

Family: *Crassulaceae*

Taxon: *Graptopetalum paraguayense*

Synonym: *Byrnesia weinbergii* (hort. ex T. B. Sheph.) R. C. **Common Name:** Ghost Plant
Cotyledon paraguayensis N. E. Br. (basionym) Mother of Pearl Plant
Echeveria weinbergii hort. ex T. B. Sheph. Gray Gost Plant
Sedum weinbergii (hort. ex T. B. Sheph.) A. B.

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score 2
101	Is the species highly domesticated?		y=-3, n=0	n
102	Has the species become naturalized where grown?		y=1, n=-1	
103	Does the species have weedy races?		y=1, n=-1	
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)	Intermediate
203	Broad climate suitability (environmental versatility)		y=1, n=0	
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0	y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs		y=1, n=0	n
402	Allelopathic		y=1, n=0	
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	
405	Toxic to animals		y=1, n=0	n
406	Host for recognized pests and pathogens		y=1, n=0	
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0	

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	
602	Produces viable seed	y=1, n=-1	
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	
801	Prolific seed production (>1000/m ²)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	
Designation: L		WRA Score 2	

Supporting Data:

101	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is the species highly domesticated? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Species suited to tropical or subtropical climate(s) 2-high] "Despite the misleading species name, <i>G. paraguayense</i> is probably a native of Mexico, although its exact origin remains undetermined." [Suited to tropical climates, despite uncertain origins]
202	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Quality of climate match data? 1-intermediate] "Despite the misleading species name, <i>G. paraguayense</i> is probably a native of Mexico, although its exact origin remains undetermined." [Suited to tropical climates, despite uncertain origins]
202	2007. Low, J.. International Crassulaceae Network - Genus Graptopetalum. http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Quality of climate match data? 1-intermediate] "Its species name hints that it came from Paraguay: only later did it become clear that it is not from that country, but from Mexico, instead. No plants have been rediscovered in the wild since the first one appeared on a cactus root imported in 1904 by a NY wholesale dealer in succulent plants (F.Weinberg), so exact habitat is unknown, even in year 2000."
203	2007. Low, J.. International Crassulaceae Network - Genus Graptopetalum. http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Broad climate suitability (environmental versatility)? Possibly] "The plants have leaf rosettes much like some <i>Echeveria</i> , but the stems are much too long. Culture so easy it is almost weed-like, and it can even freeze and live."
203	2011. Dave's Gardern. PlantFiles: Ghost Plant, Mother of Pearl Plant - Graptopetalum paraguayense. http://davesgarden.com/guides/pf/go/351/	[Broad climate suitability (environmental versatility)? Possibly. Based on reported ability to grow in 5 hardiness zones] Hardiness: USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)
203	2011. Plant this. Graptopetalum paraguayense. http://www.plantthis.com.au/plant-information.asp?gardener=15325&plantSpot=2	[Broad climate suitability (environmental versatility)? Possibly] "Hardiness zones: 9-11"
204	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Despite the misleading species name, <i>G. paraguayense</i> is probably a native of Mexico, although its exact origin remains undetermined." [Suited to tropical climates, despite uncertain origins]
205	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Does the species have a history of repeated introductions outside its natural range? Yes] "...a common house plant and container specimen..."
301	2001. Queensland Herbarium. New Taxa and Combinations of Queensland Plants. December 1989 to June 1999. http://www.derm.qld.gov.au/register/p00730aa.pdf	[Naturalized beyond native range? Yes] " <i>Graptopetalum paraguayense</i> (N.E.Br.) Walther subsp. <i>paraguayense</i> (Forster 1997e) [newly recorded as naturalised]."
301	2005. Wagner, W.L./Herbst, D.R./Lorence, D.H.. Flora of the Hawaiian Islands website. Smithsonian Institution, Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm	[Naturalized beyond native range? Yes, but no evidence in Hawaiian Islands]
301	2006. Domingues de Almeida, J./Freitas, H.. Exotic naturalized flora of continental Portugal – A reassessment. <i>Botanica Complutensis</i> . 30: 117-130.	[Naturalized beyond native range? Yes] Table 2. Exotic vascular plant species (invasive, potentially invasive or more or less naturalized) in continental Portugal" [includes <i>Graptopetalum paraguayense</i>]

301	2011. Jaramillo Díaz, P./Guézou, A./Mauchamp, A./Tye, A.. CDF Checklist of Galapagos Flowering Plants. In: Bungartz, F. et al. (eds.). Charles Darwin Foundation Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www.dar	[Naturalized beyond native range? Yes, but Not in Galapagos] "Graptopetalum paraguayense (N.E.Br.) E. Walther Taxon status: Accepted name; taxon occurs in Galapagos. Origin: Introduced, Cultivated. Galapagos Distribution: San Cristóbal. References: CONABIO et al. (2009), CONABIO et al. (2009), Tropic.org. et al. (2009)."
302	2007. Low, J.. International Crassulaceae Network - Genus Graptopetalum. http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Garden/amenity/disturbance weed? No] "Culture so easy it is almost weed-like, and it can even freeze and live." [No evidence, but exhibits weedy traits]
302	2007. Randall, R.P.. Global Compendium of Weeds - Graptopetalum paraguayense [Online Database]. http://www.hear.org/gcw/species/graptopetalum_paraguayense/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - Graptopetalum paraguayense [Online Database]. http://www.hear.org/gcw/species/graptopetalum_paraguayense/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Graptopetalum paraguayense [Online Database]. http://www.hear.org/gcw/species/graptopetalum_paraguayense/	[Environmental weed? No] No evidence
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence
401	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Produces spines, thorns or burrs? No] "Stems trailing, to 1' long, glabrous. Lvs 15-25 in terminal rosettes; peti indistinct; blades obovate to spatula-shaped, 1.5-3.5" x 0.5-1", 0.33" thick, green suffused pale lavender, becoming pale gray, glaucous, upper side ± flat or slightly concave, underside convex."
402	2011. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Parasitic? No] "Succulent perennial herbs or shrubs..." [Genus description. Crassulaceae]
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Toxic to animals? No] No evidence
405	2011. Roger's Gardens. Toxic Plant Alert - Plants and Poisoning. http://www.rogersgardens.com/toxic_plant_alert.asp	[Toxic to animals? No] "1. Non-toxic These plants are generally considered non-poisonous." [Graptopetalum paraguayense listed as non-toxic]
406	2011. PlantCare.com. Plant Encyclopedia - Ghost Plant, Mother-of-Pearl Plant. http://www.plantcare.com/encyclopedia/ghost-plant-531.aspx	[Host for recognized pests and pathogens? Unknown] "Prone to mealy bugs and rarely scale."
407	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2011. Roger's Gardens. Toxic Plant Alert - Plants and Poisoning. http://www.rogersgardens.com/toxic_plant_alert.asp	[Causes allergies or is otherwise toxic to humans? No] No evidence

408	2001. Lemke, C.. Cal's Plant of the Week - Graptopetalum paraguayense - Ghost Plant. University of Oklahoma Department of Botany & Microbiology, http://www.plantoftheweek.org/week141.shtml	[Creates a fire hazard in natural ecosystems? No] "...a small succulent plant forming rosettes of gray leaves with a pinkish cast to them." [succulent plants unlikely to create fire hazards]
409	2001. Lemke, C.. Cal's Plant of the Week - Graptopetalum paraguayense - Ghost Plant. University of Oklahoma Department of Botany & Microbiology, http://www.plantoftheweek.org/week141.shtml	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Graptopetalum paraguayense need full sun to light shade with a well-drained soil mix."
409	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Ideally, the plants should receive full sun for part of the day, with broken shade during the midday hours when the sun is most intense."
409	2011. Dave's Gardern. PlantFiles: Ghost Plant, Mother of Pearl Plant - Graptopetalum paraguayense. http://davesgarden.com/guides/pf/go/351/	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Sun Exposure: Sun to Partial Shade"
410	2011. Dave's Gardern. PlantFiles: Ghost Plant, Mother of Pearl Plant - Graptopetalum paraguayense. http://davesgarden.com/guides/pf/go/351/	[Tolerates a wide range of soil conditions? Unknown] "Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral) 7.6 to 7.8 (mildly alkaline)"
410	2011. Plant this. Graptopetalum paraguayense. http://www.plantthis.com.au/plant-information.asp?gardener=15325&plantSpot=2	[Tolerates a wide range of soil conditions? Unknown] "Soil: ordinary soil, enriched soil, mildly acidic to mildly alkaline"
411	2001. Lemke, C.. Cal's Plant of the Week - Graptopetalum paraguayense - Ghost Plant. University of Oklahoma Department of Botany & Microbiology, http://www.plantoftheweek.org/week141.shtml	[Climbing or smothering growth habit? No] "...a small succulent plant forming rosettes of gray leaves with a pinkish cast to them..."
412	2007. Low, J.. International Crassulaceae Network - Genus Graptopetalum. http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Forms dense thickets? No] No evidence
501	2001. Lemke, C.. Cal's Plant of the Week - Graptopetalum paraguayense - Ghost Plant. University of Oklahoma Department of Botany & Microbiology, http://www.plantoftheweek.org/week141.shtml	[Aquatic? No] "Graptopetalum paraguayense or Ghost Plant, a native of Mexico, is a small succulent plant forming rosettes of gray leaves with a pinkish cast to them." [Terrestrial]
502	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Grass? No] Crassulaceae
503	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Nitrogen fixing woody plant? No] Crassulaceae
504	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Geophyte (herbaceous with underground storage organs ? No] "Succulent perennial herbs or shrubs' [Crassulaceae]
601	2007. Low, J.. International Crassulaceae Network - Genus Graptopetalum. http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Evidence of substantial reproductive failure in native habitat? Unknown] "Its species name hints that it came from Paraguay: only later did it become clear that it is not from that country, but from Mexico, instead. No plants have been rediscovered in the wild since the first one appeared on a cactus root imported in 1904 by a NY wholesale dealer in succulent plants (F. Weinberg), so exact habitat is unknown, even in year 2000. "
602	1986. Kimnach, M./Moran, R.. Graptopetalum paraguayense: A history and a new subspecies. Cactus & Succulent Journal of America. http://www.crassulaceae.com/botanik/pflanzen/bot-anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Produces viable seed? Possible] "Seeds reddish brown, cylindric, ca. 0.7 mm long and 0.2 mm thick, with ca. 5 irregular longitudinal ridges." {Description given of seeds, but no evidence that plants are propagated or spread by seeds in cultivation]

602	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Produces viable seed? Possibly, but rarely or. not in Hawaii] "Flowers are seldom produced in Hawai'i. Ghost plant is readily propagated by rooting single detached leaves, which are simply placed right side up on dryish potting soil..."
603	1972. Knobloch, I.W.. Intergeneric Hybridization in Flowering Plants. <i>Taxon</i> . 21(1): 97-103.	[Hybridizes naturally? Unknown. Two intergeneric hybrids reported, but unknown if they are natural or artificial] "While the following list of intergeneric hybrids was being compiled, we thought it might be useful to point out the approximate number of all kinds of hybrids (interspecific and intergeneric) in the flowering plants. The number in parentheses after each family name is the number reported in the literature and is validated by cards in my file. The number of both kinds of hybrids in the flowering plants is 23,675. No doubt, some reported hybrids are spurious but since only a small fraction of the plant kingdom has been assessed, I would not be surprised if the number of hybrids is not a great deal larger than here reported.... <i>Graptopetalum paraguayense</i> X <i>E. pulvinata</i> ;... <i>Sedum nussbaumerianum</i> X <i>Graptopetalum paraguayense</i> "
603	2007. Low, J.. International Crassulaceae Network - Genus <i>Graptopetalum</i> . http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[[Hybridizes naturally? Unknown] "It is a popular species for making hybrids."
604	1970. Uhl, C.H.. Chromosomes of <i>Graptopetalum</i> and <i>Thompsonella</i> (Crassulaceae). <i>American Journal of Botany</i> . 57(9): 1115-1121.	[Self-compatible or apomictic? Yes. But low] "...six seedlings have resulted from three attempts at self-pollination...its self-fertility seems low,..."
605	2004. Acevedo-Rosas, R./Cameron, K./Sosa, V./Pell, S.. A molecular phylogenetic study of <i>Graptopetalum</i> (Crassulaceae) based on ETS, ITS, RPL16, and TRNL-F nucleotide sequences. <i>American Journal of Botany</i> . 91(7): 1099-1104.	[Requires specialist pollinators? Unknown] "Shifts in pollinator syndromes (e.g., from fly to bee) leading to convergent flower morphologies have been documented in many other groups of flowering plants (e.g., <i>Hapeman</i> and Inoue, 1997; Borba et al., 2002). These shifts may help to explain the patterns observed in <i>Graptopetalum</i> as well. Variation in color and distribution of bands over petals and dissimilar fragrances in same groups of <i>Graptopetalum</i> suggest that different pollinator syndromes exist. However, due to the remote places in which most <i>Graptopetalum</i> species grow, no evidence on pollination biology has been gathered."
605	2007. Kubitzki, K./Bayer, C./Stevens, P.F.. The families and genera of vascular plants: Volume IX. Flowering Plants. Eudicots. Springer-Verlag, Berlin, Heidelberg, New York	[Requires specialist pollinators? Unknown] "Carrion flies are possibly pollinators for the fade-coloured and foetid flowers of most <i>Graptopetalum</i> (Moran and Meyers 1974)."
606	1986. Kimmach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanische_zeitschrift_1986_01_02.htm	[Reproduction by vegetative fragmentation? Yes] "Vegetative reproduction by stem or leaf is extra-ordinarily easy. Every year or two, when the stems become too leggy, the terminal rosettes can be broken off and laid on the ground, where they soon take root. Fallen or detached leaves do likewise and furnish a most striking example of propa-gation of succulents by leaf-cuttings..."
606	2004. Sykes, W.R.. Succulents misbehaving in my gardens. <i>New Zealand Botanical Society Newsletter</i> . 75: 16-26.	[Reproduction by vegetative fragmentation? Yes] "The leaves so readily fall and subsequently form roots as do pieces of stem with a rosette of leaves that the species can be a minor nuisance."
607	2004. Sykes, W.R.. Succulents misbehaving in my gardens. <i>New Zealand Botanical Society Newsletter</i> . 75: 16-26.	[Minimum generative time (years)? 1] "The leaves so readily fall and subsequently form roots as do pieces of stem with a rosette of leaves that the species can be a minor nuisance." [Since this plant can reproduce from leaf fragments, the effective generation time is essentially withing the first year of growth]
701	2004. Sykes, W.R.. Succulents misbehaving in my gardens. <i>New Zealand Botanical Society Newsletter</i> . 75: 16-26.	[Propagules likely to be dispersed unintentionally? Possibly] "The leaves so readily fall and subsequently form roots as do pieces of stem with a rosette of leaves that the species can be a minor nuisance." [No evidence, but if pieces of this plant are discarded as garden waste, it could potentially be inadvertently dispersed]
702	2007. Low, J.. International Crassulaceae Network - Genus <i>Graptopetalum</i> . http://crassulaceae.net/graptopetalummenu/59-speciesgraptopetalum/150-genus-graptopetalum-uk?format=pdf	[Propagules dispersed intentionally by people? Yes] "It is perhaps the most widely grown species of this genus."

703	1986. Kimnach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanik_botanik_anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Propagules likely to disperse as a produce contaminant? No] " <i>Graptopetalum paraguayense</i> (N.E.Br.) Walth. First appeared about 1904 as volunteer seedlings in the glasshouse of Frank Weinberg in New York. According to Weinberg, the seeds came in with cacti exported from Mexico by J. A. McDowell. First known under the unpublished names of <i>Echeveria weinbergii</i> and <i>E. arizonica</i> , it was not validly named until 1914, when N. E. Brown, believing it to be from Paraguay, named it <i>Cotyledon paraguayensis</i> . It has also been placed in <i>Sedum</i> and in its own genus, <i>Byrnesia</i> , and by now has a synonymy of ten binomials. No native locality was known until 1979, when Alfred Lau collected a variant on Cerro Bernal, Tamaulipas, Mexico. His collection, described here as subsp. <i>bernalense</i> Kimn. & Moran, has smaller yellowish green leaves, in contrast to the larger greyish violet leaves of sub-sp. <i>paraguayense</i> ." [Although plants were first discovered as seedling in imported cactus, there is no subsequent evidence that this plant has ever become a contaminant of produce, despite its widespread cultivation]
703	2007. Randall, R.P.. <i>Global Compendium of Weeds - Index</i> [Online Database]. http://www.hear.org/gcw/	[Propagules likely to disperse as a produce contaminant? No] No evidence
704	1986. Kimnach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanik_botanik_anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Propagules adapted to wind dispersal? Unknown] "Seeds reddish brown, cylindric, ca. 0.7 mm long and 0.2 mm thick, with ca. 5 irregular longitudinal ridges." [Seeds, if produced, are small & could be potentially dispersed by wind, but cultivated plants rarely, if ever, produce seeds]
705	1986. Kimnach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanik_botanik_anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Propagules water dispersed? No evidence] "Vegetative reproduction by stem or leaf is extra-ordinarily easy."
706	1986. Kimnach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanik_botanik_anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Propagules bird dispersed? No] "Vegetative reproduction by stem or leaf is extraordinarily easy." [No evidence, and not fleshy-fruited]
707	1986. Kimnach, M./Moran, R.. <i>Graptopetalum paraguayense</i> : A history and a new subspecies. <i>Cactus & Succulent Journal of America</i> . http://www.crassulaceae.com/botanik/pflanzen/botanik_botanik_anzeige_scan_es.asp?gnr=1620&scan=110160&cat=6&name=Graptopetalum	[Propagules dispersed by other animals (externally)? No] No evidence, and no means of external attachment
708	2011. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown] No evidence, and if produced, seeds unlikely to be ingested or dispersed internally
801	2005. Staples, G.W./Herbst, D.R.. <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	[Prolific seed production (>1000/m ²)? No] "Flowers are seldom produced in Hawai`i. Ghost plant is readily propagated by rooting single detached leaves, which are simply placed right side up on dryish potting soil..." [No evidence in Hawaiian Islands]
802	2011. WRA Specialist. Personal Communication.	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown]
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on chemical control, or herbicide efficacy, for this species
804	2004. Sykes, W.R.. <i>Succulents misbehaving in my gardens</i> . <i>New Zealand Botanical Society Newsletter</i> . 75: 16-26.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Possibly] "The leaves so readily fall and subsequently form roots as do pieces of stem with a rosette of leaves that the species can be a minor nuisance." [No evidence, but if leaves can take root, it may be possible that plants can tolerate mutilation and resprout following cultivation]
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally? Unknown]