphorbia confinalis* R.A. Dyer 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 225 (MICH), KC019570, –, –; *Euphorbia cooperi* N.E. Br. ex A. Berger, South Africa, Limpopo Prov., *Becker, R.* 987 (MICH, PRE, UNIN), KC019714, KC019468, KC019858; *Euphorbia cooperi* N.E. Br. ex A. Berger 2, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7786 (MICH), KC019656, KC019416, –; *Euphorbia cotinifolia* (L.) Millsp., Madagascar, Toliara (cultivated), *Dorsey, B.L.* 174 (MICH), KC019540, –, KC019764; *Euphorbia croizatii* Leandri, Madagascar, Toliara, *Dorsey, B.L.* 165 (MICH), –, –, KC019761; *Euphorbia cubensis* Boiss., EF653254, –, EF653259; *Euphorbia cubensis* Boiss. 2, cultivated, *W.O.* 71 (P), KC019740, KC019489, –; *Euphorbia cupripina* S. Carter, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 232 (MICH), KC019571, –, –; *Euphorbia curvirama* R.A. Dyer, South Africa, Western Cape, in cultivation at Kirstenbosch National Botanical Garden Conservatory, *Morawetz, J.J.* 309 (MICH), KC019612, KC019383, KC019791; *Euphorbia cylindrifolia* Marn.-Lap. & Rauh, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7832 (MICH), KC019678, KC019441, KC019834; *Euphorbia cymbifera* (Schltdl.) V.W. Steinm., GU214923, GU214834, –; *Euphorbia damarana* L.C. Leach, Netherlands, from private living collection (JK), originally from Namibia, *Riina, R.* 1729 (MA), KC019725, KC019477, KC019866; *Euphorbia decaryi* Guillaumin, U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7828 (MICH), KC019675, KC019438, KC019831; *Euphorbia decidua* P.R.O. Bally & L.C. Leach, Netherlands, from private living collection (JK), origin unknown, *Riina, R.* 1719 (MA), KC019723, KC019475, KC019864; *Euphorbia decorsei* Drake, Madagascar, Toliara, *Dorsey, B.L.* 161 (MICH), KC019534, –, –; *Euphorbia decorsei* Drake 2, Madagascar, Toliara, *Dorsey, B.L.* 159 (MICH), KC019533, KC019340, –; *Euphorbia desmondii* Keay & Milne-Redh., Netherlands, from private living collection (JK), origin unknown, *Riina, R.* 1755 (MA), –, –, KC019871; *Euphorbia dhofarensis* S. Carter, Oman, Dhofar, *Morawetz, J.J.* 324 (MICH, ON), KC019614, KC019385, –; *Euphorbia didierioides* Denis ex Leandri, U.S.A., Florida (cultivated at Fairchild Botanical Garden), *Yang, Y.* 190 (MICH), KC019742, KC019493, KC019877; *Euphorbia drupifera* Thonn., U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7774 (MICH), KC019652, KC019413, –; *Euphorbia drupifera* Thonn. 2, AF537480, –, AF538191; *Euphorbia dussii* Krug & Urb. ex Duss, St. Lucia, Quarter of Castries, *Graveson, R.* 3064 (MICH), KC019715, –, –; *Euphorbia elegantissima* P.R.O. Bally & S. Carter, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L.* 235 (MICH), –, –, KC019771; *Euphorbia elodes* Boiss., Brazil, Sao Paulo, *Cordeiro, I.* 3053 (SP), KC019596, KC019371, KC019779; *Euphorbia elquiensis* Phil., Chile, *Stoll, A.* 90 (ULS), KC019497, –, –; *Euphorbia enormis* N.E. Br., U.S.A., living collection at UC-Davis, California, *Berry, P.E.* 7801 (MICH), KC019661, KC019421, KC019816; *Euphorbia enormis* N.E. Br. 2, South Africa, Limpopo Prov., *Becker, R.* 979 (MICH, PRE, UNIN), KC019711, –, –; *Euphorbia enterophora* Drake,

Appendix S1. Continued.

Madagascar, Fianarantsoa, Dorsey, B.L. 100 (MICH), KC019500, –, –; *Euphorbia enterophora* Drake 2, Madagascar, Toliara, Dorsey, B.L. 147 (MICH), KC019525, KC019337, –, –; *Euphorbia evansii* Pax, South Africa, Western Cape, in cultivation at Kirstenbosch National Botanical Garden Conservatory (206/97), Morawetz, J.J. 293 (MICH), KC019608, KC019379, KC019788; *Euphorbia famatamboay* F. Friedmann & Cremers, Madagascar, Toliara, Dorsey, B.L. 173 (MICH), KC019539, KC019343, KC019763; *Euphorbia fanshawei* L.C. Leach, Netherlands, from private living collection (JK), originally from Zambia, Riina, R. 1723 (MA), KC019724, KC019476, KC019865; *Euphorbia fiherenensis* Poiss., Madagascar, Toliara, Dorsey, B.L. 113 (MICH), KC019505, KC019322, KC019749; *Euphorbia fiherenensis* Poiss. 2, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7833 (MICH), KC019679, –, –; *Euphorbia finkii* (Boiss.) V.W. Steinm., GU214929, GU214852, –, –; *Euphorbia fractiflexa* S. Carter & J.R.I. Wood, Netherlands, from private living collection (JK), origin unknown, Riina, R. 1752 (MA), KC019728, KC019481, KC019870; *Euphorbia francoisii* Leandri, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7857 (MICH), KC019686, KC019447, KC019841; *Euphorbia fruticosa* Forsk., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7780 (MICH), KC019654, KC019415, KC019812; *Euphorbia gariepina* Boiss., South Africa, Northern Cape Prov., Becker, R. 918 (MICH, PRE, UNIN), –, –, KC019853; *Euphorbia germainii* Phil., AF537499, –, AF538205; *Euphorbia geroldii* Rauh, Madagascar, Toliara, Dorsey, B.L. 145 (MICH), –, KC019336, –, –; *Euphorbia grandicornis* Goebel ex N.E. Br., South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (762/89), Morawetz, J.J. 289 (MICH), KC019665, KC019426, –, –; *Euphorbia grandicornis* Goebel ex N.E. Br., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7787 (MICH), KC019657, KC019417, KC019813; *Euphorbia grandidens* Haw., South Africa, Western Cape, in cultivation at Kirstenbosch National Botanical Garden Conservatory (706/96), Morawetz, J.J. 287 (MICH), KC019604, KC019376, KC019785; *Euphorbia griseola* Pax, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 241 (MICH), KC019572, –, –; *Euphorbia griseola* Pax 2, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7812 (MICH), KC019665, KC019426, KC019819; *Euphorbia groenewaldii* R.A. Dyer, South Africa, Limpopo Prov., Becker, R. 972 (MICH, PRE, UNIN), KC019709, –, KC019854; *Euphorbia guentheri* (Pax) Bruyns, U.S.A., in cultivation #B67.040 at UC-Davis, California, Berry, P.E. 7743 (MICH), –, KC019399, KC019803; *Euphorbia guiengola* W.R. Buck & Huft, Netherlands, from private living collection (JK), originally from Mexico, Riina, R. 1699 (MA), KC019721, KC019473, KC019861; *Euphorbia gummifera* Boiss., South Africa, Northern Cape Prov., Becker, R. 921 (MICH, PRE, UNIN), KC019708, KC019464, –, –; *Euphorbia gymnonota* Urb., U.S.A., Florida, cultivated at Fairchild Botanical Garden, Florida, Yang, Y. 185 (MICH), JQ750886, KC019492, JQ750808; *Euphorbia gymnonota* Urb. 2, AF537507, –, –; *Euphorbia hadramautica* Baker, Oman, Dhofar, Morawetz, J.J. 320 (MICH, ON), KC019613, KC019384, KC019792; *Euphorbia haeleleana* Herbst, U.S.A., Hawaii, Wagner, W.L. 40455 (PTBG), –, KC019490, KC019876; *Euphorbia hedyotoides* N.E. Br., Madagascar, Toliara, Dorsey, B.L. 166 (MICH), KC019535, KC019341, –, –; *Euphorbia helenae* Urb., EF653255, –, EF653261; *Euphorbia helioscopia* L., South Africa, Western Cape, Morawetz, J.J. 302 (MICH), KC019610, KC019381, KC019790; *Euphorbia heterochroma* Pax, Kenya, Rift Valley Province, Morawetz, J.J. 378 (EA, MICH, MO), KC019618, –, –, KC019794; *Euphorbia heterochroma* Pax 2, Kenya, K7, Coast Province, Morawetz, J.J. 402 (EA, MICH), KC019622, KC019389, KC019797; *Euphorbia heterodoxa* Müll. Arg., Brazil, Bahia, Louzada, R. 128 (SP), KC019716, KC019469, KC019859; *Euphorbia heteropoda* Pax, U.S.A., in cultivation #B67.031 at UC-Davis, California, Berry, P.E. 7750 (MICH), KC019642, KC019405, KC019807; *Euphorbia heteropoda* Pax 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 204 (MICH), KC019554, –, –; *Euphorbia heterospina* S. Carter, Kenya, Rift Valley Province, Morawetz, J.J. 373 (EA, MICH), KC019617, –, –; *Euphorbia heterospina* S. Carter 3, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7875 (MICH), KC019693, KC019454, KC019847; *Euphorbia hirsuta* L., Spain, Madrid, Riina, R. 1769 (MICH), KC019730, KC019483, KC019873; *Euphorbia hoffmanniana* (Klotzsch & Garcke) Boiss., AF537508, –, AF538211; *Euphorbia horombensis* Ursch & Leandri, Madagascar, Toliara, Dorsey, B.L. 191 (MICH), KC019549, KC019348, KC019768; *Euphorbia horrida* Boiss., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7783 (MICH), KC019655, –, –; *Euphorbia iharanae* Rauh, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7854 (MICH), KC019685, KC019479, KC019840; *Euphorbia ingens* E. Mey. ex Boiss., South Africa, Becker, R. 985 (MICH, PRE, UNIN), KC019713, KC019467, KC019857; *Euphorbia intisy* Drake, Madagascar, Toliara, Dorsey, B.L. 112 (MICH), KC019504, –, KC019748; *Euphorbia intisy* Drake 2, Madagascar, Toliara, Dorsey, B.L. 127 (MICH), KC019514, KC019325, KC019753; *Euphorbia invenusta* (N.E. Br.) Bruyns, U.S.A., in cultivation #B67.042, at UC-Davis, California, Berry, P.E. 7747 (MICH), KC019639, KC019402, KC019805; *Euphorbia kamponii* Rauh & Petignat, Madagascar, Toliara, Dorsey, B.L. 134 (MICH), KC019518, KC019329, KC019755; *Euphorbia kamponii* Rauh & Petignat 2, Madagascar, Toliara, Dorsey, B.L. 118 (MICH), KC019507, –, –; *Euphorbia keithii* R.A. Dyer, South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (80/97), Morawetz, J.J. 290 (MICH), KC019606, KC019377, KC019786; *Euphorbia kimberleyana* (G. Will.) Bruyns, South Africa, Limpopo Prov., Downes, P.E. 9-85 (BRI), KC019698, –, –; *Euphorbia lacei* Craib, cultivated BGH142649 at Heidelberg Botanic Gardens, Germany, Haevermans, T. 452 (P), KC019733, –, –; *Euphorbia lacei* Craib 2, Thailand, Nokhon Sawon, Esser, H.-J. & M. van de Bult 08-10 (BKF), KC019592, –, KC019776; *Euphorbia lactea* Haw., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7816 (MICH), KC019667, –, KC019821; *Euphorbia lactiflua* Phil., Chile, Atacama, Carrillo-Reyes, P. 5928 (IEB), KC019700, KC019457, –, –; *Euphorbia lactiflua* Phil. 2, AF537528, –, AF538219; *Euphorbia lagunillarum* Croizat, Venezuela, Merida, Riina, R. 1836 (VEN), KC019731, –, KC019874; *Euphorbia lagunillarum* Croizat 2, Netherlands, from private living collection (RVV), originally from Venezuela, Riina, R. 1693 (VEN), KC019719, KC019471, –, –; *Euphorbia laurifolia* Juss. ex Lam., Venezuela, Merida, Riina, R. 1601 (VEN), KC019718, KC019470, –, –; *Euphorbia ledienii* A. Berger, South Africa, Eastern Cape Prov., Becker, R. 684 (MICH, PRE, UNIN), KC019707, KC019463, KC019852; *Euphorbia lenewtonii* S. Carter, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7861 (MICH), KC019687, KC019448, KC019842; *Euphorbia limpopoana* L.C. Leach ex S. Carter, South Africa, Limpopo Prov., Becker, R. 633 (MICH, PRE, UNIN), KC019705, KC019461, KC019851; *Euphorbia lindenii* (S. Carter) Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 217 (MICH), KC019566, KC019359, –, –; *Euphorbia lividiflora* L.C. Leach, Netherlands, from private living collection (JK), origin unknown, Riina, R. 1745 (MA), –, –, KC019869; *Euphorbia lomelii* V.W. Steinm., Mexico, Sonora, Van Devender, T.R. 2007-1105 (ASDM), KC019737, KC019485, KC019875; *Euphorbia lomelii* V.W. Steinm. 2, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7837 (MICH), KC019682, KC019445, KC019838; *Euphorbia longispina* Chiov., Netherlands, from private living collection (JK), origin unknown, Riina, R. 1707 (MA), –, –, KC019862; *Euphorbia lophogona* Lam., Madagascar, Toliara, Dorsey, B.L. 171 (MICH), KC019538, KC019342, KC019762; *Euphorbia lugardiae* (N.E. Br.) Bruyns, South Africa, Limpopo Prov., Cumming, D.M. 3217 (BRI), KC019588, –, –; *Euphorbia lugardiae* (N.E. Br.) Bruyns 2, U.S.A., in cultivation #B71.014 at UC-Davis, California, Berry, P.E. 7751 (MICH), KC019644, KC019407, –, –; *Euphorbia* aff. *mahafalensis* Denis, Madagascar, Toliara, Dorsey, B.L. 142 (MICH), KC019523, –, –; *Euphorbia magnifica* (E.A. Bruce) Bruyns, U.S.A., in cultivation #B90.225 at UC-Davis, California, Berry, P.E. 7750a (MICH), KC019643, KC019406, –, –; *Euphorbia magnifica* (E.A. Bruce) Bruyns 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 202 (MICH), KC019552, –, –; *Euphorbia major* (Pax) Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 210 (MICH), KC019559, KC019354, –, –; *Euphorbia mandraviokya* Leandri, Madagascar, Antsirananana, Haevermans, T. 445 (P), KC019732, KC019484, –, –; *Euphorbia micracantha* Boiss., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7802 (MICH), KC019662, KC019422, KC019817; *Euphorbia milii* Des Moul., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7826 (MICH), –, KC019436, KC019829; *Euphorbia milii* Des Moul. 2, Madagascar, Fianarantsoa, Dorsey, B.L. 101 (MICH), –, –, KC019744; *Euphorbia munizii* Borhidi, EF653256, –, EF653262; *Euphorbia neoarborescens* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 219 (MICH), –, KC019361, –, –; *Euphorbia neoarborescens* Bruyns 2, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7853 (MICH), KC019684, –, KC019839; *Euphorbia neococcinea* Bruyns, U.S.A., cultivated #B67.034 at UC-Davis, California, Berry, P.E. 7749 (MICH), KC019641, KC019404, KC019806; *Euphorbia neogossweileri* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 213 (MICH), KC019562, KC019357, –, –; *Euphorbia neograccilis* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 211 (MICH), KC019560, KC019355, –, –; *Euphorbia neohumbertii* Boiteau, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7830 (MICH), KC019677, KC019440, KC019833; *Euphorbia*

Appendix S1. Continued.

neohumbertii Boiteau 2, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7874* (MICH), KC019692, –, KC019846; *Euphorbia neomontana* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 207* (MICH), KC019557, KC019352, –; *Euphorbia neoreflexa* Bruyns, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7866* (MICH), –, KC019449, KC019843; *Euphorbia neorubella* Bruyns, U.S.A., cultivated #BAA.167 at UC-Davis, California, *Berry, P.E. 7746* (MICH), KC019638, KC019401, KC019804; *Euphorbia neorubella* Bruyns 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 214* (MICH), KC019563, –, –; *Euphorbia neospinescens* Bruyns, Tanzania, Morogoro Region, *Morawetz, J.J. 485* (DSM, K, MICH, MO, NHT), KC019627, KC019393, –; *Euphorbia neospinescens* Bruyns 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 203* (MICH), KC019553, –, –; *Euphorbia neospinescens* Bruyns 3, U.S.A., cultivated #B66.389 at UC-Davis, California, *Berry, P.E. 7748* (MICH), KC019640, KC019403, –; *Euphorbia neospinescens* Bruyns 4, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7773* (MICH), KC019651, –, KC019811; *Euphorbia neostolonifera* Bruyns, U.S.A., cultivated #B84.108 at UC-Davis, California, *Berry, P.E. 7745* (MICH), KC019637, KC019400, –; *Euphorbia neostolonifera* Bruyns 2, Kenya, Nairobi (Masai) District, *Rauh, W. Kel79* (K), KC019628, –, –; *Euphorbia neovirgata* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 215* (MICH), KC019564, KC019358, –; *Euphorbia nerifolia* L., U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 243* (MICH), KC019574, –, KC019772; *Euphorbia nerifolia* L. 2, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7776* (MICH), KC019653, KC019414, –; *Euphorbia nivulia* Buch.-Ham., U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 222* (MICH), KC019569, –, –; *Euphorbia nivulia* Buch.-Ham 2, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 242* (MICH), KC019573, –, –; *Euphorbia nivulia* Buch.-Ham 3, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7809* (MICH), –, KC019424, –; *Euphorbia orthoclada* Baker, Madagascar, Toliara, *Dorsey, B.L. 136* (MICH), KC019519, –, –; *Euphorbia papillosa* A. St.-Hil., Argentina, *Barboza, G. 1677* (CORD), KC019590, –, –; *Euphorbia parci-ramulosa* Schweinf., U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7878* (MICH), KC019694, KC019455, –; *Euphorbia pedilanthoides* Denis, U.S.A., cultivated #B68 at UC-Davis, California, *Berry, P.E. 7755* (MICH), KC019645, KC019408, KC019808; *Euphorbia peperomioides* Boiss., Brazil, Sao Paulo, *Cordeiro, I. 3057* (SP), KC019597, KC019372, KC019780; *Euphorbia peperomioides* Boiss. 2, Brazil, Sao Paulo, *Cordeiro, I. 3076* (SP), KC019598, –, –; *Euphorbia perangusta* R.A. Dyer, South Africa, North West Province, *Becker, R. 664* (MICH, PRE, UNIN), KC019706, KC019462, –; *Euphorbia persistentifolia* L.C. Leach, Netherlands, from private living collection (JK), origin unknown, *Riina, R. 1743* (MA), –, –, KC019868; *Euphorbia personata* (Croizat) V.W. Steinm., GU214940, GU214856, –; *Euphorbia pervilleana* Baill., Madagascar, Toliara, *Dorsey, B.L. 188* (MICH), JQ750888, –, JQ750835; *Euphorbia pervilleana* Baill. 2, Madagascar, Toliara, *Dorsey, B.L. 187* (MICH), –, –, KC019767; *Euphorbia phosphorea* Mart., Brazil, Sao Paulo, *Caruzo, M.B.R. 128* (SP), KC019582, –, –; *Euphorbia phosphorea* Mart. 2, Brazil, Bahia, *Caruzo, M.B.R. 145* (SP), JQ750889, KC019396, JQ750836; *Euphorbia plantiantha* Drake, Madagascar, Toliara, *Dorsey, B.L. 164* (MICH), –, –, JQ750838; *Euphorbia planiticola* D.C. Hassall, Australia, New South Wales, *Gillespie, L.J. 7324* (MICH), KC019629, KC019394, JQ750839; *Euphorbia planiticola* D.C. Hassall 2, Australia, Queensland, *Bean, A.R. 18393* (BRI), KC019498, KC019318, –; *Euphorbia plumerioides* Teijsm. ex Hassk., U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7884* (MICH), KC019695, KC019456, KC019848; *Euphorbia podocarpifolia* Urb., EF653257, –, EF653263; *Euphorbia portulacoides* L., Chile, *Arroyo, M. 994664* (SGO), KC019630, –, –; *Euphorbia portulacoides* L. 2, Argentina, *Cocucci 3479* (CORD), KC019585, –, –; *Euphorbia portulacoides* L. 3, Chile, Coquimbo, *Carrillo-Reyes, P. 5923* (IEB), KC019699, –, –; *Euphorbia portulacoides* L. 4, Chile, Coquimbo, *Carrillo-Reyes, P. 5930* (IEB), –, KC019458, –; *Euphorbia pseudoburuana* P.R.O. Bally & S. Carter, Netherlands, from private living collection (JK), origin unknown, *Riina, R. 1742* (MA), KC019727, KC019480, KC019867; *Euphorbia pseudocactus* A. Berger, South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (630/72), *Morawetz, J.J. 291* (MICH), KC019607, KC019378, KC019787; *Euphorbia pseudocactus* A. Berger 2, U.S.A., cultivated #B61.059 at UC-Davis, California, *Berry, P.E. 7735* (MICH), KC019634, –, KC019801; *Euphorbia pseudolaevis* Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 206* (MICH), KC019556, KC019351, –; *Euphorbia pseudomollis* Bruyns, Tanzania, Kilimanjaro Region, *Morawetz, J.J. 440* (DSM, MICH, MO, NHT), KC019625, KC019392, KC019799; *Euphorbia pseudomollis* Bruyns 2, Tanzania, Kilimanjaro Region, *Morawetz, J.J. 441* (MICH, NHT), KC019626, –, –; *Euphorbia pseudostellata* Bruyns, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7869* (MICH), KC019690, KC019452, –; *Euphorbia pseudotrineris* Bruyns, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, *Berry, P.E. 7867* (MICH), KC019688, KC019450, KC019844; *Euphorbia pteroneura* A. Berger, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7792* (MICH), KC019659, KC019419, KC019815; *Euphorbia punicea* Sw., Jamaica, Hanover, *van Ee, B. 778* (MICH), KC019584, KC019364, –; *Euphorbia ramipessa* Croizat, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7820* (MICH), KC019633, KC019430, KC019824; *Euphorbia randrianjohanyi* Haevermans & Labat, Madagascar, Toliara, *Dorsey, B.L. 119* (MICH), KC019508, KC019324, KC019751; *Euphorbia rauhii* Haevermans & Labat, Madagascar, Toliara, *Dorsey, B.L. 181* (MICH), KC019545, KC019345, KC019765; *Euphorbia rauhii* Haevermans & Labat 2, Madagascar, Toliara, *Dorsey, B.L. 182* (MICH), KC019546, KC019346, –; *Euphorbia rauhii* Haevermans & Labat 3, Madagascar, Toliara, *Dorsey, B.L. 180* (MICH), KC019544, KC019344, –; *Euphorbia resinifera* O. Berg, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7817* (MICH), KC019668, KC019428, KC019822; *Euphorbia* aff. *retrospina*, Madagascar, Toliara, *Dorsey, B.L. 150* (MICH), –, –, KC019757; *Euphorbia rhizophora* (P.R.O. Bally) Bruyns, U.S.A., cultivated #B71.015 at UC-Davis, California, *Berry, P.E. 7742* (MICH), KC019636, KC019398, KC019802; *Euphorbia rhizophora* (P.R.O. Bally) Bruyns 2, Kenya, Mchakos District, *Bally, P.R. E117* (BRI), KC019697, –, –; *Euphorbia robecchii* Pax, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7822* (MICH), KC019671, KC019432, KC019825; *Euphorbia rosecens* E.L. Bridges & Orzell, U.S.A., Florida, *Weekley, C. s.n.* (ARCH), KC019587, –, –, KC019774; *Euphorbia rossii* Rauh & Buchloh, U.S.A., living collection at UC-Davis, California, *Berry, P.E. 7827* (MICH), –, KC019437, KC019830; *Euphorbia rubella* Pax, AF537487, –, AF538204; *Euphorbia sapinii* De Wild., Netherlands, from private living collection (JK), origin unknown, *Riina, R. 1756* (MA), KC019729, KC019482, KC019872; *Euphorbia sarcostemmoides* J.H. Willis, Australia, Queensland, *Forster, P.I. PIF35626* (BRI), KC019589, –, –; *Euphorbia sarcostemmoides* J.H. Willis 2, Australia, Queensland, *Bean, A.R. 22376* (BRI), KC019499, –, –; *Euphorbia schubelii* Pax, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 200* (MICH), KC019551, KC019350, –; *Euphorbia seibanica* Lavranos & Gifri, The Netherlands, from private living collection (JK, *Lavranos 30745*), originally from Yemen, *Riina, R. 1709* (MA), KC019722, KC019474, KC019863; *Euphorbia sekukienensis* R.A. Dyer, South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (713/96), *Morawetz, J.J. 286* (MICH), KC019603, KC019375, KC019784; *Euphorbia sessilifolia* Klotzsch ex Boiss., JQ750957, –, JQ750851; *Euphorbia sinclairiana* Benth., AF537495, –, AF538217; *Euphorbia sinclairiana* Benth 2., Peru, *Reynel 4830* (MOL), KC019702, –, –; *Euphorbia sipolisii* N.E. Br., Brazil, Minas Gerais, *Cordeiro, I. 3039* (SP), KC019595, KC019370, KC019778; *Euphorbia sipolisii* N.E. Br. 2, Brazil, Sao Paulo, *Caruzo, M.B.R. 129* (SP), KC019583, –, –; *Euphorbia* sp. 1, Chile, Atacama, *Taylor, C.M. & Richardson, P.M. 12412* (MO), KC019586, KC019367, –; *Euphorbia* sp. 2, Madagascar, Toliara, *Dorsey, B.L. 148* (MICH), –, –, KC019756; *Euphorbia* sp. 3, Madagascar, Toliara, *Dorsey, B.L. 186* (MICH), KC019548, –; *Euphorbia* sp. 4, Madagascar, Toliara, *Dorsey, B.L. 185* (MICH), KC019547, KC019347, KC019766; *Euphorbia* sp. 5, Madagascar, Toliara, *Dorsey, B.L. 128* (MICH), KC019515, KC019326, KC019754; *Euphorbia* sp. 6, Madagascar, Toliara, *Dorsey, B.L. 126* (MICH), KC019513, –, KC019752; *Euphorbia* sp. 7, Madagascar, Toliara, *Dorsey, B.L. 158* (MICH), KC019532, KC019339, KC019759; *Euphorbia* sp. 8, Madagascar, Toliara, *Dorsey, B.L. 105* (MICH), –, –, KC019747; *Euphorbia* sp. 9, Madagascar, Toliara, *Dorsey, B.L. 192* (MICH), KC019550, KC019349, KC019769; *Euphorbia* sp. 10, Madagascar, Toliara, *Dorsey, B.L. 151* (MICH), KC019526, KC019338, KC019758; *Euphorbia* sp. 11, Madagascar, Fianarantsoa, *McPherson & Rabenantoandro, J. 18330* (MO), KC019632, KC019366, –; *Euphorbia* sp. 12, Madagascar, Toliara, *Dorsey, B.L. 129* (MICH), KC019516, KC019327, –; *Euphorbia* sp. 13, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, *Dorsey, B.L. 209* (MICH), KC019558, KC019353, –; *Euphorbia* sp. 14, Madagascar, Toamasina, *Randrianasolo, A. 1129* (MO), KC019496, –, –; *Euphorbia* sp. 15, Vietnam, *Haevermans, T. 532* (P), KC019735, –, –; *Euphorbia* sp. 16, Vietnam, *Haevermans, T. 547* (P), KC019736, –, –; *Euphorbia* sp. 17, Madagascar, Toliara, *Dorsey, B.L. 138* (MICH), KC019521, KC019332, –; *Euphorbia* sp. 18, Madagascar, Toliara, *Dorsey, B.L. 167* (MICH), KC019536, –, –; *Euphorbia* sp. 19, Madagascar, Toliara, *Dorsey, B.L. 168*

Appendix S1. Continued.

(MICH), KC019537, –, –; *Euphorbia* sp. **20**, Madagascar, Toliara, Dorsey, B.L. 130 (MICH), KC019743, KC019494, KC019879; *Euphorbia spectabilis* (S. Carter) Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 205 (MICH), KC019555, –, –; *Euphorbia spinea* N.E. Br., South Africa, Northern Cape Prov., Becker, R. 967 (MICH, PRE, UNIN), JQ750964, –, JQ750862; *Euphorbia stellata* Willd., South Africa, Western Cape, in cultivation at the Kirstenbosch National Botanical Garden Conservatory (944/97), Morawetz, J.J. 297 (MICH), KC019609, KC019380, KC019789; *Euphorbia stenoclada* Baill., Madagascar, Toliara, Dorsey, B.L. 115 (MICH), –, –, KC019750; *Euphorbia stenoclada* Baill. **2**, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7804 (MICH), –, –, KC019423, –, –; *Euphorbia stevenii* F.M. Bailey, Australia, Queensland, Walmsley PW33 (BRI), –, –, KC019488, –, –; *Euphorbia succulenta* (Schweickerdt) Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 218 (MICH), KC019567, KC019360, –, –; *Euphorbia succulenta* (Schweickerdt) Bruyns **2**, Kenya, Rift Valley Province, Morawetz, J.J. 423 (EA, MICH), KC019624, KC019391, –, –; *Euphorbia sudanica* A. Chev., U.S.A., in cultivation #B79.257 at UC-Davis, California, Berry, P.E. 7757 (MICH), KC019647, KC019410, –, –; *Euphorbia sudanica* A. Chev. **2**, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7810 (MICH), KC019663, KC019425, KC019818; *Euphorbia sudanica* A. Chev. **3**, cultivated, Haevermans, T. 462 (P), KC019734, –, –, –; *Euphorbia tanaensis* P.R.O. Bally & S. Carter, Kenya, cultivated in the garden of A. Robertson, originally from Witu Forest, Kenya, Morawetz, J.J. 415 (MICH), KC019623, KC019390, KC019798; *Euphorbia tannensis* Spreng., Australia, Queensland, Halford Q9447 (BRI), KC019594, –, –, –; *Euphorbia tanquahuete* Sessé & Moc., AF537525, –, AF538224; *Euphorbia tanquahuete* Sessé & Moc. **2**, Mexico, Guanajuato, Martinez, M. 6205 (IEB), KC019631, –, –, –; *Euphorbia teke* Schweinf. ex Pax, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7834 (MICH), KC019680, KC019442, KC019835; *Euphorbia telephiooides* Chapm., U.S.A., Florida, Black, C. 1 (FSU), –, –, KC019365, –, –; *Euphorbia tetragona* Haw., South Africa, Eastern Cape, Morawetz, J.J. 260 (MICH, NBG), KC019599, KC019373, KC019781; *Euphorbia tetraptera* Baker, Madagascar, Toamasina, Randrianasolo, A. 1113 (MO), KC019495, KC019317, –, –; *Euphorbia thinophila* Phil., AF537530, –, AF538218; *Euphorbia tirucalli* L., South Africa, Becker, R. 982 (MICH, PRE, UNIN), KC019712, KC019466, KC019856; *Euphorbia tirucalli* L. **2**, Madagascar, Toliara, Dorsey, B.L. 121 (MICH), KC019510, –, –, –; *Euphorbia tirucalli* L. **3**, Madagascar, Toliara, Dorsey, B.L. 122 (MICH), KC019511, –, –, –; *Euphorbia tirucalli* L. **4**, Madagascar, Toliara, Dorsey, B.L. 120 (MICH), KC019509, –, –, –; *Euphorbia tirucalli* L. **5**, Madagascar, Toliara, Dorsey, B.L. 153 (MICH), KC019527, –, –, –; *Euphorbia tirucalli* L. **6**, Madagascar, Toliara, Dorsey, B.L. 154 (MICH), KC019528, –, –, –; *Euphorbia tirucalli* L. **7**, Madagascar, Toliara, Dorsey, B.L. 155 (MICH), KC019529, –, –, –; *Euphorbia tirucalli* L. **8**, Madagascar, Toliara, Dorsey, B.L. 156 (MICH), KC019530, –, –, –; *Euphorbia tirucalli* L. **9**, South Africa, Limpopo Prov., Becker, R. 1065 (MICH, PRE, UNIN), KC019704, –, –, –; *Euphorbia tirucalli* L. **10**, Madagascar, Toliara, Dorsey, B.L. 117 (MICH), KC019506, KC019323, –, –; *Euphorbia tirucalli* L. **11**, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7772 (MICH), KC019650, –, –, –; *Euphorbia tithymaloides* L., U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 294 (MICH), KC019580, KC019363, –, –; *Euphorbia tithymaloides* L. **2**, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 293 (MICH), KC019579, –, –, –; *Euphorbia tithymaloides* L. **3**, Madagascar, Fianarantsoa, Dorsey, B.L. 102 (MICH), KC019501, KC019319, KC019745; *Euphorbia torrei* (L.C. Leach) Bruyns, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 212 (MICH), KC019561, KC019356, –, –, –; *Euphorbia triangularis* Desf. ex A. Berger, South Africa, Eastern Cape, Morawetz, J.J. 270 (MICH, NBG), KC019600, –, –, –; *Euphorbia tulearensis* (Rauh) Rauh, Madagascar, Toliara, Dorsey, B.L. 143 (MICH), KC019524, KC019334, –, –; *Euphorbia umbellata* (Pax) Bruyns, AF537469, –, –, JN249237; *Euphorbia umbelliformis* (Urb. & Ekman) V.W. Steinm. & P.E. Berry, EF653253, –, EF653258; *Euphorbia unispina* N.E. Br., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7798 (MICH), KC019660, KC019420, JN249239; *Euphorbia vajravelui* Binojk. & N.P. Balakr., U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 289 (MICH), KC019577, –, –, –; *Euphorbia vajravelui* Binojk. & N.P. Balakr. **2**, U.S.A., in cultivation at Arid Lands Greenhouses, Tucson, Arizona, Dorsey, B.L. 220 (MICH), KC019568, KC019362, KC019770; *Euphorbia venenifica* Tremaux ex Kotschy, U.S.A., living collection at The Huntington Botanical Gardens, San Marino, California, Berry, P.E. 7868 (MICH), KC019689, KC019451, –, –; *Euphorbia viguieri* Denis, U.S.A., living collection at UC-Davis, California, Berry, P.E. 7825 (MICH), KC019674, KC019435, KC019828; *Euphorbia weberbaueri* Mansf., AF537519, –, –, AF538212; *Euphorbia xylophyloides* Brongn. ex Lem., U.S.A., living collection at UC-Davis, California, Berry, P.E. 7823 (MICH), KC019672, KC019433, KC019826; *Euphorbia xylophyloides* Brongn. ex Lem. **2**, AF537467, –, –, AF538214; *Euphorbia xylopoda* Greenm., Mexico, Mexico, Steinmann, V.W. 6752 (IEB), KC019739, KC019487, –, –.