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A NATIVE DRAWING OF AN HALLUCINOGENIC PLANT FROM COLOMBIA

RICHARD EVANS SCHULTES[1]
and
ALEC BRIGHT[2]

There has recently been discovered an interesting and undoubtedly very significant drawing of an hallucinogenic plant made by an Indian artist in southern Colombia. We have been able to identify this plant as *Brugmansia vulcanicola* a species only recently described as *Datura vulcanicola* A. S. Barclay, from the Andes of southern Colombia (Barclay, 1959).

The drawing, reproduced here, shows a shrub or small tree with tubular flowers and an Indian woman sitting beneath its branches. It is entitled "Mujer al pie de borrachero" (Woman at the foot of a borrachero tree). The name of the plant in the Indian dialect is given as *yas*. Drawn a quarter of a century ago in Popayán, Colombia, by a Guambiano Indian from the region of Silvia — Francisco Tumiña Pillimue — it has been published in a book of many interesting drawings by the same native artist entitled *Nuestra Gente - Namuy Misag*, with a text by Dr. Gregorio Hernández de Alba (Tumiña P., 1949).

The drawing has all of the characteristics of indigenous art, especially as to lack of detail and disregard of relative size. Yet we believe that it is possible to identify this drawing with certainty as representative of the solanaceous *Brugmansia vulcanicola*. The leaves match in shape those of this species. The flowers — with a dentate calyx, almost regularly tubular corolla with a slightly flaring dentate lip — match the characters of this plant. Furthermore, the shape and surface texture of the fruit are the same. The name *borrachero* is applied to all of

[1]Botanical Museum, Harvard University, Cambridge, Mass.
[2]Museo del Oro, Bogotá, Colombia.

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the *Brugmansias* in southern Colombia. *Brugmansia vulcanicola*, moreover, is endemic to the highlands of southern Colombia, being especially abundant and possibly having originated in the region of the Volcán de Puracé, not far from the location of Silvia in the Departamento del Cauca.

We believed at first that the drawing might possibly represent another solanaceous hallucinogen of southern Colombia: *Iochroma fuchsioides* (HBK.) Miers. Careful study, however, indicates that, even though this species is likewise called *borrachero*, such an identification would be extremely tenuous and open to grave doubt. The flowers, for example, are drawn as though borne singly, while in *Iochroma fuchsioides* they occur in multiflorous clusters. Furthermore, the shape and texture of the fruits are so far from the condition of the bacca of *Iochroma fuchsioides* with its enlarged, persistent calyx as to present serious problems in attributing the differences to artistic license.

Brugmansia vulcanicola was described in 1959 on the basis of material collected on the northern slopes of the Volcán de Puracé in Cauca, Colombia, between 7000 and 8400 feet. This locality is not far from Silvia. In this region, the plant is extremely abundant. Natives of the region indicated that it was used "in olden times" as an hallucinogenic narcotic by Indians, but the acculturated peasants now living in the type locality do not utilize it. Ten or twelve years later, however, when additional botanical collections were made in the type locality, botanists found that local residents were assiduously destroying the population because of the initiation of a new industry, bee-keeping, and the fear that the presence of these toxic flowers could damage the honey produced in the region.

It has been thought that *Brugmansia vulcanicola* might represent an endemic of the region of Puracé, but collections have also been made near the Laguna La Cocha, above El Encanto, between 9000 and 11,000 feet, in the Departamento de Nariño, east of the city of Pasto in southern Colombia. Whether or not the plants growing in this more southern locality, which is a tourist centre, are the result of introductions from the localities near Puracé cannot be ascertained. It is our suspicion that perhaps they may have been introduced because of their hor-

ticultural attraction, since the species has never been found in the area between Puracé and the region of La Cocha, and the occurrence of the plants near La Cocha is sporadic and along roadsides, where it appears to have been planted.

There have been several different botanical interpretations of the concept which we here call *Brugmansia vulcanicola*.

Lockwood, in his revision of *Brugmansia* (Lockwood, 1973) considered the concept described as *Datura vulcanicola* to represent a subspecies of *Brugmansia sanguinea*, but he did not have an opportunity to make the indicated nomenclatural change before his untimely death. It can be differentiated from *Brugmansia sanguinea*, with which it is obviously allied, on the basis of corolla colour and shape; the pericarp which is woody and externally provided with a warty, corky reticulum; an extremely stout, woody peduncle; very hard wood; the calyx which is conspicuously not persistent on the fruit; the usually smooth surface of the seed; and leaf shape and size. Although Lockwood argued that ". . . the hard wood, the thick, woody peduncle; and hard, woody pericarp of the fruit may all represent the pleitropic effects of one mutant gene that controls lignification", it seems that there are sufficient characters on which to accept specific status.

Bristol (Bristol, 1966) studied a number of species of *Brugmansia* employed for hallucinogenic purposes by medicinemen in the Valle de Sibundoy in the southern Colombian Andes and recognized it as a distinct species. He (Bristol, 1969) suggested that this concept might represent an incipient species, especially in view of its limited range in the Andean highlands of southern Colombia between about 9,000 and 11,000 feet. Consideration of its very marked differences from its nearest ally, *Brugmansia sanguinea*, however, would tend to indicate that it is far from incipient and that it is already a well established species.

It would seem advisable, in view of the numerous and stable characters, to continue recognizing it as a distinct species. Consequently, the necessary nomenclatural transfer to *Brugmansia* is here made.

Brugmansia vulcanicola *(A.S. Barclay) R.E. Schultes comb. nov.*

Datura vulcanicola A. S. Barclay in Bot. Mus. Leafl., Harvard Univ. 18 (1959) 260.

All parts of the plant of *Brugmansia vulcanicola* give very positive spot tests for alkaloids with Dragendorff reagent. Although further chemical studies have not yet been carried out on this species, it seems logical to presume that it contains the same tropane alkaloids found in all other species of the genus.

Some six species of *Brugmansia* are recognized, all native to South America and all but two native to relatively high parts of the Andes. All have been employed by native peoples as hallucinogens (Schultes, 1976; Schultes and Hofmann, 1973). In prehispanic times the Chibcha-speaking Muisca people of the high plateau of Bogotá used *Brugmansia aurea* Lagerheim to drug the women and slaves who were to be buried with a dead chief. Juan de Castellanos described this custom four centuries ago (de Castellanos, 1589): "At Tunja, in the land of the Chibcha-speaking Muiscas, the dead chief was accompanied to the tomb by his women and slaves, who were buried in different layers of earth . . . of which none was without gold. And so that the women and poor slaves should not fear their death before they saw the awful tomb, the nobles gave them things to drink of inebriating tobacco and other leaves of the tree we call borrachero ('intoxicator'), all mixed in their usual drink, so that of their senses none is left to foresee the harm soon to befall them."

The depiction of the tree — which the Chibcha-speaking Guambianos call *yas* — as the only plant and its association with the name *borrachero* lead us to suspect strongly that it was chosen and drawn because of its importance as an hallucinogen in indigenous life. This suspicion is heightened by the very conspicuous association of the large bird with the tree: the bird is a symbol of evil and sorcery amongst these Indians.

A translation of Hernández de Alba's text which accompanied the Indian drawing follows.

"A WOMAN AT THE FOOT OF A *BORRACHERO* (The Intoxicator). ISUG *YAS* GYETA

"How pleasant is the perfume of the long, bell-like flowers of the Yas, as one inhales it in the afternoon, following the rural paths.

"But the tree has a spirit in the form of an eagle which has been seen to come flying through the air, and then to disappear; it vanishes completely in the leaves, between the branches, between the flowers.

"The spirit is so evil that if a weak person stations himself at the foot of the tree, he will forget everything and stay in that state, feeling up in the air as if on the wings of the spirit of the Yas. This happens to men and women alike, but if a *girl who has evil within her, something dirty** sits resting in the tree's shade, she will dream about men of the Páez tribe, about those men who never stop chewing coca, and later, a figure will be left in her womb which will be born six months later in the form of pips or seeds of the tree.

"Spirit which evilly impregnates women. Spirit which punishes Indians if they uproot all the plants where they live in order to make fields, when at least one plant should be left just for seed.

"A spirit so evil, our grandparents tell us, was in these trees with flowers like long bells, which give off their sweet perfume in the afternoon, that they were the food of those Indians at whose name people tremble: the fierce Pijaos."

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*This is a literal translation, but it all means "a menstruating girl".

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Plate 21. *Brugmansia vulcanicola* (Barclay) R.E. Schultes. Photograph of the plant from which the type-specimen was collected. Photograph by Richard Evans Schultes.

PLATE 22

Plate 22. *Brugmansia vulcanicola* (Barclay) R.E. Schultes. Drawn by Lynda Bates and taken from the unpublished Ph.D. Thesis: A Taxonomic Revision of *Brugmansia* (Solanaceae) by Tommie Earle Lockwood.

PLATE 23

Plate 23. *Brugmansia vulcanicola* (Barclay) R.E. Schultes. Native drawing of an Indian woman under a *borrachero* tree.