

Potato Collecting Expeditions to Bolivia, 1980, 1981.

BGR

Collectors (1980): J.G.Hawkes (Birmingham), J.P.Hjerting (Copenhagen) and I.Avilés (Cochabamba).

Collectors (1981): J.G.Hawkes (Birmingham), I.Avilés (Cochabamba) and R.Hoopes (Cochabamba - C.I.D.).

— HHA 6404 S.toralapanum ? Dept. Cochabamba, prov. Chapare, new road from Cochabamba to Villa Tunari, 37km, just below top of pass. Lat. 17°23' Long. 65°52'. Alt. 3600m. Puna vegetation amongst grass and rocks. Small rosette. Herbarium only. 17/2/80

— HHA6412 S.violaceimarmoratum Dept. Cochabamba, prov. Chapare, 66km from Cochabamba on road to Villa Tunari (100km from Villa Tunari). Lat. 17°15'. Long. 65°53'. Alt. 3100m. Amongst mosses in rich soil by a stream, with scattered bushes. Herbarium only. 17/2/80

— HHA 6415 Dept. Cochabamba, prov. Chapare, 100km from Villa Tunari on the road to Cochabamba (66km from Cochabamba). Lat. 17°15'. Long. 65°53'. Alt. 3100m. Stony bushy places by road with shallow mossy soil, ceja formation. Small plants with mother and daughter tubers. Same place as 6412. Tubers and plants. 18/2/80

— HHA 6418 S.violaceimarmoratum Dept. Cochabamba, prov. Chapare, 16.5km from Aguirre on road to Incachaca (new section). Lat. 17°17'. Long. 65°47'. Alt. 3400m. In upper part of ceja woodland and on roadside scree. Large spreading plants to 75cm high with dark to light violet flowers (segregation?). Herbarium and plants. 19/2/80

28963

HHA 6422 S.virgultorum Dept. Cochabamba, prov. Carrasco, 105km from Cochabamba on road to Santa Cruz. Lat. 17°28'. Long. 65°17'. Alt. 2900m. In dense shade of Alnus wood in damp valley bottom. 21/2/80  
Plants immature, with deep purple veins and midribs. Herb. and plants.  
Remark: only berries with 27154 (veg)

— HHA 6423 S.toralapanum Dept. Cochabamba, prov. Carrasco, 105km from Cochabamba on road to Santa Cruz. Lat. 17°28'. Long. 65°17'. Alt. 2900m. Dry bank above road with bromeliads, cacti, etc, and bare soil. Young plants; rosettes. Herbarium only. 21/2/80

28964  
31180

HHA 6429 S.brevicaule Dept. Cochabamba, prov. Carrasco, 106km from Cochabamba on road to Santa Cruz, Escalante. Lat. 17°29'. Long. 65°16'. Alt. 2950m. On rocky grassy slopes above road. (Note: S.microdontum subsp. gigantophyllum grows on other side of road, but

BgRC

Potato Collecting Expeditions to Bolivia, 1980, 1981.

31180 (cont)

HHA 6429 (continued) not collected (see 1971 and 1974 lists).  
Herbarium, tubers and plants. 21/2/80

HHA 6433 S.alandiae Dept. Cochabamba, prov. Carrasco, 13km on road  
from Epizana towards Aiquile, 1km before Totora. Lat. 17°43'.  
Long. 65°06'. Alt. 2800m. Grassy bushy slopes below road, above river.  
Plants 20-30cm; flowers pale bluish-mauve; calyx with pigmented sepal  
midribs. Herbarium, tubers and plants. 21/2/80

41921

HHA 6434 S.sparsipilum Dept. Cochabamba, prov. Carrasco, 13km on road  
from Epizana towards Aiquile, 1km before Totora. Lat. 17°43'.  
Long 65°06'. Alt. 2800m. Cultivated field, but growing near S.alandiae  
which has invaded field. Possibly some hybrid plants. Seed. 21/2/80

HHA 6435 S.alandiae Dept. Cochabamba, prov. Carrasco, 15km from Epi-  
zana on road to Aiquili, 1km past Totora. Lat. 17°44'. Long.  
65°06'. Alt. 2800m. Bushy grassy places below road. No flowers. Herbarium.  
21/2/80

HHA 6436 S.chacoense "Kkita papa" Dept. Cochabamba, prov. Misque,  
45 km from Epizana on road to Aiquile, in a deep valley below  
the road. Lat. 17°54'. Long 65°06'. Alt. 2500m. In shade of shrubs and  
trees. Large tuber but died later. Herbarium only. 21/2/80

27996.

HHA 6438 (a) S.tarijense x S.berthaultii. (b) S.berthaultii. Dept.  
Cochabamba, prov. Campero, road branching westwards at 17km  
from Aiquile towards Sucre, at Novillero, 1.7km from main road. Lat.  
18°17'. Long. 65°13'. Alt. 2100m. On edge of maize field in thorn hedge.  
Plants 75cm tall, short glands only; flowers stellate, white to palest  
blue; berries globular, white-verrucose. Herbarium, seeds. 22/2/80

HHA 6440 S.berthaultii Dept. Cochabamba, prov. Campero, road branch-  
ing westwards at 17km from Aiquile towards Sucre, at Novillero,  
3.0km from main road. Lat. 18°16'. Long. 65°14'. Alt. 2150m. Stony  
bank by road, partial shade. Rather pale flowers; long and short glands.  
Herbarium. 22/2/80.

HHA 6441 S.chacoense Dept Cochabamba, prov. Campero, road branching  
westwards at 17km from Aiquile towards Sucre, 3.5km along  
road, near large ruined building. Lat. 18°16'. Long. 65°14'. Alt. 2150m.  
Among bushes by road and in hedge. Tall plants to 80cm; fls white stell  
ate; no glands, almost glabrous. Herbarium. 22/2/80.

Potato Collecting Expeditions to Bolivia, 1980, 1981.

BGRC

28499

HHA 6442 S.berthaultii Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 3.5km along road, near large ruined building. Lat. 18° 16'. Long 65° 14'. Alt. 2150m. Among bushes along road and in hedge. Short plant, no flowers; berries round, white-spotted. Herbarium and seed. 22/2/80. Short glands only.

HHA 6443 S.chacoense Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 4.5km along road. Lat. 18° 16'. Long. 65° 14'. Alt. 2200m. Among bushes, 2.75m high. Herbarium. 22/2/80.

HHA 6444 S.alandiae Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 7km from turning. Lat. 18° 16'. Long. 65° 15'. Alt. 2300m. Flowers pale blue. Herbarium. 22/2/80.

HHA 6445 S.alandiae Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 12km from turning. Lat. 18° 15'. Long. 65° 16'. Alt. 2350m. On a roadside scree. Flowers pale mauve; plants spreading; no other vegetation. Herbarium. 22/2/80.

HHA 6446 S.berthaultii Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 13km from turning. Lat. 18° 15'. Long. 65° 17'. Alt. 3420m. On scree above and below road. Long and short glands; flowers ± pentagonal, whitish, bluer towards centres. Herbarium and seeds. 22/2/80.

HHA 6447 S.alandiae Dept. Cochabamba, prov. Campero, road branching westwards at 17km from Aiquile towards Sucre, 13km from turning. Lat 18° 15'. Long 65° 17'. Alt. 3420m. Herbarium only. 22/2/80.

HHA 6448 S.alandiae Dept. Cochabamba, prov. Campero, 10km from Aiquile on road to Misque, by first railway cutting. Lat. 18° 07'. Long. 65° 06'. Alt. 2400m. In shade of shrubs and herbs. Plants immature, one with pale blue-mauve flowers. Herbarium. 23/2/80.

28489

HHA 6450 S.alandiae Dept. Cochabamba, prov. Campero, 13km from Aiquile on road to Misque. Lat. 18° 06'. Long. 65° 07'. Alt. 2300m. In grass and other herbs in partial shade or in open, near Schinus molle trees. Plants wilting. Herbarium. Tubers. 23/2/80.

27998

HHA 6451 S.tarijense x S.berthaultii Dept. Cochabamba, probably prov. Misque, 18km from Aiquile on road to Misque. (continued on p.4)

27998 (cont.) HHA 6451 (continued) Lat. 18°05'. Long. 65°09'. Alt. 2200m. In thorn hedges dividing maize fields and by roadside. No long glands, white stellate flowers, white spotted berries. Herbarium and seeds. 23/2/80.

27997 HHA 6453 S.tarijense x S.berthaultii Dept. Cochabamba, probably prov. Misque, 21km from Aiquile on road to Misque. Lat. 18°04'. Long. 65°10'. Alt. 2180m. In a spiny hedge in thorn scrub region with cacti. Plant to 1m high; berries white-spotted. Herbarium and seed. 23/2/80.

27999 HHA 6454 S.tarijense x S.berthaultii Dept. Cochabamba, prov. Misque, 37km from Aiquile on road to Misque, just before river crossing. Lat. 17°59'. Long. 65°14'. Alt. 2000m. In spiny hedge on field border. One spotted berry. Herbarium and seeds. 23/2/80.

HHA 6455 S.chacoense (+ S.berthaultii introgression) Dept. Cochabamba, prov. Misque, 37km from Aiquile on road to Misque, just before river crossing. Lat. 17°59'. Long. 65°14'. Alt. 2000m. In spiny hedge on field border, growing close to HHA 6454. Plants with a few glands and slightly mauve flowers. Herbarium only. 23/2/80.

28965 HHA 6456 S.alandiae Department Cochabamba, prov. Misque, 13km from Misque on road to Arani. Lat. 17°53'. Long. 65°19'. Alt. 2400m. In grass under partial shade of bushes in a small stream valley. Small wilting plants; no flowers. Plants. 23/2/80.

28966 HHA 6457 S.alandiae Dept. Cochabamba, prov. Misque, 18km from Misque on road to Arani, on open flat meseta just before reaching top of ascent. Lat. 17°50'. Long. 65°20'. Alt. 2650m. In grassy place under partial shade of shrubs in deep rich loam. Small wilting plants. Plants. 23/2/80.

Crossed with each other.

28967 HHA 6458 S.microdontum subsp. microdontum Dept. Cochabamba, prov. Misque, 27km from Misque on road to Arani, by a small waterfall. Lat. 17°47'. Long. 65°22'. Alt. 2760m. In deep rich soil on wet banks by waterfall. Plants to 40cm, leaves simple, flowers white. Herbarium. plants. 23/2/80.

HHA 6461 S.toralapanum Dept. Cochabamba, prov. Misque, 33.5km from Misque on road to Arani, in a rocky gorge. Lat. 17°44'. Long. 65°25'. Alt. 3100m. In open soil in grassland. Rosettes with dark purple flowers. Herbarium. 23/2/80.

32673 = 28965 x 28966. → seeds.  
ald x ald

BgAC

- HHA 6463 S.capsicibaccatum Dept. Cochabamba, prov. Quillacollo, 19km from Quillacollo on road to Morochata. Lat. 17°21'. Long. 66°21'. Alt. 3400m. Growing amongst shrubs and herbs in partial shade (probably former Polylepis woodland). Plants with flowers and some with immature berries. Herbarium. 25/2/80.
- HHA 6464 S.brevicaule Dept. Cochabamba, prov Quillacollo, 19km from Quillacollo on road to Morochata. Lat. 17°21'. Long. 66°21'. Alt. 3400m. Growing amongst shrubs and herbs in partial shade (probably former Polylepis woodland), mixed with HHA 6463. Flowers dark violet blue flowers; no fruits yet. Herbarium. 25/2/80.
- HHA 6465 S.toralapanum Dept. Cochabamba, prov. Quillacollo, 19km from Quillacollo on road to Morochata. Lat. 17°21'. Long. 66°21'. Alt. 3400m. Open grassland. No flowers or fruits. 25/2/80.
- HHA 6466 S.brevicaule Dept. Cochabamba, prov. Quillacollo, 25.5km from Quillacollo on road to Morochata, above Puente San Miguel. Lat. 17°19'. Long. 66°22'. Alt. 3850m. Among bushes and grass, often in bare soil; degraded Polylepis wood. Plants from 8-10 or up to 25cm tall, very hairy; flowers deep blue-purple, very rotate. Herbarium. 25/2/80.
- HHA 6467 S.toralapanum Dept. Cochabamba, prov. Quillacollo, 25.5km from Quillacollo on road to Morochata, above Punete San Miguel. In open soil; rosettes. Herbarium. 25/2/80. Lat. 17°19'. Long. 66°22'. Alt. 3850m.
- 28000 HHA 6468 S.brevicaule Dept. Cochabamba, prov. Quillacollo, 22km from Quillacollo on road to Morochata, by new Puente San Miguel. Lat 17°20'. Long. 66°21'. Alt. 3650m. In shade of little building and trees. Very dissected leaves, dark blue flowers and round green berries about 2cm diam. Herbarium, seeds. 25/2/80.
- 28968 HHA 6469 S.capsicibaccatum Dept. Cochabamba, prov. Quillacollo, 22km from Quillacollo on road to Morochata, by new Puente San Miguel. Lat. 17°20'. Long. 66°21'. Alt. 3650m. Damp bushy places among grasses and herbs with occasional small trees. Plants. 25/2/80.  
Only seeds from cross 28968 (HHA 6469) × 28972 (HHA 6486)
- HHA 6473 S.toralapanum Dept. Cochabamba, prov. Carrasco, 95km from Cochabamba on road to Santa Cruz, by road in small Polylepis region. Lat. 17°25'. Long. 65°25'. Alt. 3250m. In grass and short bushes and on bare soil. Rosetted or stemmed. No flowers. Herbarium. 26/2/80.

32676 = 28968 × 28972 HHA 6469 × HHA 6486

BGR C

HHA 6474 S.toralapanum Dept. Cochabamba, prov. Carrasco, 96km from Cochabamba on road to Santa Cruz, by ASAR notice below huts on lower side of road by a stream, Zapata Rancho. Lat. 17°25'. Long. 65°25'. Alt. 3200m. Amongst bushes in deep rich soil. Flowers deep purple. Herbarium. 26/2/80.

HHA 6475 S.brevicaule Dept. Cochabamba, prov. Carrasco, 96km from Cochabamba on road to Santa Cruz, by ASAR notice below huts on lower side of road by a stream, Zapata Rancho. Lat. 17°25'. Long. 65°25'. Alt. 3200m. Amongst bushes in deep rich soil. Flowers blue-purple. Herbarium. 26/2/80.

2896g

HHA 6476 S.okadae Dept. Cochabamba, prov. Carrasco, 96km from Cochabamba on road to Santa Cruz, by ASAR notice below huts on lower side of road by a stream, Zapata Rancho. Lat. 17°25'. Long. 65°25'. Alt. 3200m. Amongst bushes and in open soil. Stem 5-40cm according to habitat; flowers white. Herbarium, plants. 26/2/80.

28970

HHA 6477 S.okadae Dept. Cochabamba, prov. Carrasco, 96km from Cochabamba on road to Santa Cruz, by ASAR notice below huts on lower side of road by a stream, Zapata Rancho. Lat. 17°25'. Long. 65°25'. Alt. 3200m. One small plant. 26/2/80.

28971

HHA 6478 hsp Dept. Cochabamba, prov. Carrasco, 96km from Cochabamba on road to Santa Cruz, by ASAR notice below huts on lower side of road by stream, Zapata Rancho. Lat. 17°25'. Long. 65°25'. Alt. 3200m. Rather open soil with short grass, etc. Purple flowers. Plants. 26/2/80.

HHA 6483 S.microdontum subsp. microdontum Dept. Cochabamba, prov. Carrasco, Incallajta, turning at km 121 from the main Cochabamba to Santa Cruz road (just a few kms past Monte Punko), 20 km southwards from turning. Lat. 17°35'. Long. 65°22'. Alt. 2900m. In Alnus forest and amongst shrubs by river (below Inca fortress). Flowers white and one or two very small berries. Herbarium, plants. 26/2/80.

HHA 6484 S.sparsipilum Dept. Cochabamba, prov. Carrasco, Incallajta, 20km south from the turning at km 121 on the main Cochabamba road to Santa Cruz (just a few kms past Monte Punko). Lat. 17°35'. Long. 65°22'. Alt. 2900m. One plant on field border near locality for 6483. Herbarium. 26/2/80.

32686. =

28971 x 2896g HHA. 6478 x 642g

hsp x brc

BGR

HHA 6485 S.microdontum subsp. microdontum (+ S.sparsipilum)

Dept. Cochabamba, prov. Carrasco, Incallacta 20km south from the turning at km 121 on the main Cochabamba to Santa Cruz road. Lat. 17°35'. Long. 65°22'. Alt. 2900m. One plant on edge of Alnus wood amongst herbs and shrubs, close to both putative parents. Flowers pale blue; leaf dissection intermediate. Herbarium. 26/2/80.

28972

HHA 6486 S.capsicibaccatum Dept. Cochabamba, prov. Carrasco, 132km from Cochabamba on road to Santa Cruz, 4km past Epizana. Lat. 17°36'. Long. 65°05'. Alt. 3000m. Under shade of Polylepis and Escallonia in damp rich soil. Small plants to 15cm; flowers but no fruits. Herbarium and plants. 27/2/80.

32677 = 28972 x 28977 (HHA 6486 x HHA 6561a) S.capsicibaccatum

HHA 6487 S.capsicibaccatum Dept. Cochabamba, prov. Carrasco, 143-144km from Cochabamba on road to Santa Cruz (new measurements). Lat. 17°39'. Long. 65°00'. Alt. 3000m. In shade of Cassia and Escallonia in damp rich soil. Small plants to 15-20cm tall. No fruits. Herbarium and plants. 27/2/80.

HHA 6488 S.sparsipilum Dept. Cochabamba, prov. Carrasco, 150km from Cochabamba on road to Santa Cruz, Copachuncho. Lat. 17°41'. Long. 64°58'. Alt. 2640m. In a maize field as a weed by a mud wall, just by the road. Herbarium. 27/2/80.

HHA 6495 S.chacoense (+ S.tarijense) Dept. Santa Cruz, prov. M.M. Caballero, 298km from Cochabamba on main road to Santa Cruz, field border near road. Lat. 18°07'. Long. 64°20'. Alt. 1800m. On edge of a potato field in a thorn hedge. Plants with some glands, no flowers. Herbarium. 28/2/80.

32678 = 28977 x 28972 (HHA 6561a x HHA 6486) S.capsicibaccatum

28001

HHA 6496 S. neocardenasii Dept. Santa Cruz, prov. Valle Grande, 1.5km from Matoral on road to Valle Grande. Top of hill on right of road. Lat.  $18^{\circ}07'$ . Long.  $64^{\circ}12'$ . Alt. 1400m. In shade of thorn trees of various types, amongst spiny ground bromeliads, thus protected from grazing animals. Plants very frequent, with long and short glands; berries abundant, pale green with dark green band from base to top. Herbarium and seeds. 29/2/80.

28002

HHA 6502 S. microdontum subsp. microdontum Dept. Santa Cruz, prov. Valle Grande, 8km from Valle Grande in direction of Masicurí, Guadalupe, above village. Lat.  $18^{\circ}32'$ . Long.  $65^{\circ}05'$ . Alt. 2200m. In a wooded valley by stream just above reservoir, in deep rich leaf mould. Plants to 1m high; flowers white. Herbarium, seeds and plants. 29/2/80.

28973

HHA 6503 S. yungasense Dept. Santa Cruz, prov. Valle Grande, 8km from Valle Grande in direction of Masicurí, Guadalupe, above village. Lat.  $18^{\circ}32'$ . Long.  $65^{\circ}05'$ . Alt. 2200m. In potato field above reservoir just by natural woodland, swidden plots. Height of plant from 50-175cm according to height of surrounding vegetation; flowers yellow, stellate, very reflexed; hairy and glandular with very broad stem wings. Herbarium and plants. 29/2/80. no berries obtained. tubers 1983.

31181

HHA 6504 S. microdontum subsp. microdontum Dept. Santa Cruz, prov. Valle Grande, 8km from Valle Grande in direction of Masicurí, Guadalupe, above village. Lat.  $18^{\circ}32'$ . Long.  $65^{\circ}05'$ . Alt. 2200m. In a potato field above reservoir just by natural woodland, swidden plots. Herbarium. Seeds. 29/2/80.

HHA 6508 S. microdontum subsp. microdontum Dept. Santa Cruz, prov. Valle Grande, 18km from Valle Grande on road to Pucará. Lat.  $18^{\circ}36'$ . Long.  $64^{\circ}07'$ . Alt. 2600m. Ceja formation by a little stream in



BGRC

- HHa 6508 (continued) deep rich leaf mould under shade of trees and bushes. Plants to 1m or more, with two pairs of leaflets; flowers white to slightly bluish; corolla pentagonal; stem purple-marbled. Herbarium. 1/3/80.
- 31182 HHA 6510 S.capsicibaccatum Dept. Santa Cruz, prov. Valle Grande, about 19km from Valle Grande on road to Pucará. Lat. 18°36'. Long. 64°07'. Alt. 2650m. Bushy places in Ceja formation, growing with HHA 6513 (S.microdontum). Corolla white stellate; immature berries narrow, pointed. Herbarium and plants. 1/3/80.
- 31183 HHA 6513 S.microdontum ssp. microdontum Dept. Santa Cruz, prov. Valle Grande, about 19km from Valle Grande on road to Pucará. Lat. 18°36'. Long. 64°07'. Alt. 2650m. Bushy places in Ceja formation, growing with HHA 6510 (S.capsicibaccatum). One plant from a population; stems to 1m tall; flowers white. (goes up to 2850m over the pass - very minute plants in grassland). Herbarium and seeds. 1/3/80.
- 28003 HHA 6517 S.microdontum ssp. microdontum Dept. Santa Cruz, prov. Valle Grande, 22km from Valle Grande on road to Pucará. Lat. 18°37'. Long. 64°08'. Alt. 2850m. In hedge by road and at base of wall, protected by shrubs. Plants to 1m tall, with white flowers and many berries; some plants with quite narrow leaflets. Herbarium and seeds. 1/3/80.
- 31184 HHA 6519 S.avilesii Dept. Santa Cruz, prov. Valle Grande, 26km from Valle Grande, on road to Pucará, by side of road in one place only, Agua de Oro. Lat. 18°38'. Long. 64°09'. Alt. 2850m. On small rock outcrop, with very short herbs and shrubs. Plants to 10cm tall or less; flowers small, deep blue-purple. Herbarium and plants. 1/3/80.
- 31185 HHA 6521 S.avilesii Dept. Santa Cruz, prov. Valle Grande, 28km from Valle Grande on road to Pucará, near top of high peak. Lat. 18°38'. Long. 64°09'. Alt. 2950m. Amongst spiny shrubs in rich soil on rock outcrops. Plants about 5-10cm; flowers blue-purple. Herbarium and plants. 1/3/80.
- 31186 HHA 6522 S.avilesii Dept. Santa Cruz, prov. Valle Grande, 28km from Valle Grande on road to Pucará, amongst bushes near road. Lat. 18°38'. Long. 64°09'. Alt. 2850m. Larger plants than 6521, with larger medium purple flowers. Herbarium and plants. 1/3/80.

BgRC

31187

HHA 6523 S.alandiae Dept. Santa Cruz, prov. Valle Grande, 45km from Valle Grande on road to Pucará, on slopes looking down over Pucará. Lat. 18°42'. Long. 64°12'. Alt. 2650m. In degraded forest among small shrubs and grass. Plants to 40cm; flowers medium blue-purple. Herbarium and plants. 1/3/80.

HHA 6524 S.microdontum ssp. microdontum Dept. Santa Cruz, prov. Valle Grande, 46.5km from Valle Grande on road to Pucará, 0.5km above Pucará. Lat. 18°42'. Long. 64°12'. Alt. 2550m. In wild vegetation and cultivated field nearby. Plant to 75cm, often shorter; flowers white; stem very dark purple. Herbarium and plants. 1/3/80.

28490

HHA 6526 (a) S.alandiae (b) S.alandiae x S.sparsipilum Dept. Santa Cruz, prov. Valle Grande, 42km from Valle Grande on road to Pucará, 5km from Pucará. Lat. 18°41'. Long. 64°11'. Alt. 2450m. On grassy rocky slopes by road; plants bushy, to 30cm; flowers purple. Herbarium and seeds. 1/3/80.

28974

HHA 6528 S.alandiae Dept. Santa Cruz, prov. M.M. Caballero, road from Comarapa to Cochabamba, 65 km from Mataral and 247km from Cochabamba. Lat. 17°53'. Long. 64°37'. Alt. 2450m. Very dry soil on steep slopes amongst grass and bushes, with deep humus. Plants short and not well developed because of very dry weather, only about 10cm tall. Herbarium and plants. 2/3/80. No berries 8/2/83 Tubers only

28975

HHA 6530 S.alandiae Dept. Santa Cruz, prov. M.M. Caballero, 241km from Cochabamba on road to Santa Cruz, 71km from Mataral, 1km before Torrecillas. By road. Lat. 17°54'. Long. 64°39'. Alt. 2600m. In deep rich soil among bushes. Plants 20-30cm tall, with sky-blue flowers. Plants and herbarium. 2/3/80. No berries 8/2/83 Tubers only.

31189

HHA 6531 S.microdontum subsp. microdontum Dept. Santa Cruz, prov. M.M. Caballero; Siberia, on road to La Fortaleza, 227km from Cochabamba on road to Sta Cruz, 160m from main road. Lat. 17°53'. Long. 64°42'. Alt. 2550m. Along forest roads in rich soil among grass and shrubs. Plants 50cm; flowers white. (Note: this locality now known as El Empalme). Herbarium and plants. 2/3/80.

28004

HHA 6532 S.circaeifolium subsp. quimense Dept. Cochabamba, prov. Carrasco, 204km from Cochabamba on road to Santa Cruz, on steep slope below road. Lat. 17°46'. Long. 64°41'. Alt. 2650m. In deep shade

32674 = 28974 x 28975 (HHA 6528 x HHA 6530) - S.alandiae

32675 = 28975 x 28974 (HHA 6530 x HHA 6528) - S.alandiae

BGRG

- 28004 (alt) HHA 6532 (continued) of small trees and shrubs in rich deep leaf mould; plants 10-30cm; flowers white, stellate; fruits pale green, conical slightly compressed, veined with darker green, especially at the edges, sharp-pointed. Herbarium, seeds and plants..2/3/80.
- 28005 HHA 6536 S.sparsipilum Dept. Cochabamba, prov. E.Arze, road from Anzaldo to Mollepujro at 10km. Lat. 17°53'. Long. 65°55'. Alt. 2950m. Under partial shade of bushes by road. Plants not in flower; berries round to slightly oval, mostly green but one with white points. Herbarium and seeds. 6/3/80.
- HHA 6538 S.sparsipilum Dept. Cochabamba, prov. E. Arze, road from Anzaldo to Mollepujro at 10km. Lat. 17°53'. Long. 65°55'. Alt. 2950m. No flowers. Herbarium. 6/3/80.
- 28006 HHA 6540 S.berthaultii Dept. Cochabamba, prov. E. Arze, road from Anzaldo to Mollepujro at 15km from Anzaldo. Lat. 17°55'. Long. 65°55'. Alt. 2730m. Growing under bushes and trees by side of the road. No flowers; long and short glands; roundish berries with white spots. Herbarium and seeds. 6/3/80.
- 28007 HHA 6541 S.berthaultii Dept. Cochabamba, prov. E.Arze, 17km along road from Anzaldo to Mollepujro, just above Alfamayo. Lat. 17°55'. Long. 65°55'. Steep slopes below road; partial shade of trees and bushes, but some plants in full sun. Plants with long and short glands, one with pale blue flowers; berries slightly oval, green with white raised spots. Herbarium and seeds. 6/3/80. Alt. 2600m.
- 28009 HHA 6542 S.berthaultii Dept. Cochabamba, prov. E. Arze, 17km along road from Anzaldo to Mollepujro, just above Alfamayo. Same place as 6541. Lat. 17°55'. Long. 65°55'. Steep slopes above road where stream crosses. Alt. 2600m. Flowers very pale blue, almost white. Herbarium and seeds. 6/3/80.
- 28494 HHA 6544 S.berthaultii Dept. Cochabamba, prov. E. Arze, 18km along road from Anzaldo to Mollepujro, about 1km below Alfamayo. Lat. 17°55'. Long. 65°55'. Alt. 2550m. Under Prosopis and other small trees and bushes. No flowers; long and short glands. Seeds only. 6/3/80.
- 28476 HHA 6545 S.mollepujroense ? Dept. Cochabamba, prov. E. Arze, 17.5km from Anzaldo on road to Mollepujro, but in a small side valley above the road. Lat. 17°55'. Long. 65°55'. Alt. 2500m. Among

52687 = 28476 x 28494 = HHA 6545 x HHA 6429 mlj? x brc

BGR C

HHA 6545 (continued) bushes in humus-rich soil with thorn-bush and cacti vegetation. Many small plants, 10-30cm tall; no flowers or fruits. Herbarium and plants. 6/3/80.

28010

HHA 6547 S.berthaultii Dept. Cochabamba, prov. E. Arze, 16km along road from Anzaldo to Mollepujro. Lat. 17°55'. Long. 65°55'. Alt. 2570m. Steep shaley slopes above road. Plants with green berries with white spots. Herbarium and seeds. 6/3/80.

28011

HHA 6548 S.berthaultii Dept. Cochabamba, prov. E. Arze, 15.5km from Anzaldo on road to Mollepujro. Lat. 17°54'. Long. 65°55'. Alt. 2600m. Dry bank by road. Fruits round green with white raised spots and blotches. Seeds only. 6/3/80.

28012

HHA 6549 S.berthaultii Dept. Cochabamba, prov. E. Arze, 12.5km along road from Anzaldo to Mollepujro. Lat. 17°54'. Long. 65°55'. Alt. 2875m. Among grass and bushes on bank above road. Berries frequent, green with raised white spots and blotches. Herbarium and seeds. 6/3/80.

28495

HHA 6552 S.berthaultii ? Dept. Cochabamba, prov. Esteban Arce, road from Anzaldo to Mollepujro at 2.5km below Mollepujro, Tincomayo. Lat. 17°57'. Long. 65°55'. Alt. 2440m. In hedge at edge of river. Plants to 80cm, glandular. 6/3/80. Seeds only.

28013

HHA 6553 S.sparsipilum "Apharuma". Dept. Cochabamba, prov. Esteban Arce, Mollepujro, by the Hacienda. Lat. 17°57'. Long. 65°55'. Alt. 2560m. In a wheat field, growing as a weed. Herbarium and seeds. 7/3/80.

28014

HHA 6554 S.berthaultii "Tumi, Apharuma" Dept. Cochabamba, prov. Esteban Arce, Mollepujro, by the Hacienda. Lat. 17°57'. Long. 65°55'. Alt. 2560m. In a Prosopis and Schinus wood at edge of river. Herbarium and seeds. 7/3/80.

HHA 6555 S.berthaultii Dept. Cochabamba, prov. Esteban Arce, 1km from Hacienda Mollepujro in direction of Anzaldo. Lat. 17°57'. Long. 65°55'. Alt. 2620m. Growing in animal manure round a tree. Herbarium. 7/3/80.

28015

HHA 6556 (a) S.sparsipilum (b) S.berthaultii Dept. Cochabamba, prov. Esteban Arce, Hacienda Mollepujro, 100m from the house. Lat. 17°57'. Long. 65°55'. Alt. 2560m. Herbarium and seeds. 7/3/80.

28496

HHA 6557 S.berthaultii Dept. Cochabamba, prov. Esteban Arce, Hacienda Mollepujro, 100m from house. Lat. 17°57'. Long. 65°55'.  
Alt. 2560m. Under shade of Schinus molle tree. Herbarium & seeds. 7/3/80.

—

HHA 6559 S.sparsipilum Dept. Cochabamba, prov. Arque, 60km from Cochabamba on old road to Oruro. Lat. 17°37'. Long. 66°28'.  
Alt. 3175m. On open soil of an entrance to a stony field. Plants young, no flowers. Herbarium. 9/3/80.

31192

HHA 6560 S.sparsipilum ? Dept. Cochabamba, prov. Arque, 60km from Cochabamba on old road to Oruro. Lat. 17°37'. Long. 66°28'.  
Alt. 3175m. Among grasses and bushes by cultivated field and occasionally in field itself. Herbarium and plants. 9/3/80.

28977

HHA 6561a. S.capsicibaccatum Dept. Cochabamba, prov. Arque, 60km from Cochabamba on old road to Oruro. Lat. 17°37'. Long. 66°28'.  
Alt. 3175m. Under bushes just below edge of road. Immature berries. Herbarium, seeds and plants. 9/3/80.

31203

HHA 6561b hsp location as HHA 6561a

28978

HHA 6562 S.toralapanum Dept. Cochabamba, prov. Arque, 71km from Cochabamba on old road to Oruro. Lat. 17°38'. Long. 66°29'.  
Alt. 3550m. On scree below road; also occurs in grass and among bushes in the same general area. Rosette plants with + subsimple leaves, very hairy; flowers deep blue-violet. Herbarium and plants. 9/3/80.

—

HHA 6563 S.capsicibaccatum Dept. Cochabamba, prov. Arque, 71km from Cochabamba on old road to Oruro. Lat. 17°38'. Long. 66°29'.  
Alt. 3550m. Under Polylepis in deep rich humus. Herbarium. 9/3/80.

—

HHA 6566 S.acaule Dept. Cochabamba, prov. Tapacari, road from Cochabamba to Oruro at Cruce de Challa (3km before Challa) which is the turning for Independencia, 3km along this road. Lat. 17°37'. Long. 66°42'. Alt. 4250m. In open soil on side of road. No flowers or fruits. Herbarium voucher only. 9/3/80.

—

HHA 6568 S.acaule Dept. Cochabamba, prov. Ayopaya, 35km from Cruce de Challa on road to Independencia, Cruce de Villa Pereira. Lat. 17°28'. Long. 66°48'. Alt. 3850m. On bare soil among ichu grass in wet puna formation round village. Small rosettes. Herbarium. 9/3/80.

BGRC

28979

HHA 6569 S.toralapanum ? Dept. Cochabamba, prov. Ayopaya, 38km from Cruce de Challa on road to Independencia. Lat. 17°28'. Long. 66°49'. Alt. 3900m. In open ground and among ichu grass in wet puna. Rosette plants, some with deep blue-purple flowers. Herbarium, plants. 9/3/80.

28493

HHA 6571 S.acaule, Dept. Cochabamba, prov. Ayopaya, 27km from Kami on road from Cruce de Challa to Independencia, Abra de Ornoni. Lat. 17°15'. Long. 66°54'. Alt. 3730m. In wet puna amongst ichu grass. Plants rosettes, with flowers and a few fruits. Herbarium and seeds. 10/3/80.

28016

HHA 6572 S.toralapanum Dept. Cochabamba, prov. Ayopaya, 27km from Kami on road from Cruce de Challa to Independencia, Abra de Ornoni. Lat. 17°15'. Long. 66°54'. Alt. 3730m. Sheltered under ichu grass, and with very abundant manure. Very large plants and rotate flowers. Berries dark brownish, with white spots. Herbarium, seeds and plants. 10/3/80.

HHA 6573 S.circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, 36km from Kami on road from Cruce de Challa to Independencia. Lat. 17°13'. Long. 66°53'. Alt. 3600m. Under small bushes below the road in degraded Polylepis woodland. Small hairy plants with white stellate flowers. Herbarium and plants. 10/3/80.

HHA 6575 S.circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, near Independencia, by path. Lat. 17°07'. Long. 66°56'. Alt. 2670-2700m. In shade of bushes, degraded woodland. Delicate plants with white stellate flowers and immature conical berries. Herbarium and plants. 11/3/80. Plants died in 1982

31193

HHA 6578 S.circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, near Independencia, by path. Lat. 17°07'. Long. 66°56'. Alt. 2750m. In degraded humid woodland in partial shade and in a cultivated field (slash-burn). Large plants, not very hairy, with 2-3 pairs of leaflets; flowers substellate-pentagonal, white. Herbarium and plants. 11/3/80.

HHA 6580 S.circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, near Independencia, by path. Lat. 17°07'. Long. 66°56'. Alt. 2900m. Under partial shade of thorny Acacias, etc. in degraded woodland. Plants 30-50cm or more; flowers white, substellate. Herbarium and plants. 11/3/80.

BGRC

28500

HHA 6581 S. circaeifolium subsp. quimense Dept. Cochabamba, prov. Ichupampa, Ayopaya, near Independencia, by path, Lat. 17°07'. Long. 66°56'. Alt. 3000m. Among shrubs at edge of natural forest and in maize field (swidden). Locally abundant, to 30cm high, flowering and with some fruits which are spindle-shaped and sharp-pointed. Herbarium, seeds and plants. 11/3/80.

HHA 6582 S. circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, footpath from Independencia to Sivingani, about 1km from Independencia. Lat. 17°07'. Long. 66°56'. Alt. 2550m. In hedge under shrubs by wayside. White flowers. Herbarium. 11/3/80.

HHA 6583 Dept. Cochabamba, prov. Ayopaya, about 2km from Independencia on footpath to Sivingani. Lat. 17°06'. Long. 66°55'. Alt. 2500m. In scree of clay and stones below road; thorn bush vegetation. Flowers purple, very rotate; with narrow leaflets. Herbarium and plants. 11/3/80.

31194

HHA 6585 S. okadae Dept. Cochabamba, prov. Ayopaya, about 3km from Independencia on footpath to Sivingani. Lat. 17°06'. Long. 66°55'. Alt. 2450m. In fallow field near hedge. Plant almost glabrous; flowers white, rotate-pentagonal; buds white, tipped with violet. Herbarium and plants. 11/3/80.

28498

HHA 6588 S. circaeifolium subsp. quimense Dept. Cochabamba, prov. Ayopaya, 16km from Independencia on road to Challa. Lat. 17°12'. Long. 66°53'. Under partial shade of bushes by road. Corolla broad stellate, white. Immature berries. Herbarium and seeds. 12/3/80, 3220m.

31195

HHA 6589 S. toralapanum Dept. Cochabamba, prov. Ayopaya, 24km from Independencia on road to Challa. Lat. 17°14'. Long. 66°54'. Alt. 3730m. In open shaley ground by side of road in wet puna formation. Plants mostly in rosettes. Flowers deep rich purple. Herbarium & seeds. 12/3/80.

HHA 6590 S. violaceimarmoratum x S. microdontum Dept. Cochabamba, prov. Carrasco, 12km from Monte Punco towards Sihuenca, Yerba Buena. Lat. 17°30'. Long. 65°08'. Alt. 2300m. Growing in Ceja with big Alnus trees, under shade but near road. Flower violet with white acumens, 2.5cm diam. Plants to 70cm tall. Herbarium and plants. 13/3/80.

BGRC

- HHA 6594 Dept. Cochabamba, prov. Carrasco, 21km from Monte Punco towards Sihuenca. Lat. 17°28'. Long. 65°07'. Alt. 2100m. Amongst bushes towards rock wall; small plants. Plants. 13/3/80.
- HHA 6595 S.microdontum Dept. Cochabamba, prov. Carrasco, 14km from Monte Punco towards Sihuenca. Lat. 17°29'. Long. 65°08'. Alt. 2250m. Plant to 1.8m tall; no flowers. Herbarium. 13/3/80.
- 28017 HHA 6597 S.sparsipilum Dept. Cochabamba, prov. Cercado, Sierra de Tunari, Parque Tunari at 8-9km from beginning of park road. Lat. 17°15'. Long. 66°10'. Alt. 3300m. Among trees and bushes in very deep rich humus. Plants to 30-50cm tall, with large rich blue-purple flowers and mature fruits. Herbarium and seeds. 14/3/80.
- HHA 6600 S.toralapanum Dept. Cochabamba, prov. Cercado, Sierra de Tunari, Parque Tunari at about 11.5km from park entrance. Lat. 17°19'. Long. 66°10'. Alt. 3500m. Under shade of bushes in Polylepis - Stipa formation. Small rosettes, no flowers. Herbarium. 14/3/80.
- 31196 HHA 6601 S.acaule Dept. Cochabamba, prov. Cercado, Sierra de Tunari, near Lake Huara Huara at end of road, 23.5km from park entry. Lat. 17°18'. Long. 66°10'. Alt. 4000m. In very short grass and open ground near road; puna vegetation of Stipa ichu. Very tiny flattened rosettes, 3-5cm diam. No flowers or fruits. Herbarium and plants. 14/3/80.
- HHA 6602 S.toralapanum Dept. Cochabamba, prov. Cercado, Sierra de Tunari, near Lake Huara Huara at end of road, 23.5km from park entry. Lat. 17°18'. Long. 66°10'. Alt. 4000m. In very short grass and open ground near road; puna vegetation of Stipa ichu. Very small rosettes, one or two rather bigger. Herbarium. 14/3/80.
- HHA 6603 S.toralapanum Dept. Cochabamba, prov. Cercado, Sierra de Tunari, near Lake Huara Huara at end of road, 23.5km from park entry. Lat. 17°18'. Long. 66°10'. Alt. 4000m. Along the road, 200m distant from 6602. Plants larger than 6602, rather hairy. Herbarium. 14/3/80.
- 28018 HHA 6604 S.acaule Dept. Cochabamba, prov. Cercado, Sierra de Tunari, near Lake Huara Huara at end of road, 23.5km from park entry. Lat. 17°18'. Long. 66°10'. Alt. 4000m. In very short grass and open ground near road; puna vegetation of Stipa ichu. Some distance from 6601, with mature berries. Seeds only. 14/3/80



BGR

31197

HHA 6609 S. brevicaulis Dept. Cochabamba, prov. Cercado, road through Parque de Tunari, Cerro Tunari, about 17-18km from park entrance. Lat. 17°19'. Long. 66°10'. Alt. 3750m. In a damp valley in shade of Polylepis; puna vegetation with Stipa, etc. Plants 15-20cm; flowers blue-purple. Herbarium and plants. 14/3/80.

HHA 6610 S. capsicibaccatum Dept. Cochabamba, prov. Chapare, 8km from Tranca de Sacaba towards Palca. Lat. 17°22'. Long. 66°03'. Alt. 3100m. Stony valley slope amongst bushes. Herbarium. 15/3/80.

28019

HHA 6611 S. acaule Dept. Cochabamba, prov. Chapare, 34km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3920m. Roadside in wet puna on disturbed soil. Herbarium & seeds. 15/3/80.

HHA 6612 S. toralapanum Dept Cochabamba, prov. Chapare, 34km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3920m. Roadside in wet puna on disturbed soil. Growing with HHA 6611. Herbarium and plants. 15/3/80.

28020

HHA 6613 S. toralapanum Dept. Cochabamba, prov. Chapare, 35km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3760m. Amongst stones in puna vegetation. Herbarium & seeds. 15/3/80.

HHA 6615 S. brevicaulis Dept. Cochabamba, prov. Chapare, 35km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3800m. Amongst rocks, 50m higher than HHA6613. Herbarium. 15/3/80.

28021

HHA 6616 S. toralapanum Dept. Cochabamba, prov. Chapare, 35km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3760m. On border of cultivated potato field. Large plants. Herbarium and seeds. 15/3/80.

28022

HHA 6617 S. acaule Dept. Cochabamba, prov. Chapare, 35km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3760m. On border of cultivated potato field. Rather large rosettes. Herbarium and seeds. 15/3/80.

HHA 6618 S. brevicaulis Dept. Cochabamba, prov. Chapare, 35km from Tranca de Sacaba on road to Palca. Lat. 17°14'. Long. 66°03'. Alt. 3760m. Riverside, below rocks. Herbarium. 15/3/80.

28497

HHA 6619 S. brevicaule Dept. Cochabamba, prov. Chapare, about 40km from Tranca de Sacaba along road to Palca,  $\frac{1}{2}$ km before Palca. Lat.  $17^{\circ}13'$ . Long.  $66^{\circ}03'$ . Alt. 3730m. Growing on valley side among stones and ichu grass, wet puna. Flowers to 4cm, dark violet. Herbarium and seeds. 15/3/80.

28023

HHA 6620 S. brevicaule Dept. Cochabamba, prov. Chapare, about 40km from Tranca de Sacaba along road to Palca,  $\frac{1}{2}$ km before Palca. Lat.  $17^{\circ}13'$ . Long.  $66^{\circ}03'$ . Alt. 3730m. Growing on valley side among stones and ichu grass, wet puna. Flowers violet,  $2\frac{1}{2}$ cm diameter. Herbarium and seeds. 15/3/80.

28024

HHA 6621 S. brevicaule Dept. Cochabamba, prov. Chapare, about 40km from Tranca de Sacaba along road to Palca,  $\frac{1}{2}$ km before Palca. Lat.  $17^{\circ}13'$ . Long.  $66^{\circ}03'$ . Alt. 3730m. Close to HHA 6619, growing on valley side among stones and ichu grass, wet puna. Herbarium & seeds. 15/3/80.

28025

HHA 6622 S. toralapanum Dept. Cochabamba, prov. Chapare, about 40km from Tranca de Sacaba along road to Palca,  $\frac{1}{2}$ km from Palca. Lat.  $17^{\circ}13'$ . Long.  $66^{\circ}03'$ . Alt. 3730m. Wayside amongst stones. No flowers. Herbarium and seeds. 15/3/80.

28026

HHA 6626 S. acaule Dept. Cochabamba, prov. Chapare, 29km from Tranca de Sacaba on road to Palca. Lat.  $17^{\circ}15'$ . Long.  $66^{\circ}03'$ . Alt. 4200m. Growing in puna vegetation among ichu grass. Very small rosettes. Herbarium and seeds. 15/3/80.

28027

HHA 6627 S. sparsipilum Dept. Cochabamba, prov. Cercado, grounds of the University of Cochabamba. Lat.  $17^{\circ}23'$ . Long.  $66^{\circ}10'$ . Alt. 2560m. Waste ground of grass and herbs. Plants small, with blue-purple flowers; berries green, sometimes with small white spots. Herbarium and seeds. 17/3/80.

HHA 6628 S. sparsipilum Dept. Cochabamba, prov. Cercado, grounds of the University of Cochabamba. Lat.  $17^{\circ}23'$ . Long.  $66^{\circ}10'$ . Alt. 2560m. Waste ground of grass and herbs. One white-flowered plant only, possibly just a white-flowered mutant of HHA 6627. Herbarium. 17/3/80.

HHA 6635 S. chacoense Dept. Santa Cruz, prov. Cordillera, road from Santa Cruz to Camiri, near Camiri, 4km on road to Caipipendi, 24 km from Ipati towards Camiri. Lat.  $19^{\circ}48'$ . Long.  $63^{\circ}35'$ . Alt. 800m. Under dense shade of small trees by road. Herbarium & tubers. 23/3/80.

- HHH 6640 S. chacoense Dept. Santa Cruz, prov. Cordillera, road from Santa Cruz to Camiri, near Camiri, 4km on road to Caipipendi, 24km from Ipati towards Camiri. Lat. 19°48'. Long. 63°35'. Alt. 900m. Under dense shade of small trees by road. Herbarium and plant. 23/3/80.
- HHH 6641 S. chacoense x yungasense ? Dept. Chuquisaca, prov. Luis Calvo, 42km on road from Ipati to Monteagudo at top of pass, Aquio. Lat. 19°45'. Long. 63°45'. Alt. 1600m. Among bushes at top of small hill above the road menders encampment. Plant to 70cm; flowers white. Only one berry. Herbarium and seeds. 23/3/80.
- HHH 6642 S. chacoense x S. yungasense ? Dept. Chuquisaca, prov. Luis Calvo, 42km on road from Ipati to Monteagudo at top of pass, Aquio. Lat. 19°45'. Long. 63°45'. Alt. 1600m. Among bushes at top of small hill above the road menders encampment. Plants to 1.5m; stems broadly winged; flowers slightly yellow. Herbarium and seeds. 23/3/80.
- HHH 6644 S. chacoense ? Dept. Chuquisaca, prov. Jaime Mendoza, 22km from Monteagudo on road to Padilla, top of pass. Lat. 19°45'. Long. 64°05'. Alt. 1400m. In deep shade of bushes. One small plant, no flowers or berries. Herbarium. 24/3/80.
- HHH 6646 S. chacoense ? Dept. Chuquisaca, prov. Jaime Mendoza, 85 km from Monteagudo on road to Padilla, just above pumping station, El Rosal. Lat. 19°29'. Long. 64°10'. Alt. 2100m. In a maize field, died down. Herbarium and tuber. 24/3/80.
- HHH 6648 S. microdontum subsp. microdontum Dept. Chuquisaca, prov. Jaime Mendoza, 98km from Monteagudo on road to Padilla, by a waterfall and double-span bridge below fall. Lat. 19°27'. Long. 64°15'. Alt. 2350m. In deep rich leaf mould in partial shade, not far from the water. Small plants to 40cm; flower white. Herbarium, seeds, tubers and plants. 24/3/80.
- 28028 HHH 6650 S. microdontum subsp. gigantophyllum Dept. Chuquisaca, prov. Jaime Mendoza, 110km from Monteagudo on road to Padilla, 1km from Llequepampa. Lat. 19°25'. Long. 64°16'. Alt. 2500m. In rich soil in very dense shade, very damp, under bushes and trees, by a stream. Plants to 2m tall, with very few flowers. Herbarium, seeds & plants. 24/3/80.

BgRC

- HHA 6651 S.yungasense Dept. Chuquisaca, prov. Belisario Boeto, Huaca Huasi; passing Río Marañon, 24km from Padilla on road to Villa Serrano. Lat. 19°10'. Long. 64°20'. Alt. 2050m. In scrub above road, partial shade. Stem wings well-marked, no flowers or fruits. Herbarium, tubers and plants. 25/3/80.
- 28029 HHA 6652 S.microdontum subsp. gigantophyllum Dept. Chuquisaca, prov. Belisario Boeto, 14km from Villa Serrano on road to Nuevo Mundo, Trampamayu. Lat. 19°02'. Long. 64°20'. Alt. 2450m. Locally abundant. Herbarium and seeds. 25/3/80.
- 31198 HHA 6653 S.microdontum subsp. gigantophyllum Dept. Chuquisaca, prov. Belisario Boeto, 20km from Villa Serrano on road to Nuevo Mundo. Lat. 19°01'. Long. 64°19'. Alt. 2500m. On roadside scree, but many plants in Podocarpus woodland below; plants very small, in deep shade. Herbarium and seeds. 25/3/80.
- HHA 6655 S.yungasense Dept. Chuquisaca, prov. Belisario Boeto, Huaca Huasi, passing Río Marañon, 24km from Padilla on road to Villa Serrano, 100m from HHA 6651. Lat. 19°10'. Long. 64°20'. Alt. 2050m. Bushy slopes. Plants not flowering. Stem wings not well marked. Herbarium and tubers. 25/3/80.
- 28030 HHA 6656 Salapedia ? Dept. Chuquisaca, prov. Jaime Mendoza, 31km from Padilla on road to Tomina, 5km before Tomina. Lat. 19°15'. Long. 64°30'. Alt. 2100m. In spiny hedges and in maize fields. Plants maturing; fruits dark green with white warts. Herbarium and seeds. 25/3/80.
- 28491 HHA 6657 S.alandiae Dept. Cochabamba, prov. Campero, 10km from Aiquile on road to Misque by railway crossing. Lat. 18°07'. Long. 65°06'. Alt. 2400m. Two plants in shade to 1m high. Same locality as 6448. 26/3/80. Herbarium and seeds.
- HHA 6658 S.alandiae Dept. Cochabamba, prov. Campero, 14km from Aiquile on road to Misque. Lat. 18°06'. Long. 65°07'. Alt. 2350m. Under partial shade of Schinus molle trees. Plants dying down, no berries. Same locality as HHA 6450 ? Tubers. 26/3/80.
- 28031 HHA 6661 S.sparsipilum Dept. Cochabamba, prov. Campero, 10km from Aiquile on road to Misque, in fields across the river and

BgRC

- 28031(cont) HHA 6661 S. sparsipilum (continued) railway. Lat. 18°07'. Long. 65°06'.  
Altitude 2450m. In peanut fields. Plants with three pairs  
of leaflets but rather sparse hairs above and below, and winged rachis.  
Herbarium and seeds. 26/3/80.
- 28032 HHA 6662 S. alandiae Dept. Cochabamba, prov. Carrasco,  $\frac{1}{2}$ -1km south of  
Totora on road to Aiquile. Lat. 17°44'. Long. 65°06'. Alt.  
2800m. Among small shrubs, especially on lower edge of road and on small  
screens. Plants dying down; some berries, round, green, with scattered  
small white spots. Same place as HHA 6435. 27/3/80. Herb., tubers & seeds.
- 31199 HHA 6664 S. alandiae Dept. Cochabamba, prov. Carrasco, about 1km above  
Totora on road to Epizana. Lat. 17°43'. Long. 65°06'. Alt.  
2800m. Growing partly as a field weed and partly in natural vegetation  
(S. sparsipilum in field but no fruits). Some plants in flower, 35cm  
high. Flower pale blue-mauve; berries very slightly ovate-cordate, with  
very few small white spots. Locality for 6433. Herbarium and seeds. 27/3/80.
- 28492 HHA 6665 S. alandiae Dept. Cochabamba, prov. Carrasco, about  $1\frac{1}{2}$ km  
above Totora on road to Epizana. Lat. 17°43'. Long. 65°06'.  
Alt. 2800m. Amongst bushes by road. Plants to 50cm tall; berries green,  
slightly pointed, broad round-oval. Herbarium and seeds. 27/3/80.
- 28981 HHA 6666 S. microdontum x S. violaceimarmoratum Dept. Cochabamba, prov.  
Carrasco, road from Montepunco to Sihuenas, 12km from Monte-  
punco, Yerba Buena. By a woodcutter's hut. Lat. 17°30'. Long. 65°08'.  
Alt. 2300m. Very wet rain forest in a clearing by road. Plants velvety-  
hairy; leaf simple to 2-jugate; flowers blue-purple to whiteish marginally  
with very flat corolla lobes. Locality of HHA 6590. Herbarium & plants. 27/3/80.  
to berries 82.
- HHA 6667 Dept. Cochabamba, prov. Carrasco, 104km  
from Cochabamba on road to Santa Cruz, Lope Mendoza. Lat. 17°28'.  
Long. 65°17'. Alt. 2850m. In shade of trees and shrubs in large wood  
at base of valley, close to village. Tubers and plants. 27/3/80.
- 28033 HHA 6668 S. berthaultii Dept. Cochabamba, prov. Capinota, 2km from  
Parotani on road to Capinota (1km from new road). Lat. 17°  
34'. Long. 66°23'. Alt. 2450m. In stones and among shrubs by road metal  
dump. Berries dark green with white raised spots. Herbarium & seeds. 29/3/80.

32685 = 28981 x 28967 (HHA 6666 x HHA 6456) (med x vio) x med.

39ac

a = 31200  
b = 31201

6669a → 6669b →  
 HHA 6669 (a) S. sparsipilum (b) S. berthaultii x S. sparsipilum  
 Dept. Cochabamba, prov. Capinota, 2km from Parotani on  
 road to Capinota (1km from new road). Lat. 17°34'. Long 66°23'. Alt.  
 2450m. Same place as HHA6668 but berries without spots or with very  
 faint ones only (No sparsipilum seen here). Seeds. 29/3/80.

28034

28035

HHA 6670 S. sparsipilum Dept. Cochabamba, prov. Capinota, Charamoco,  
 1km from village to south, round walls of cemetery. Lat. 17°37'.  
 Long. 66°19'. Alt. 2400m. By walls of cemetery and in nearby field,  
 locally abundant. Seeds and tubers. 29/3/80

28036

HHA 6671 S. sparsipilum Dept. Cochabamba, prov. Capinota, 2km from  
 Charamoco on road to Capinota. Lat. 17°38'. Long. 66°18'.  
 Alt. 2380m. In cultivated field as a weed and amongst herbs and bushes  
 round the field borders in wild vegetation. Berries green, no spots.  
 Herbarium and seeds. 29/3/80.

HHA 6674 S. violaceimarmoratum Dept. Cochabamba, prov. Chapare,  
 66km from Cochabamba on road to Villa Tunari, 3.5km from the  
 Korani dam. Lat. 17°14'. Long. 65°54'. Alt. 3060m. Among bushes in  
 partial shade, in deep rich soil with mosses, ceja de monte. Young  
 plants only 31/3/80.

HHA 6675 S. violaceimarmoratum Dept. Cochabamba, prov. Chapare,  
 65km from Cochabamba on road to Villa Tunari. Lat. 17°14'.  
 Long. 65°54'. Alt. 3120m. In ceja formation near road; small plants  
 in moss among herbs and in partial shade. Plants only. 31/3/80.

28037

HHA 6678 S. violaceimarmoratum Dept. Cochabamba, prov. Chapare, road  
 from Aguirre to Incachaca, taking left-hand turning for 2.5km,  
 16.5km from Aguirre. Lat. 17°20'. Long 65°46'. Alt. 3400m. In ceja  
 woodland and talus slope below road. Large bushy plants with abundant  
 purple flowers, long white acumens and slightly flattened oval-conical  
 green fruits to 3 x 1.5 x 1.7cms. Flowers about 3cm. diam. Herbarium  
 and seeds. 31/3/80.

HHA 6684 S. violaceimarmoratum Dept. Cochabamba, prov. Chapare, Inca-  
 chaca, about 500m downstream from the old electricity gener-  
 ating station. Lat. 17°16'. Long. 65°48'. Alt. 2150m. Amongst boulders  
 and Cortaderia, probably brought down from higher altitudes. Herbarium  
 and plants. 1/4/80.

BGR C

28038

HHA 6690 S. brevicaule Dept. Cochabamba, prov. Quillacollo, 25½ km from Quillacollo on road to Morochata, below hairpin bend by river. Lat. 17°19'. Long. 66°22'. Alt. 3850m. Locally abundant in rich leaf mould under Polylepis in partial shade by river. Plants 10-50cm tall; flowers rich deep blue-purple, to 4cm diam. Berries round to oval, slightly 2-grooved, to 2cm long, very abundant. Herbarium & seeds. 2/4/80.

HHA 6694 S. sparsipilum Dept. Cochabamba, prov. Ayopaya, Morochata, back street. Lat. 17°17'. Long. 66°31'. Alt. 3000m. In grass; rich nitrogenous soil. Herbarium. 2/4/80.

HHA 6695 S. okadae Dept. Cochabamba, prov. Ayopaya, 17km from Morochata on road to Independencia, below road. Lat. 17°17'. Long. 66°37'. Alt. 2670m. Under shade of bushes in deep soil and in margins of maize fields. Plants to 40cm, not in flower. Herbarium & tubers. 2/4/80.

HHA 6697 S. toralapanum Dept. Cochabamba, prov. Ayopaya, 30km from the turning off the Morochata - Cochabamba road towards Cocapata, near Loko. Lat. 17°12'. Long. 66°28'. Alt. 3950m. High puna vegetation in ichu grass. Very small plants. Herbarium. 3/4/80.

28039

HHA 6699 S. acaule Dept. Cochabamba, prov. Ayopaya, 34km from the turning off the Morochata - Cochabamba road towards Cocapata, Viscachas. Lat. 17°10'. Long. 66°30'. Alt. 4000m. Puna formation, in a roadside ditch with manure. Large rosettes; berries oval grooved, abundant. Herbarium and seeds. 3/4/80.

28040

HHA 6700 S. acaule Dept. Cochabamba, prov. Ayopaya, 34km from the turning off the Morochata - Cochabamba road towards Cocapata, Viscachas. Lat. 17°10'. Long. 66°30'. Alt. 4000m. In grassland round houses and in corral with richly manured soil. Rosettes with flowers. Herbarium and seeds. 3/4/80.

28041

HHA 6701 S. brevicaule Dept. Cochabamba, prov. Quillacollo, 22km from Quillacollo on road to Morochata near new Puente San Miguel but on old road. Lat. 17°20'. Long. 66°21'. Alt. 3650m. Under shade of Polylepis, Berberis, Escallonia, etc. Plants with large flowers and about 2-3 berries per plant. Seeds. 3/4/80.

HHA 6702 S. capsicibaccatum Dept. Cochabamba, prov. Quillacollo, 22km from Quillacollo on road to Morochata near <sup>new</sup> Puente San Miguel but on old road. Lat. 17°20'. Long. 66°21'. Alt. 3650m. Under shade of

HHA 6702 (continued) Polylepis, Berberis, Escallonia, etc. Plants with very few berries, scattered within the woodland area, some still flowering. Herbarium, seeds and tubers. 3/4/80.

HHA 6710 S.achacachense Dept. La Paz, prov. Larecaja, 22.5km on road from Achacachi to Sorata. Alt. 4100m.

On rocky grassy slopes, rather damp and sheltered. Plants very small, some with immature berries. Plants. 8/3/81



Tuber-accessions received from Dr. Bob Hoopes on 8.9.1981  
collected in Bolivia

Collectors No.	BGRC	Species	Herbarium	Remarks
✓ HAW 6422	28963 ✓	? <i>virgultorum</i>	+	corolla violet, crossed with itself and 31203 but no berries obtained
✓ 6429	28964 ✓	<i>brevicaule</i>	-	seems to be true <i>brevicaule</i> , several berries after random sib mating
✓ 6456	28965 ✓	<i>alandiae?</i>	+	corolla blue-violet, only berries with 28966
✓ 6457	28966 ✓	<i>alandiae?</i>	+	corolla blue-violet, small interjected leaflets, crossed with itself and 28965, no berries obtained
✓ 6458	28967 ✓	<i>microdontum</i>	-	true <u>med</u> , no berries obtained, self-incompatibility?
✓ 6469	28968 ✓	<i>capsicibaccatum</i>	-	true cap, few berries with 28972
✓ 6476	28969 ✓	<i>okadae?</i>	+	corolla white, small interjected leaflets, only 2 berries with 28970
✓ 6477	28970 ✓	<i>alandiae? okadae</i>	+	corolla white (ald?), small interjected leaflets, only 3 berries with 28969
✓ 6478	28971 ✓	?	+	very fine leaves like <i>ifd</i> , berries only obtained with 28964
✓ 6486	28972 ✓	<i>capsicibaccatum</i>	-	true cap, only 3 berries with 28977
✓ 6503	28973 ✓	<i>yungasense</i>	-	yun?, no berries obtained after random sib mating
✓ <i>gren</i> 6528	28974	<i>alandiae</i>	+	corolla blue-violet, only 3 berries obtained with 28975
✓ 6530	28975	<i>alandiae</i>	+	corolla blue-violet, only berries obtained with 28974
✓ 6545	28976	<i>mollepujense?</i>	+	corolla blue-violet, no berries, crossed with 28964, 28963 and 31203
✓ 6561a	28977	<i>capsicibaccatum</i>	-	true cap, only 2 berries with 28972
✓ 6561b	31203?	?	+	tubers included in HAW 6561, blue-violet corolla, small interjected leaflets, like 28963. Crossed with 28963 and 28964, but no berries obtained
✓ 6562	28978 ✓	<i>toralapanum</i>	-	true <u>tor</u> , several berries with 28979
berries' Pz 6569	28979 ✓	<i>toralapanum?</i>	-	true <u>tor</u> , several berries after random sib mating
✓ — 6575	28980	<i>quimense</i>	-	very poor plants which died
✓ 6666	28981	<i>vioxmcd</i>	-	hybrid?, no berries after random sib mating some with 28967 ( <u>med</u> )
<i>gren</i> ?	28982	<i>tarijense?</i>	-	true tar, berries with <i>yun</i> 28973

berries with 29154 veg

\* Seed available, either original or sib-mated (sibbed)

Collector's Nr.	Species	Material collected in Bolivia (1980)
HHH 6415	nsp	tubers and plants <u>Died in Bolivia</u>
HHH 6418	vio	herbarium and plants <u>Died in Bolivia</u>
HHH 6422	vrg	herbarium and plants <u>Died in Bolivia (Yoni 23963)</u>
HHH 6433	ald	herbarium, tubers and plants <u>Died in Bolivia</u>
HHH 6446	ber	* herbarium and seeds <u>Original and sibbed seed available</u>
okay HHA 6478	nsp	plants <u>You had this in Braunschweig in 1932, sent from Toralapa. I never had it here.</u>
HHH 6483	mcd	herbarium and plants <u>At Toralapa. NOT sent to Europe?</u>
HHH 6487	cap	herbarium and plants <u>Did not germinate here. OK in Toralapa</u>
okay HHA 6528	ald	herbarium and plants <u>You had this in Braunschweig in 1932, but it was never sent to Birmingham</u>
HHH 6573	cir*	herbarium and plants <u>Must have died in Toralapa. It was not sent to Europe I think</u>
HHH 6580	cir*	herbarium and plants <u>Must have died in Toralapa. It was not sent to Europe I think</u>
HHH 6583	nsp	herbarium and plants <u>Ditto.</u>
HHH 6590	vio x mcd	herbarium and plants <u>Ditto</u>
HHH 6594	nsp	small plants <u>Ditto.</u>
HHH 6612	tor	herbarium and plants <u>Ditto</u>
HHH 6635	chc	herbarium and tubers <u>Tubers did not germinate</u>
HHH 6641 + 6642	chc x yun	* herbarium and seeds <u>6641 Available at Copenhagen 6642 No germination</u>
HHH 6646	chc?	herbarium and tubers <u>Tubers did not germinate</u>
HHH 6648	mcd	herbarium, seeds, tubers and plants <u>None available Perennially did not germinate</u>
HHH 6651	yun	herbarium, tubers and plants <u>Must have died at Toralapa. NOT sent to Europe I think</u>
HHH 6655	yun	herbarium and tubers <u>Ditto</u>
HHH 6658	ald	tubers <u>Ditto</u>
HHH 6667	nsp	tubers and plants <u>Ditto</u>
HHH 6674	vio	young plants only <u>Ditto</u>
HHH 6684	vio	herbarium and plants <u>Ditto</u>
HHH 6695	oka	herbarium and tubers <u>Ditto</u>
HHH 6702	cap	* herbarium, seeds and tubers <u>Original seed available</u>

\*cir must be crc