Perezia microcephala *A. Molina, sp. nov.*

Herba perennis acaulis, caule ramoso, paniculis longipedunculatis, plus minusve pilosis; folia cordato-ovata, sparse pilosa, longe petiolata, spinoso-dentata; capitula perparva, numerosa, 2-5 mm. tantum alta; achaenia 1-1.5 mm. longa.

Hierba perenne acaule, o mejor dicho de tallo poco visible, y densamente lanoso, rizomas leñoso-rígido; panícula o tallo multi-ramificado, largo-pedunculada, de 15-40 cm. de alto, ligeramente pilosa; hojas numerosas, radicales, aovado-cordiformes, membranáceas, comúnmente de 3.5-8 cm. de largo y 3-7 cm. de ancho, ligeramente pilosas por ambas caras, largamente pecioladas, la costilla largo-pilosa por el envés, espinoso-dentadas en el margen, obtuso-redondeadas hacia el ápice; cabezuelas numerosas, de 2-5 mm. de largo y de 1-2 mm. de ancho, blancas; aquenio linear-apretado, de 1-1.5 mm. de largo.

HONDURAS: "Contrayerba", flores blancas y muy pequeñas, planta sobre rocas, Río Guarabuquí, terreno de los indios Xicaques de Montaña La Flor, Dept. Morazán, alt. 1800 m., junio 2, 1950, *Antonio Molina R. 3048* (TIPO en Herb. Esc. Agr. Panam., DUPL. en Herb. Chicago Nat. Hist. Mus.); con los mismos datos, *Molina 3052.*

Esta especie de *Perezia*, es muy distinta a todas las demás centroamericanas ya conocidas, entre las cuales no tiene pariente cercano.

RUBUS GLAUCUS, THE ANDES BLACKBERRY OF CENTRAL AMERICA AND NORTHERN SOUTH AMERICA

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IN 1921 Popenoe (3) described the fruit of the Andes blackberry (*Rubus glaucus* Benth.). It grows on a plant that resembles the black raspberry but is strange for a blackberry; in Latin America it has a flavor that is among the most desirable in blackberries. The United States Bureau of Plant Industry has

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attempted to grow it in experimental plantings in Maryland; and Williams (4) of North Carolina crossed it with other berries but thus far without success from the horticultural standpoint. During a 2-month survey of temperate-climate fruits in the highlands from Guatemala to Ecuador, from January to March 1952, I had a chance to obtain further information on the Andes blackberry.

I found *Rubus glaucus* growing in the wild in the highlands from northern Guatemala to the Ambato region of Ecuador, a distance of about 2,000 miles. It has also been reported from Mexico. In all these Latin American countries its fruit is recognized as distinctive and is often called Mora de Castilla, or Mora. It may well be thought of as the Queen of tropical blackberries. All blackberries advertised, served or preserved as "especially fine" are of this species. Not only is this fruit the choice of those with means to obtain the best, but in many sections it is the most abundant berry of peons and Indians. In many countries it is the most common blackberry in the markets. Though abundant in the wild in many areas, it is common also in the gardens in some areas. Gardeners in the highlands of all these countries generally have the opportunity to obtain and grow the best blackberry, for *R. glaucus* is native to most of the humid areas of each country, at least at altitudes of 6,000 to 11,000 feet.

The fruit of *Rubus glaucus* varies in size and flavor with environmental conditions. At its best it is about the size of a very large Boysen (Boysenberry). In flavor it is the equal of the Boysenberry and the Youngberry, but in general appearance it is somewhat superior because its druplets and seeds are much smaller. Color of the marketed fruit varies from the rich scarlet of the somewhat immature berry to the near black of the mature; often it is similar to that of the Youngberry.

The bushes vary in size with the conditions under which they are grown; usually they have longer canes than our black raspberry. Though *Rubus glaucus* is native on mountain tops where severe frosts occur its canes have been killed to the ground by the first severe fall frost in Maryland. They seem remarkably free from diseases but now and then they show leaf rust and slight mildew on the cane tips. The flowers are white, similar to those of black raspberry; but they are in larger, looser clusters. The plants seem to blossom and fruit the year

through in the short days and cool climate in all countries from Guatemala to Ecuador. However, flower bud formation seems to vary with other environmental conditions such as dry and rainy season and varying winds. The Andes blackberry has been very satisfactory as a garden plant because of its continuous fruiting habit. How productive it would be under commercial conditions is unknown. In one garden in El Salvador, at the time of my visit, February 1, for some reason the flowers were not setting fruit.

Rubus glaucus was found wild on a mountain side near Cali, Colombia, at about 4,500 feet but elsewhere at 6,000 to 11,000 feet. It is evidently a cool-climate fruit and probably does best at the 6,000 to 10,000 feet altitude.

A most striking thing about the Andes blackberry is its uniformity everywhere. Plants were seen in the woodland near Quezaltenango in Guatemala, by the roadside near Guatemala City, on Mt. Uyuca in Honduras, in gardens on the volcano of San Salvador in El Salvador, in the highlands of Costa Rica, in the foothills bordering the Cauca River Valley of Colombia and on the mountains and in the gardens of Ecuador. All the thousands of plants seen seemed to be identical, as though they had been propagated by cane tips and widely planted. *Rubus glaucus* is probably apomictic, just as are the Oregon Evergreen and Himalaya blackberries of the coastal region of Oregon and Washington (1,2). These last two varieties may be amphidiploids since they produce ample pollen and are presumably mostly self-pollinated. They also are represented by millions of wild identical plants grown from seed scattered by birds in all moist highlands areas suitable for blackberries.

Like the Oregon Evergreen blackberry, the Andes blackberry produces seed mutants, which come true to seed. Two such mutants were seen; one had a round fruit in contrast to the usual cylindrical type. The round type was seen on the Pan American Highway in Costa Rica and again in Ecuador. A second mutant was shown me by Sr. Abelardo Pachano at Ambato, Ecuador. He had obtained a light-scarlet mutant and the same scarlet-fruited plant was appearing along fence walls in the neghborhood. Popenoe (3) referred to still another mutant with a light-pink color in Ecuador.

There is another variant called *Rubus eriocarpus* Liebm. and known from Mexico to Ecuador. The upper leaf surface is puberulent, but otherwise it seems indistinguishable from *R. glaucus*. Curiously, not once did I see or collect any specimen of this variant, although I studied *R. glaucus* along nearly 2,000 miles of its range. Herbarium material in the United States National Herbarium shows no difference other than this puberulence of the upper leaf surface. I saw occasional hybrids, or hybrid segregates, of *Rubus glaucus* with other species that showed this puberulence but usually they showed other marks of hybridity. Possibly leaves of *R. glaucus* may show puberulence in months other than those in which I observed them or *R. eriocarpus* may be common in some localities in Mexico and only rarely found southward.

With *Rubus glaucus*, as with the Oregon Evergreen, natural hybrids can be found. They are abundant where the Andes blackberry grows with other species of Rubus. Because seed of the Andes blackberry apparently reproduces the parent plant exactly, the hybrids originate usually as a result of its pollen fertilizing flowers of other species and the resulting seed of these other species developing into hybrid plants. On Volcán Irazú at 5,500 feet and on the Pan American Highway beyond La Chonta, Costa Rica, at about 7,600 feet, and 1,000 miles to the south along the Pan American Highway at El Angel, Ecuador, many natural hybrids were found. Nearly all hybrids were very vigorous and sterile, few setting any druplets. However, at the Jaules Farm on Volcán Irazú, one plant selected by Sr. José A. Gutiérrez as the best *R. glaucus* to be found was a hybrid segregate with some glandular hairs from *R. adenotrichus* or a related species. In Ecuador though most hybrids were sterile, a few seemed to be setting good fruit. El Angel seemed to be a particularly good horticultural selection area; but any area where *R. glaucus* and other species come together would seem to be good. At one location about 24 miles southwest of Bogotá a hybrid with fair fruit seemed to be reproducing true to seed.

Rubus glaucus is an unusual berry, for, although its foliage and cane are similar to those of the black raspberry, its fruit is a blackberry. These characteristics and its true breeding habit (apomictic reproduction) suggest hybrid origin. In many markets much of the fruit has the calyx, or both calyx