

LIST OF COLLECTIONS MADE IN BOLIVIA BY HOOPES, AVILES, AND OKADA IN 1986

HAO 1. *Solanum capsicibaccatum*. Cochabamba Dept., Prov. Ayopaya. 2750 meters. Outskirts of town of Independencia. Growing in shade of bushes and as weed in maize field. Plants beginning to flower. White, stellate flowers. Farmers say it is common. Local name is 'Yutu papa,' which is Quechua for 'partridge potato,' as partridges are said to dig down and eat the tubers of both wild and cultivated potatoes. 2/27/86. Herbarium (H) only.

HAO 2. *S. capsicibaccatum*. Also on outskirts of Independencia as weed in maize field. 2750 m. Farmer in whose field this was found said it is common. 2/27/86. H only.

HAO 3. *S. toralapanum*? Cochabamba Dept., Prov. Ayopaya. About 3500 m. Several km. beyond Chulpu Pampa and Ichu Pampa, to the east of Independencia on foot trails. These plants were collected for us by Sr. Jacinto Loayza, a local farmer who is familiar with wild potatoes in the area. Plants with simple leaves, sometimes with 3 lateral lobes. Very large, pentagonal flowers, deep purple. 2/28/86. H only.

HAO 4. *S. okadae*. Cochabamba Dept., Prov. Ayopaya. About 2500 m. Three km. from hospital in Independencia on road to La Vega. In thicket. Known as 'Yutu papa.' White flowers, large, rounded leaflets, terminal leaflet largest. 2/28/86. H only.

HAO 5. Not identified. On the road below Independencia on the way to Tendal Mogo. Before Tendal Mogo, 50 m. before the house of Teofilo Encinas. 2400 m. 30-40 plants growing on side of road. Plants with blue flowers with very reduced calyx. 2/28/86. H only.

HAO 6. Not identified. Dept. Cochabamba, Prov. Ayopaya. 3000 m. Ten km. from Independencia on the road to Challa. Among stones on edges of maize fields below the road. Locally frequent, known as 'Yutu papa.' Blue flowers. Leaves mostly glabrous. 3/1/86. H and Seeds (S).

HAO 7. *S. capsicibaccatum*. Same location as HAO 6, under shrubs below road embankment. Sparse, but not rare. White flowers, beginning to form pointed, elongated fruits. Small, delicate plants. 3/1/86. H only.

HAO 8. Not identified. Same locality as HAO 6-7, further below road in a small, abandoned stone corral where animals could not enter, and in shade of shrubs. Large plants, 1.1 m vines. Deep purple, rotate flowers. Berries varicose, mottled white and green. Immature berries collected, but no seeds obtained. Some vines taken to Cochabamba and put in water for berries to mature, but were lost. 3/1/86. H only.

HAO 9. *S. toralapanum*. Dept. Cochabamba, Prov. Ayopaya. Outskirts of village of Charahuayco on the road to Challa from Independencia. 3700 m. Large population of plants on edge of a sloping field above road. Rosette growth habit. Leaves simple to 3-lobed. Deep purple flowers. Round, green berries. 3/1/86. H and S.

HAO 10. *S. brevicaule*. Dept. Cochabamba, Prov. Ayopaya. 6 km from Charahuayco on road to the mining town of Kami (10 km from Kami). 3600 m. Under shrubs and among stones on steep slope below road; also in a stone enclosure protected from grazing animals. Many plants, often eaten by livestock. Deep purple, rotate flower. Pubescent stem, leaf, peduncle. Berries round, light green. Damage from late blight apparent. Plant with immature berries taken to Cochabamba and placed in water to obtain mature seeds, but was lost. Photo. 3/1/86. H only.

- HAO 11. Not identified. Same locality as HAO 10. In stone enclosure. Similar to HAO 10, but with larger leaflets. 3/1/86. H only.
- HAO 12. S. toralapanum. Dept. Cochabamba, Prov. Ayopaya. 3 km. from Kami on road to Challa. 3820 m. On edge of cultivated field next to road. 3/1/86. H only.
- HAO 13. S. acaule. Dept. Cochabamba, Prov. Ayopaya. 9 km from Kami on the road to Challa. 3740 m. Inside ruins of stone buildings now used as corrals for sheep. Soil rich with manure. Plants very large for this species. Purple flowers. Berries like upside-down pears. These plants not eaten by livestock although animals are corralled among them. 3/1/86. H and S.
- HAO 14. Not identified. Dept. Cochabamba, Prov. Mizque. 15 km from Totora, 11 km. from the turn-off to Julpe. 2700 m. On steep, gravelly slope below road. Light blue flowers. 3/4/86. H only.
- HAO 15. S. berthaultii? Same locality as HAO 14. Pubescent leaves, 1st pair laterals sessile. Light blue flowers. Known locally as 'papa del monte' or 'yutu papa.' 3/4/86. H only.
- HAO 16. Not identified. Same locality as HAO 14-15. Very large, glabrous leaves, light blue flowers, pigmented anthers. 3/4/86. H only.
- HAO 17. S. berthaultii. Dept. Cochabamba, Prov. Mizque. 2200 m. Julpe. Near the Rio Julpe. Very steep slope with loose stones in ravine along stream. Upstream from the crossing just before the village. West-facing slope. Pale green, pubescent leaves, white-spotted berries. Locally abundant, but only where livestock could not graze. 3/4/86. H and S.
- HAO 18. S. okadae. Same locality as HAO 17. Very steep, gravelly slope. Round, fleshy leaves, white flowers, round berries with white spots. Small plants. Rare. 3/4/86. H and S.
- HAO 19. S. alandiae. Dept. Cochabamba, Prov. Carrasco. 2 km from Totora on road to Sucre. About 300 towards Sucre from the grain storage silos. Lower side of road. 2900 m. Pale lilac flowers. Locally fairly common, but most plants grazed by livestock before they produce fruits. Live plants taken to Toralapa Station to obtain mature seeds. 3/4/86. S only.
- HAO 20. S. sparsipilum. Dept. Cochabamba, Prov. Carrasco. On the upper side of the town of Totora in heavy weed growth along a stone wall next to the road. 2800 m. Large plants, with vines 1 m or more long. Deep purple flowers. Rare. Plant with developing berries taken to Toralapa Station, put in water to allow further development. 3/4/86. H and S.
- HAO 21. S. microdontum, ssp. gigantophyllum. Dept. Cochabamba, Prov. Carrasco. 28 km from the Cochabamba-Santa Cruz road. Take the road towards Pocona for 14 km, turn left at a white church and go to Conda. 1 km beyond Conda. In dense shade of trees and shrubs in humid site between road and ditch. 2400 m. Plants 1.5 m tall, with very large leaflets. White flowers, but no berries forming yet. H only.
- HAO 22. Hybrid of S. microdontum and sparsipilum? or aff. vernei? Dept. Cochabamba, Prov. Carrasco. 23 km from the turn-off from the Cochabamba-Santa Cruz road. 1 km out of the upper side of Pocona on the road to Huallapampa. Along the oil pipeline. Among stones of a stone wall around a farmyard owned by Felix Zuaznava (last name may not be spelled correctly).

2740 m. Large leaves, 2 pairs laterals. Terminal leaflets much enlarged like microdontum. Pubescent throughout. Stems 1.5 m long w/wings well-developed, about 5 mm. Flowers blue-violet, white acumens. Berries round, with white spots. A population of microdontum was growing quite near. Plants of this population seemed quite uniform. Plants with developing berries taken to Toralapa Station for further fruit development. 3/5/86. H and S.

HAO 23. S. microdontum ssp. gigantophyllum. Same locality as HAO 22, but in shade of dense bushes and trees. Very large plants with 1.5 m vines. Very large leaflets, especially terminal. Pale green foliage. Round berries. Wild potatoes in this area are called 'aparuma' or 'yutu papa.' 3/5/86. H and S.

HAO 24. S. sparsipilum. Dept. Cochabamba, Prov. Mizque. 44 km from Epizana on the road to Sucre. 3 km before village of Oyadas, 13 km before the crossing of the Rio Mizque. 2500 m. Very steep slope with loose stones on the lower side of road. Lilac flowers, white-spotted round berries. Very few interjected leaflets. Glabrous foliage. 3/6/86. H and S.

HAO 25. S. alandiae. Same locality as HAO 24. Pubescent leaves. First pair laterals sessile, decurrent on rachis. Lilac-colored flowers. Round, green berries. 3/6/86. H and S.

HAO 26. S. chacoense with lilac flowers? Dept. Cochabamba, Prov. Campero. 5-6 km from Aiquile on road towards Epizana. Near the house of Florencio Ortiz Salazar, on the edge of maize fields, in hedgerows made of thorn bushes. Known locally as 'aparuma.' Glabrous leaves, resembling those of chacoense. Lilac flowers, semi-stellate. Berries round with white spots. 3/6/86. H and S.

HAO 27. Not identified. Same locality as HAO 26. In a dense hedge made of thorn bushes, between road and maize field. Pubescent leaves, with 1st pair of laterals sessile. No flowers remained on the plants, but some developing buds looked lilac in color. 3/6/86. H and S.

HAO 28. Not identified. Dept. Cochabamba, Prov. Campero. From Aiquile, start towards Epizana, turn right just outside of town towards Omereque. 2 km beyond this junction. 2300 m. Among stones, cactus, thorny shrubs below the road. Plants with pubescent leaves similar to those of HAO 27, 1st pair laterals sessile, decurrent on rachis. Rachis winged. Pentagonal purple flowers. White-spotted berries. 3/6/86. H and S.

HAO 29. Not identified. 1 km beyond HAO 28 on the road to Omereque. Flowers lilac or pale purple, pentagonal. Leaflets with pilose edges. Wild potatoes known as 'aparuma' in this area. 3/6/86. H only.

HAO 30. Not identified. 200 m further on road to Omereque from HAO 29. Same habitat. Pubescent leaves. No flowers seen. 3/6/86. H and S. Berries could possibly have corresponded to HAO 31, picked up at the same spot, but probably not.

HAO 31. S. chacoense? Same place as HAO 30. Glabrous leaves. 3/6/86. H only.

HAO 32. Not identified. 500 m beyond HAO 29 on the same road. Same type of habitat-- large stones, cactus, thorny shrubs (photo was taken of area). Glabrous leaves, 1st pair of laterals not sessile. No flowers seen. Berries conical. Plant similar to HAO 31. 3/6/86. H and S.

HAO 33. Not identified. 7 km from turn-off towards Omereque, 1 km beyond the village of

Marquilla. Weed in maize fields belonging to Eduardo Beizaga. 2260 m. Pubescent leaves, 1st pair of laterals with well-developed petioles. Pale lilac flowers, corolla stellate, well-dissected. Light green berries, white spotted and almost white on bottom, with conical shape. Plants with no particular odor. 3/6/86. H and S and 1 tuber.

HAO 34. Not identified. At Uchu Chaj'ra, near La Angostura. 4 km from the turn-off towards Omereque, 2 km before village of Marquilla. 2300 m. This material was collected for us by Sr. Florencio Ortíz Salazar, on whose property (along the Aiquile-Epizana road) we had collected earlier. Violet flowers. Round to conical berries with white spots, slightly varicose. 3/6/86. H and S.

HAO 35. *S. berthaultii*? Dept. Cochabamba, Prov. Campero. 11 km towards Sucre from the Inn 'Los Escudos' in Aiquile. 2320 m. On roadside. Pointed leaflets, well-dissected leaves, pale blue flowers. Glandular hairs not evident. Only 2-3 plants found. 3/7/86. H only.

HAO 36. Not identified. Dept. Cochabamba, Prov. Campero. Mojon. 21 km from Aiquile on road to Sucre. 2080 m. A weed of maize field owned by Donato Encinas and relatives. Plants similar to HAO 33. No flowers seen, but farmers said they are lilac-colored. Plants were common in fields, but had failed to develop well, probably because of excessive moisture this year. 3/7/86. H and tubers.

HAO 37. *S. gandarillasii*. Dept. Cochabamba, Prov. Campero. 32 km from Aiquile, 2 km beyond Quiroga, on road to Sucre. 2000 m. In shade of thorny vegetation such as cactus, *Acacia*, etc., in arid, rocky terrain. Correll described large, showy populations of this species in the same area when he was here in February, 1960. Now only a few plants are found where they are well-protected from the goats, pigs, and other grazing animals that remove all edible vegetation from existence. Small, delicate plants with pale green leaves. White flowers with sepals curved backwards. Berries quite small, dark green, with white spots. 1-3 pairs lateral leaflets, terminal enlarged, acuminate. Glabrous foliage. 3/7/86. H and S.

HAO 38. *S. berthaultii*. Dept. Chuquisaca, Prov. Oropeza. 125 km from Aiquile, 26 km before Sucre on main road. On very steep, gravelly slope below road. Plants frequent, but small, not well developed. No flowers or berries seen. Pointed, well-dissected leaves. 3/7/86. Tubers.

HAO 39. *S. chacoense* with purple flowers? Dept. Chuquisaca, Prov. Yamparáez. Go from Sucre towards Tarabuco. Turn right about 40 km from Sucre, 25 km before Tarabuco, to take the road to Sotomayor. 6 km from this turn-off. 2880 m. Under spiny shrubs and among cactus plants. Glabrous leaves, dark purple flowers, leaves much-dissected. Known as 'alko papa' or 'dog potato' in this area. 3/8/86. H only.

HAO 40. *S. berthaultii*. Same locality as HAO 39. Among stones by cultivated field and on roadside. Berry round with white spots. 3/8/86. H and S, all from one berry.

HAO 41. Not identified. Same locality as HAO 39-40. First pair lateral leaflets sessile. No flowers or fruits. 3/8/86. H only.

HAO 42. Not identified. 1 km beyond HAO 39-41 on road to Sotomayor. Under *Schinus molle* tree by roadside. Plants about 70 cm high. 3/8/86. H and tubers.

HAO 43. Not identified. Same locality as HAO 42. Violet flowers. 3/8/86. H only.

HAO 44. Not identified. Same locality as HAO 41-42. Pubescent leaves without glandular hairs. No flowers. 3/8/86. H only.

HAO 45. *S. berthaultii*. Dept. Chuquisaca, Prov. Yamparáez. Sauce Pampa. Going towards Sotomayor, turn right on the road to Escana. 1 km beyond this junction. 2750 m. In a property enclosed by stone walls among scrub algarrobo, columnar cactus, Acacia vegetation. Pubescent with pale blue to pale purple flowers. Berries dark green, splashed with white, round. There was a large population of this species, along with 2-3 others, in this area, protected from grazing (photos were taken). *Berthaultii* plants more mature than the other species, but very few berries could be found. They may have fallen and/or been eaten before our visit. 3/8/86. H and S.

HAO 46. *S. leptophyes*? Same as HAO 45. Very narrow leaflets. Plants still small, immature. No flowers seen, although plants very common. Known as 'alko papa' in the area. 3/8/86. H and tubers.

HAO 47. Not identified. Same as HAO 45-46. Glabrous leaves, pigmented stem. Dark green upper side of leaves. Purple, winged rachis. Less common than other spp. in population. 3/8/86. H only.

HAO 48. Not identified. Dept. Chuquisaca. Prov. Yamparáez. Escana. 13 km from the turn-off to Sotomayor from the main road, 7 km. from the junction where we turned right, leaving the Sotomayor road. 2600 m. Weed in maize and other cultivated fields. Tends to grow on the hill between the furrows. Quite common in and on edges of fields. Flowers violet. Berries green, slightly pointed, becoming lighter in color away from stem end. Photo. 3/8/86. H and S.

HAO 49. Not identified. Same locality as HAO 48. Plant similar to HAO 48, but with dark green, white-spotted berries. 3/8/86. H and S.

HAO 50. Not identified. Same locality as HAO 48-49. Growing at the base of fig tree. Two berries were found. S only.

HAO 51. Not identified. Same locality as HAO 48-50. On edges of cultivated fields. 3/8/86. H only.

HAO 52. *S. berthaultii*. Same locality as HAO 48-51. Around fig trees, on edges of fields. Common, small. Flowers with pale blue to violet color, corolla well divided. Pale green leaves. People harvesting figs in the fields were familiar with the wild potatoes in the area, which they called 'alko papa,' or 'dog potatoes.' 3/8/86. H and S.

HAO 53. Not identified. Dept. Chuquisaca, Prov. Yamparáez. Chamicle. 7 km from turn-off from the Sucre-Tarabuco road towards Sotomayor. About 1/2 km beyond the junction of the road to Escana. 2700 m. Weed of maize field. Pubescent, much dissected leaves. No flowers. Berry round with white spots. Rare. 3/9/86. H only.

HAO 54. Not identified. Same locality as HAO 53. Also weed in maize field. Glabrous leaves, with winged rachis. Dark green, rather fleshy leaves. None or few intermediate leaflets. Berries green, slightly elongated. Very common. 3/9/86. H and S.

HAO 55. Not identified. Same locality and habitat as HAO 53 and 54. Leaves like HAO 54, but very dissected. 3/9/86. H only.

HAO 56. Not identified. Same locality as HAO 53-55, but habitat along roadside. Berries round, green or with some white spots. 3/9/86. H and S.

HAO 57. Not identified. Same locality as HAO 53-56. Habitat is border of cultivated field along stone wall. Plant very similar to HAO 54, but leaves pubescent. Rachis winged. Berry like that of HAO 54. 3/9/86. H and S.

HAO 58. *S. tarijense*? 200 m. beyond HAO 53-57 on road to Sotomayor. On roadside under protection of thorny hedge. Also along stone wall on edge of maize field. Pubescent leaves, much dissected. 70-80 cm tall. White flowers, sometimes with slight purple tinge. Semi-stellate, slightly bell shaped. Berries round with white spots. Small population of plants along stone wall and under hedge. 3/9/86. H and S.

HAO 59. *S. berthaultii*. Same locality as HAO 58. Across the road along another stone wall and under another thorn hedge. Pale purple flowers. 3/9/86. H only.

HAO 60. *S. tarijense*? 10 km beyond the turn-off from the Sucre-Tarabuco road towards Sotomayor. 3 km beyond HAO 59. 2640 m. On edge of cultivated field, or around stone piles within the field. One plant with white flowers, others without flowers. Like HAO 58. Berries round with white spots. Fairly large population. 3/9/86. H and S.

HAO 61. Not identified. Locality same as HAO 60, but a weed within maize field. Plant similar to that of HAO 54. Leaves dark green. Berries green, slightly elongated. 3/9/86. H and S.

HAO 62. Not identified. Dept. Chuquisaca, Prov. Yamparáez. 12 km from turn-off from the Sucre-Tarabuco road towards Sotomayor. 3 km beyond Cota. 2500 m. Plant similar to HAO 54 and HAO 61. Weed in cultivated field. Purple flowers. 3/9/86. H only.

HAO 63. *S. tuberosum* ssp. *andigena*? Cota. 9 km from the junction of the Sucre-Tarabuco road on the way to Sotomayor. In cultivated maize field. 3/9/86. S only.

HAO 64. *S. sparsipilum*? Dept. Chuquisaca, Prov. Yamparáez. Granja 'El Recreo.' 3 km from the turn-off towards Sotomayor from the Sucre-Tarabuco road. 2820 m. On edges of apple and quince orchard in weedy area. Small population. Plants very mature. Berries had fallen to the ground and many were rotting. Workers who showed us the plants said the flowers were purple. 3/9/86. H and S.

HAO 65. Not identified. Dept. Chuquisaca, Prov. Yamparáez (possibly over the border into Prov. Zudañez). 15 km from Tarabuco on the road to Icla. 200 m beyond the Escuela San Jose de Paredón. 2900 m. Among stones on retaining wall above road and on the edge of potato field. Together with *S. oplocense*? Small, pubescent leaflets. Berries round and green. No flowers seen. Local name most used for the wild potatoes is 'pisco papa' or 'pisgo papa,' meaning 'bird potato.' 3/11/86. H and S.

HAO 66. *S. oplocense*? Same locality and habitat as HAO 65. Leaflets with hairs protruding from edges. Rachis and main vein of leaflets with purple tinge. 3/11/86. H only.

HAO 67. *S. hondelmannii*? Same locality and habitat as HAO 65-66. Plants much larger than two previous collections. Leaflets with hairs protruding from edge. Rachis slightly winged. Main vein slightly purple. Plant with overall aspect of oplocense. 3/11/86. H only.

HAO 68. *S. oplocense*? Dept. Chuquisaca, Prov. Yamparáez (possibly Zudañez). 17 km from Tarabuco towards Icla. 2 km beyond previous collection. 2920 m. Under 'muelle' tree. Plants with edges of leaflets pilose. Main vein and rachis purple. 3/11/86. H only.

HAO 69. *S. hondelmannii*? Dept. Chuquisaca, Prov. Zudañez. Icla. 40 km from Tarabuco. 2600 m. Under thorny hedge in cactus type vegetation. Algarrobo tree (Prosopis) common. Rare. Only a few plants could be found. Young boy on edge of town knew of them and took us to find them. 3/11/86. H only.

HAO 70. *S. oplocense*? Icla. On edge of maize field. 2600 m. 3/11/86. H only.

HAO 71. *S. hondelmannii*? Dept. Chuquisaca, Prov. Zudañez. 15 km beyond Icla on road to Azurduy. Tagopampa ('Tago' means algarrobo tree). 2740 m. In hedges by road. Rare. Plants almost glabrous. Flowers violet. Berries green, somewhat conical. 3/11/86. H and S (all from 1 berry).

HAO 72. *S. acaule*. Dept. Chuquisaca, Prov. Zudañez, possibly Jaime Mendoza. 30 km beyond Icla on road to Azurduy. 3400 m. Among stones of corrals in heavily grazed area. Pilose leaves, stem and rachis deep purple. Flowers dark violet. Conical green berries. 3/11/86. H and S.

HAO 73. *S. boliviense*? Same locality as HAO 72. Among bushes and ichu grass on slopes. Violet flowers. Low-growing plants. Terminal leaflet enlarged. 1-2 pairs laterals. 3/11/86. H only.

HAO 74. *S. megistacrolobum*. Same locality as HAO 73. Open ground on roadside, among clumps of ichu grass, on steep hillside. Single leaves, underside purple. Aroma typical of the species. 3/11/86. H only.

HAO 75. Not identified. Dept. Chuquisaca, Prov. Zudañez or Jaime Mendoza. Jatun Mayu ('Big River') 10 km beyond Icla towards Azurduy. 2740 m. In peach orchard among amaryllis flowers and weeds along ditch. On the property of Sr. Ivan Gorená, who also has a house at 668 Calle San Alberto in Sucre. Purple flowers. 3/12/86. Tubers only.

HAO 76. *S. tarijense*. Dept. Chuquisaca, Prov. Zudañez. 45 km from Tarabuco, 7 km beyond Icla on road to Azurduy. 2700 m. Among spiny scrub vegetation below road. Big, dense, population. Leaflets somewhat sticky, scented. Berries green, conical, with white spots. 3/12/86. S only (from 2 berries).

HAO 77. *S. berthaultii*? Dept. Chuquisaca, Prov. Yamparáez or Zudañez. 23 km from Tarabuco on the road to Zudañez. 2700 m. Steep slope below road--below stone retaining wall on edge of deep canyon. No flowers seen, but plants typical of berthaultii. 3/13/86. H only. 1 small berry obtained, but no seeds could be extracted from it.

HAO 78. *S. berthaultii*. Dept. Chuquisaca, Prov. Yamparáez or Zudañez. 25 km from Tarabuco on road to Zudañez. 2600 m. Under spiny hedge. About 1 km before village of Lamboyo. Aromatic plants. Flowers pale purple to almost white with purple tinge. Round berries with

white spots. 3/13/86. H and S.

HAO 79. *S. tarijense/berthaultii*. Dept. Chuquisaca, Prov. Zudáñez. 11 km beyond Zudáñez on the road to Tomina. 3 km beyond Tejas. 2300 m. Weed of maize and barley. Very frequent, but most plants in debilitated state. Aromatic plants. Flowers almost white, with very slight purple tinge, or pure white. Berries round with white spots. 3/13/86. H and S.

HAO 80. *S. berthaultii*. Same locality as HAO 79. Edges of cultivated maize and wheat fields. Flowers pale purple. 3/13/86. H only.

HAO 81. *S. berthaultii*. Same locality as HAO 79-80. Habitat in thorn hedge. Aromatic plant with conical, white-spotted berry. 3/13/86. H and S (from 1 berry).

HAO 82. *S. megistocrolobum?* Dept. Potosí, Prov. Saavedra. 11 km from Don Diego on road to Puna. 1 km before Chaquí. 3460 m. By stone walls at edge of broad bean field. Plants non-aromatic. Simple leaves. Berries green, round. 3/14/86. S only.

HAO 83. Not identified. Same locality as HAO 82. Mostly among stones under the protection of spiny bushes. Pubescent leaves, terminal leaflets ovate-acuminate. 1st pair laterals sessile or shortly petiolulate. Round green berries. Local people call wild potatoes 'Pisco papa.' 3/14/86. H and S.

HAO 84. Not identified. Dept. Potosí, Prov. Saavedra. Chaquí. 12 km from Don Diego on road to Puna. In cultivated field by stone wall next to river. Similar to HAO 83. 3/14/86. H and S.

HAO 85. Not identified. Dept. Potosí, Prov. Saavedra. Chaquí Baño. 17 km from Don Diego on road to Puna. 3600 m. By stone wall on edge of cultivated field; also growing between stones in stone wall. Across the road from the hot springs in the town. Common. Similar to HAO 84. Deep purple flowers, pentagonal, calyx acumens deep purple. Pedicel rather thickened below calyx. Fruits round, but quite conical when immature. 3/14/86. H and S.

HAO 86. *S. tuberosum* ssp. *andigena?* Dept. Chuquisaca, Prov. Nor Cinti. Jatun Rumí. 68 km from Belén on road from Potosí to Tarija, also 68 km from Camargo going the other way. 4 km before Padcoya going to Camargo from Potosí. 3420 m. Edge of cultivated field. Berries round, green. 3/15/86. H and S.

HAO 87. *S. sparsipilum?* Same locality as HAO 86. Edge of broad bean field. Flowers violet, berries round, varicose, with white spots. 3/15/86. H and S.

HAO 88. Not identified. Same locality as HAO 85-86. By stone wall at roadside and under thorny hedges. Frequent. Terminal leaflets much larger than laterals. 1st pair laterals sessile and decurrent on rachis. 3/15/86. H only.

HAO 89. *S. infundibuliforme*. Same locality as HAO 86-88. By stone wall under spiny shrubs at roadside. Rare. 3/15/86. H only.

HAO 90. Not identified. Same locality as HAO 86-89. Very large leaflets, no flowers. 3/15/86. H only.

HAO 91. *S. leptophyes?* Dept. Chuquisaca, Prov. Nor Cinti. 19 km south of Padcoya towards



Camargo. 1 km before Chichamayu, 45 km north of Camargo. 3400 m. On very steep slope of loose stones below road. Leaflets narrowly lanceolate, pilose throughout. Edge of leaflets pilose. Dark green. 1st pair laterals sessile, sometimes narrowly decurrent on rachis. Small population. 3/15/86. H only.

HAO 92. *S. chacoense*. Dept. Tarija, Prov. Cercado. 9 km from turnoff at El Puente, on the north side of Tarija, on the way to Victoria, the source of the municipal water for the city. 2300 m. Among stones in waste places. Rare. White flowers. 3/16/86. H only. Slide.

HAO 93. *S. microdontum* ssp. *gigantophyllum*. Dept. Tarija, Prov. Méndez. On the Cuesta de Sama. About 30 km from the checkpoint on the north side of Tarija, 2 km from the Retén Municipal Tucumilla checkpoint. 2640 m. 3/18/86. H only.

HAO 94. *S. toralapanum*. 2 km beyond HAO 93, climbing the Cuesta de Sama. 2950 m. On roadside and bank below road among stones and under bushes. Many plants. Locally common. Single leaves with purple veins. All vegetative in most places, but a few plants with berries. No flowers seen. 3/18/86. H and S.

HAO 95. *S. microdontum* ssp. *gigantophyllum*. 2 km beyond HAO 94 or 6 km above the Retén Municipal de Tucumilla on the Cuesta de Sama. 3000 m. Among bushes on lower side of road. White flowers, no berries. 3/18/86. H only.

HAO 96. *S. microdontum* ssp. *gigantophyllum* x ?. Same locality as HAO 95. Similar to ssp. *microdontum*, but with pale blue flowers. Seems like a hybrid. 3/18/86. H and S (from 1 berry).

HAO 97. *S. microdontum* ssp. *gigantophyllum*. Cuesta de Sama. About 6 km beyond the Retén Municipal Tucumilla next to a roadside spring with several crosses on the hill above it. Stopping place for trucks climbing the pass. Locally frequent, below road in bushes and next to the bridge. Flowers white, berries round, green. 3/18/86. H and S. Photo of site.

HAO 98. *S. acaule* ssp. *acaule*. Dept. Tarija, Prov. Méndez. 2 km. from Iscayachi on the road towards Tarija. Near the river crossing. 3400 m. In open ground and edge of cultivated fields. Very low, rosette growth. Small plants. 3/18/86. Local name 'yutu papa.' H and S.

HAO 99. *S. megistacrolobum*. Dept. Tarija, Prov. Méndez. 4 km from Iscayachi on road to Tarija. 3500 m. Very near an old stone church just before starting to climb over the pass. Among piles of stones. Aromatic plants. 1 purple flower. 3/18/86. H and S.

HAO 100. *S. acaule* ssp. *acaule*. Dept. Tarija, Prov. Avilés. Chorcoya Méndez. 11 km. from Iscayachi on road to Villazón. 3540 m. On and at the base of stone wall at edge of cultivated field. 3/19/86. Photos of plants and wall. H and S.

HAO 101. *S. megistacrolobum*. Same locality as HAO 100. Base of stone wall and among stones. Very frequent. Aromatic plants, purple flowers. Known locally as 'yutu papa.' Photos. 3/19/86. H and S.

HAO 102. *S. megistacrolobum*. 3 km beyond HAO 101, or 14 km from Iscayachi on the road to Villazón. 3700 m. Plant like HAO 101. 3/19/86. S only.

- HAO 103. *S. megistacrolobum*. Dept. Tarija, Prov. Avilés. 52 km from Iscayachi on road to Villazón. 3720 m. Under muna muna bushes in narrow ravine. Very common. Growing with *S. acaule*. Aromatic plants. Berries, round, green. No flowers seen. 3/19/86. H and S.
- HAO 104. *S. acaule* ssp. *acaule*. Same locality and habitat as HAO 103. 3/19/86. H and S.
- HAO 105. *S. infundibuliforme*. Same locality as HAO 103-104. Rocky slopes above road. Most plants stunted. Narrow, lanceolate leaves. Fruits green, mottled with white. 3/19/86. Berries collected, but may have been combined with HAO 106. H only.
- HAO 106. *S. infundibuliforme*. 1 km beyond HAO 103-105. 5 km before Yunchara. 3700 m. Roadside and road banks. Most plants stunted, poorly developed, but often with berries. Fruits round, white-spotted. 3/19/86. H and S. Photos of plants and site.
- HAO 107. *S. infundibuliforme*. Dept. Potosí, Prov. Sud Chichas. 13-16 km from the checkpoint at Tupiza towards Cotagaita. On steep rocky slopes below road, below thorny bushes, also in open and along dry stream beds. Locally common. 3450-3500 m. Plants with lanceolate leaflets. Berries round, green, mottled with white. No flowers seen. 3/20/86. Photos of site. H and S.
- HAO 108. *S. tuberosum* ssp. *andigena*? Dept. Potosí, Prov. Sud Chichas. Turn left at checkpoint on north side of Tupiza, taking road towards Oploca. 9 km along this road, take right fork towards San Miguel and Atacha. This site is 13 km from Tupiza checkpoint. Road follows river bed along red rock canyon bottoms. A weed in maize field. Frequent. Local people refer to this as 'papa quipa.' It grows in the fields without being planted, but is harvested and eaten in times of need. Tubers small, white-skinned. Plants were dried, mature. 3/20/86. H?, tubers.
- HAO 109. *S. oplocense*. Same locality as HAO 108. At edge of cultivated maize field and into a thicket of *Acacia caven*. Plants mostly dried or wilting. 1st pair of laterals sessile, decurrent onto rachis. Main veins purple. Edge of leaflets with protruding hairs. Berries round, white spotted. Infrequent. 3/20/86. H and S.
- HAO 110. *S. oplocense*. Collection made on the left-hand fork of the road from the checkpoint, this time going towards Oploca. 13 km from the checkpoint, 4 km from the jct. of the San Miguel, Oploca fork in the road. Edge of cultivated field between railroad and river. Under *Acacia* thicket. 3080 m. Plants wilting, no flowers seen. 3/20/86. Tubers collected but were not in good condition.
- HAO 111. *S. tuberosum* ssp. *andigena*? 300 m. beyond HAO 110 on road to Oploca. Edge of maize field. These potatoes were said by local man not to be edible because of their bitterness. "Taste like potatoes that have turned green." 3/20/86. S only.
- HAO 112. *S. oplocense*. Seito Grande. 17 km from checkpoint on north side of Tupiza, 8 km from the fork in the road, about 2 km before reaching Oploca. 3120 m. Under thorny fence on roadside. Berries round, white-spotted. Plants dried or wilting. 3/20/86. H and S.
- HAO 113. *S. oplocense*. Dept. Potosí, Prov. Sud Chichas or Nor Chichas. Rio Blanco. 39-40 km from Tupiza checkpoint on road to Cotagaita. 3220 m. Edge of sloping, cultivated field, under *Acacia* shrubs, also under thorny fences, under bushes in waste places. Leaves with bluish tinge, edges of leaflets with protruding hairs. Berries round, white spotted. Local people are

familiar with the wild species, which they call 'yutu papas.' They know where to find wild potatoes in this area. 3/21/86. H and S.

HAO 114. *S. tuberosum* ssp. *andigena*? Same locality as HAO 113, under thorny bushes by roadside. Berries round, green, no flowers seen. Boy who lived next to where we found these plants said they eat these potatoes, but they aren't the same quality as cultivated varieties. Known as 'papa quipa.' 3/21/86. H and S.

HAO 115. ssp. *andigena*? Same locality as HAO 114, as weed in a maize field. Plants dried or wilting. No flowers or fruits seen. Tubers with white skin. 3/21/86. Tubers only.

HAO 116. *S. acaule* ssp. *acaule*. Same locality as HAO 113-115. By a stream bed about 300-400 from the road. Plants found by boys from Rio Blanco. Berries small, green. 3/21/86. H and S.

HAO 117. ssp. *andigena*? Same locality as HAO 113-116. Weed in broad bean field. Round, green berries. 3/21/86. S.

HAO 118. *S. oplocense*? Same locality as HAO 113-117. Berries brought by a girl from Rio Blanco. Plants not seen by us. Berries round, white-spotted. 3/21/86. S only.

HAO 119. Not identified. Same locality as HAO 113-118. Plants on roadside at base of adobe wall on the way out of town towards Cotagaita. Leaves pilose throughout. All vegetative growth in plants examined. Tubers white-skinned. 2/21/86. H and Tubers.

HAO 120. *S. oplocense*. Dept. Potosí, Prov. Nor Chichas. 94 km from Tupiza, 8 km north of Cotagaita on Rt. 702 towards Potosí. 2700 m. In forest of columnar cactus, *Prosopis*, acacia, in an arid, xerophytic-plant zone. In dry stream bed. Edges of leaflets with protruding hairs. Berries round, white-spotted. Frequent, but most plants in vegetative state. Plants found only where well-protected by thorns from grazing animals. Photos of site. 3/21/86. H and S.

HAO 121. *S. oplocense*. Dept. Potosí, Prov. Nor Chichas. Yitichi. 172 km north of Tupiza, 44 km north of Tumusla on road to Potosí. On north side of village. 3000 m. Under thorny bushes by roadside and on edge of cultivated fields. 3/21/86. H only.

HAO 122. *S. acaule* ssp. *acaule*. Dept. Potosí, Prov. Frias. 6 km from checkpoint leaving Potosí on way to Sucre. 3900 m. Karachi Pampa. On stream bank in damp, sandy soil. Purple flowers, rosette growth habit, round green berries. 3/22/86. H and S.

HAO 123. Not identified. Dept. Potosí, Prov. Frias. Samasa. 18 km from checkpoint leaving Potosí on road to Sucre. Railroad embankment and side of cultivated field by stone wall. 3660 m. Some plants like *oplocense*, others not. Variable collection. Berries round, white-spotted. 3/22/86. H and S.

HAO 124. *S. tuberosum* ssp. *andigena*? 44 km from Potosí checkpoint towards Sucre. 3380 m. Side of wheat field at base of stone wall and within crop. Berries with sparse white spots. Photos of plants and site. 3/22/86. H and S.

HAO 125. *S. gourlayi*? Dept. Potosí, Prov. Saavedra. 78 km from Potosí, 34 km beyond Betanzos on road to Sucre. 3280 m. In pea field above the road. Leaves pilose throughout. 1st

pair laterals sessile, slightly decurrent onto rachis. Berries round, green. 3/22/86. H and S.

HAO 126. *S. astleyi*. Same locality as HAO 125. Same habitat. Growing with *gourlayi* and *boliviense*. Low plants. Leaves coarse, pilose throughout, single, lanceolate. Berries large--2.3 cm diameter--round, green. Photos of plants. 3/22/86. H and S.

HAO 127. *S. boliviense*. Same locality and habitat as HAO 125-126. Coarse, single leaves, pilose throughout. Berries dark green, round, with white spots. 3/22/86. H and S.

HAO 128. *S. gourlayi*? Same locality as HAO 125-127, but in nearby maize field. Small, pilose leaflets. 1st pair laterals sessile, slightly decurrent on rachis. Smaller leaflets than HAO 125. 3/22/86. H and tubers.

HAO 129. *S. oplocense*? Same locality as HAO 125-128. Under spiny shrubs by roadside. Delicate leaves in comparison with *gourlayi*, and larger. No flowers seen. 3/22/86. H only.

HAO 130. *S. oplocense*? 4 km beyond previous collections on road to Sucre (38 km from Betanzos). Side of cultivated field under spiny shrubs. 3100 m. Leaves large, thin, with slightly winged rachis, protruding hairs. Berries round, green. 3/22/86. H and S.

HAO 131. *S. gourlayi*? Same locality as HAO 130, across the road on borders of maize field. Leaves coarse, pilose, 1st pair laterals sessile. Berries somewhat conical, green. 3/22/86. H and S.

HAO 132. *S. gourlayi*? Same locality as HAO 131. Edge of pea field. Leaves coarse, pilose, rachis slightly winged. Berries round, green. 3/22/86. H and S.

HAO 133. *S. berthaultii*? Dept. Potosí, Prov. Saavedra. Retiro. 43 km from Betanzos on way to Sucre. 2820 m. On roadside among shrubs and under fence made of dried thorn bushes. Frequent. People in the area can point this species out when asked for 'yutu papa.' Leaves large, well-dissected, pubescent with glandular hairs, but not aromatic. Berries round, with white spots, 2.5 cm diameter. Flowers not seen. People said these potatoes were not good to eat. 3/22/86. H and S.

HAO 134. *S. larijense*. Dept. Chuquisaca, Prov. Oropeza. 22 km from the checkpoint leaving Sucre on road to Aiquile. 2140 m. On borders of maize field. 3/23/86. H and tubers.

HAO 135. *S. gandarillasii*. Dept. Chuquisaca, Prov. Oropeza (probably). 75 km from Sucre on way to Aiquile. 1900 m. Large, pale green leaflets. Sepals that curve backwards. 2/23/86. H only.

HAO 136. *S. gandarillasii*. Dept. Cochabamba, Prov. Campero. 24 km north of Aiquile on road to Totora. 9 km before crossing Rio Mizque. Below spiny shrubs and fence made of thorn bushes in shade. 2260 m. Grows well in soil with lots of organic matter. Pale green leaves. Calyx curved backwards. White flowers. Delicate, glabrous plants, stems break easily. Berries small--10-11 mm in diameter--dark green with white spots. 3/24/86. H and S.

HAO 137. *S. chacoense* or *berthaultii*? Same locality as HAO 136. Under spiny fences on edge of field. Locally frequent. Plants pilose. Berries somewhat conical, green with white spots. Flowers purple. 3/24/86. H and S.

HAO 138. *S. chacoense* or *berthaultii*? Same locality as HAO 137. Under thorn fence. May be same sp. as HAO 137. Leaves like those of *chacoense*, almost glabrous, apparently without glandular hairs. No aromatic odor. Berries slightly conical, white-spotted. 3/24/86. H and S.

HAO 139. *S. berthaultii*? Dept. Cochabamba, Prov. Campero. 27 km north of Aiquile, 6 km before Rio Mizque on the road to Totorá. By roadside under *Acacia furcatispina* bushes. 2300 m. Aromatic plants. Flowers purple, semi-stellate. 3/24/86. H only.

HAO 140. *S. alandiae* or *microdontum* x *alandiae*? Dept. Cochabamba, Prov. Carrasco. 9 km from Totorá on the road from Totorá to Omereque, by roadside. 2900 m. Leaves coarse, pubescent throughout. Four pairs laterals with 1st pair sessile. 3/24/86. H and tubers.

HAO 141. *S. alandiae*? Dept. Cochabamba, Prov. Carrasco. 15 km from Totorá on road to Omereque. 2800 m. In wheat field. Pubescent. 1st pair laterals sessile. Pale lavender flower. 3/24/86. H only.

HAO 142. *S. tuberosum* ssp. *andigena*? Dept. Cochabamba, Prov. Carrasco. 21 km from Totorá on the road to Omereque. 2760 m. In broad bean field. May be the 'papa quipa' that grows as a weed in cultivated fields or just a volunteer from the previous year's potato crop. 3/24/86. 1 tuber only.

HAO 143. *S. toralapanum*. Dept. Cochabamba, Prov. Arani. Toralapa Experiment Station, 2 km. off the Cochabamba-Santa Cruz road, turning at Km 71. 3490 m. On edges of cultivated fields. Very common. Local people call this plant 'kateri papa,' which means 'snake potato.' 3/28/86. H and S.

HAO 144. *S. tuberosum* ssp. *andigena*. Same locality as HAO 143. Variety 'Huaycha paceña.' This variety is becoming very important in the Cochabamba Dept. and other Depts. as well. It yields well, has good eating quality, and a moderate amount of resistance to frost and several diseases. Other than some possible escapes, this is the only cultivated variety we collected on the expedition. 3/28/86. S only.

HAO 145. *S. alandiae*. Dept. Cochabamba, Prov. Carrasco. Same locality and plant description as HAO 19. We stopped again and collected berries after plants had had time to develop further. 3/28/86. S only.

HAO 146. Not identified. Dept. Chuquisaca, Prov. Zudañez (possibly Yamparáez). Chilla pachita. 26 km from Tarabuco on road to Icla. 2 km beyond Cardelaria, 10 km before Icla. 3000 m. Well dissected leaves with many interjected leaflets. Purple flowers. Berries green and round. Photo. These plants were seen on the first trip to Icla but had only very immature berries. We covered them with bushes to protect them from grazing animals and harvested the berries upon returning 2 1/2 weeks later. 3/29/86. H and S.

HAO 147. *S. okadae*? Dept. Chuquisaca, Prov. Zudañez or Jaime Mendoza. 95 km from Tarabuco on the road to Azurduy. 3300 m. Among stones in alpine meadow landscape. 3/29/86. H only.

HAO 148. Not identified. Dept. Chuquisaca, Dept. Azurduy. 2 km beyond the hamlet of Abra Kasa on road to Azurduy. 2600 m. On roadside under bushes. Known locally as 'yutu papa.' 3/30/86. H only.

HAO 149. Not identified. 2 km beyond HAO 148 on the road to Azurduy. 2800 m. A weed of wheat field. Plants had died without developing well, possibly killed by late blight. The environment of this area seems extremely favorable for the disease. 3/30/86. Tubers only, not in good condition.

HAO 150. Not identified. Dept. Chuquisaca, Prov. Azurduy. Llorente. 11 km from Abra Kasa on way to Azurduy. 10 km before Tarvita. 167 km from Tarabuco. 2900 m. Roadside on open ground where a small landslide had gone across the road within the past year or two. Dark purple flowers. Calyx dark purple. Berries round, green with white spots. Photo of plant. 3/30/86. H and S, plus 2 tubers.

HAO 151. *S. microdontum*. Dept. Chuquisaca, Prov. Azurduy. 14 km beyond Abra Kasa (170 from Tarabuco) on the road to Azurduy. On roadside under dense growth of shrubs in narrow ravine. 2780 m. 1 small population. 3/30/86. H and S.

HAO 152. *S. microdontum* ssp. *gigantophyllum*. Dept. Chuquisaca, Prov. Azurduy. 15 km beyond Tarvita on road to Azurduy. On roadside under *Alnus jorullensis* trees. 2740 m. 3/30/86. S only.

HAO 153. Not identified. Dept. Chuquisaca, Prov. Azurduy. 46 km from Azurduy, returning towards Tarabuco. 9 km beyond Tarvita or 13 km before Abra Kasa. 2900 m. Similar to HAO 150. May be same species. Terminal leaflets ovate-lanceolate, enlarged. 1-2 pairs lateral leaflets. 'Yutu papa.' 3/31/86. Tubers only.

HAO 154. *S. chacoense*. Dept. Chuquisaca, Prov. Azurduy. On north edge of Abra Kasa going towards Tarabuco. 59 km from Azurduy. 2600 m. On roadside under bushes, along edges of fields, stone fences. Plants 1 m high with well-developed wing (2 mm). Non-aromatic. White flowers. Berries round, green, or with white spots. 'Yutu papa.' 4/1/86. H and S.

HAO 155. Not identified. 2 km beyond Abra Kasa on way to Tarabuco (61 km from Azurduy). 2440 m. On roadside. Plants similar to those of HAO 153. Terminal leaflet ovate-lanceolate. 1 pair lateral leaflets. 4/1/86. Tubers.

HAO 156. *S. berthaultii*? 1 km from HAO 155 on road to Tarabuco. Capaj'tala. 2440 m. Roadside under small trees. Glandular foliage. 4/1/86. Tubers.

HAO 157. *S. chacoense*. Dept. Chuquisaca, Prov. Azurduy. 11 km from Abra Kasa on way to Tarabuco. 20 km before Cruz Kasa. Roadside under bushes. Plants dead or dying. 2500 m. 4/1/86. S only.

HAO 158. *S. chacoense*. 1 km beyond HAO 157 on road to Tarabuco. 2500 m. Roadside. 4/1/86. Tubers.

HAO 159. *S. chacoense*? Dept. Chuquisaca, Prov. Azurduy. 26 km from Abra Kasa (85 km from Azurduy) on the road to Tarabuco. 5 km before Cruz Kasa. 3200 m. Plants along stone wall. Plants were yellow or completely dead. Berries mostly fallen on ground or stones. Berries somewhat conical with white spots. 4/1/86. S only.

HAO 160. *S. chacoense*? Same locality as HAO 159. 10 m from the other collection along the same stone wall. May be same thing, but berries more round, with white spots. Plants all dead.

4/1/86. S only.

HAO 161. *S. okadae*? Dept. Chuquisaca, Prov. Azurduy. 103 km from Azurduy, 13 km beyond Cruz Kasa, on the road to Tarabuco. 37 km before the junction where the road goes to the oil pumping station at Torre Pampa. 3440 m. On ledges at the foot of high cliffs facing east and south. 4/1/86. H and S and tubers.

HAO 162. *S. toralapanum*. Dept. Chuquisaca, Prov. Azurduy? 109 km from Azurduy, 19 km beyond Cruz Kasa, 31 km before the Torre Pampa junction, on the road to Tarabuco. 3600 m. On open ground at roadside. 4/1/86. Tubers only.

HAO 163. Not identified. Dept. Chuquisaca, Prov. Azurduy. 110 km from Azurduy, 20 km beyond Cruz Kasa, 30 km before the Torre Pampa junction, on the road to Tarabuco. 3700 m. At the base of a cliff on mountain top about 300 m above the road. An area where cattle take shelter. Among *Blumenbachia* and in open. Growing in a dense population where ground is richly manured. Leaves coarse, 3 pairs laterals. Pilose throughout. Flowers very large, dark purple. Berries conical, mottled green and white with varicose surface. Plants growing very well and had not been grazed down by cattle. Photos of plants growing on the site, also of berries and flowers after their collection. 4/1/86. H and S.

HAO 164. Not identified. Dept. Chuquisaca, Prov. Azurduy. 7 km beyond HAO 163 on the road to Tarabuco from Azurduy. 117 km from Azurduy, 27 km beyond Cruz Kasa, 23 km before the Torre Pampa junction. 3700 m. Habitat very similar to that of HAO 163, ledges at the foot of rock cliffs at top of steep slopes 200-300 m above road, in open ground and among *Blumenbachia*. Richly manured ground, usually, where cattle take shelter against cliffs. Plants similar to those of HAO 163, growing abundantly. Stems with straight wings (2mm). Flowers dark purple, large (5.2 cm diameter). Stigma and style sometimes purple. 4/1/86. H and S.

HAO 165. *S. toralapanum*. Same locality as HAO 164. Along lower roadside, growing among stones on steep slopes and on open ground. 4/1/86. H only (lost).

HAO 166. *S. acaule* ssp. *acaule*. Dept. Chuquisaca, Prov. Zudañez or Jaime Mendoza. Corralon Mayu, the Sheep Improvement Station of the Regional Development Corporation for Chuquisaca (CORDECH). 68 km from Tarabuco on the road to Azurduy. 3540 m. On the edge of sheep pastures. 4/2/86. S only.

HAO 167. Not identified. Dept. Chuquisaca, Prov. Azurduy or Jaime Mendoza. 21 km from the turn-off from the Tarabuco-Azurduy road towards Torre Pampa and San Pedro. 2700 m. On roadside. 4/2/86. H only.

HAO 168. Same as HAO 146, picked up on return trip. Number dropped.

HAO 169. *S. astleyi*. Same locality as HAO 146. On dry hill about 150-200 m above the road, among cactus plants. Rare. Simple, lanceolate leaves. Plants small, had not developed well. Could not get tubers large enough to keep. 4/2/86. H only.

HAO 170. *S. oplocense*? Same locality as HAO 146. On roadside. 4/2/86. H only.

HAO 171. *S. astleyi*. Dept. Chuquisaca, Prov. Yamparáez (possibly in Zudañez). 2 km after the road into Molle Mayu from the Tarabuco-Isla road. Between Candelaria and Tarabuco. About 31

km south of Tarabuco. In pea field. 3000 m. Plants locally frequent, but small, not well developed. In very stony soil. Could not locate berries or tubers. 4/2/86. H only.

HAO 172. *S. gandarillasii*. Dept. Cochabamba, Prov. Campero. 106 km north of Sucre, 18 km north of Puente Arce, 6 km before Quiroga, on the way to Aiquile. 1950 m. In arid zone among cactus, *Acacia*, and *Japhora*, in stony places protected from grazing goats by thorns. 4/3/86. S and tubers.

HAO 173. *S. gandarillasii*. 5 km north of HAO 172. 1 km south of Quiroga. Same habitat type as that of HAO 172. 4/3/86. S only.

HAO 174. *S. toralapanum*. Dept. Cochabamba, Prov. Chapare. 9 km from the turn-off at Aguirre from the Cochabamba-Chapare road. Past new dams which are part of the hydroelectric project at Korani. 3500 m. On the edge of oca field. Simple leaves. No flowers left. Berries dark green, round. 4/9/86. S only.

HAO 175. *S. toralapanum* x *acaula*? Same locality and habitat as HAO 174. Could be same thing, but leaves more divided. Growing together with HAO 174. 4/9/86. Herbarium specimen not dry, so left with I. Avilés at Toralapa after making photograph of it. S only for Sturgeon Bay.

HAO 176. *S. violaceimarmoratum*. Dept. Cochabamba, Prov. Chapare. 16 km from the turn-off at Aguirre on the road to Tunel Malaga, which is part of the hydroelectric system at Korani. 1 km before the beginning of the tunnel. 3500 m. In heavy underbrush on steep slope below road. Very large, vines over 2.5 m long. Purple, stellate flowers with white acumens. Berries green, very elongated and pointed. Photos of the site, the vines, and berries. This collection was made at or very near the site of that made by Hawkes, Hjerting, and Avilés in 1980, numbered HHA 6678. 4/9/86. Herbarium not dry, left with I. Avilés at Toralapa after making photograph of it. Seeds for Sturgeon Bay quite immature. Berries left with Avilés to allow to mature, obtain better quality seed.



