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Editorial team and responsible for the content: www.schuetziana.org/contact.php

Mario Wick, 14547 Fichtenwalde, Fichtenweg 43, Germany, mario.wick@schuetziana.org

Massimo Meregalli, 10123 Torino, V. Accademia Albertina, 17, Italia, massimo.meregalli@schuetziana.org

Wolfgang Papsch, 8401 Kalsdorf, Ziehrenweg 6, Austria, wolfgang.papsch@schuetziana.org

Tomáš Kulhánek, 67201 Moravský Krumlov, Tylova 673, Czech Republic, tomas.kulhanek@schuetziana.org.

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Cover picture: *Gymnocalycium borthii* MaW 05-139/194, Ruta 2, 500 m south of the turning Ruta 8a, Province San Luis, Argentina, 1030 m, with an Orchid Bee (photo: M. Wick)

Editorial

Dear *Gymnocalycium* enthusiasts



Mario Wick

In this issue of *Schütziana* we proceed with the overview on the seeds of the genus *Gymnocalycium*, with the subgenus *Gymnocalycium*.

The species of this subgenus turn out to be very interesting. With one exception, all new first descriptions at species level of the last three years are about representatives of this group:

Gymnocalycium alenae Kulhánek 2017 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium ponomarevae Gapon et Neuhuber 2017 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium ilseae F. Berger 2016 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium kulhanekii Papsch 2016 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium pinalii Meregalli & Kulhánek 2016 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium campestre Řepka 2015 (Argentina, Province Córdoba, subgenus *Gymnocalycium*)

Gymnocalycium mendozaense Bercht & Schädlich 2015 (Bolivia, subgenus *Muscosemineum*)

Except for *G. mendozaense*, the special thing of these species is that they are all native to northern Córdoba. Here there seems to exist a kind of 'hotspot' of the development of this subgenus. Not every population in this area can be unambiguously assigned to a described species. Here we simply cannot go any further with morphological comparisons. Polyploidy, hybridisation, recombination and separation seem to allow the plants to develop the characteristics of different species. As always, here we have only a snapshot of nature, which is especially regrettable in this case.

Unfortunately, we do not yet have the material of the recently described species *Gymnocalycium ponomarevae* Gapon et Neuhuber available for publication. We will cover this species later.

Have fun leafing through and gazing!

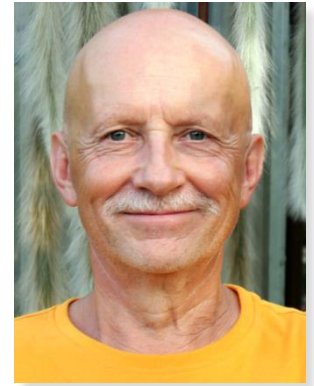
We would like to express our warmest thanks to Mrs Iris Blanz (Fernitz, Austria), to Mr Brian Bates (Bolivia) and to Mr Graham Charles (United Kingdom), who support us with the translation into English, to Mrs Larisa Zaitseva for the translation into Russian (Tscheljabinsk, Russia), to Mr Takashi Shimada (Japan) for the translation into Japanese and to Mr Daniel Schweich (France), who has mirrored our publications under <http://www.cactuspro.com/biblio/>.

The Seeds of the Genus *Gymnocalycium* Pfeiffer ex Mittler Part 2: The Subgenus *Gymnocalycium*

Volker Schädlich

Bergstraße 1, 03130 Spremberg, Germany

E-mail: volker@gymnos.de



Mario Wick

Fichtenweg 43, 14547 Fichtenwalde, Germany

E-mail: mario.wick@schuetziana.org



ABSTRACT

The authors present a paper about those *Gymnocalycium* species which they accept. The species are introduced with one photograph of their habitat, one of their environment and one of their seed respectively (if available). A map of each plant's locality completes the presentation. Part 2 deals with the subgenus *Gymnocalycium*.

KEYWORDS: Cactaceae, *Gymnocalycium*, subgenus *Gymnocalycium*, affine, *alena*, *amerhauseri*, *andreae*, *baldianum*, *berchtii*, *borthii*, *bruchii*, *calochlorum*, *campestre*, *capillense*, *carolinense*, *erinaceum*, *erollesii*, *fischeri*, *frankianum*, *gaponii*, *gertii*, *gibbosum*, *ilseae*, *kieslingii*, *kroenleinii*, *kuehhasii*, *kulhanekii*, *mariana*, *mergallii*, *morroense*, *nataliae*, *neuhuberi*, *papschii*, *parvulum*, *pinalii*, *platense*, *poeschlii*, *reductum*, *robustum*, *schreiteri*, *strigianum*, *sutterianum*, *taningaense*, *uebelmannianum*.

INTRODUCTION

In the second part of our work on the seeds of the genus *Gymnocalycium* we present the species of the subgenus *Gymnocalycium*.

For compiling the maps, we used the free GIS software QGIS (<http://www.qgis.org/de/site/forusers/download.html>). The background of the maps is formed by Google Inc. data, which can be combined in QGIS with the QGIS extension Quick Map Services (<http://nextgis.com/blog/quickmapservices/>) by Nextgis company (<http://nextgis.com/>).

Type species of the subgenus *Gymnocalycium* is *Gymnocalycium gibbosum* (Haw.) Pfeiff. ex Mittler (1844).

Genus *Gymnocalycium* Pfeiffer ex Mittler (1844)

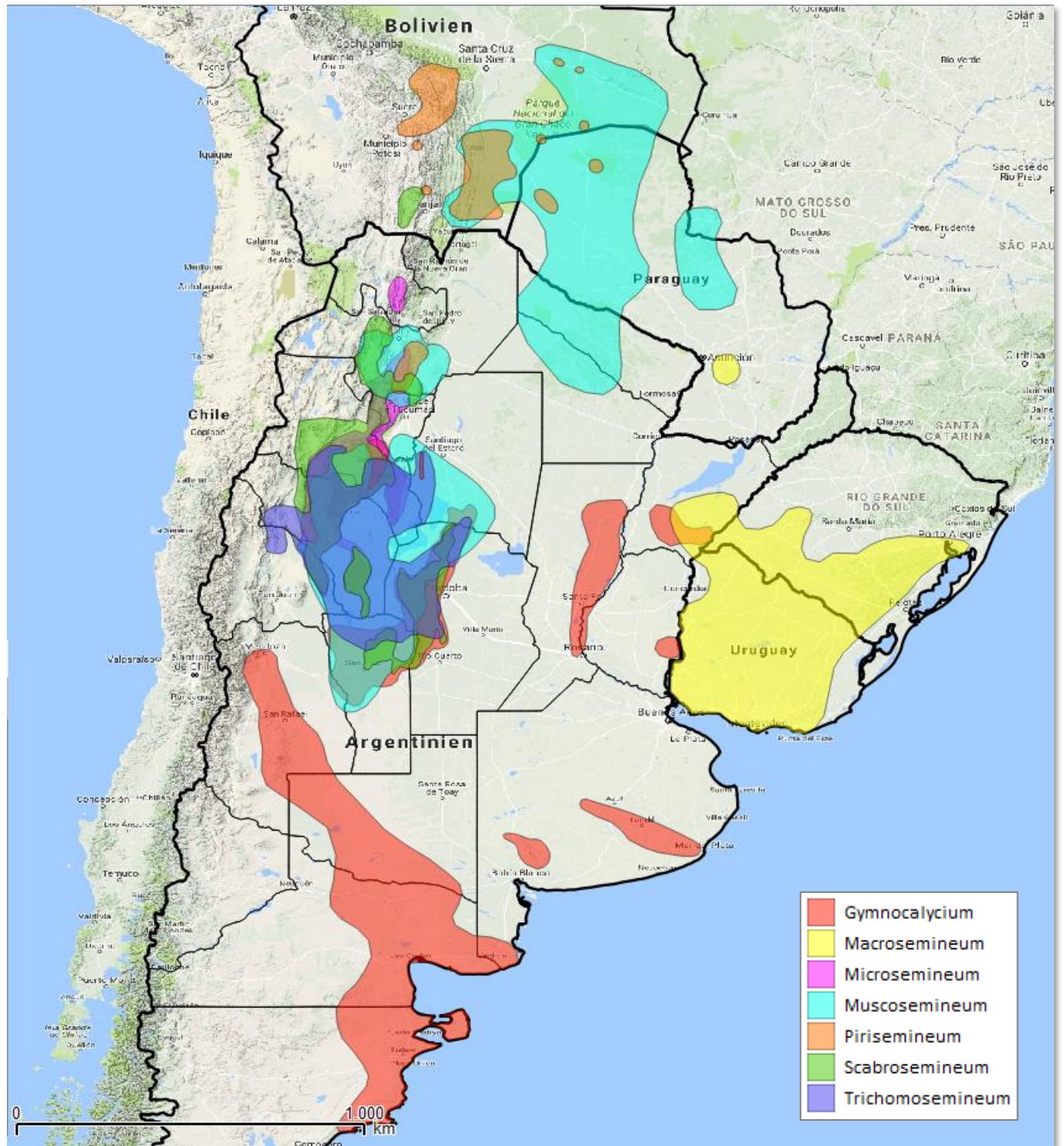


Fig. 1: Overview map of the distribution areas of the subgenera of the genus *Gymnocalycium*

Subgenus *Gymnocalycium*

Body: very small to medium large, flat, spherical or short columnar, with fibrous or tap root, **Spines:** from almost hairy to very strong and stiff, straight to bent, **Flowers:** from the apex, funnel- to bell-shaped, often large, **Fruits:** spherical, fusiform or clavate, brown, grey green or green, often grey or blue pruinated, dehiscing vertically, **Seeds:** 0.9-1.1 mm in size, **Testa:** with protuberances, matt to matt-glossy, brownish to black, usually with a partly or entirely detaching brownish cuticle, seeds within this subgenus relatively uniform, **Locality:** Argentina and Uruguay.

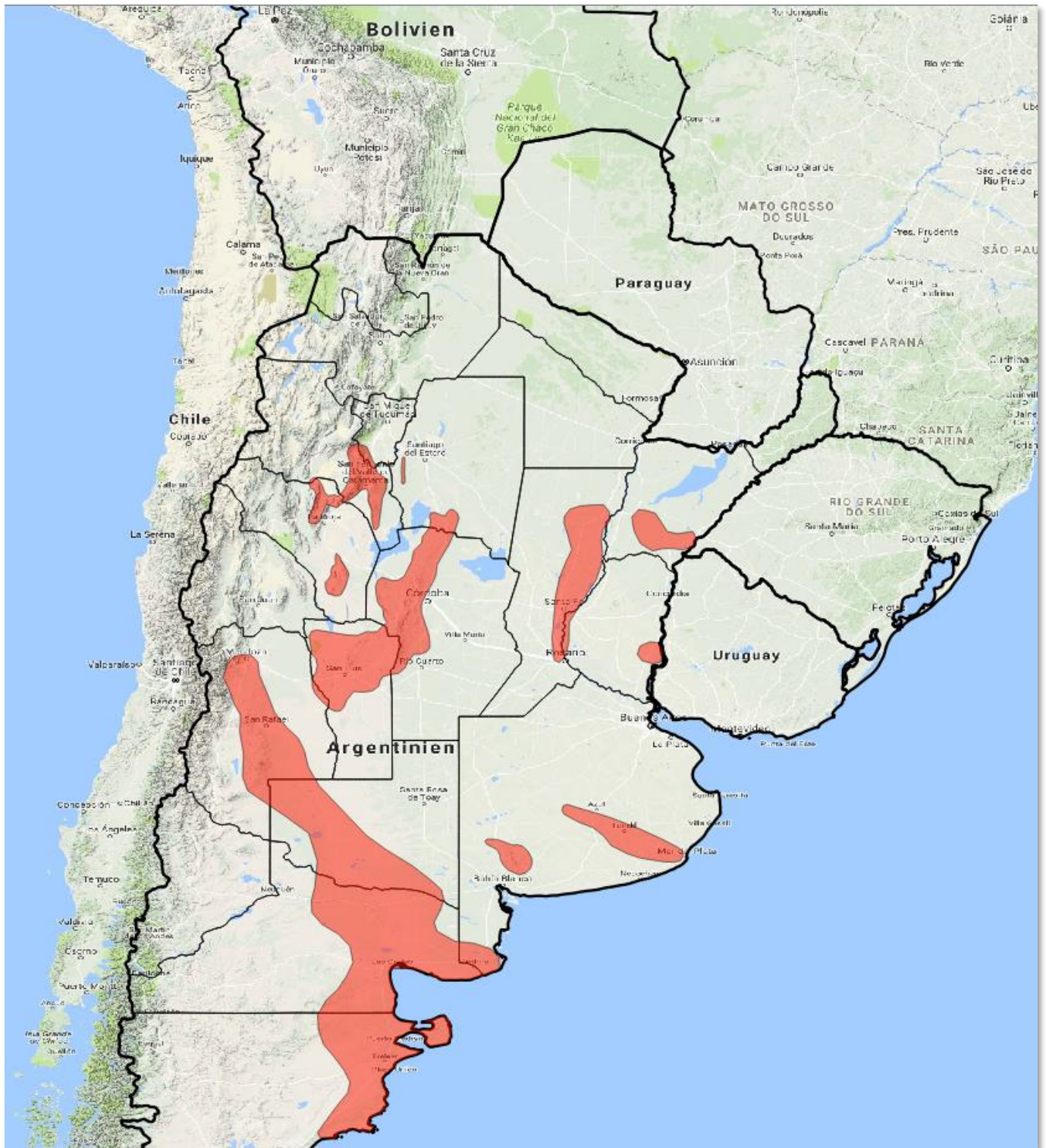


Abb. 2: Overview map of the distribution area of subgenus *Gymnocalycium*, type species: *G. gibbosum*

***Gymnocalycium affine* Řepka (2010)**



Fig. 3: *Gymnocalycium affine* VoS 1380, northeast of San Francisco del Chañar, Province Córdoba, Argentina, 618 m



Fig. 4: Habitat of *Gymnocalycium affine* VoS 1380



Fig. 5: Seeds of *Gymnocalycium affine* VoS 1380 (photographed at 20x magnification)

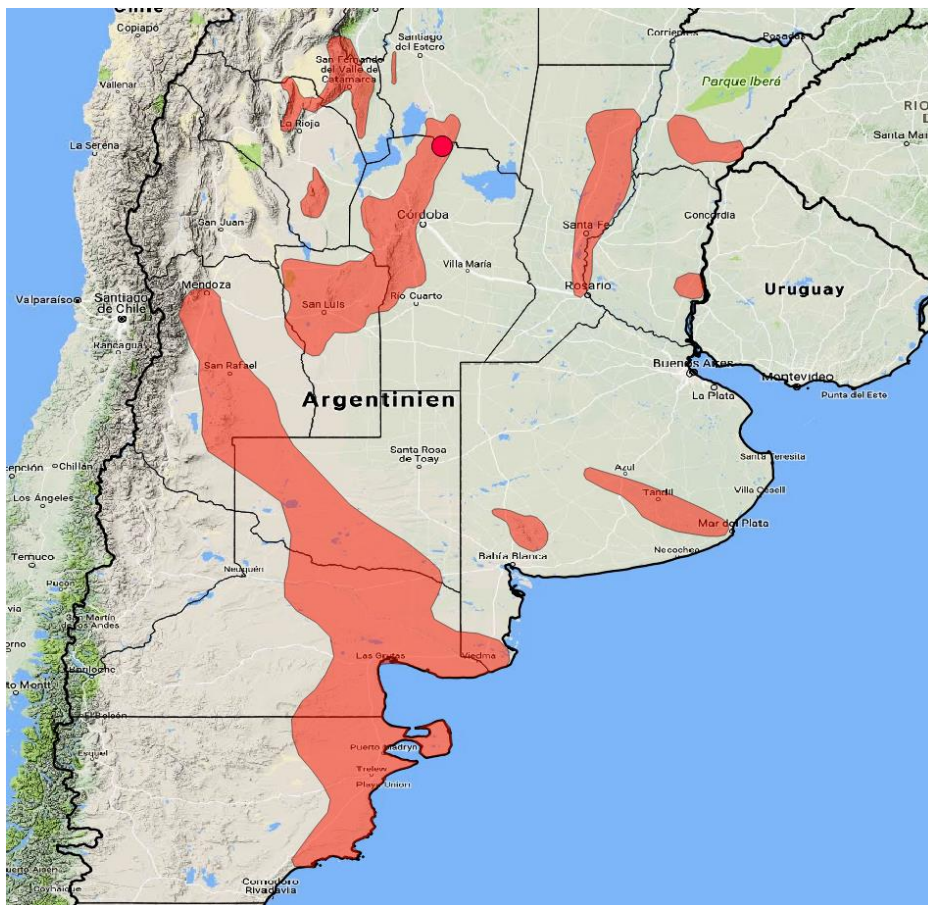


Fig. 6: Locality of *Gymnocalycium affine* VoS 1380

***Gymnocalycium alenae* Kulhánek (2017)**



Fig. 7: *Gymnocalycium alenae* VoS 795, south of San Francisco de Chañar, Province Córdoba, Argentina, 672 m



Fig. 8: Habitat of *Gymnocalycium alenae* VoS 795



Fig. 9: Seeds of *Gymnocalycium alenae* VoS 795 (photographed at 20x magnification)

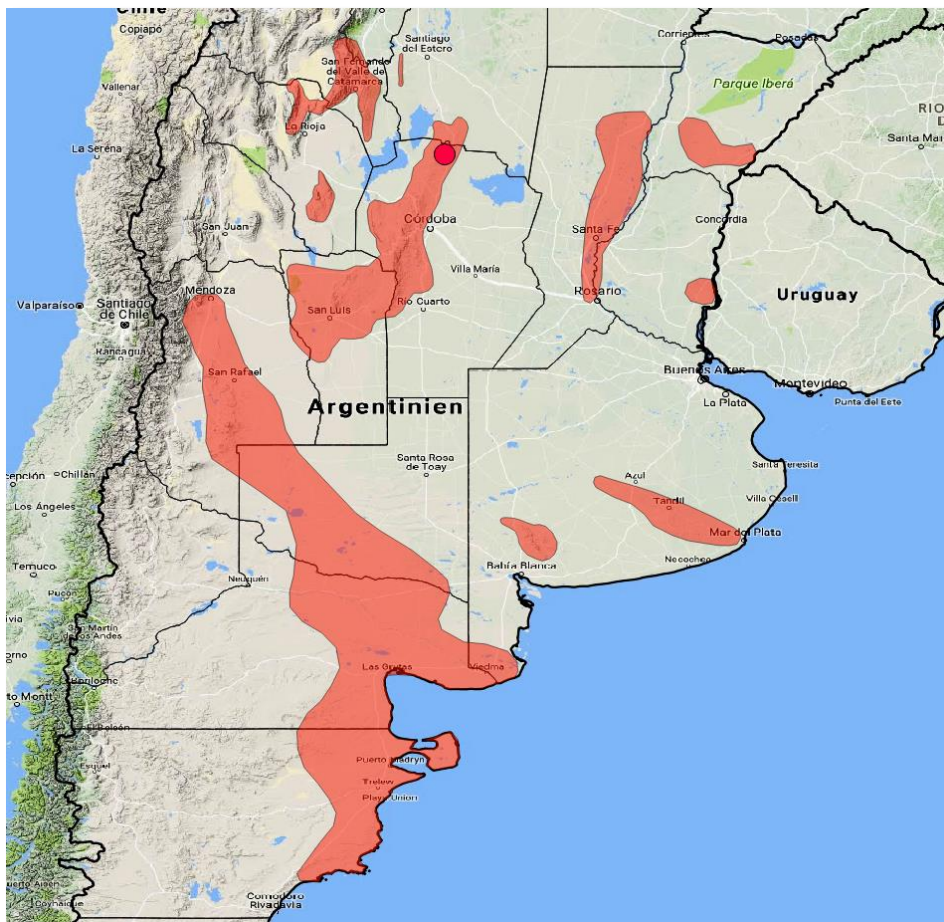


Fig. 10: Locality of *Gymnocalycium alenae* VoS 795

***Gymnocalycium amerhauseri* H. Till (1994)**



Fig. 11: *Gymnocalycium amerhauseri* VoS 690, southwest of La Falda, Province Córdoba, Argentina, 1160 m



Fig. 12: Habitat of *Gymnocalycium amerhauseri* VoS 690

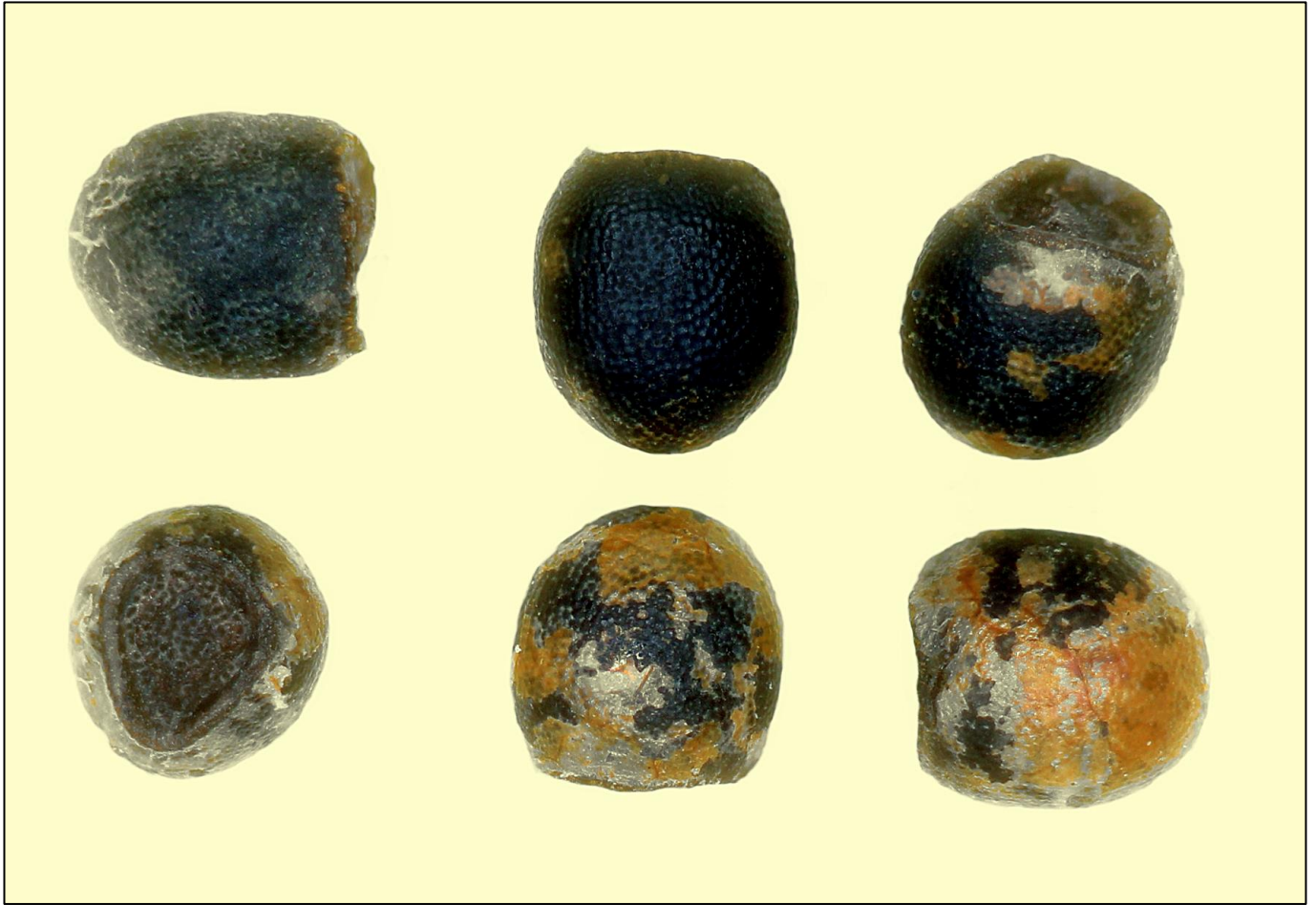


Fig. 13: Seeds of *Gymnocalycium amerhauseri* VoS 690 (photographed at 20x magnification)

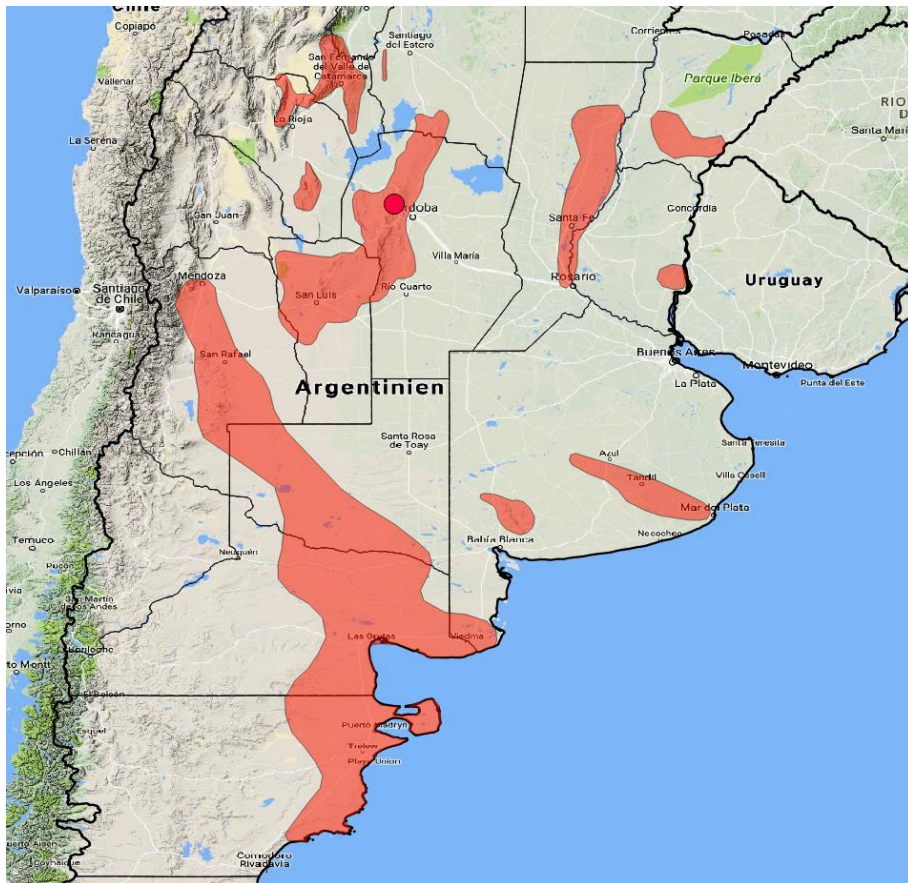


Fig. 14: Locality of *Gymnocalycium amerhauseri* VoS 690

***Gymnocalycium andreae* (Boedeker) Backeb. & F. M. Knuth (1936)**



Fig. 15: *Gymnocalycium andreae* VoS 1490, road from Merlo to Lutti, Province Córdoba, Argentina, 2109 m



Fig. 16: Habitat of *Gymnocalycium andreae* VoS 1490



Fig. 17: Seeds of *Gymnocalycium andreae* VoS 1490 (photographed at 20x magnification)

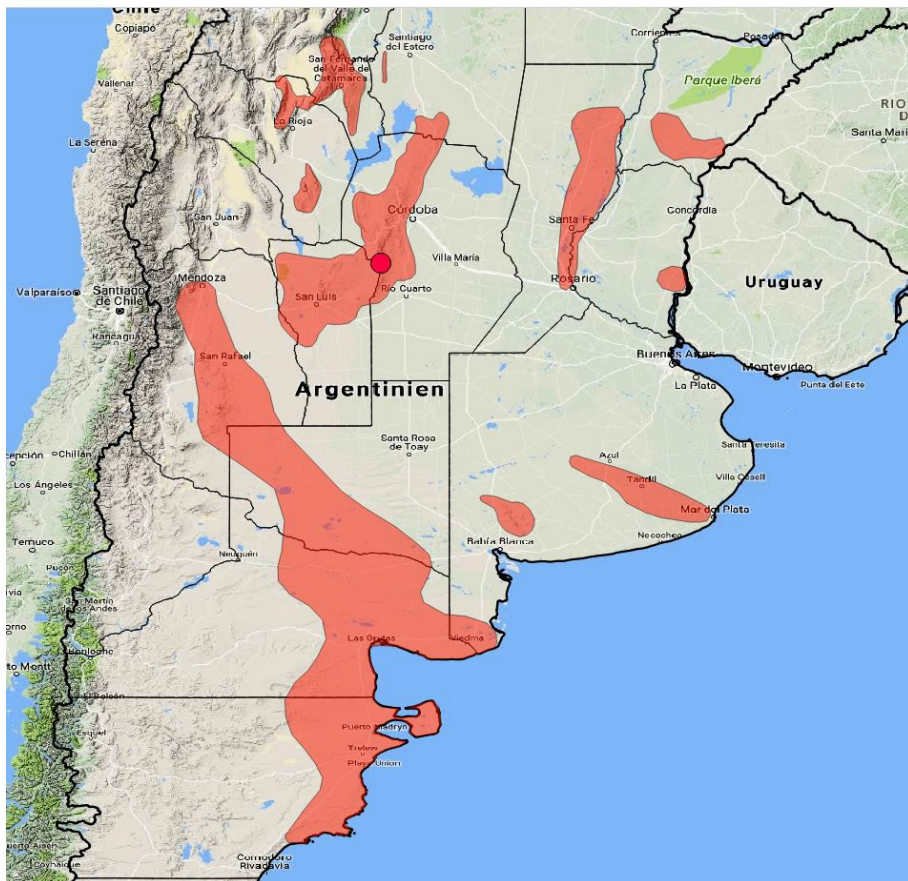


Fig. 18: Locality of *Gymnocalycium andreae* VoS 1490

***Gymnocalycium baldianum* (Speg.) Speg. (1925)**



Fig. 19: *Gymnocalycium baldianum* VoS 117, Cuesta del Portezuelo, Province Catamarca, Argentina, 1823 m



Fig. 20: Habitat of *Gymnocalycium baldianum* VoS 117



Fig. 21: Seeds of *Gymnocalycium baldianum* VoS 844, Cuesta del Totoral, Province Catamarca, Argentina, 1122 m (photographed at 20x magnification)

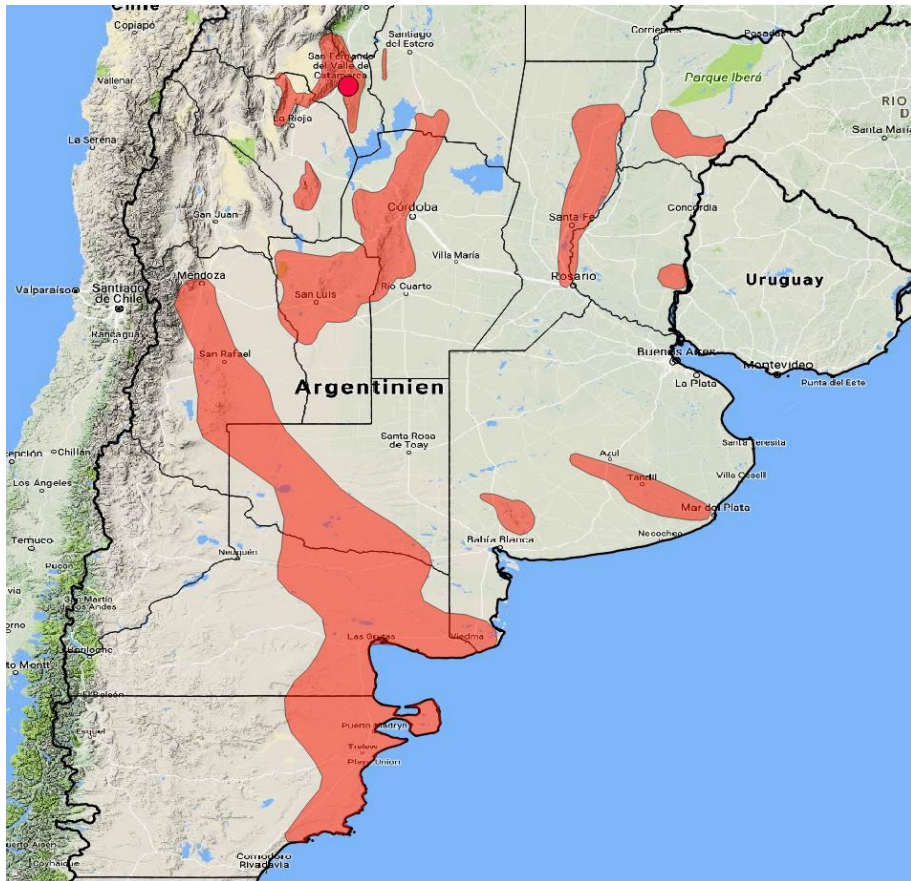


Fig. 22: Locality of *Gymnocalycium baldianum* VoS 117 and VoS 844

***Gymnocalycium berchtii* Neuhuber (1997)**



Fig. 23: *Gymnocalycium berchtii* VoS 170, northwest turnout Ruta 5 X Ruta 5a, Province San Luis, Argentina, 731 m



Fig. 24: Habitat of *Gymnocalycium berchtii* VoS 170

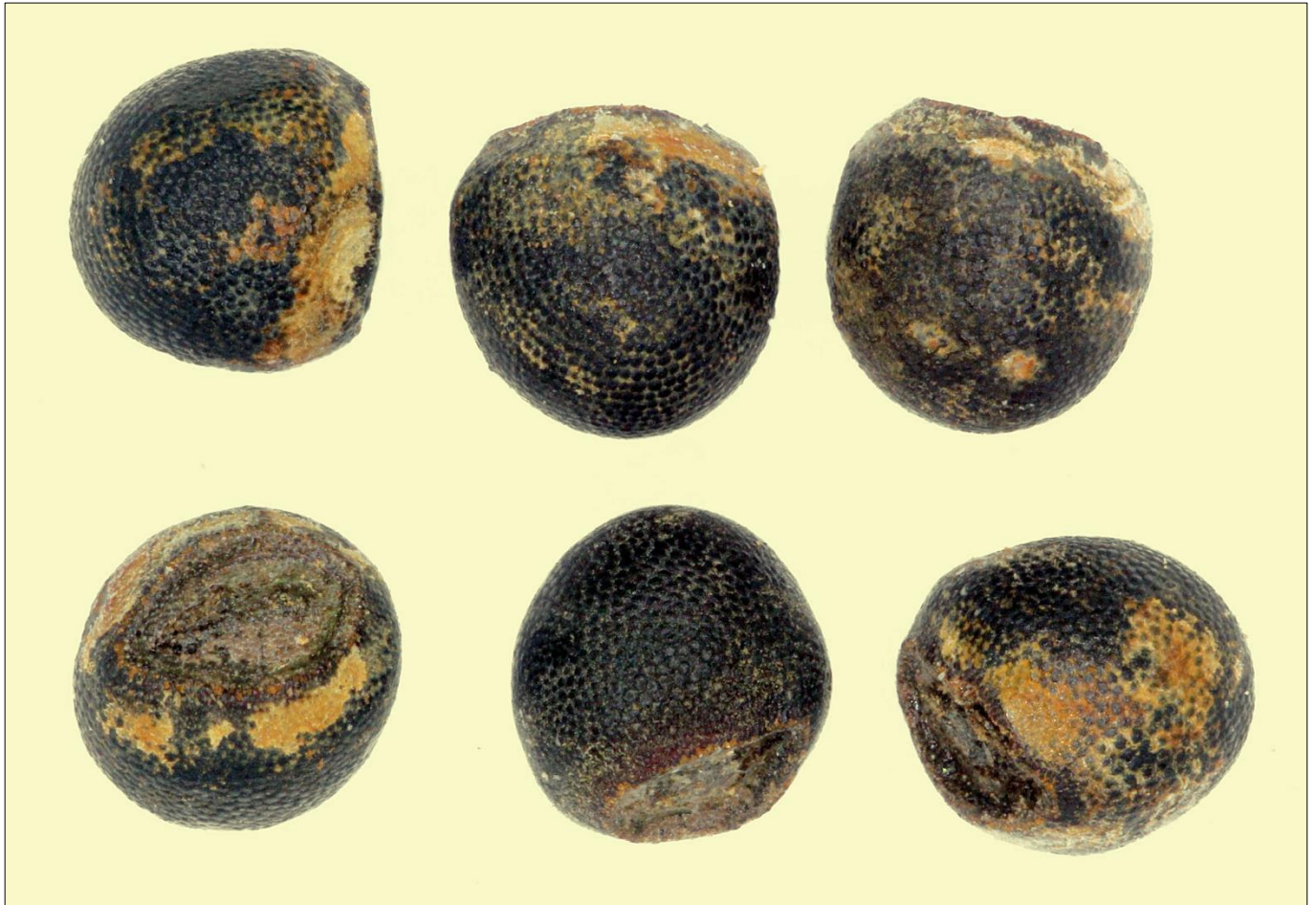


Fig. 25: Seeds of *Gymnocalycium berchtii* VoS 170 (photographed at 20x magnification)

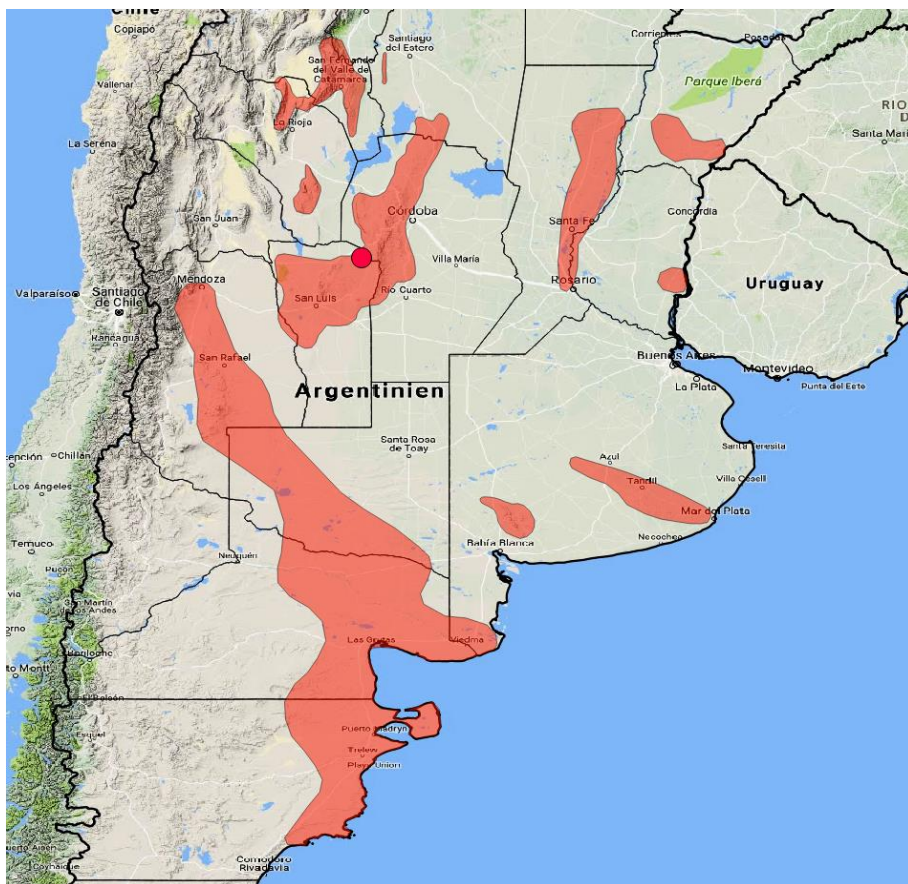


Fig. 26: Locality of *Gymnocalycium berchtii* VoS 170

***Gymnocalycium borthii* Koop ex H. Till (1987)**



Fig. 27: *Gymnocalycium borthii* LB 4367, Escuela Los Chañares, Province San Luis, Argentina, 753 m



Fig. 28: Habitat of *Gymnocalycium borthii* LB 3187 = LB 4367



Fig. 29: Seeds of *Gymnocalycium borthii* MM 634 (photographed at 20x magnification)

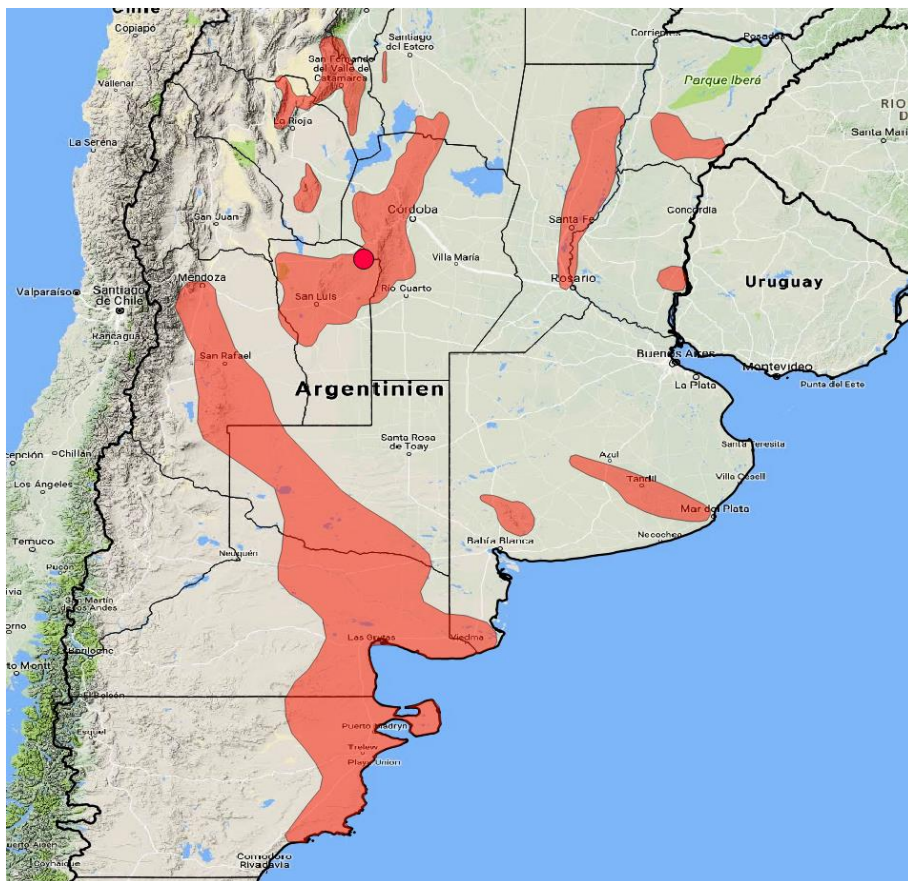


Fig. 30: Locality of *Gymnocalycium borthii* MM 634 = LB 3187 = LB 4367

***Gymnocalycium bruchii* (Speg.) Hosseus (1926)**



Fig. 31: *Gymnocalycium bruchii* var. *niveum* VoS 727, north of Ongamira, Province Córdoba, Argentina, 1180 m



Fig. 32: Habitat of *Gymnocalycium bruchii* var. *niveum* VoS 727



Fig. 33: Seeds of *Gymnocalycium bruchii* var. *niveum* VoS 727 (photographed at 20x magnification)

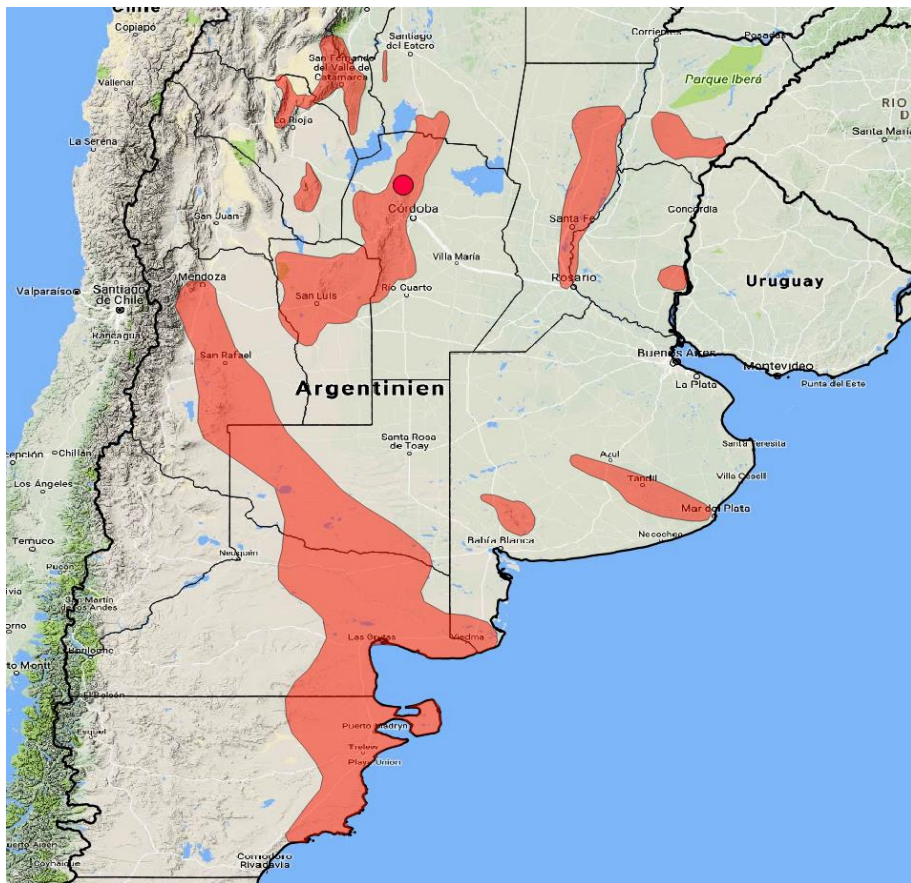


Fig. 34: Locality of *Gymnocalycium bruchii* var. *niveum* VoS 727

***Gymnocalycium calochlorum* (Boed.) Y. Itô (1952)**



Fig. 35: *Gymnocalycium calochlorum* VoS 663, northwest of Villa Carlos Paz, Province Córdoba, Argentina, 760 m



Fig. 36: Habitat of *Gymnocalycium calochlorum* VoS 663

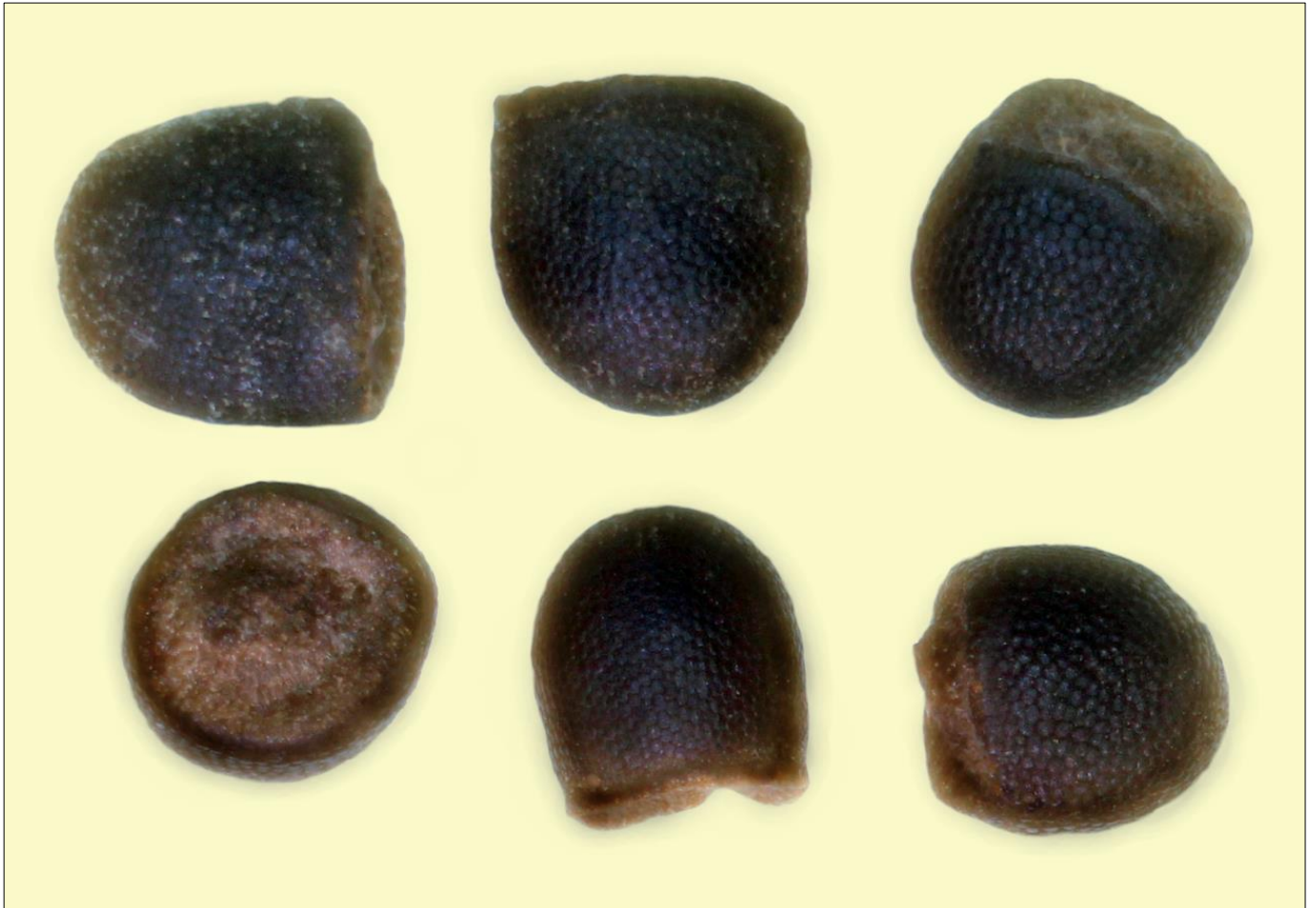


Fig. 37: Seeds of *Gymnocalycium calochlorum* VoS 663 (photographed at 20x magnification)

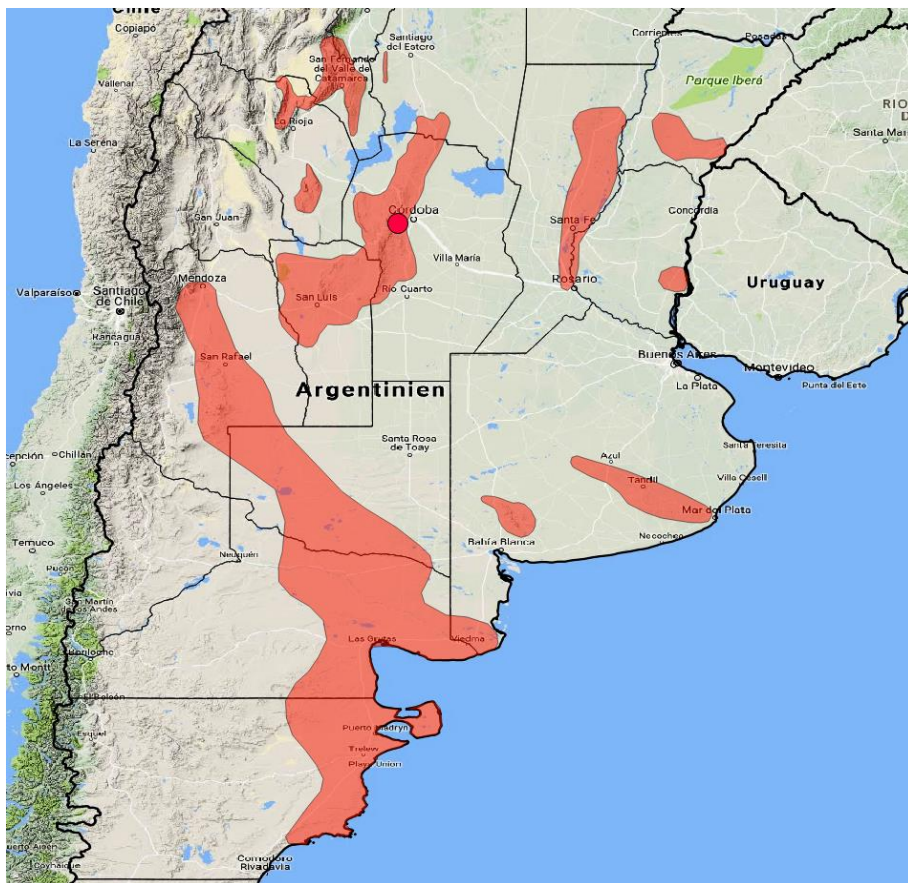


Fig. 38: Locality of *Gymnocalycium calochlorum* VoS 663

***Gymnocalycium campestre* Řepka (2015)**



Fig. 39: *Gymnocalycium campestre* VoS 1308, east of Copacabana, Province Córdoba, Argentina, 1003 m



Fig. 40: Habitat of *Gymnocalycium campestre* VoS 1308



Fig. 41: Seeds of *Gymnocalycium campestre* VoS 1308 (photographed at 20x magnification)

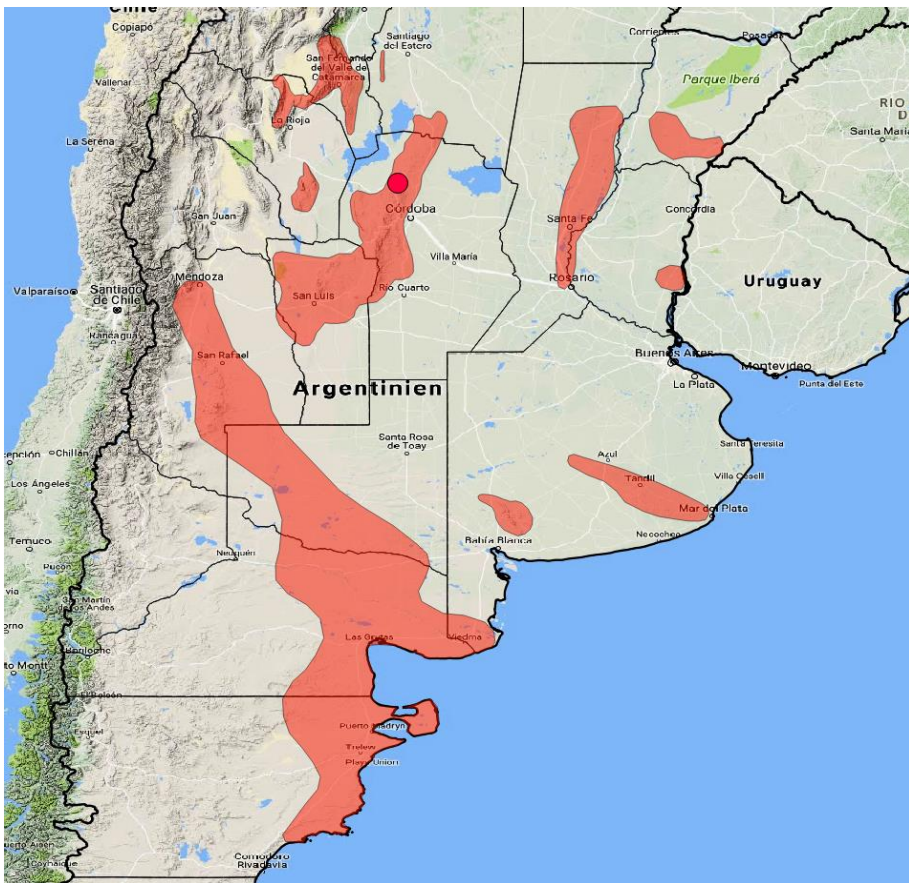


Fig. 42: Locality of *Gymnocalycium campestre* VoS 1308

***Gymnocalycium capillense* (Schick) Hosseus (1926)**



Fig. 43: *Gymnocalycium capillense* VoS 1478, northeast of Ambul, Province Córdoba, Argentina, 1397 m



Fig. 44: Habitat of *Gymnocalycium capillense* VoS 1478

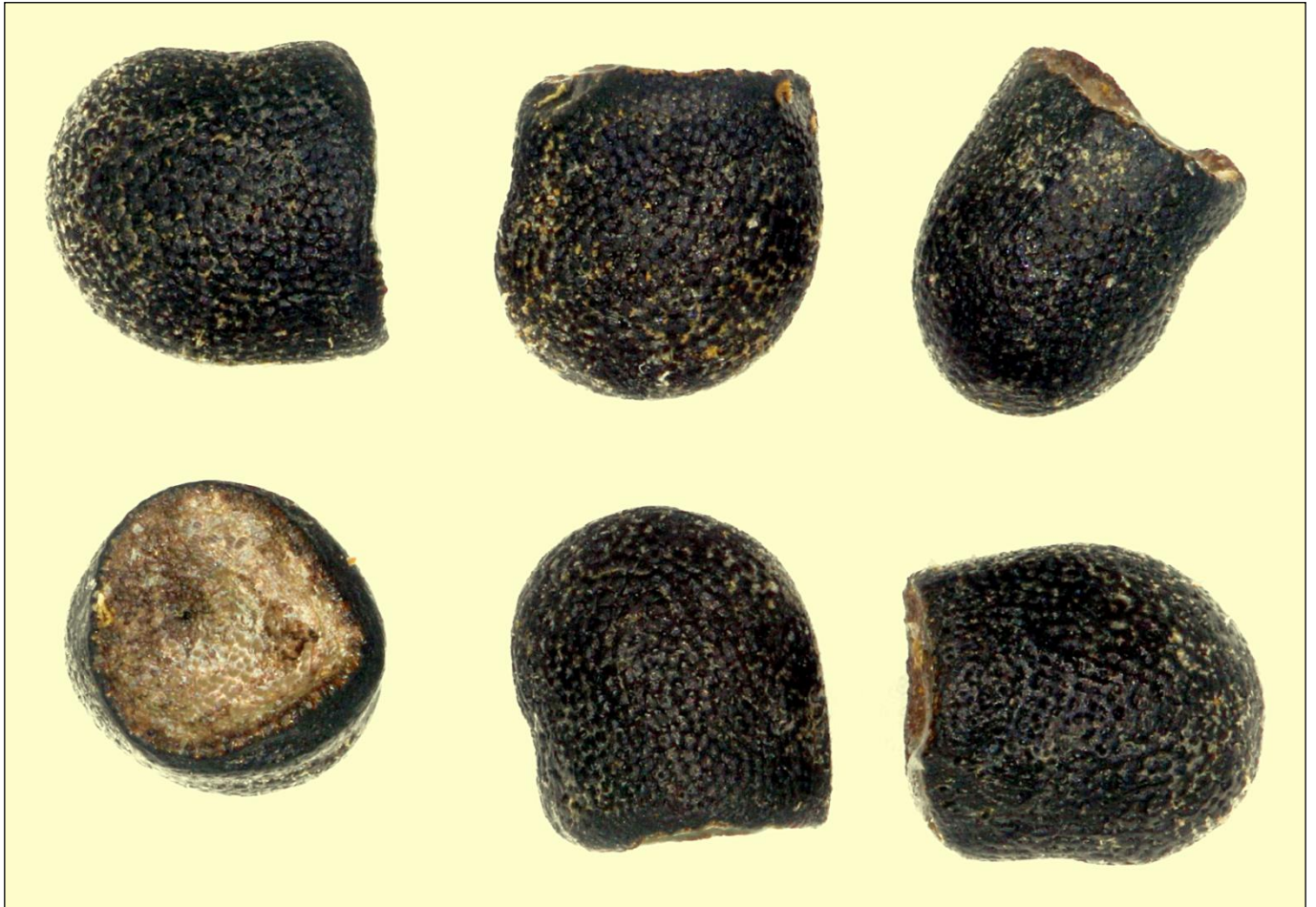


Fig. 45: Seeds of *Gymnocalycium capillense* VoS 1478 (photographed at 20x magnification)

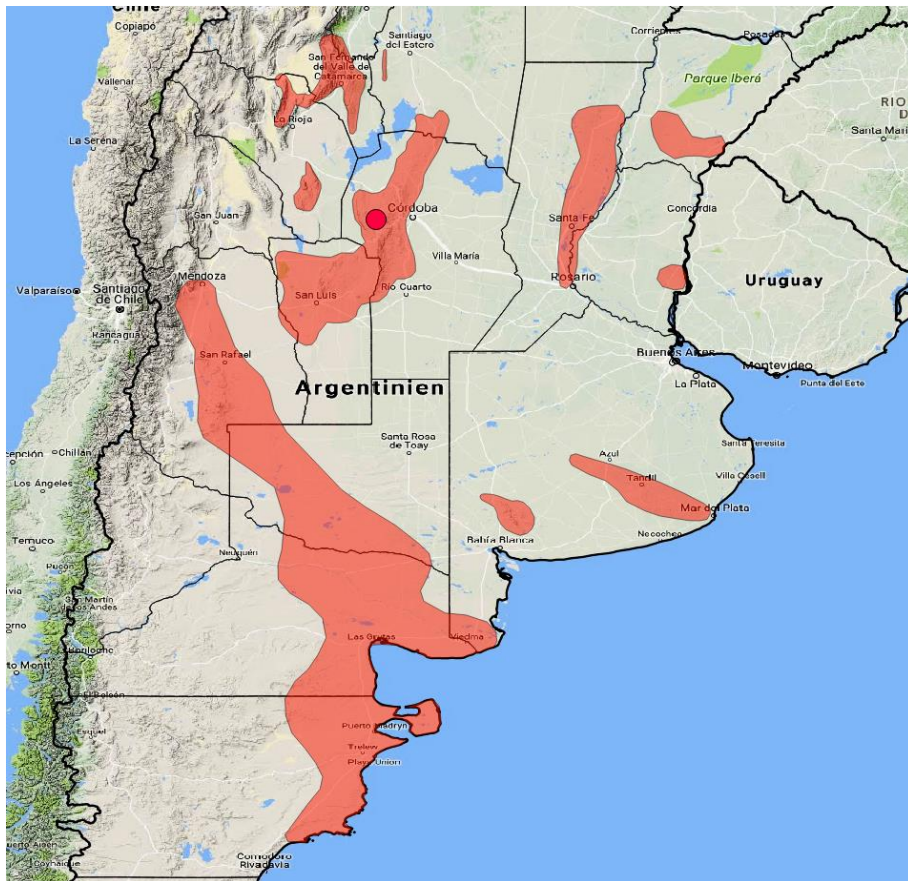


Fig. 46: Locality of *Gymnocalycium capillense* VoS 1478

***Gymnocalycium carolinense* (Neuhuber) Neuhuber (2005)**



Fig. 47: *Gymnocalycium carolinense* VoS 198, north of La Carolina, Ruta 9, Province San Luis, Argentina, 1706 m



Fig. 48: Habitat of *Gymnocalycium carolinense* VoS 198

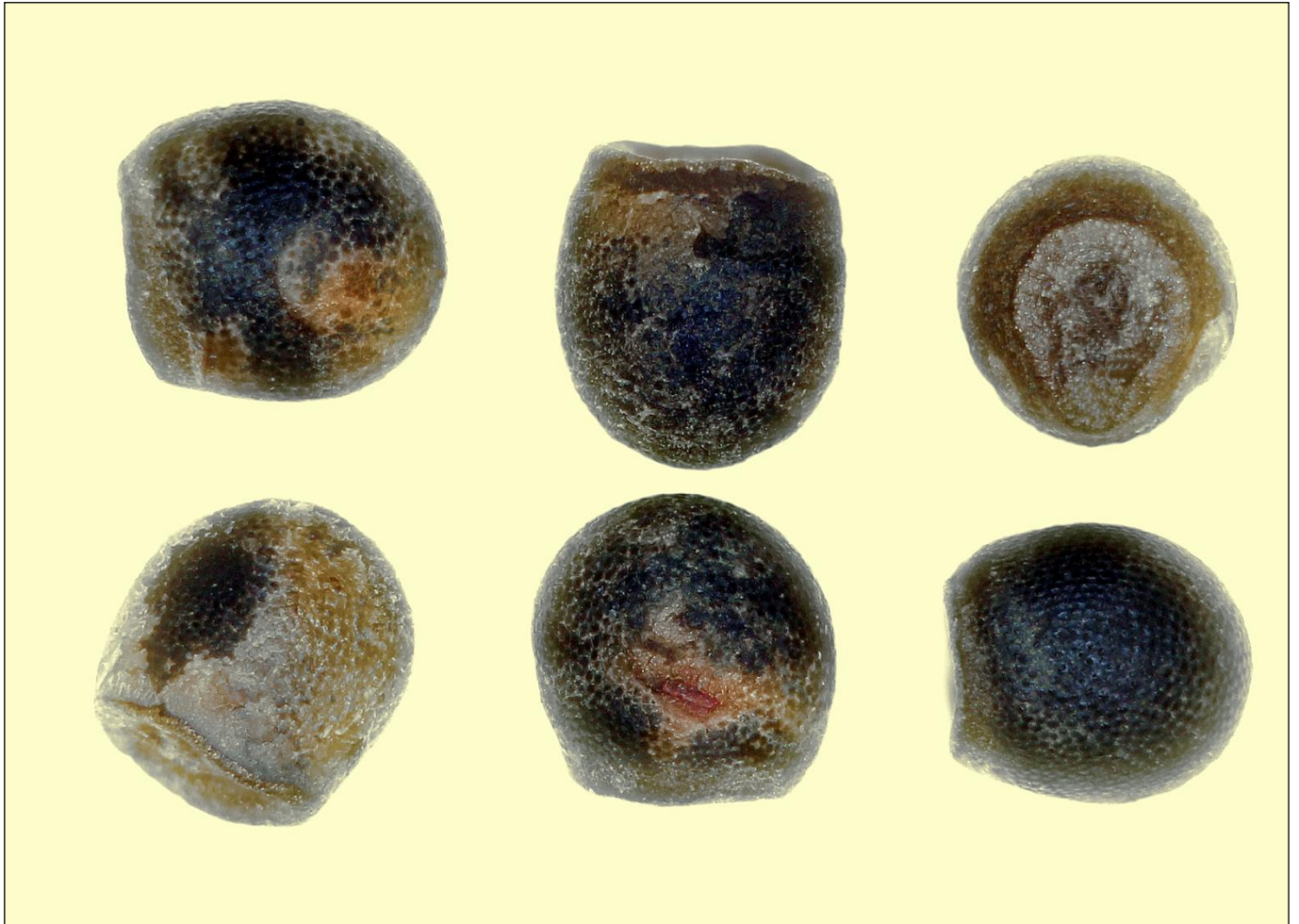


Fig. 49: Seeds of *Gymnocalycium carolinense* VoS 198 (photographed at 20x magnification)

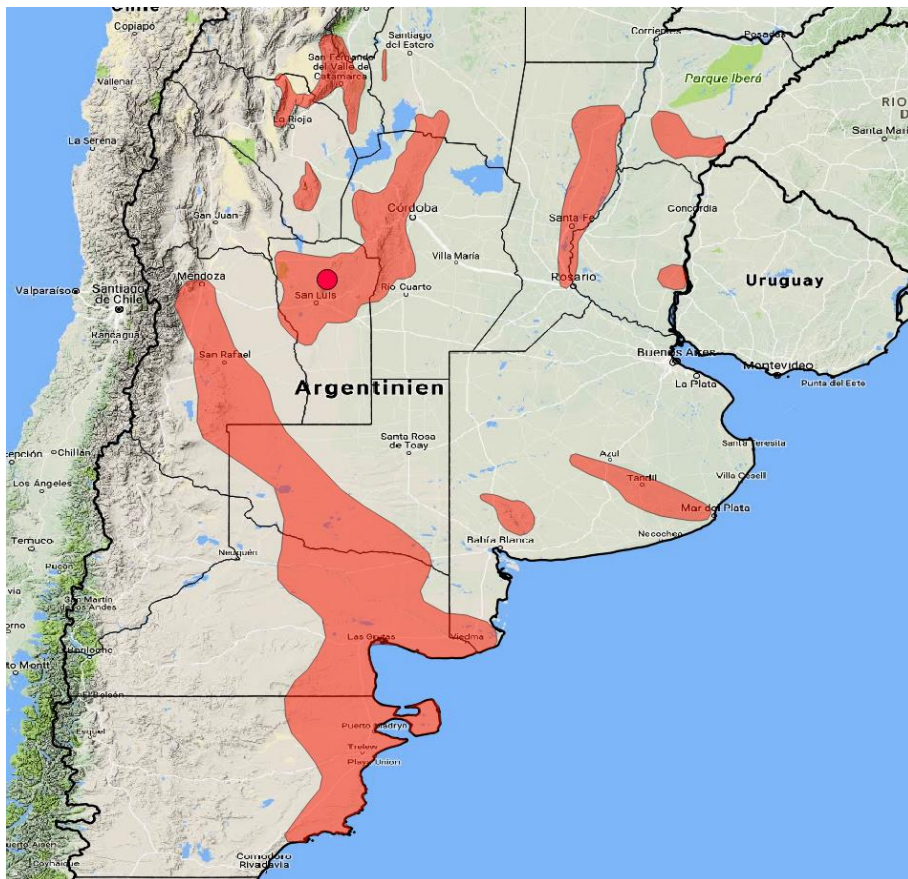


Fig. 50: Locality of *Gymnocalycium carolinense* VoS 198

***Gymnocalycium erinaceum* Lambert (1985)**



Fig. 51: *Gymnocalycium erinaceum* VoS 1331, Sauce Punco, Province Córdoba, Argentina, 862 m



Fig. 52: Habitat of *Gymnocalycium erinaceum* VoS 1331



Fig. 53: Seeds of *Gymnocalycium erinaceum* VoS 1331 (photographed at 20x magnification)

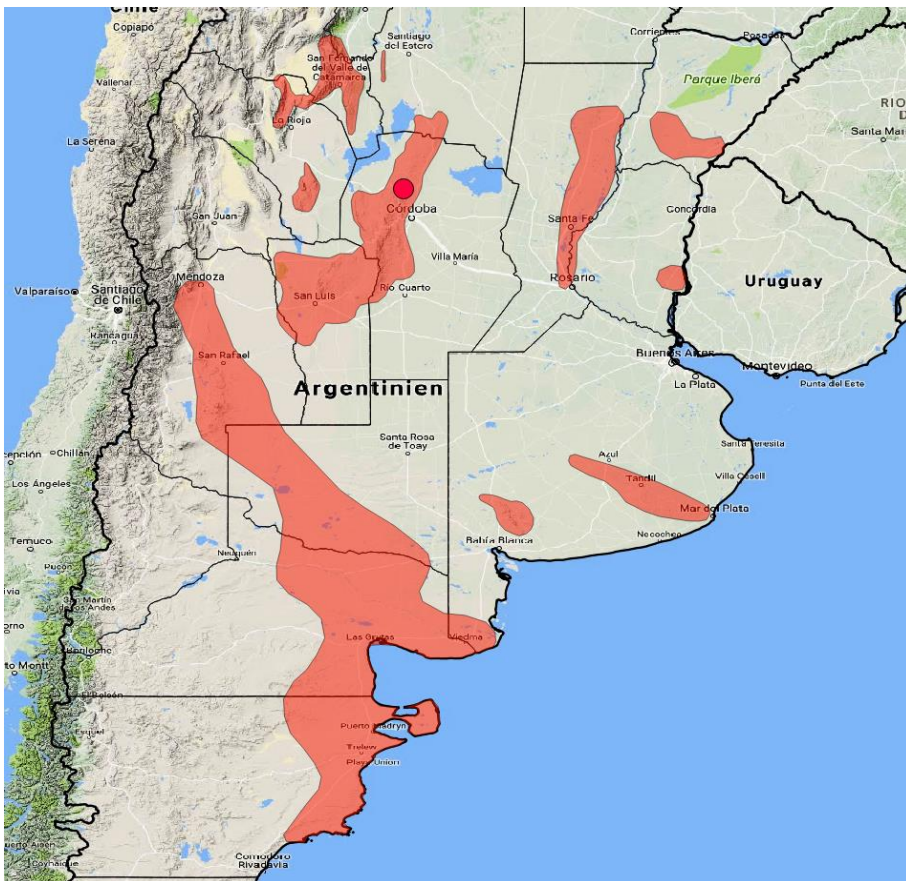


Fig. 54: Locality of *Gymnocalycium erinaceum* VoS 1331

***Gymnocalycium erolesii* Neuhuber & Bercht (2002)**



Fig. 55: *Gymnocalycium erolesii* VoS 83, Ruta 11, northeast of Vera, Province Santa Fe, Argentina, 64 m



Fig. 56: Habitat of *Gymnocalycium erolesii* VoS 83



Fig. 57: Seeds of *Gymnocalycium erolesii* VoS 83 (photographed at 20x magnification)

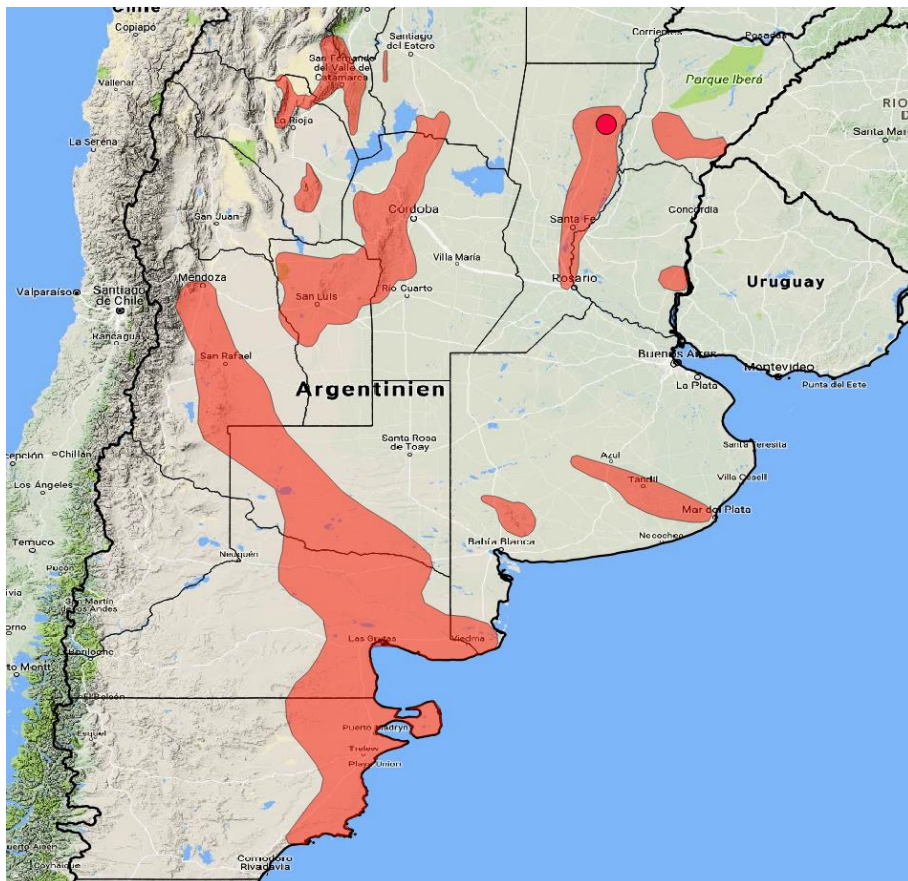


Fig. 58: Locality of *Gymnocalycium erolesii* VoS 83

***Gymnocalycium fischeri* Halda, Kupcák, Lukašik & Sladk. (2003)**



Fig. 59: *Gymnocalycium fischeri* VoS 228, Campo La Sierra El Volcán, Province San Luis, Argentina, 963 m



Fig. 60: Habitat of *Gymnocalycium fischeri* VoS 228

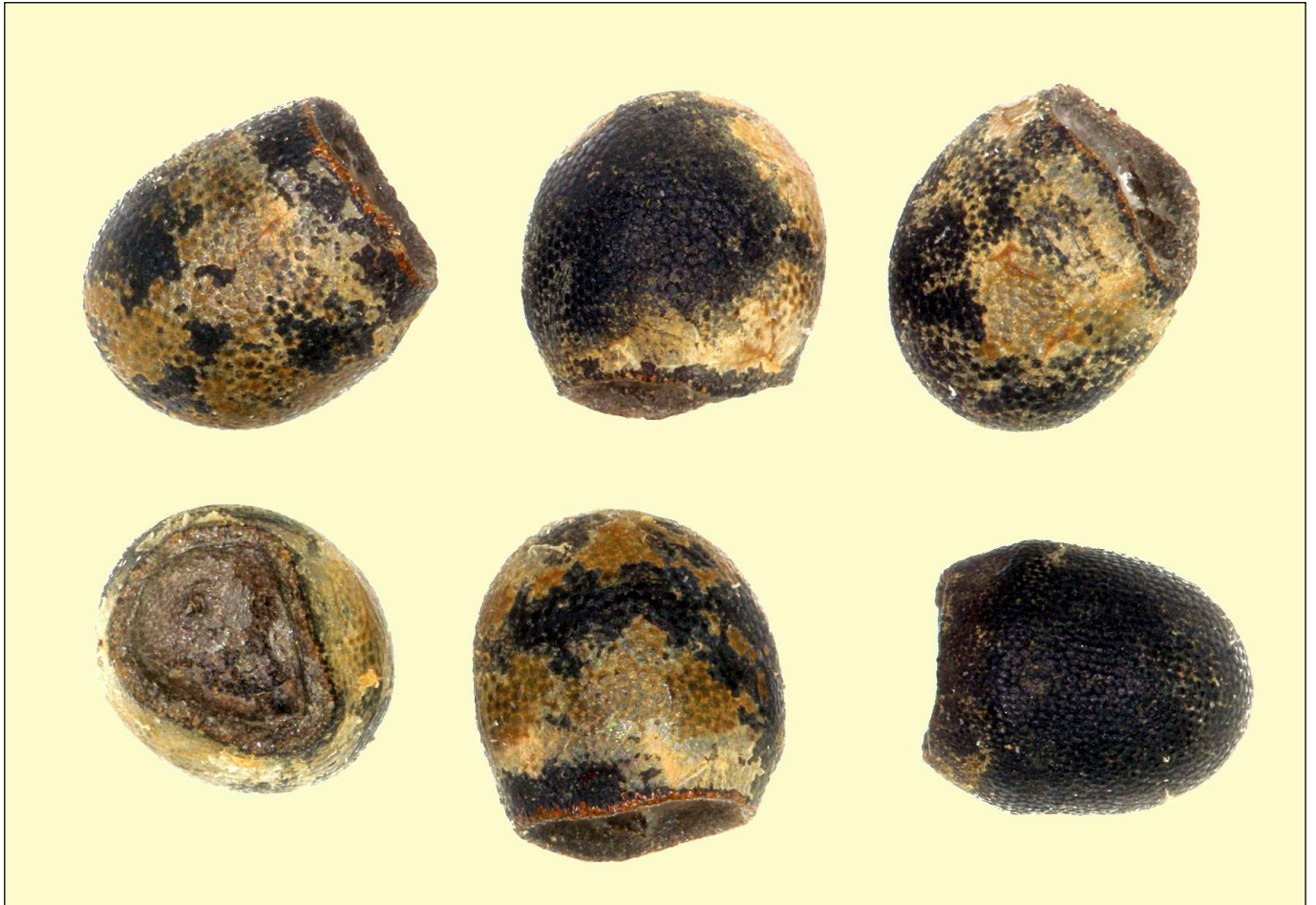


Fig. 61: Seeds of *Gymnocalycium fischeri* VoS 228 (photographed at 20x magnification)

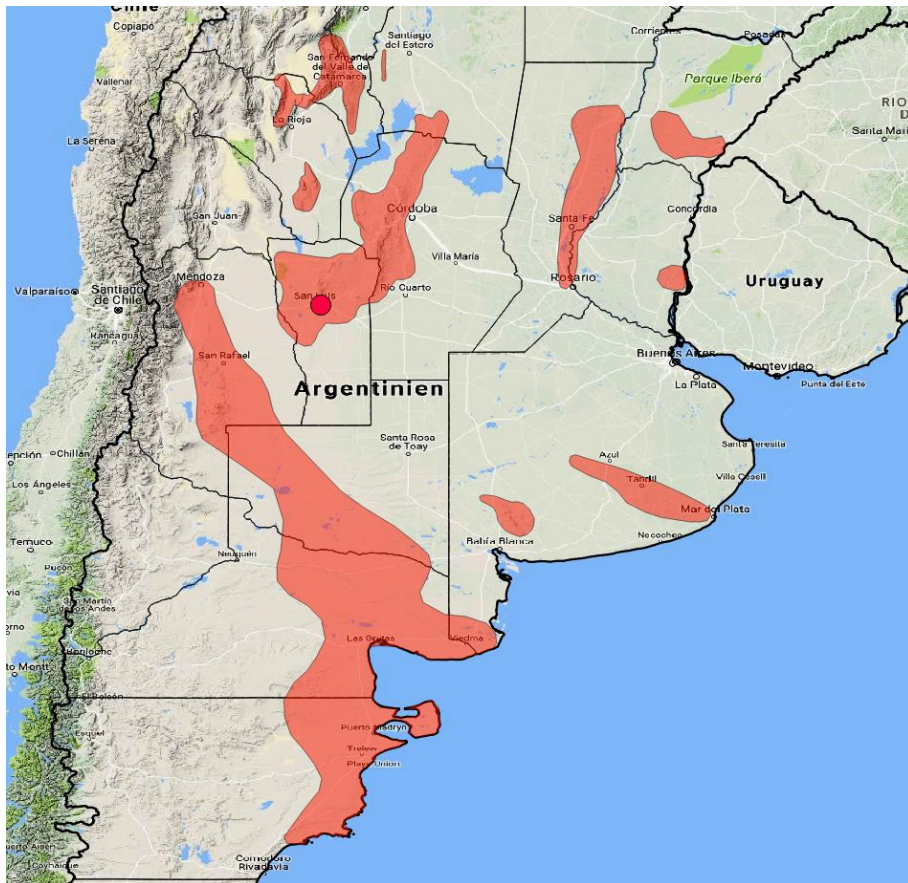


Fig. 62: Locality of *Gymnocalycium fischeri* VoS 228

***Gymnocalycium frankianum* Rausch ex H. Till & Amerh. (2007)**



Fig. 63: *Gymnocalycium frankianum* VoS 812, west of Santa Catalina, Province Santiago del Estero, Argentina, 600 m



Fig. 64: Habitat of *Gymnocalycium frankianum* VoS 812



Fig. 65: Seeds of *Gymnocalycium frankianum* VoS 812 (photographed at 20x magnification)

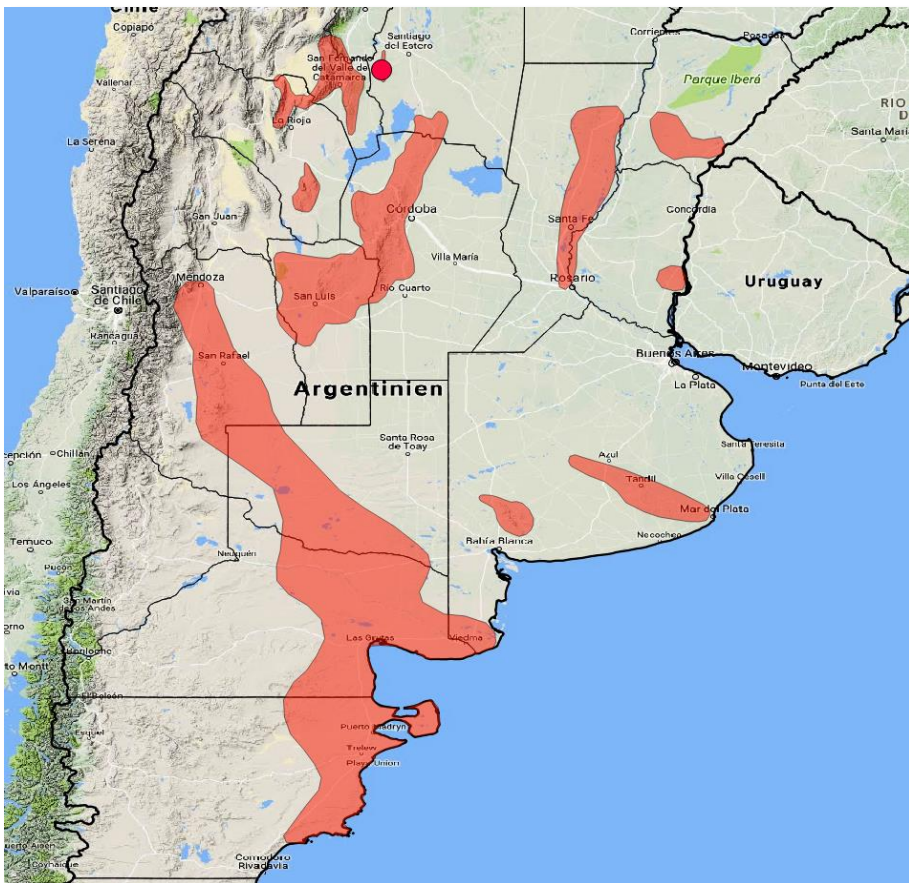


Fig. 66: Locality of *Gymnocalycium frankianum* VoS 812

***Gymnocalycium gaponii* Neuhuber (2001)**



Fig. 67: *Gymnocalycium gaponii* VoS 892, east of Panaholma, Province Córdoba, Argentina, 982 m



Fig. 68: Habitat of *Gymnocalycium gaponii* VoS 892



Fig. 69: Seeds of *Gymnocalcium gaponii* VoS 892 (photographed at 20x magnification)

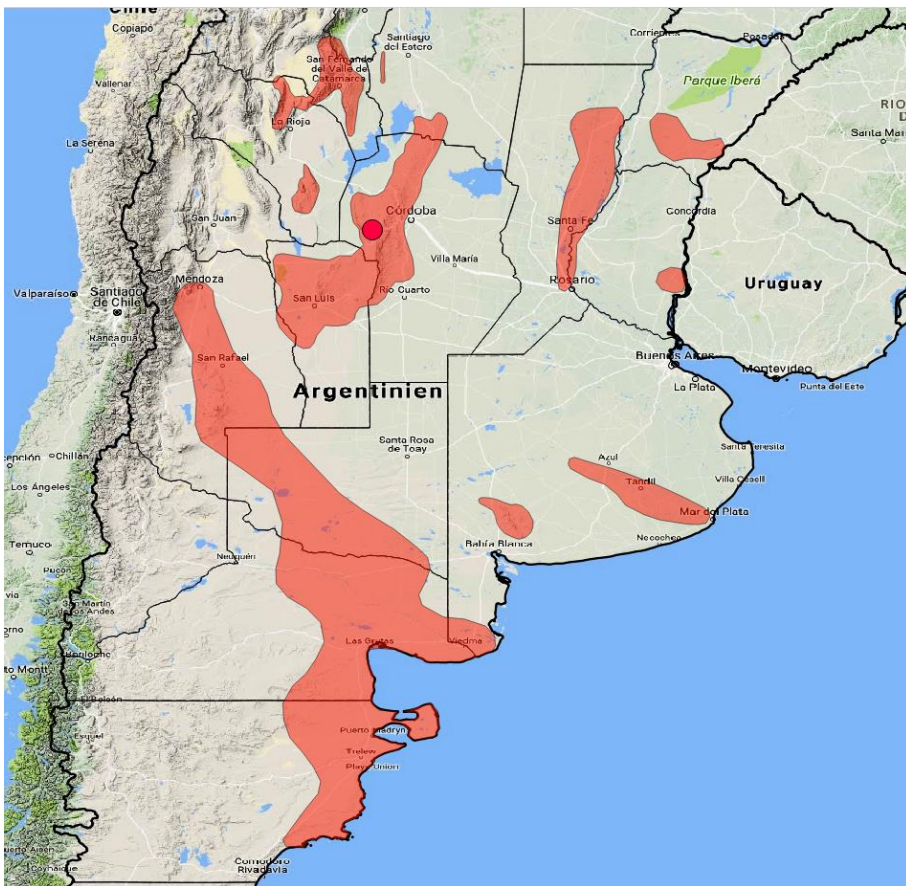


Fig. 70: Locality of *Gymnocalcium gaponii* VoS 892

***Gymnocalycium gertii* Gapon & Schelkun. (2010)**



Fig. 71: *Gymnocalycium gertii* VG 07-707, Loma Bola, Province Córdoba, Argentina, 935 m



Fig. 72: Habitat of *Gymnocalycium gertii* VG 07-707



Fig. 73: Seeds of *Gymnocalycium gertii* VG 07-707 (photographed at 20x magnification)

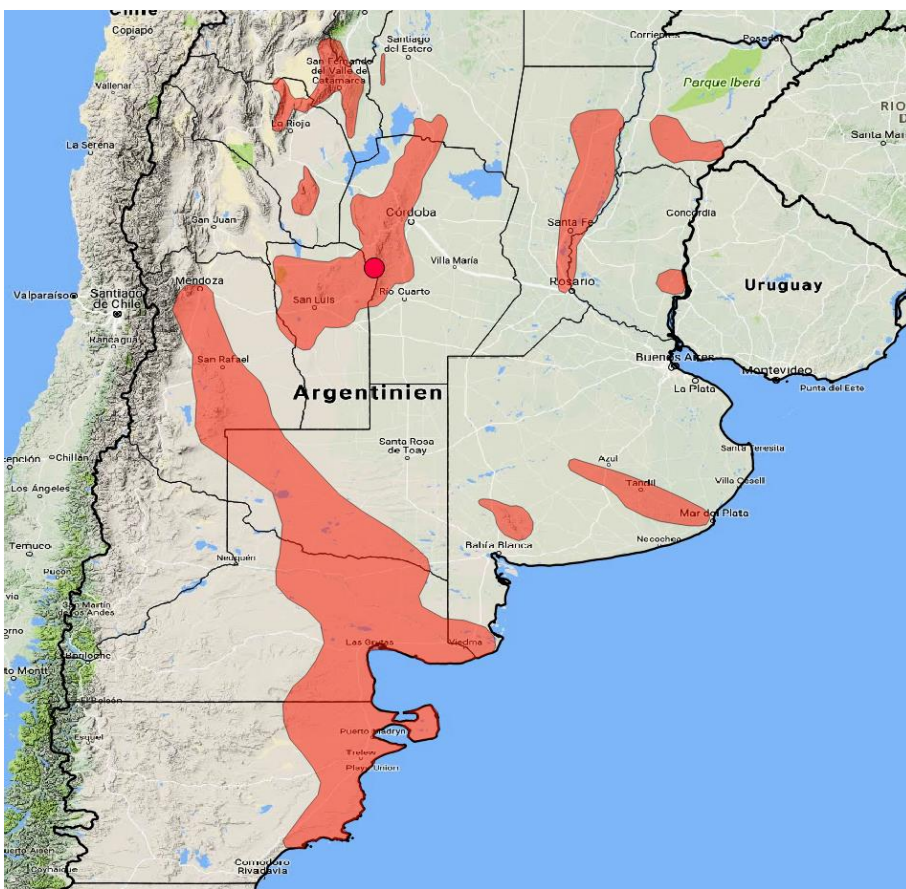


Fig. 74: Locality of *Gymnocalycium gertii* VG 07-707

***Gymnocalycium gibbosum* (Haw.) Pfeiff. ex Mittler (1844)**



Fig. 75: *Gymnocalycium gibbosum* subsp. *ferox* MT 14-606, Est. San Miguel, Province Chubut, Argentina, 5 m



Fig. 76: Habitat of *Gymnocalycium gibbosum* subsp. *ferox* MT 14-606



Fig. 77: Seeds of *Gymnocalycium gibbosum* WP 89-54/67, Carmen de Patagones, Province Buenos Aires, Argentina, 50 m (photographed at 20x magnification)

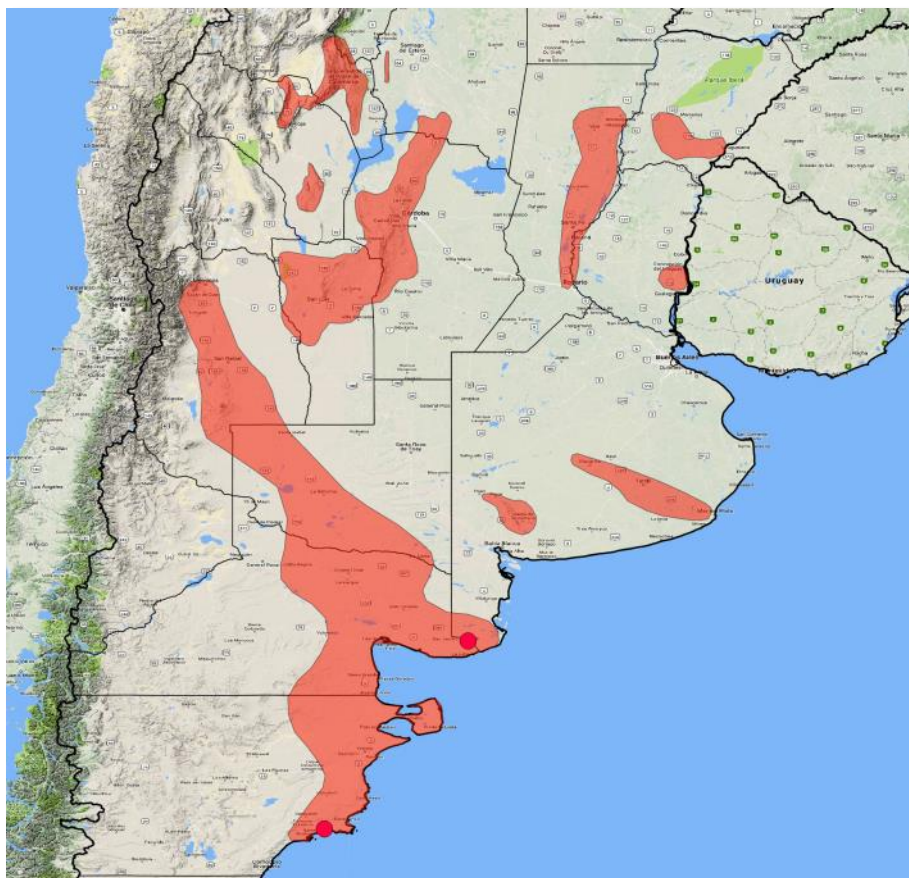


Fig. 78: Localities of *Gymnocalycium gibbosum* WP 89-54/67 (northern locality) and *Gymnocalycium gibbosum* subsp. *ferox* MT 14-606 (southern locality)

***Gymnocalycium ilseae* F. Berger (2016)**



Fig. 79: *Gymnocalycium ilseae* EZ 1031, northwest of Capilla del Monte, Province Córdoba, Argentina, 960 m



Fig. 80: Habitat of *Gymnocalycium ilseae* EZ 1031



Fig. 81: Seeds of *Gymnocalycium ilseae* EZ 1031 (photographed at 20x magnification)

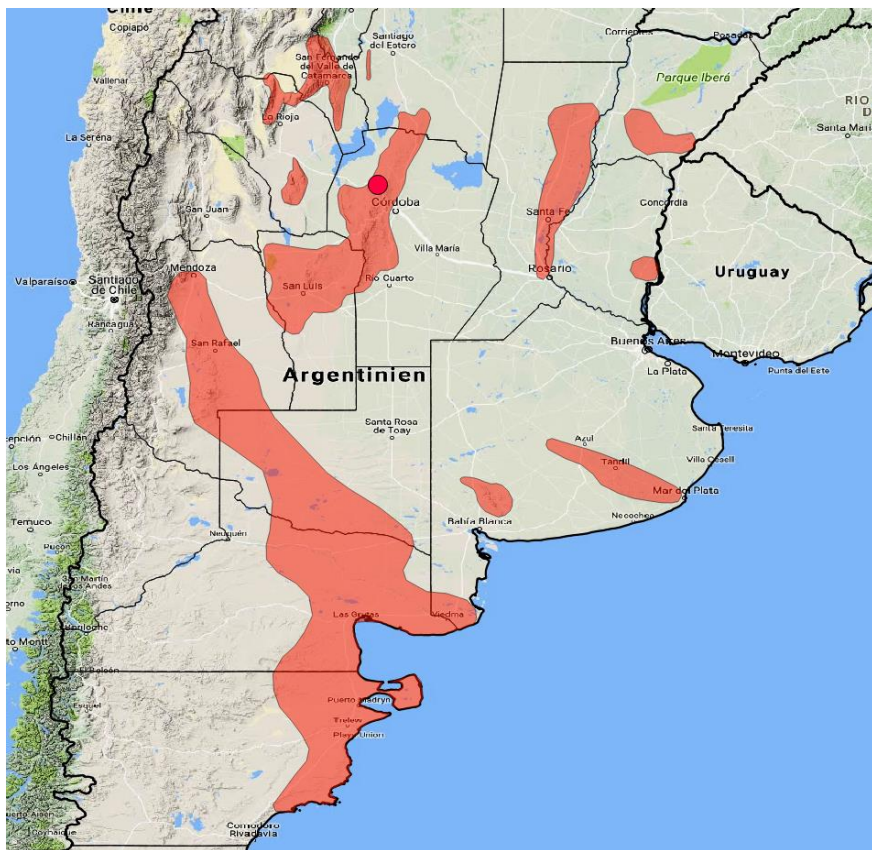


Fig. 82: Locality of *Gymnocalycium ilseae* EZ 1031

***Gymnocalycium kieslingii* O. Ferrari (1985)**



Fig. 83: *Gymnocalycium kieslingii* fa. *castaneum* VoS 1761, Cuesta de Huaco, Province La Rioja, Argentina, 1334 m



Fig. 84: Habitat of *Gymnocalycium kieslingii* fa. *castaneum* VoS 1761



Fig. 85: Seeds of *Gymnocalycium kieslingii* fa. *castaneum* VoS 1761 (photographed at 20x magnification)

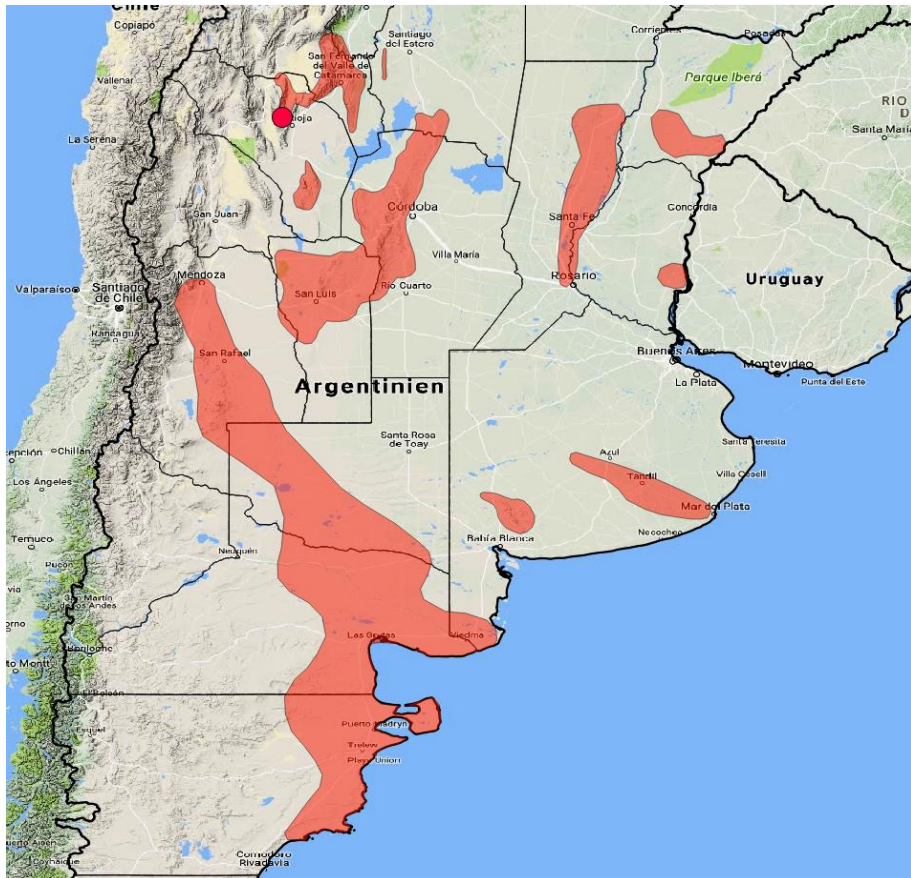


Fig. 86: Locality of *Gymnocalycium kieslingii* fa. *castaneum* VoS 1761

***Gymnocalycium kroenleinii* R. Kiesling, Rausch & O. Ferrari (2000)**



Fig. 87: *Gymnocalycium kroenleinii* subsp. *funettae* VoS 1436, Sierra de Los Quinteros, Province La Rioja, Argentina, 1424 m



Fig. 88: Habitat of *Gymnocalycium kroenleinii* subsp. *funettae* VoS 1436

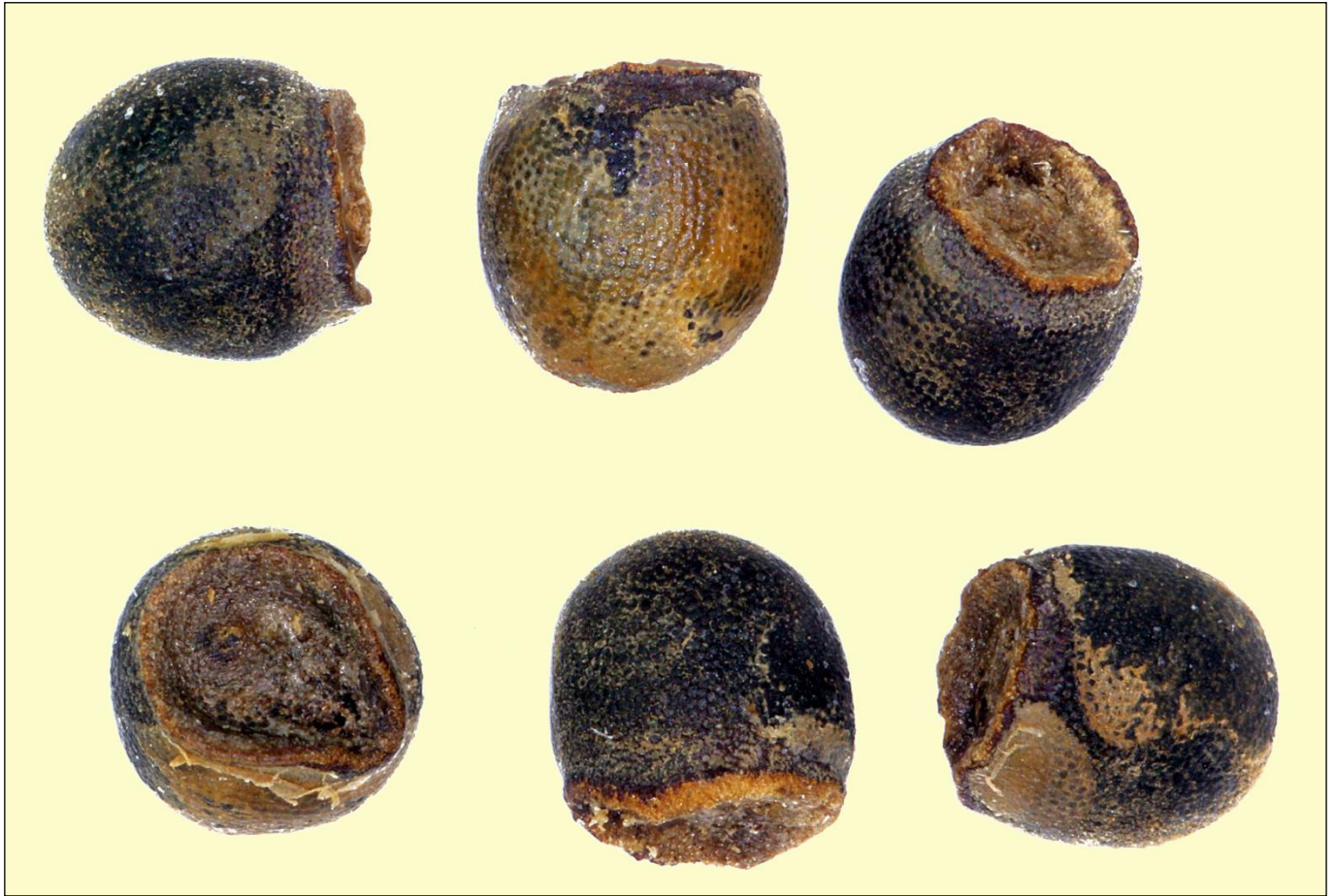


Fig. 89: Seeds of *Gymnocalycium kroenleinii* subsp. *funettae* VoS 1436 (photographed at 20x magnification)

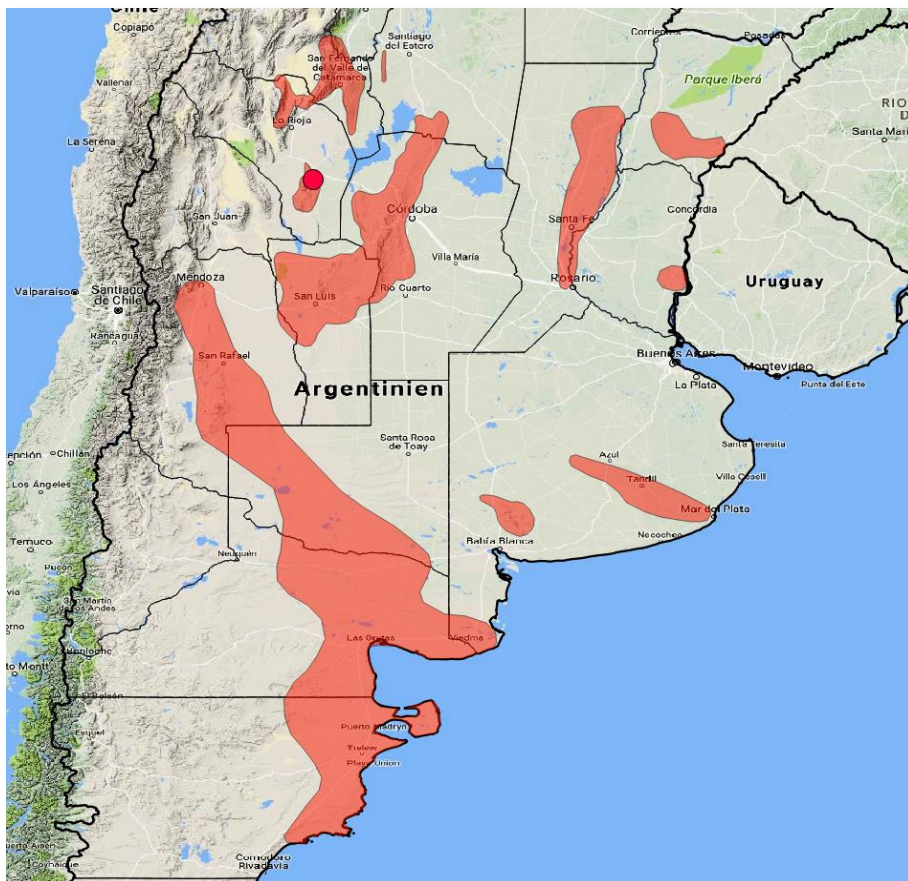


Fig. 90: Locality of *Gymnocalycium kroenleinii* subsp. *funettae* VoS 1436

***Gymnocalycium kuehhasii* Neuhuber & R. Sperling (2008)**



Fig. 91: *Gymnocalycium kuehhasii* VoS 798, north of Villa de Maria, Province Córdoba, Argentina, 544 m



Fig. 92: Habitat of *Gymnocalycium kuehhasii* VoS 798

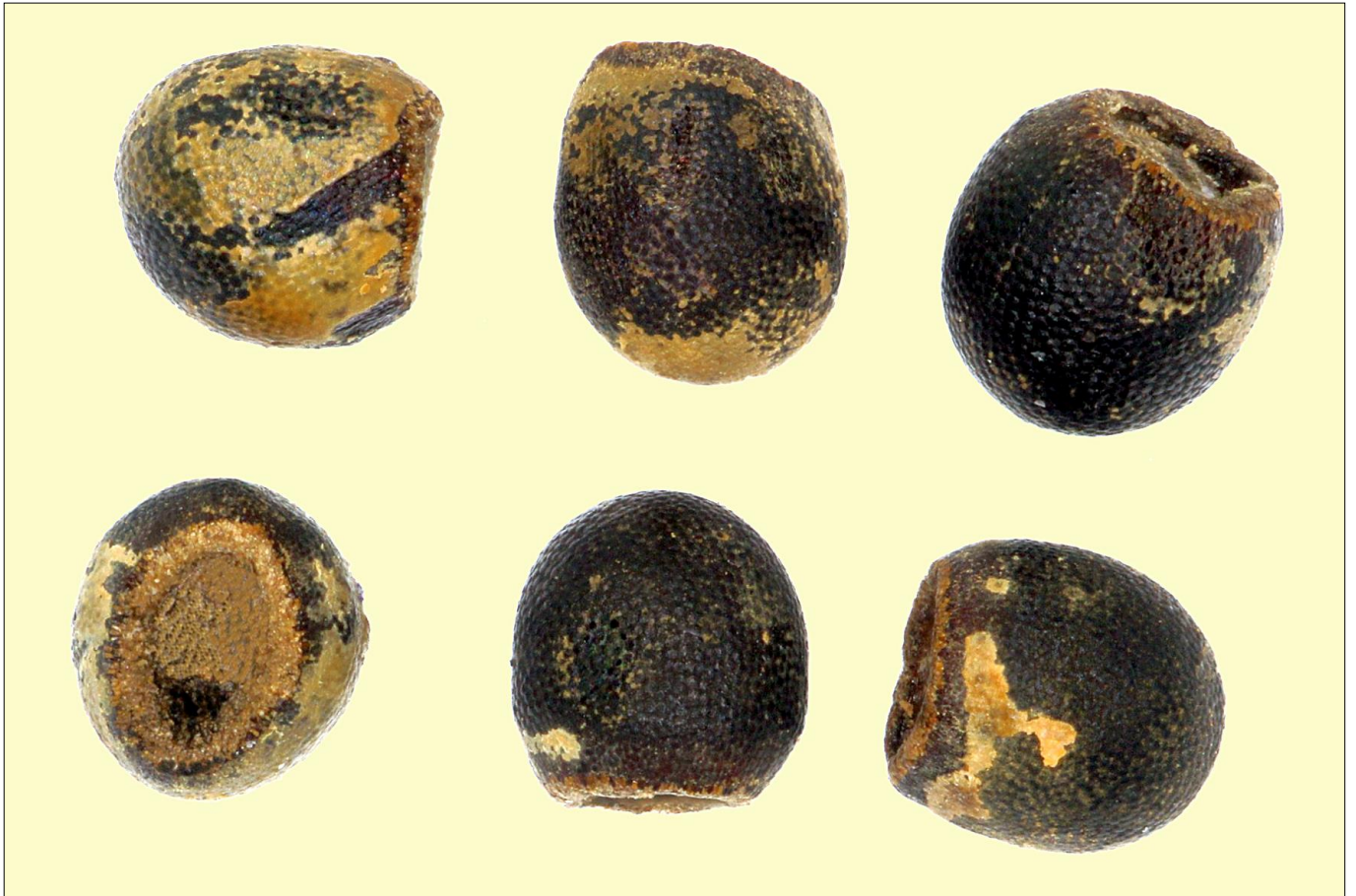


Fig. 93: Seeds of *Gymnocalycium kuehhasii* VoS 798 (photographed at 20x magnification)

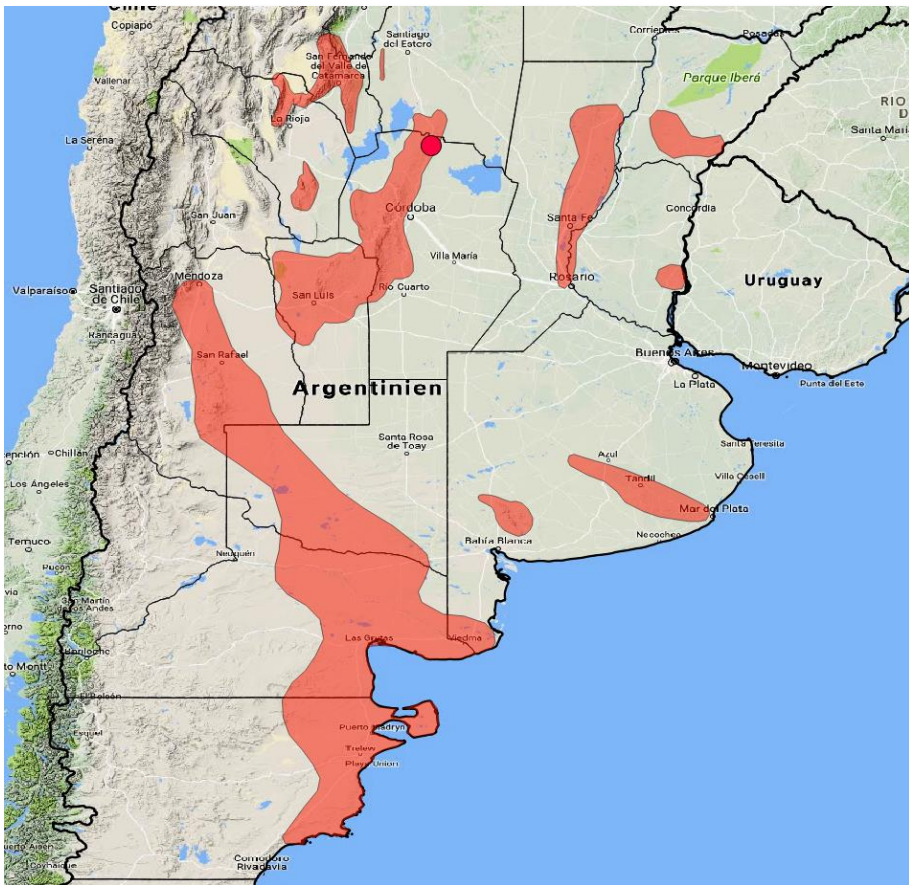


Fig. 94: Locality of *Gymnocalycium kuehhasii* VoS 798

***Gymnocalycium kulhanekii* Papsch (2016)**



Fig. 95: *Gymnocalycium kulhanekii* Tom 15-791, Cerro Uritorco, Province Córdoba, Argentina, 1820 m



Fig. 96: Habitat of *Gymnocalycium kulhanekii* Tom 15-791



Fig. 97: Seeds of *Gymnocalycium kulhanekii* WP 04-442/859 (photographed at 20x magnification)

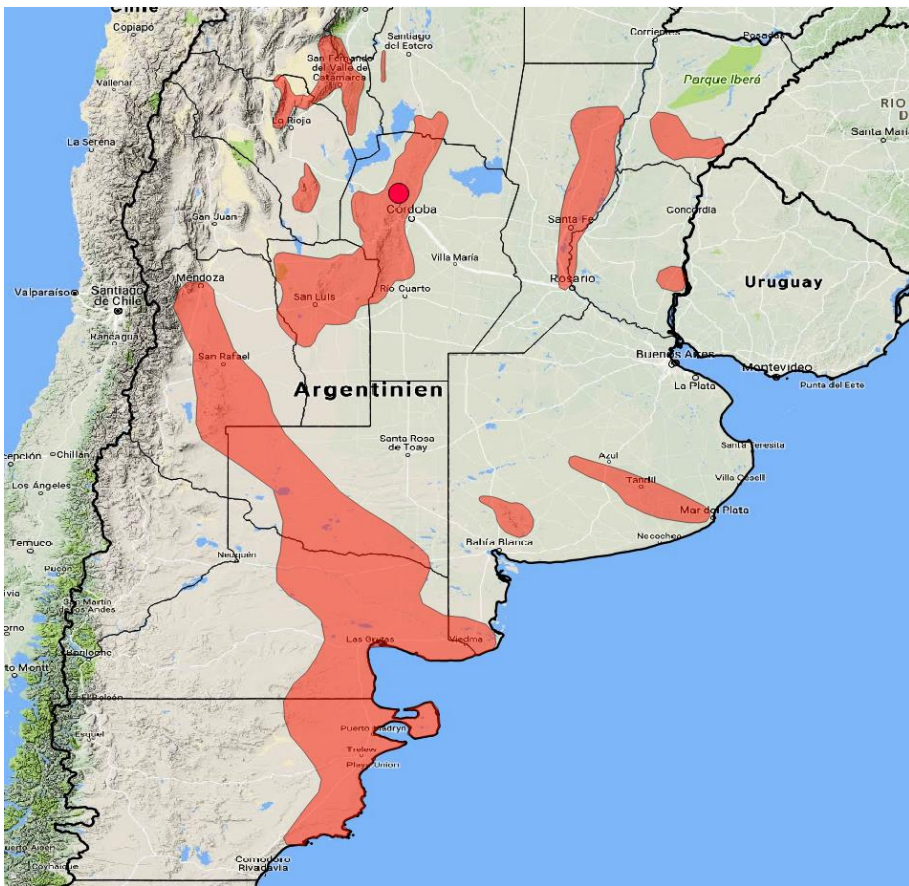


Fig. 98: Locality of *Gymnocalycium kulhanekii* Tom 15-791 and WP 04-442/859

***Gymnocalycium marianae* Perea, O. Ferrari, Las Peñas & R. Kiesling (2009)**



Fig. 99: *Gymnocalycium marianae* Tom 12-715, east of Agua de las Palomas, Ruta 48, Province Catamarca, Argentina, 1783 m



Fig. 100: Habitat of *Gymnocalycium marianae* Tom 12-715



Fig. 101: Seeds of *Gymnocalycium marianae* Tom 12-715 (photographed at 20x magnification)

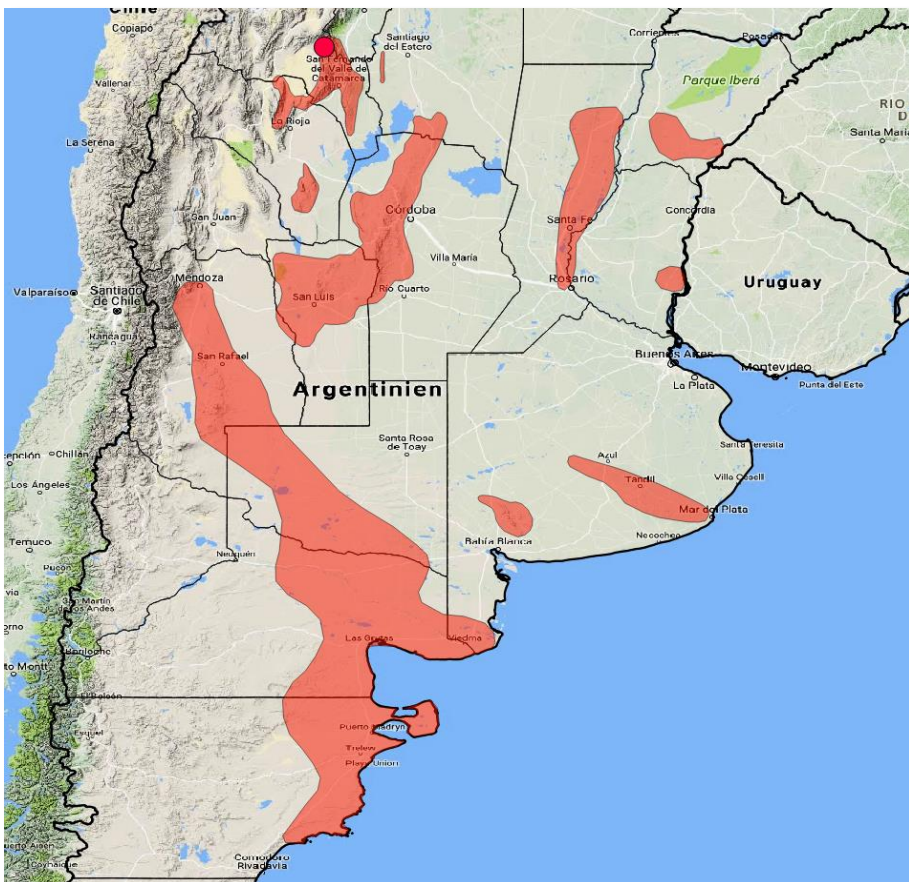


Fig. 102: Locality of *Gymnocalycium marianae* Tom 12-715

***Gymnocalycium meregallii* Bercht (2012)**



Fig. 103: *Gymnocalycium meregallii* VoS 1486, road from Merlo to Lutti, Province Córdoba, Argentina, 1656 m



Fig. 104: Habitat of *Gymnocalycium meregallii* VoS 1486



Fig. 105: Seeds of *Gymnocalcium meregallii* VoS 1486 (photographed at 20x magnification)

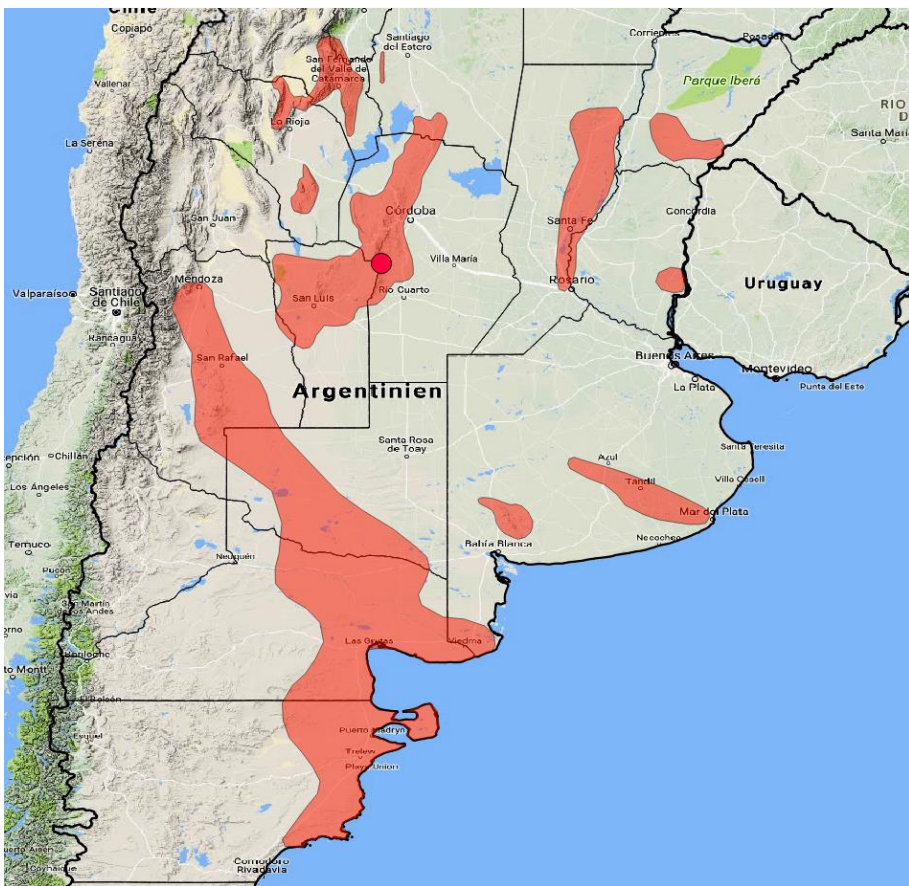


Fig. 106: Locality of *Gymnocalcium meregallii* VoS 1486

***Gymnocalycium morroense* Kulhánek, Řepka et J. Proch. (2010)**



Fig. 107: *Gymnocalycium morroense* VoS 1853, Las Chacras, Province San Luis, Argentina, 1110 m



Fig. 108: Habitat of *Gymnocalycium morroense* VoS 1853

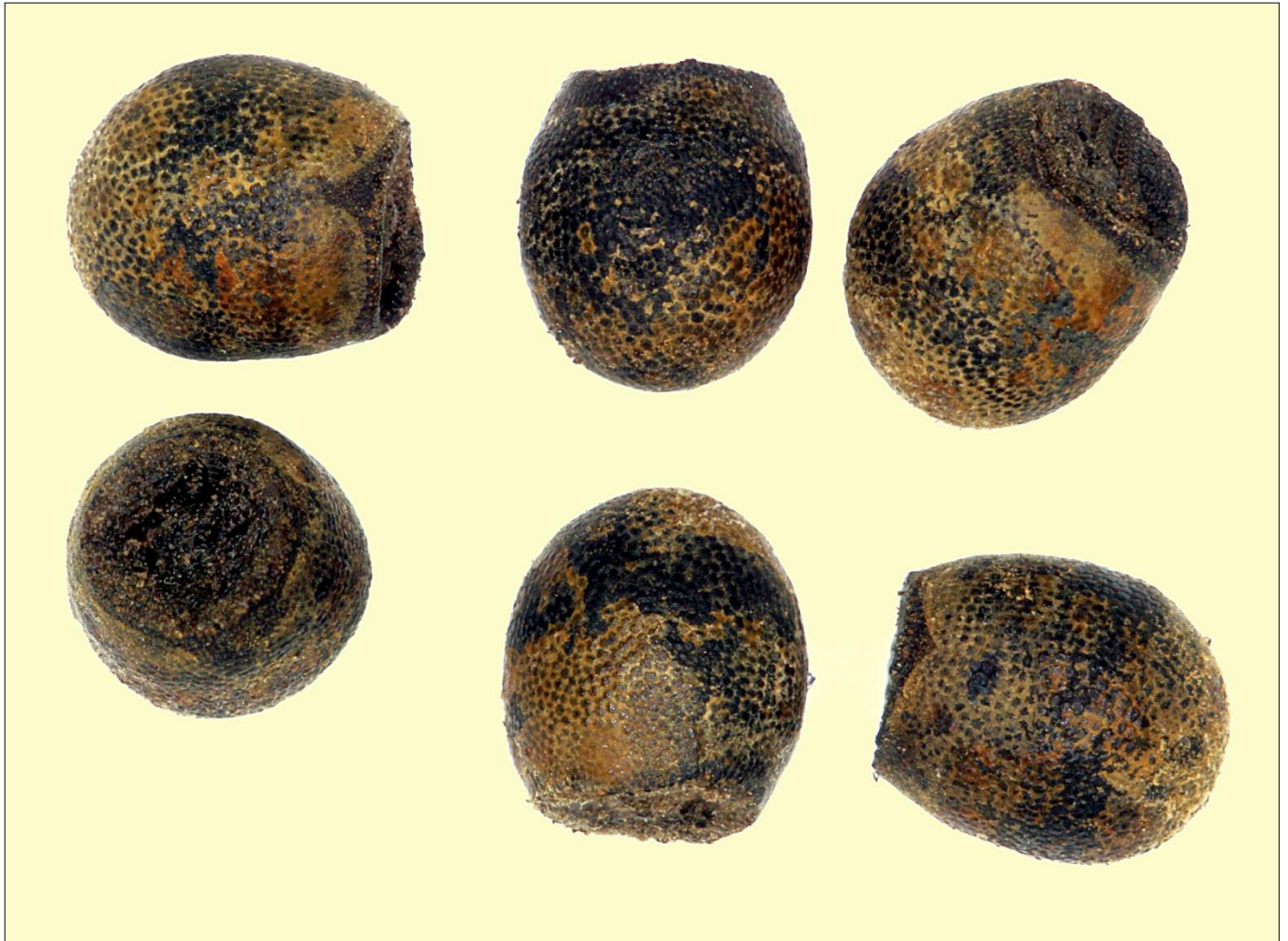


Fig. 109: Seeds of *Gymnocalycium morroense* VoS 1853 (photographed at 20x magnification)

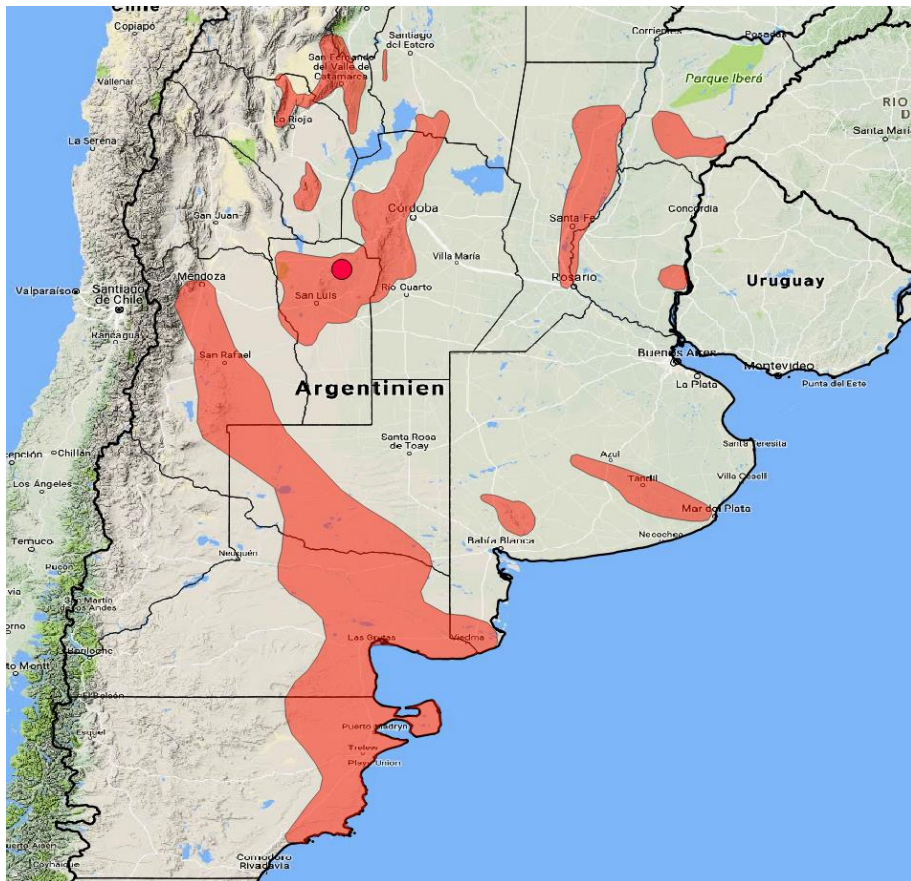


Fig. 110: Locality of *Gymnocalycium morroense* VoS 1853

***Gymnocalycium nataliae* Neuhuber (2005)**



Fig. 111: *Gymnocalycium nataliae* VoS 1855, San Isidro, Province San Luis, Argentina, 928 m



Fig. 112: Habitat of *Gymnocalycium nataliae* VoS 1855

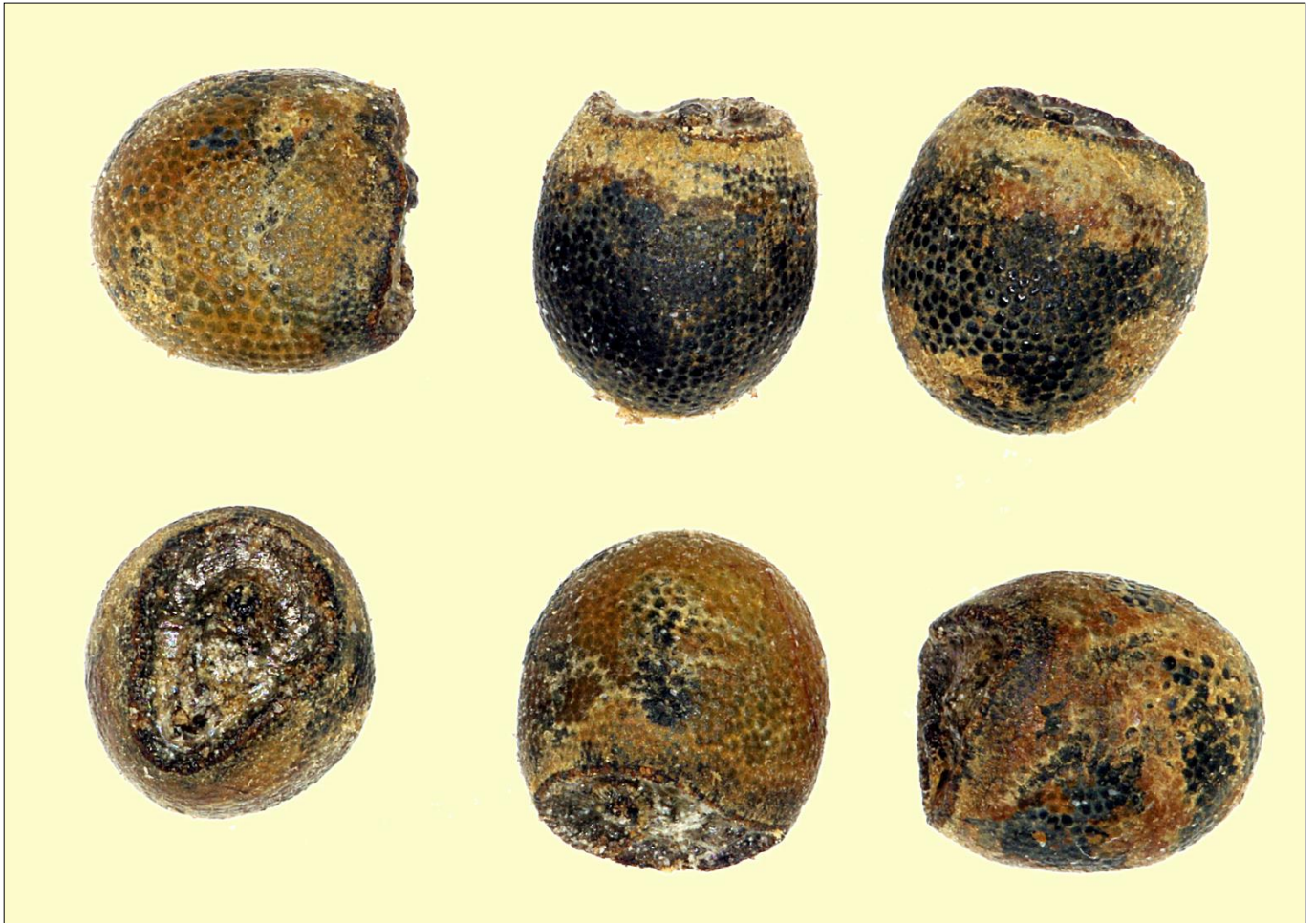


Fig. 113: Seeds of *Gymnocalycium nataliae* VoS 1855 (photographed at 20x magnification)

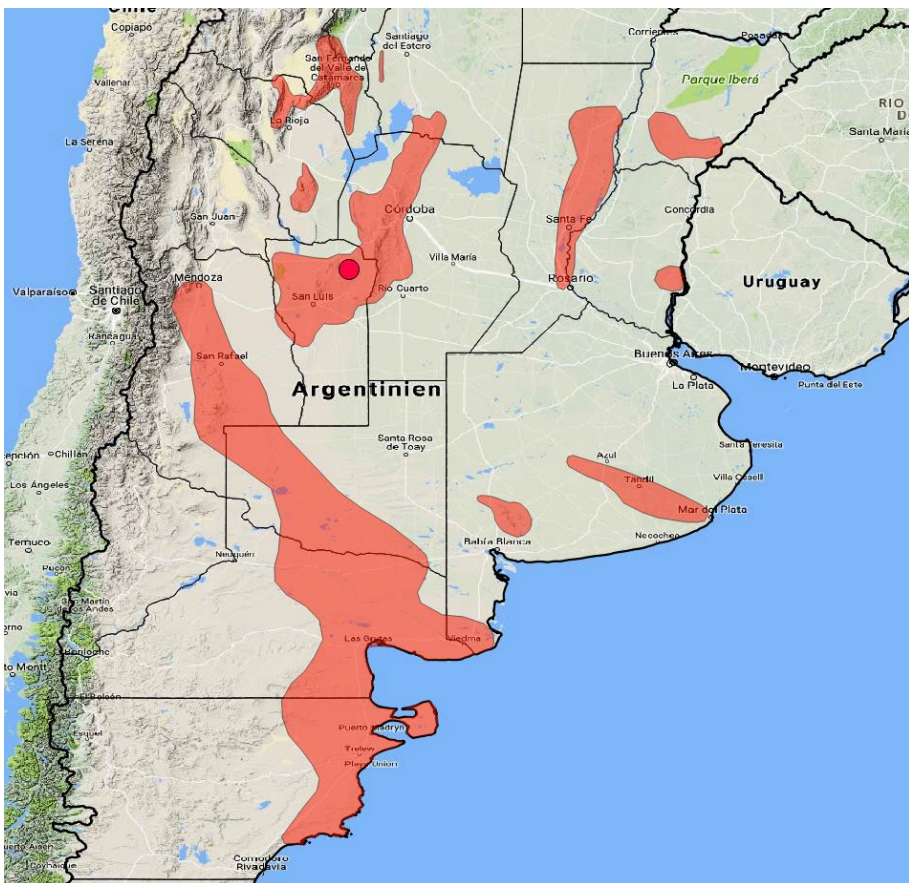


Fig. 114: Locality of *Gymnocalycium nataliae* VoS 1855

***Gymnocalycium neuhuberi* H. Till & W. Till (1992)**



Fig. 115: *Gymnocalycium neuhuberi* VoS 191, Suyuque Viejo, above the monastery, Province San Luis, Argentina, 1355 m



Fig. 116: Habitat of *Gymnocalycium neuhuberi* VoS 191

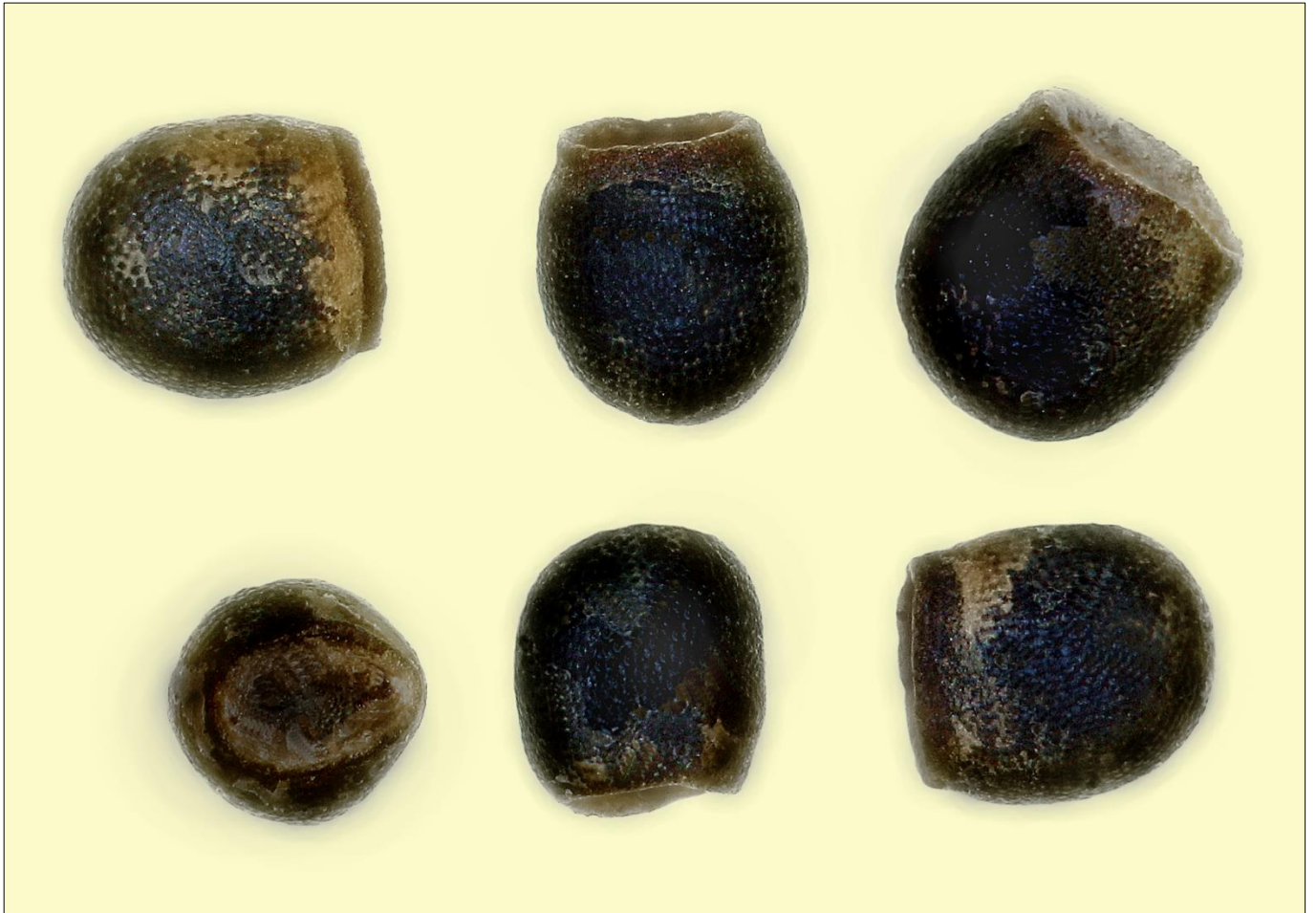


Fig. 117: Seeds of *Gymnocalycium neuhuberi* VoS 191 (photographed at 20x magnification)

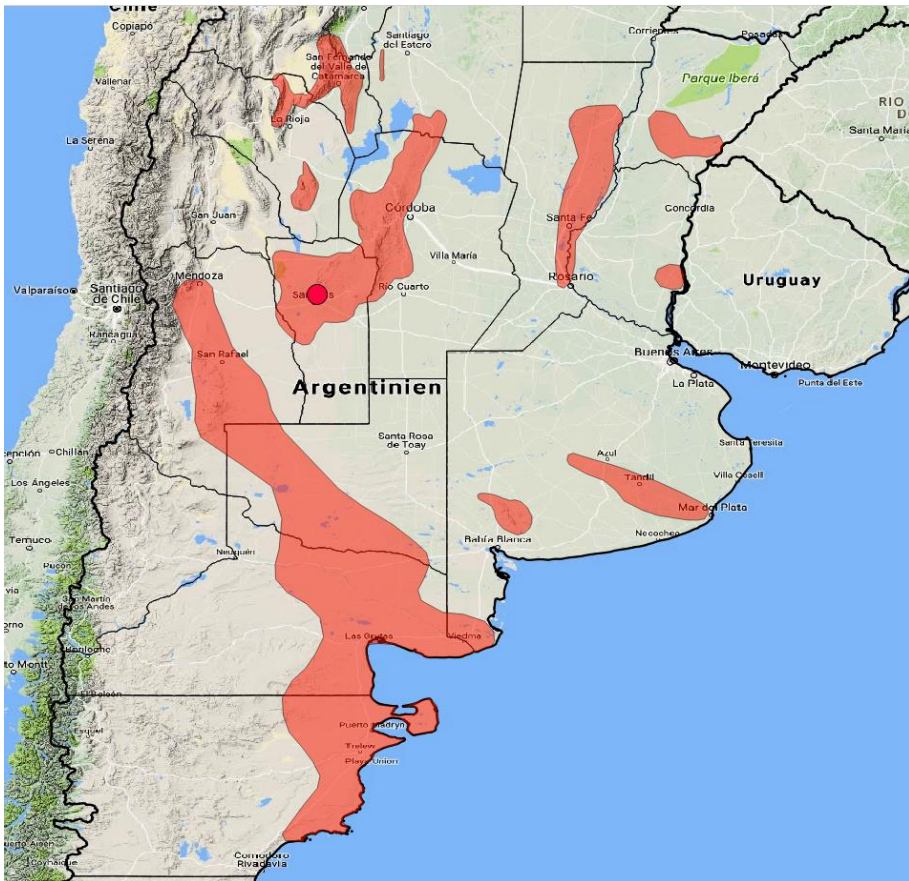


Fig. 118: Locality of *Gymnocalycium neuhuberi* VoS 191

***Gymnocalycium papschii* H. Till pro. part. (2001)**



Fig. 119: *Gymnocalycium papschii* VG 830, San Javier, Cerro Champaqui, Sierra de Comechingones, Province Córdoba, Argentina, 1200-1700 m



Fig. 120: Habitat of *Gymnocalycium papschii* VG 830



Fig. 121: Seeds of *Gymnocalycium papschii* WP 89-83/111 (photographed at 20x magnification)

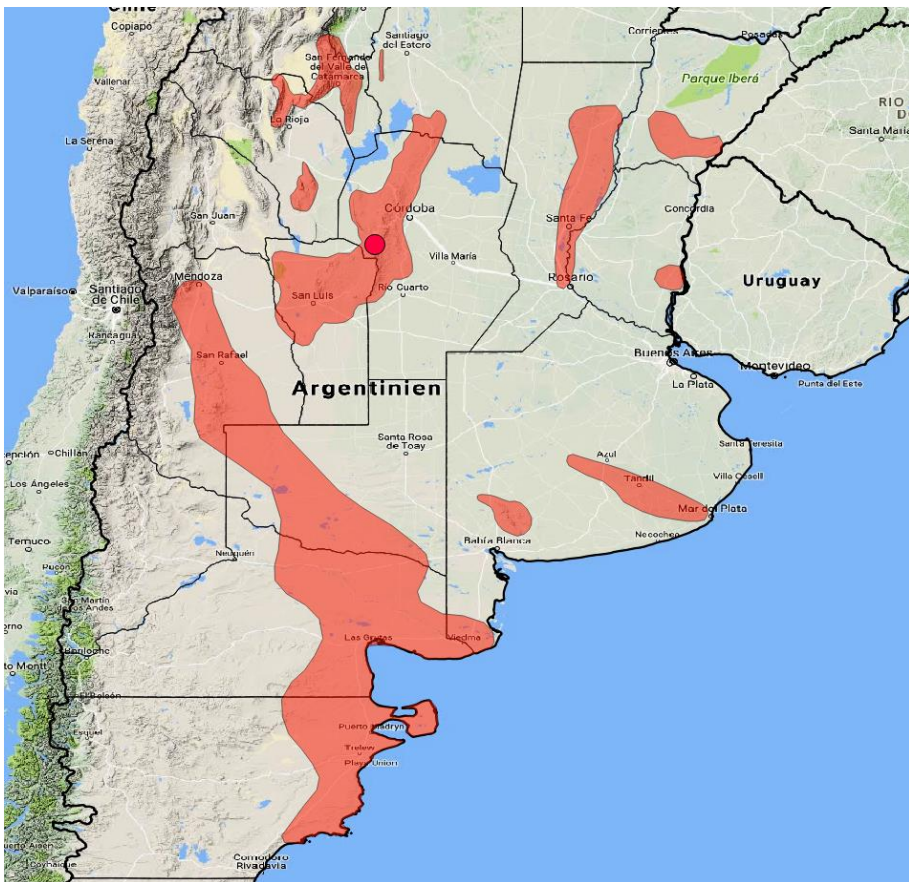


Fig. 122: Locality of *Gymnocalycium papschii* VG 830 and WP 89-83/111

***Gymnocalycium parvulum* (Speg.) Speg. (1925)**



Fig. 123: *Gymnocalycium parvulum* VoS 164, west of Villa Cura Brochero, Province Córdoba, Argentina, 1097 m



Fig. 124: Habitat of *Gymnocalycium parvulum* VoS 164

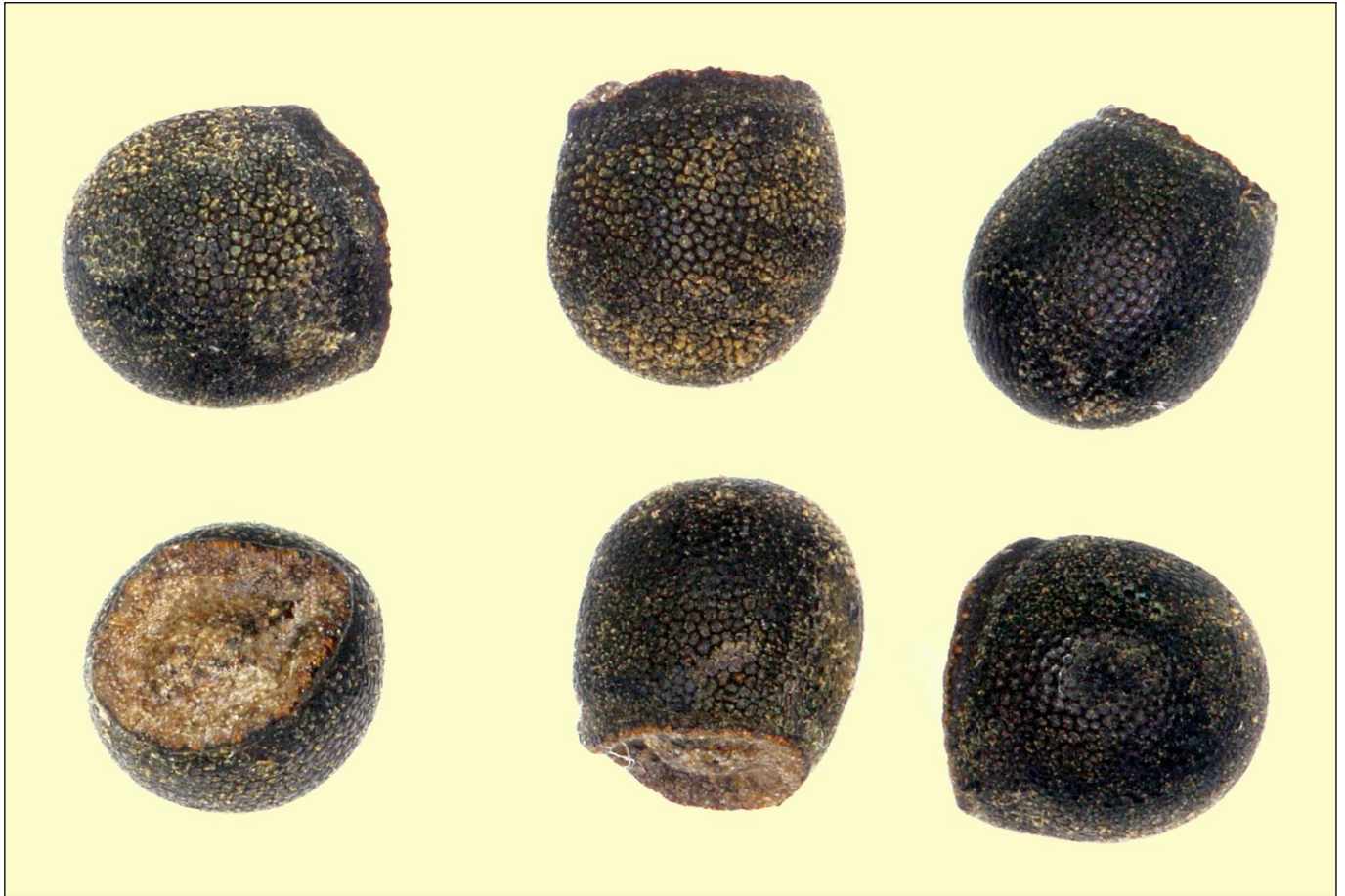


Fig. 125: Seeds of *Gymnocalycium parvulum* VoS 164 (photographed at 20x magnification)

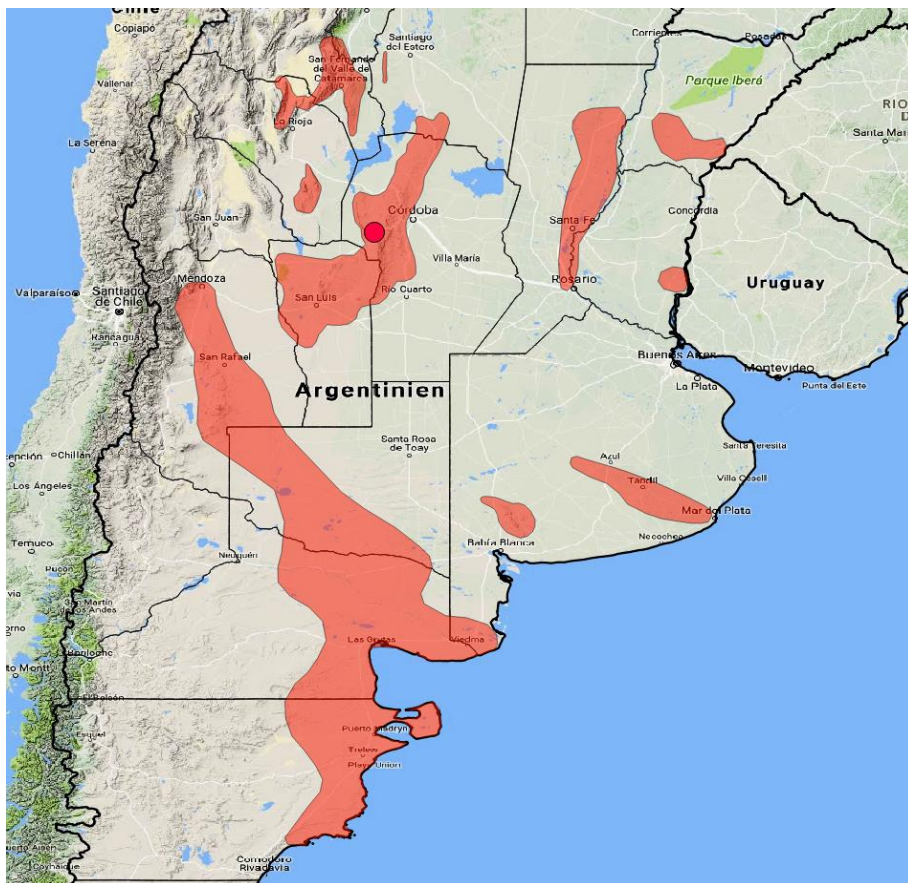


Fig. 126: Locality of *Gymnocalycium parvulum* VoS 164

***Gymnocalycium pinalii* Mereg. & Kulhánek (2016)**



Fig. 127: *Gymnocalycium pinalii* Tom 15-879, Capilla del Monte, Parque Los Terrones, Province Córdoba, Argentina, 1370 m



Fig. 128: Habitat of *Gymnocalycium pinalii* Tom 15-879



Fig. 129: Seeds of *Gymnocalcium pinalii* Tom 15-879 (photographed at 20x magnification)

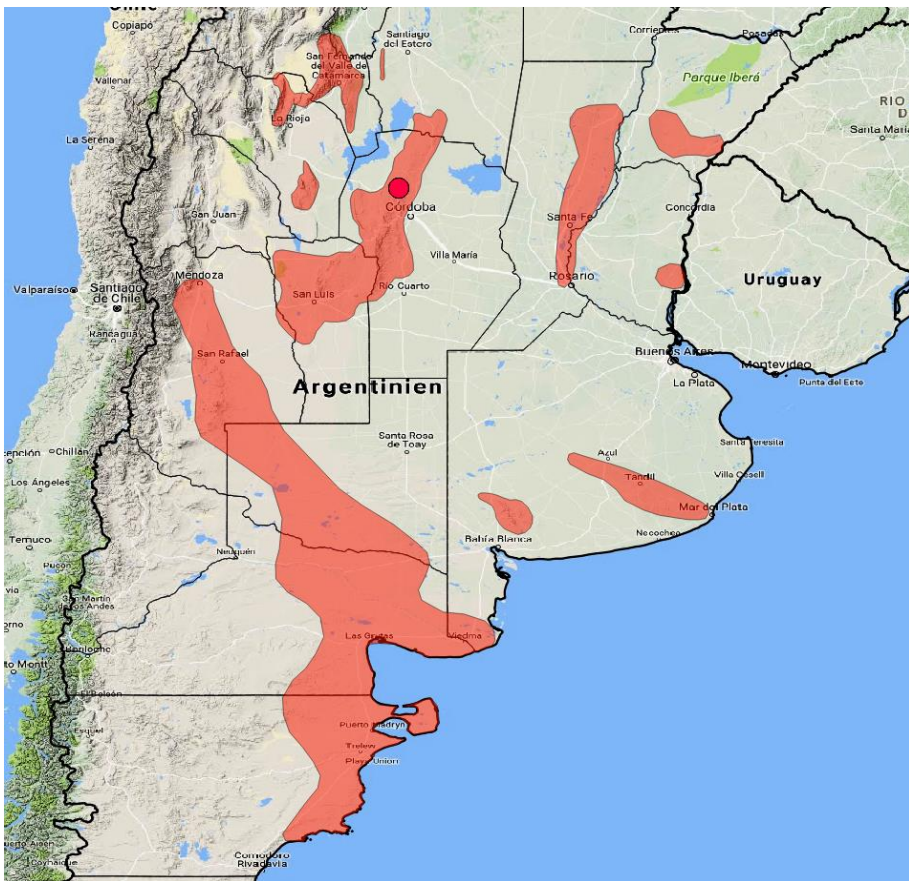


Fig. 130: Locality of *Gymnocalcium pinalii* Tom 15-879

***Gymnocalycium platense* (Speg.) Britton & Rose (1922)**



Fig. 131: *Gymnocalycium platense* subsp. *paucicostatum* VoS 1533, southwest of Curuzu Cuatia, Province Corrientes, Argentina, 72 m



Fig. 132: Habitat of *Gymnocalycium platense* subsp. *paucicostatum* VoS 1533



Fig. 133: Seeds of *Gymnocalycium platense* subsp. *paucicostatum* VoS 1533 (photographed at 20x magnification)

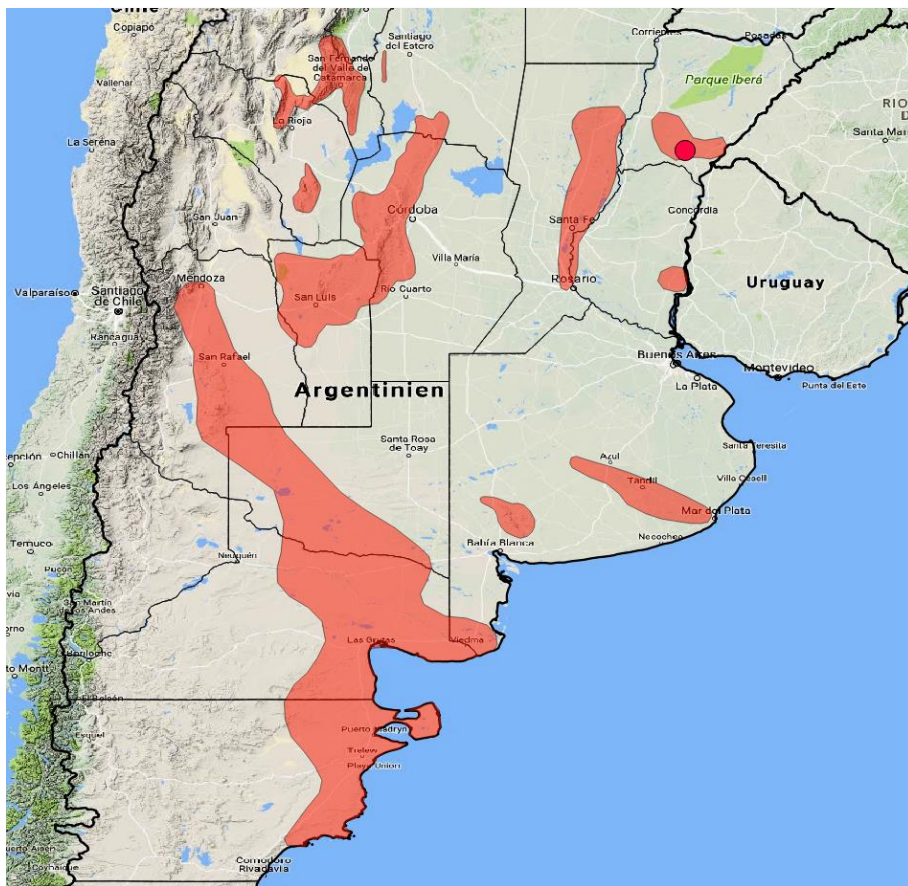


Fig. 134: Locality of *Gymnocalycium platense* subsp. *paucicostatum* VoS 1533

***Gymnocalycium poeschlii* Neuhuber (1999)**



Fig. 135: *Gymnocalycium poeschlii* VoS 225, northeast of Saladillo, Province San Luis, Argentina, 916 m



Fig. 136: Habitat of *Gymnocalycium poeschlii* VoS 225



Fig. 137: Seeds of *Gymnocalycium poeschlii* VoS 225 (photographed at 20x magnification)

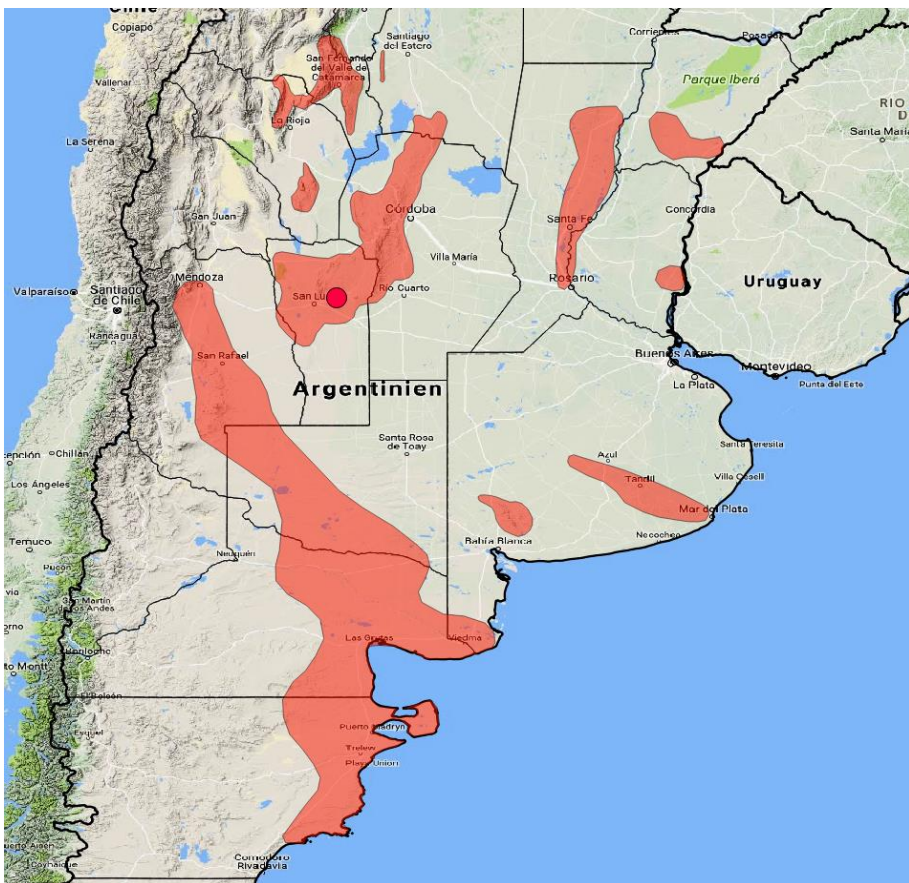


Fig. 138: Locality of *Gymnocalycium poeschlii* VoS 225

***Gymnocalycium reductum* (Link) Pfeiff. ex Mittler (1844)**



Fig. 139: *Gymnocalycium reductum* MT 08-322, Cerro Tornquist, Province Buenos Aires, Argentina, 334 m



Fig. 140: Habitat of *Gymnocalycium reductum* MT 08-322

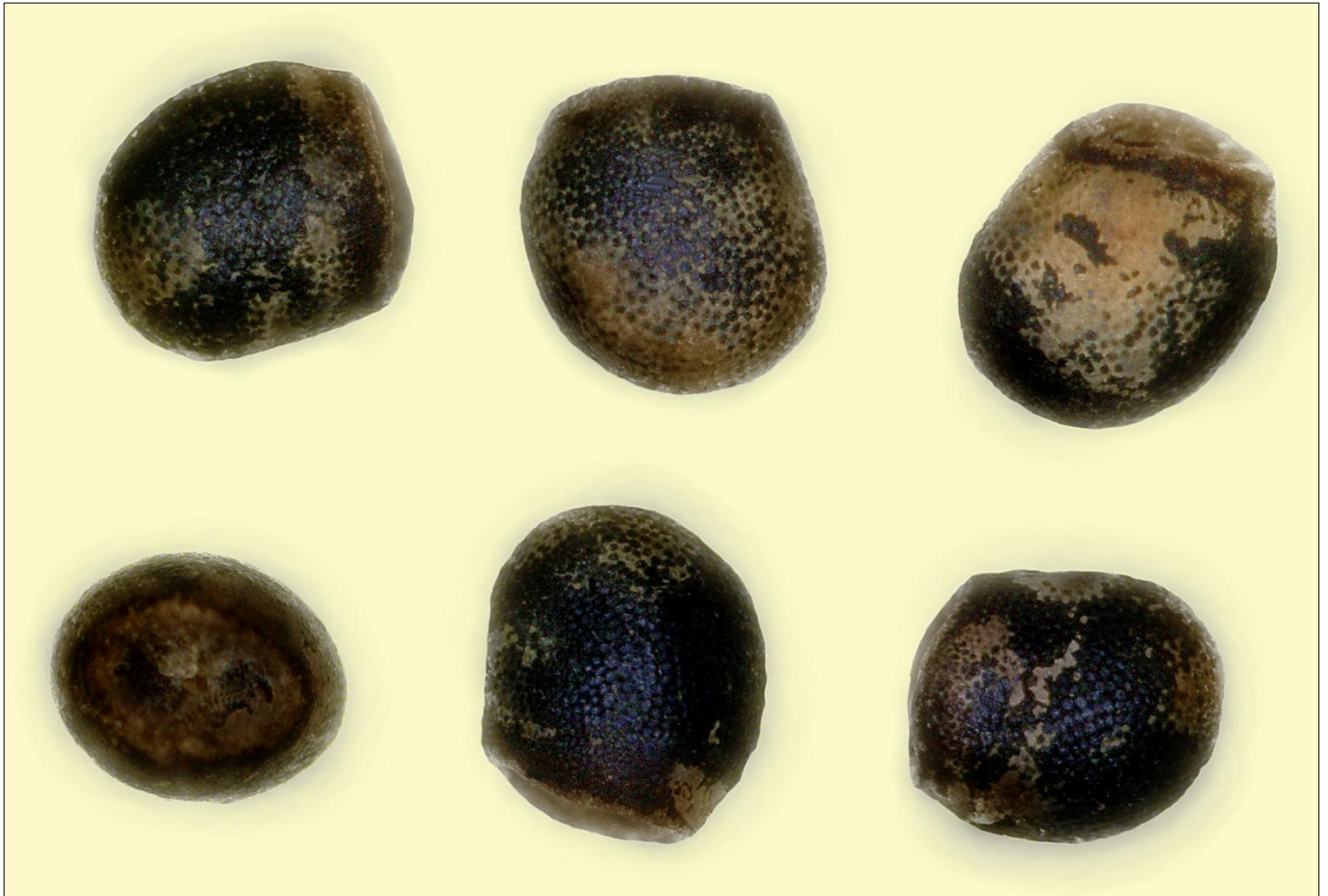


Fig. 141: Seeds of *Gymnocalycium reductum* WP 89-23/26, Sierra Curu Malal Chico, Province Buenos Aires, Argentina, 350 m (photographed at 20x magnification)

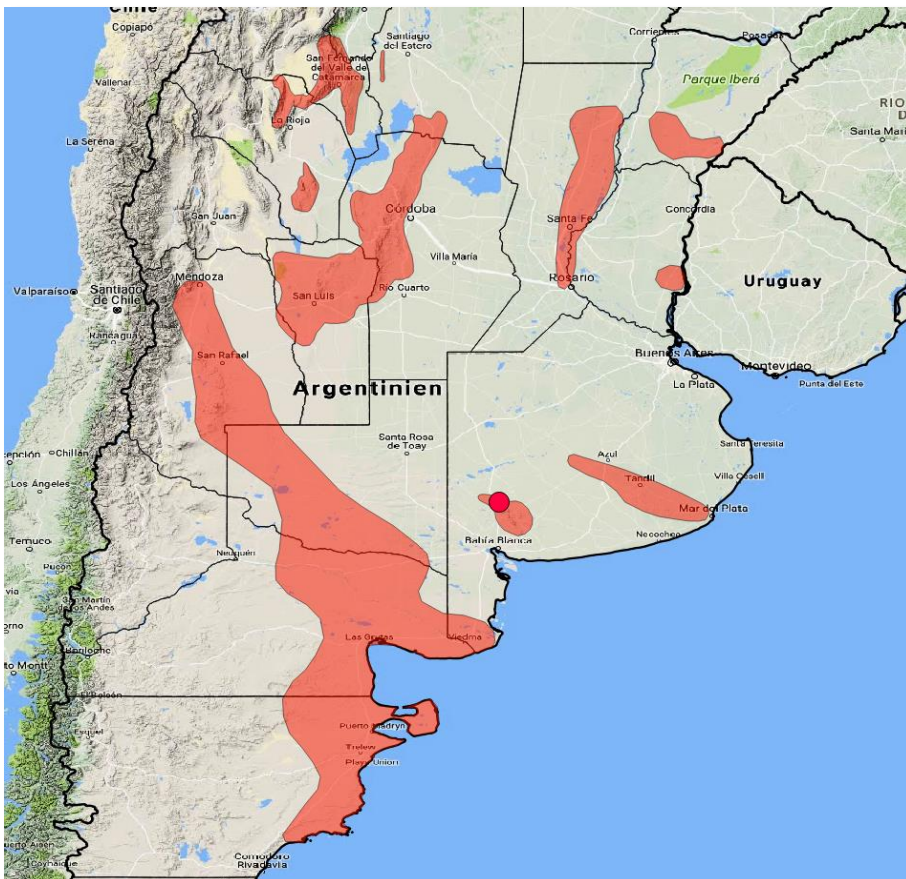


Fig. 142: Locality of *Gymnocalycium reductum* MT 08-322 and WP 89-23/26

***Gymnocalycium robustum* R. Kiesling, O. Ferrari et Metzging (2002)**



Fig. 143: *Gymnocalycium robustum* VoS 148, south of Quilino, Ruta 60, Province Córdoba, Argentina, 453 m



Fig. 144: Habitat of *Gymnocalycium robustum* VoS 148

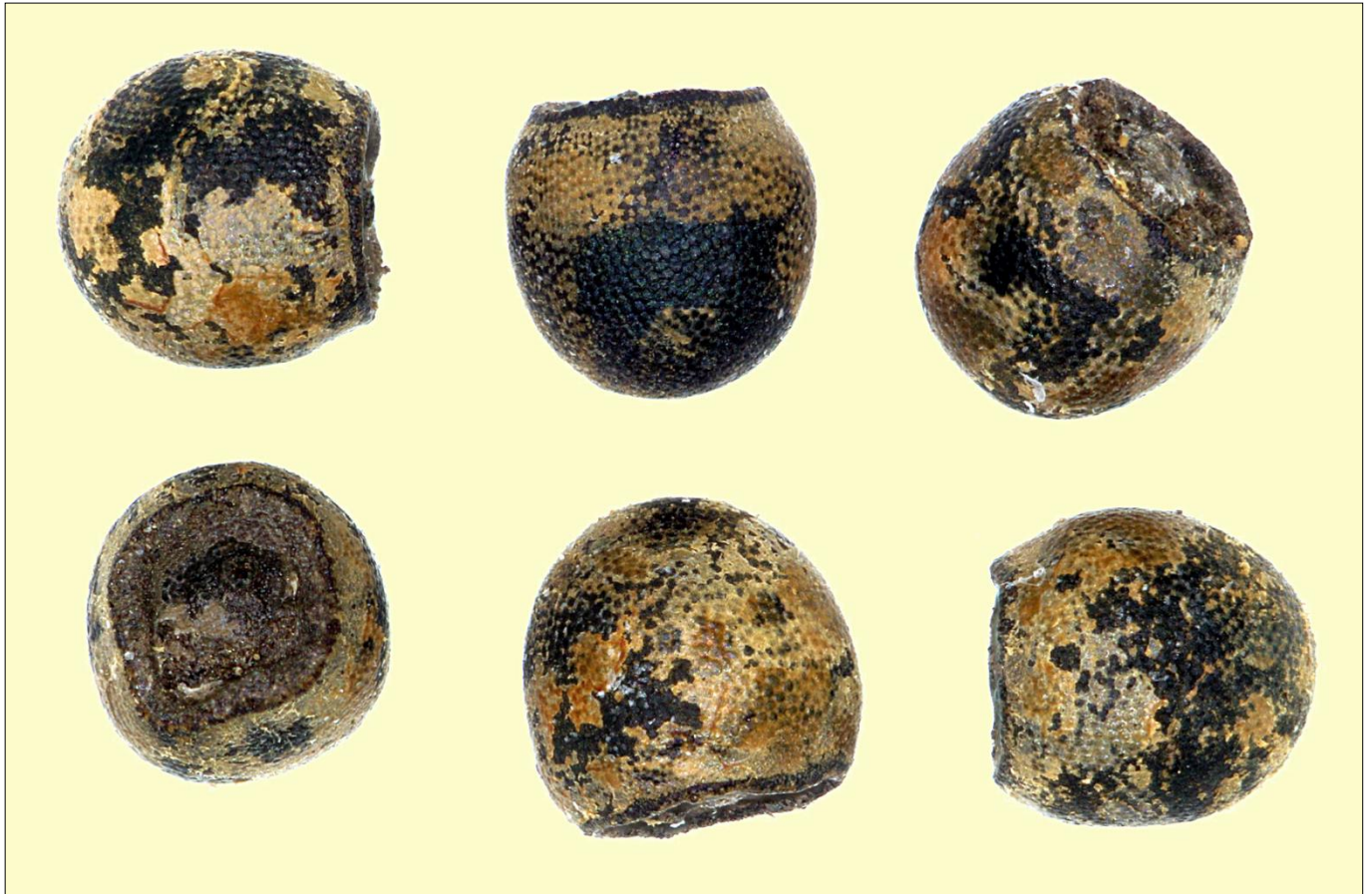


Fig. 145: Seeds of *Gymnocalycium robustum* VoS 148 (photographed at 20x magnification)

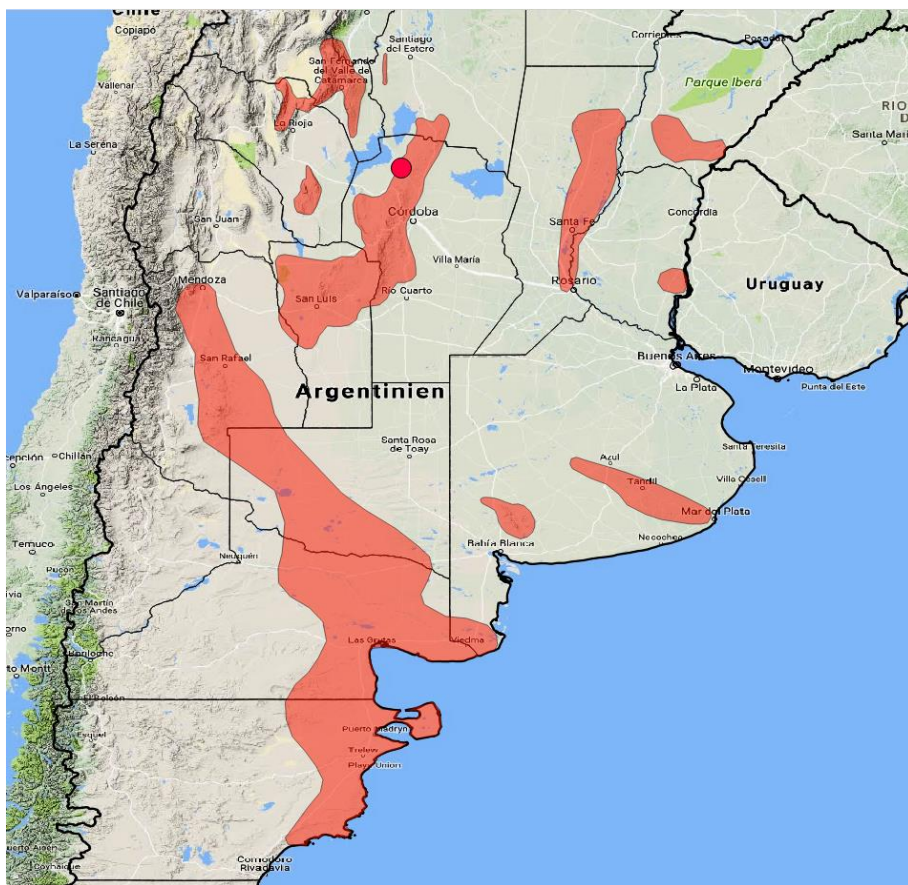


Fig. 146: Locality of *Gymnocalycium robustum* VoS 148

***Gymnocalycium schreiteri* H. Till (2009)**



Fig. 147: *Gymnocalycium schreiteri* RB 576, Sierra de Candelaria, Province Salta, Argentina, 2100 m



Fig. 148: Habitat of *Gymnocalycium schreiteri* RB 576

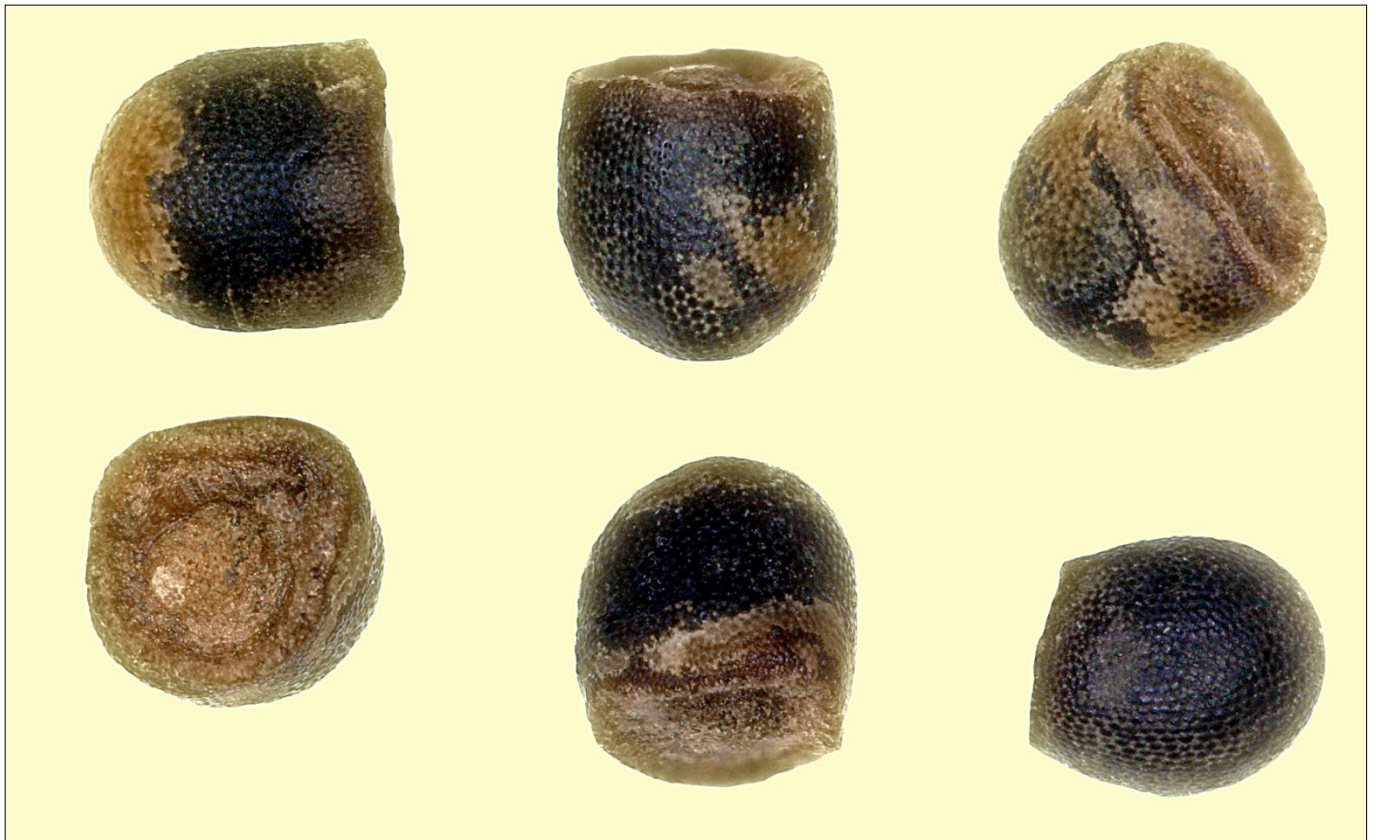


Fig. 149: Seeds of *Gymnocalycium schreiteri* RB 576 (photographed at 20x magnification)

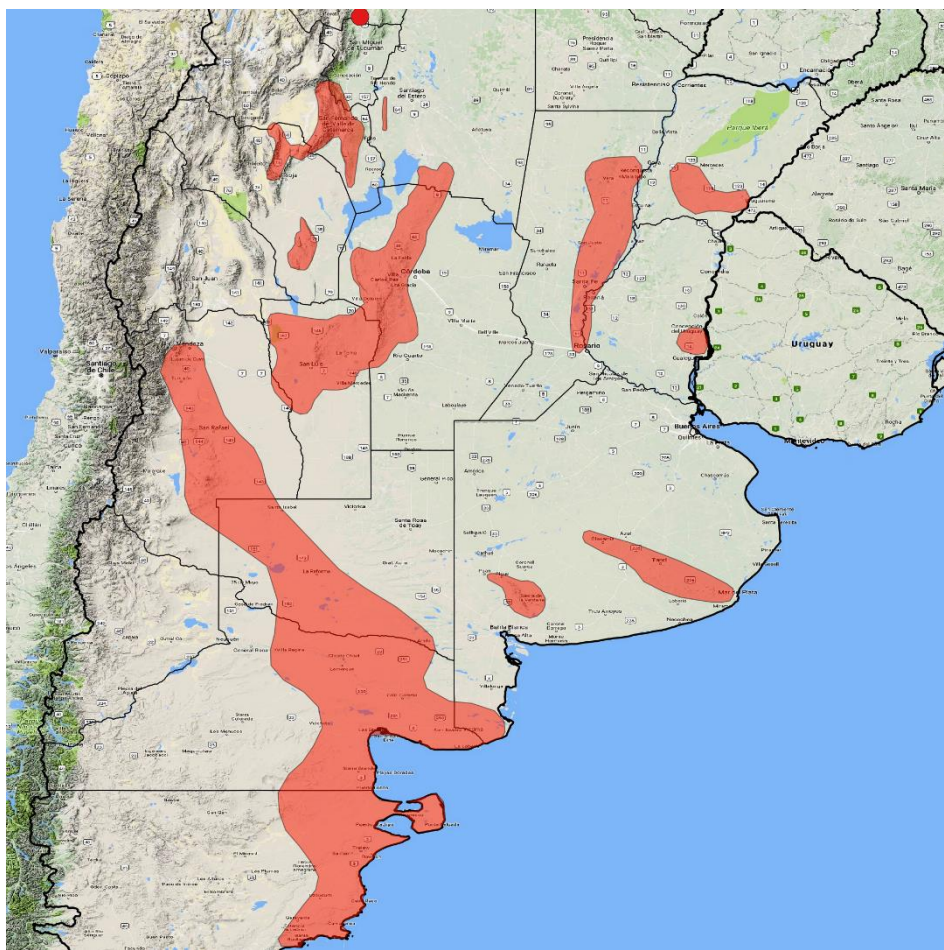


Fig. 150: Locality of *Gymnocalycium schreiteri* RB 576

***Gymnocalycium strigianum* Jeggler ex H. Till (1987)**



Fig. 151: *Gymnocalycium strigianum* MT 08-341, Lujan de Cuyo, Province Mendoza, Argentina, 1179 m



Fig. 152: Habitat of *Gymnocalycium strigianum* MT 08-341

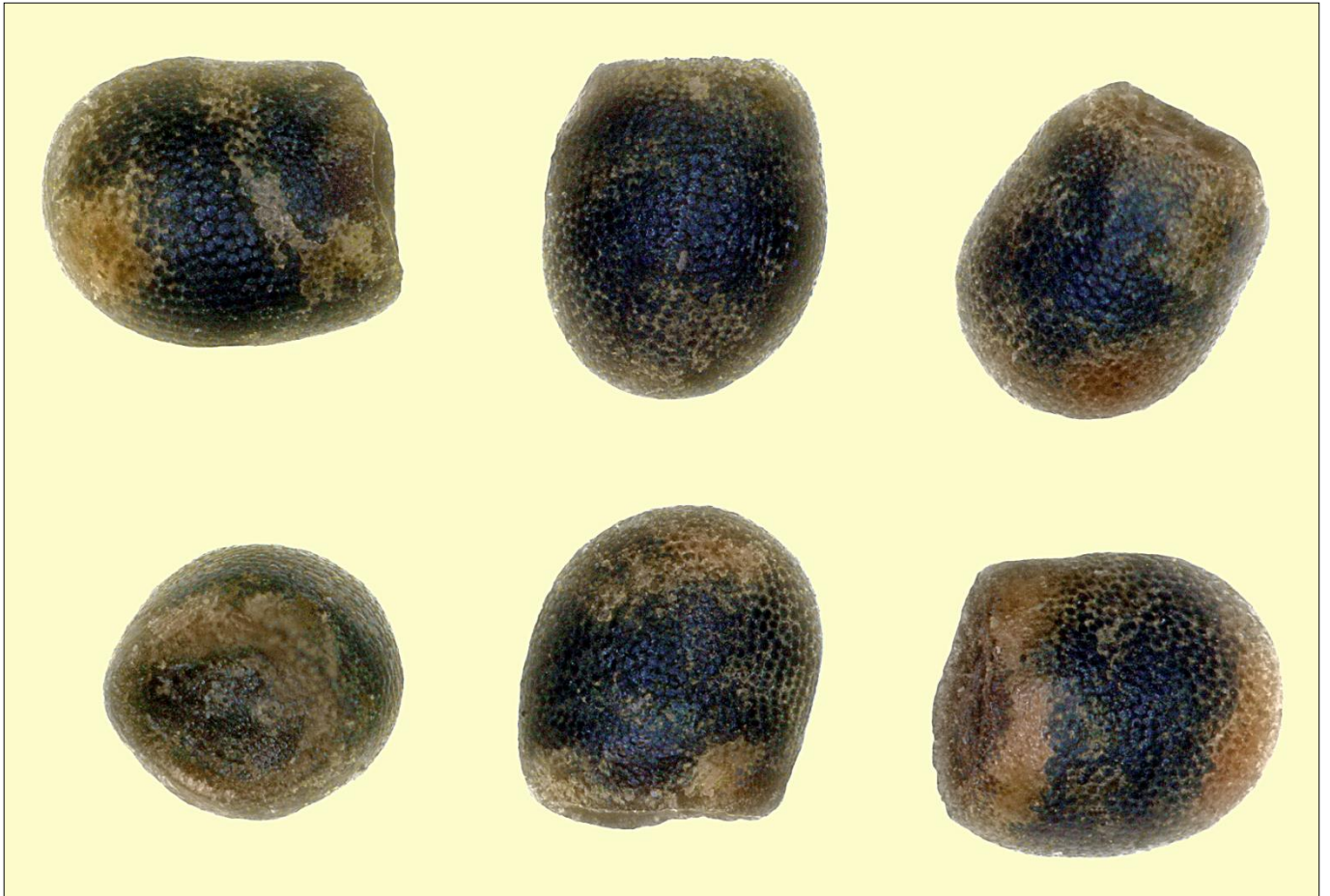


Fig. 153: Seeds of *Gymnocalycium strigianum* MT 08-341 (photographed at 20x magnification)

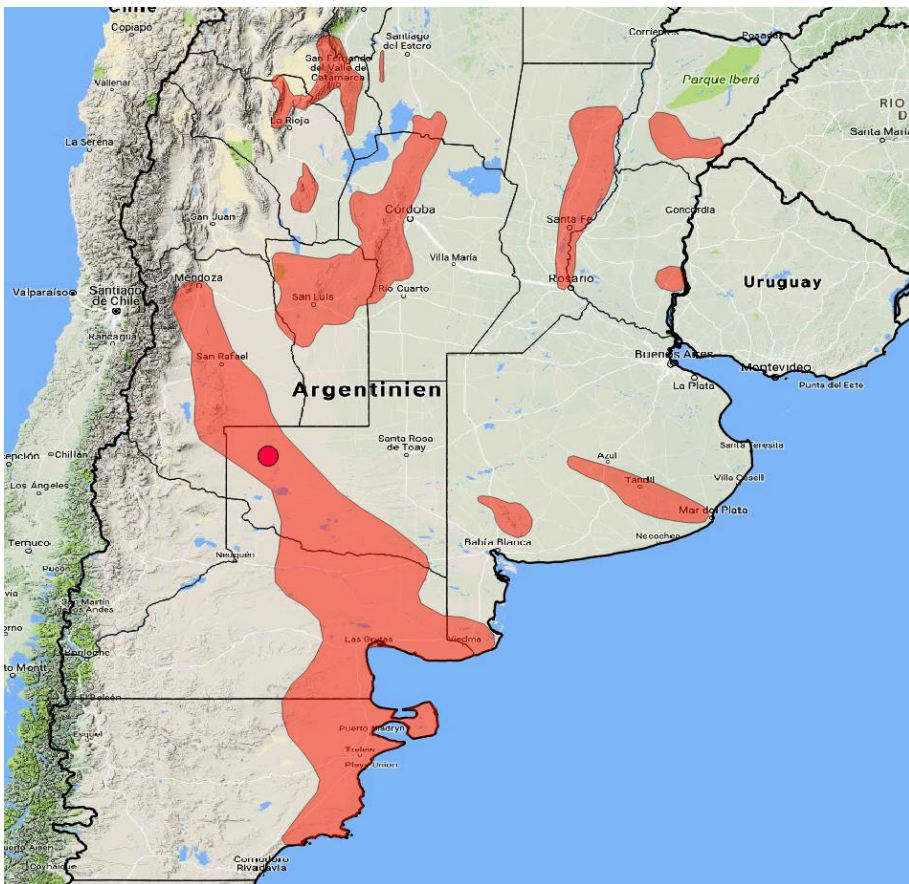


Fig. 154: Locality of *Gymnocalycium strigianum* MT 08-341

***Gymnocalycium sutterianum* (Schick) Hosseus (1926)**



Fig. 155: *Gymnocalycium sutterianum* subsp. *dolezalii* VoS 635, northeast of Berrotarán, Province Córdoba, Argentina, 716 m



Fig. 156: Habitat of *Gymnocalycium sutterianum* subsp. *dolezalii* VoS 635

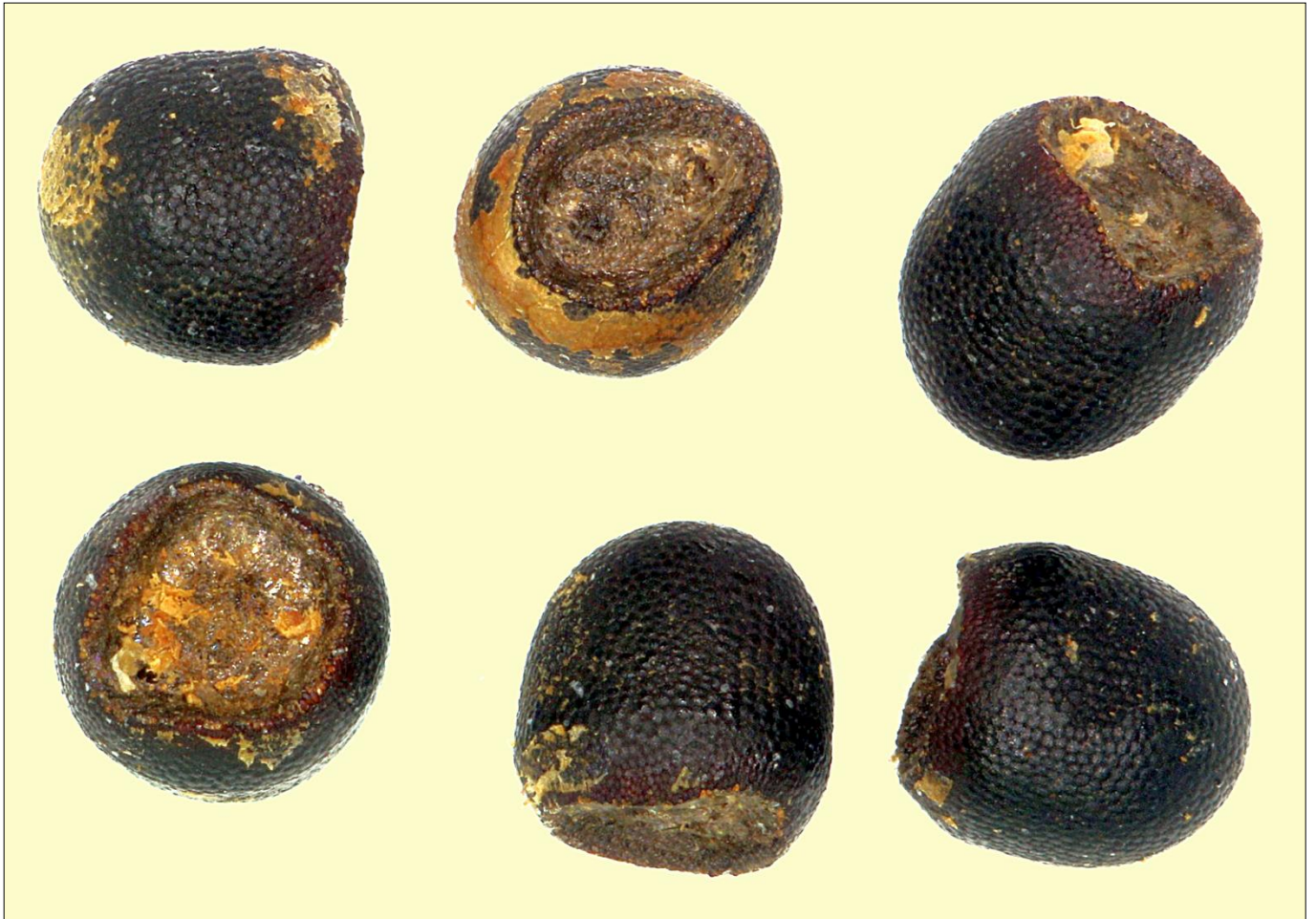


Fig. 157: Seeds of *Gymnocalycium sutterianum* subsp. *dolezalii* VoS 635 (photographed at 20x magnification)

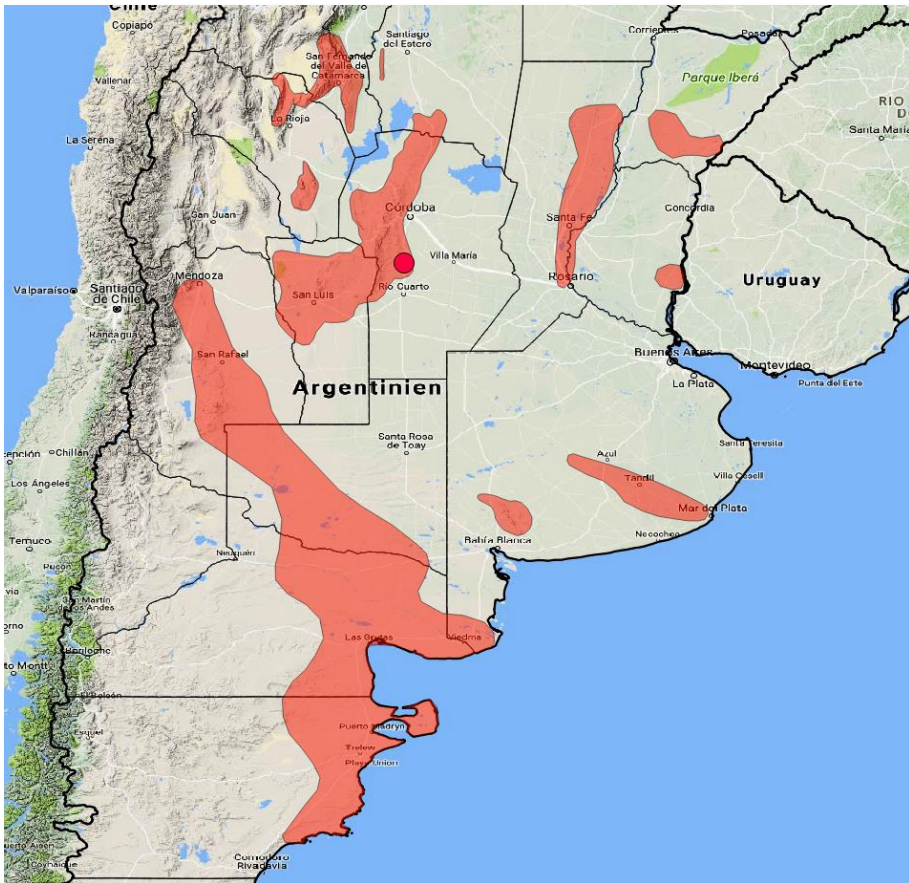


Fig. 158: Locality of *Gymnocalycium sutterianum* subsp. *dolezalii* VoS 635

***Gymnocalycium tanningaense* Piltz (1990)**



Fig. 159: *Gymnocalycium tanningaense* VoS 1462, east of Tanninga, Province Córdoba, Argentina, 988 m



Fig. 160: Habitat of *Gymnocalycium tanningaense* VoS 1462

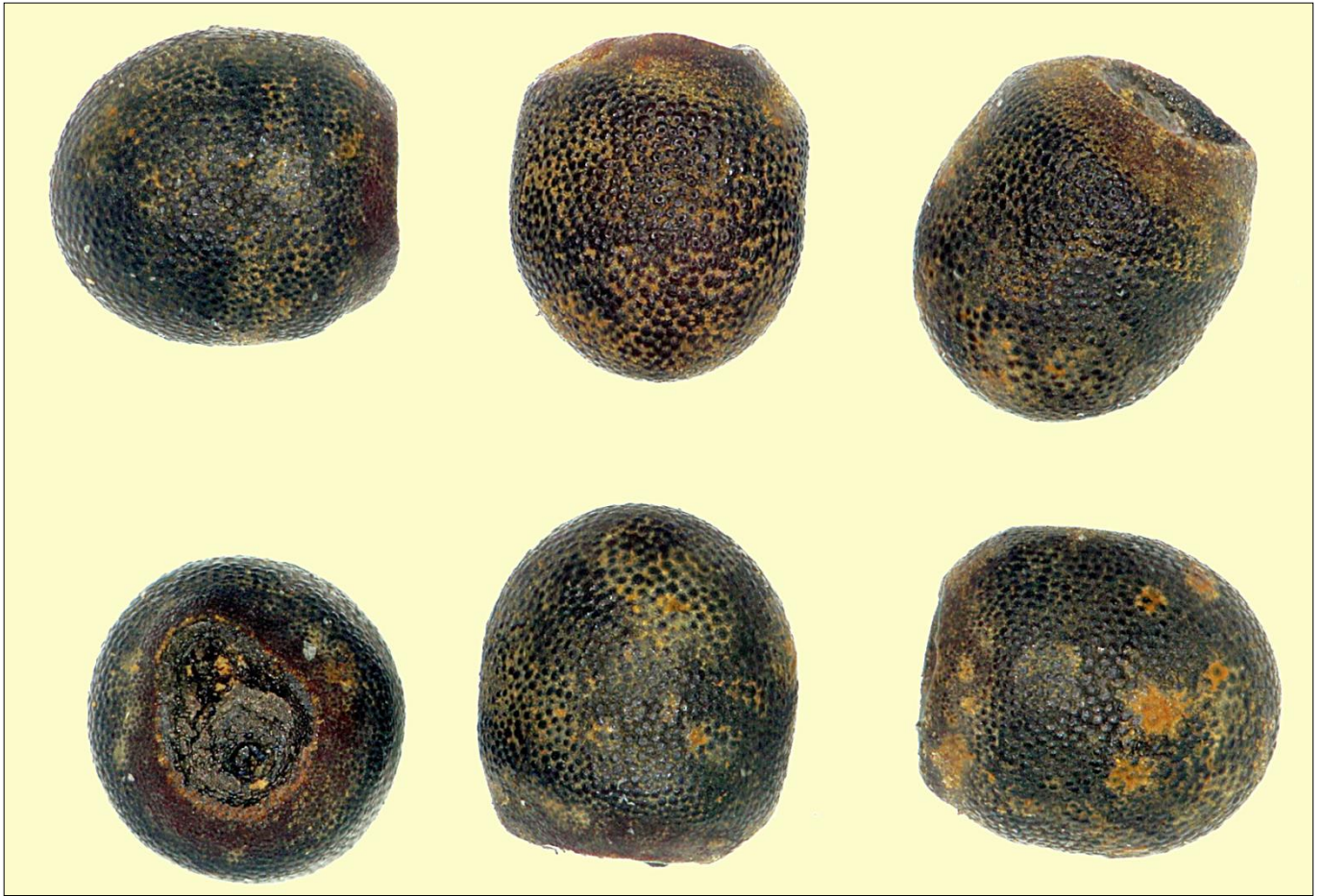


Fig. 161: Seeds of *Gymnocalycium tainingaense* var. *lukasikii* VoS 183, south of La Esquina, Ruta 17, Province San Luis, Argentina, 1072 m (photographed at 20x magnification)

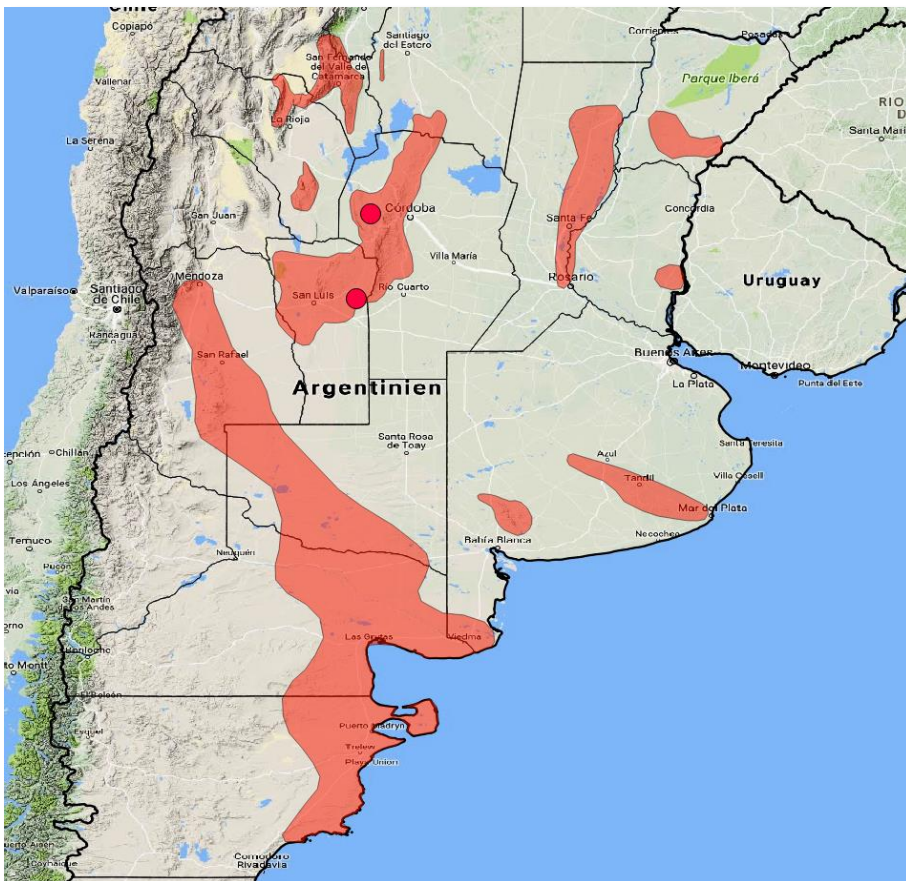


Fig. 162: Localities of *Gymnocalycium tainingaense* VoS 1462 (northern locality) and *Gymnocalycium tainingaense* var. *lukasikii* VoS 183 (southern locality)

***Gymnocalycium uebelmannianum* Rausch (1972)**



Fig. 163: *Gymnocalycium uebelmannianum* VoS 1757, Pampa de La Viuda, Province La Rioja, Argentina, 2160 m



Fig. 164: Habitat of *Gymnocalycium uebelmannianum* VoS 1757



Fig. 165: Seeds of *Gymnocalycium uebelmannianum* VoS 1757 (photographed at 20x magnification)

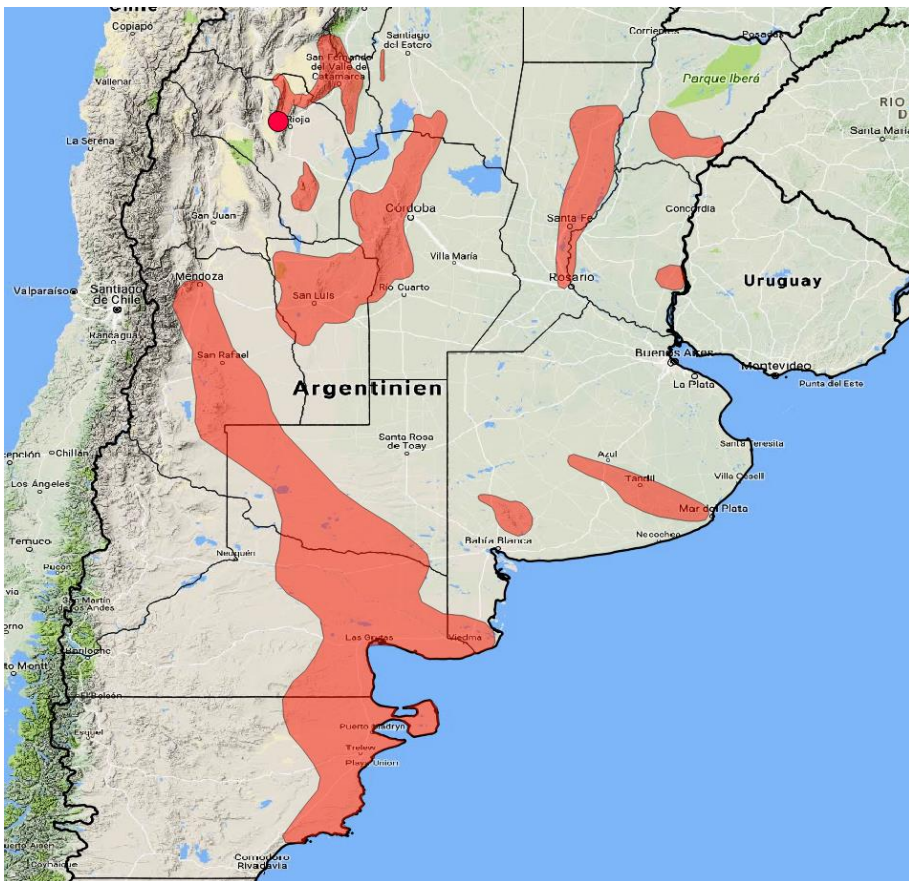


Fig. 166: Locality of *Gymnocalycium uebelmannianum* VoS 1757

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Unless otherwise stated all photos by the authors.

LITERATURE

Schütz, B. (1969): Rod *Gymnocalycium*. – Fričiana: 46(7): 3-23.