



## A new species of *Plumeria* (Apocynaceae) from Honduras and Salvador: *Plumeria mariaelenae*

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Fig. 3. Mixed wood of the Quebrada de Cayagua, the type locality of *Plumeria mariaelenae* J.F. Gutiérrez and J. Linares, notice the trees of this species (white flowers in the centre right side of the picture).

A new treelike species, native of Honduras and El Salvador *Plumeria mariaelenae* (Apocynaceae) is here described and illustrated for the first time, and its possible taxonomical affinity with other species of the genus is discussed.

Keywords: *Plumeria*, Honduras, Salvador.

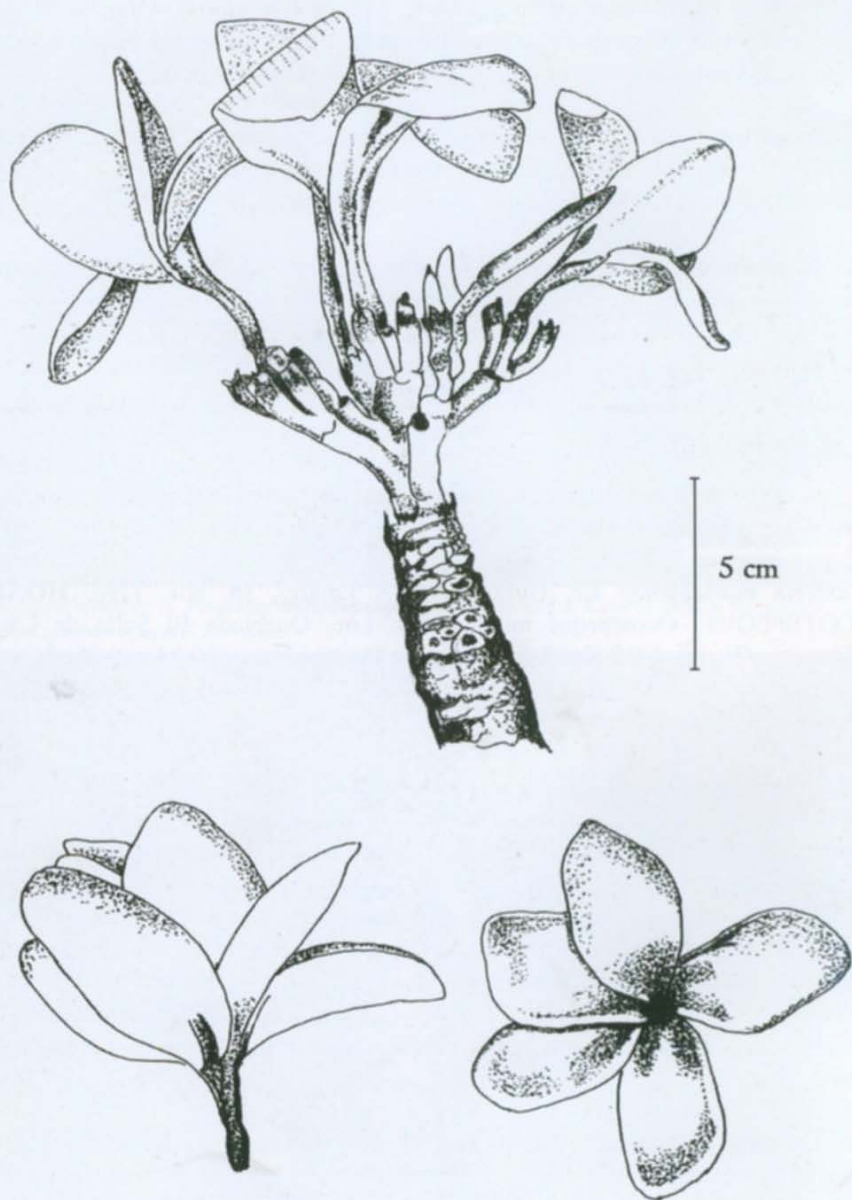


Fig. 1. Illustration of *Plumeria mariaeanae* J.F. Gutiérrez and J. Linares. A. Floral branch. B. Lateral view of an opened flower. C. Opened flower seen from above. All pictures by J.L. Linares and J.F. Gutiérrez 8501 (MEXU).

During the botanical investigations made by the authors in the mountainous zones of the North of El Salvador and the western part of Honduras for the Herbarium of the Escuela Agrícola Panamericana it turned out that different plants which apparently had never been collected in any or both countries were relatively rare.

Among these plants, were some species of Leguminosae: a *Dalbergia* new to science, *Connarus stenophyllus* (Connaraceae), the first register outside Mexico, and some other plants relatively rare like *Decatropis paucijuga* (Rutaceae).

One of the most famous and remarkable plants of the area is a *Plumeria* which we present here as new species and which had never been suitably collected previously.

Having analyzed in a criticize way the available material in herbaria and having studied the available literature (Gentry, 2001; Standley & William, 1966), the original descriptions of the Central America and the Caribbean islands species, as well as the photos of these varieties and forms amply grown (\*) it is clear that samples collected in this village and in the other one situated in La Campa, in the department of Lempira, belong to a new species for science and which is described below.

*Plumeria mariaelenae* J.F. Gutiérrez & J. Linares, sp. nov. Type: HONDURAS. OCOTEPEQUE: Ocotepeque municipality. Loc. Quebrada El Salto de Cayagua (Ticacao or Tiana),  $\pm 7.2$  Km S-SE of Nueva Ocotepeque and 0.9 km to the N. of Peña de Cayagua. Alt. 1050 m, March 20th, 2005, J.L. Linares and F.J. 8501 (holotype Gutiérrez, MEXU; isotype, MEXU, EAP). Fig. 1

Arbor ad 15 m alta, caule ad 30 cm diametro. Folia 27-33 X 3.5 cm, anguste elliptica vel linearia, supra subtusque omnino glabra, 50 vel pluribus paribus nervis secundariis, supra subtusque prominentibus, petiolis 5.2-7cm longis. Inflorescentiae pseudoterminales in ramis anni ante, paniculatae, 10-15 cm longae. Pedunculi 1-4 cm. Flores pedicellati, pedicellis 5-11 X 2-3 mm, incrassatis, claviformibus; calyx pentamerus, lobis imbricatis 1.4-2 x 1.5 mm, deltoideis vel triangularibus; corolla hypocraterimorpha, praefloratione contorta, tubo 1-7-2 cm, kermesino, fauce pubescenti; petala alba 5-5.8 x 3.5 cm, oblonga, leviter obliqua, apice obtusa vel acuta. Folliculi fusiformi, semper binati, conspicue lenticellati, castanei vel ferruginei etiam immaturi, omnino maculis elongatis magis obscuris.

Trees measuring up to 15 m high and 30 cm in diameter, usually growing bent, on big steep cliffs and masses of fallen rock. Extremely thick bark, up to 5cm, yellowish brown, profoundly cracked with longitudinal excrescences of up to 5cm high at the crest.

Plants are completely without leaves during the flowering stage. Leaves, when present, 27-33 x 3.5-5 cm, strictly elliptic to linear, with approximately 50 pairs of secondary,

\* <http://www.plumeriajournal.com/>, <http://www.io.com/~jrm/plumeria.html>, <http://www.plumeria.org/>

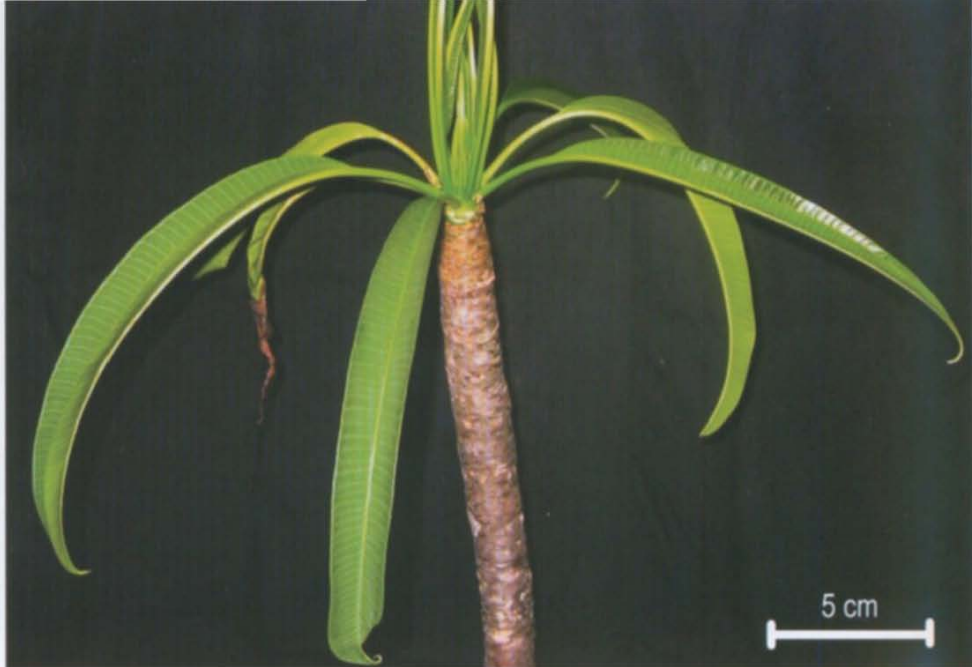


Fig. 7. Terminal branches of *Plumeria mariaelenae* J.F. Gutiérrez and J. Linares. Notice the narrow leaves and the great number of lateral nervures.

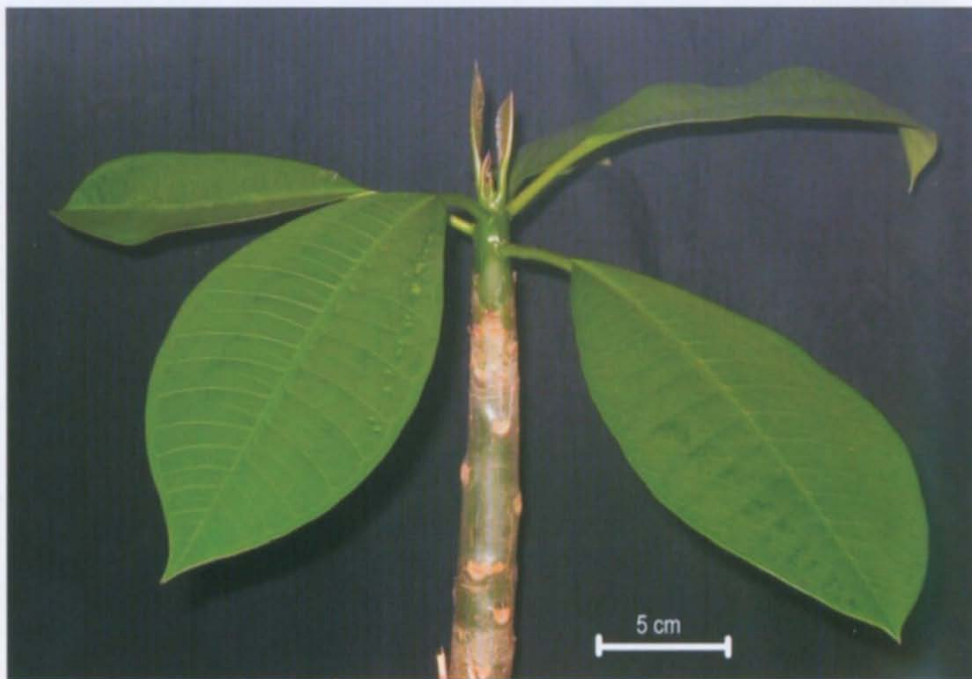


Fig. 6. Terminal branches of *Plumeria rubra* f. *acutifolia* of a wild plant collected in the neighborhood of Zamorano.

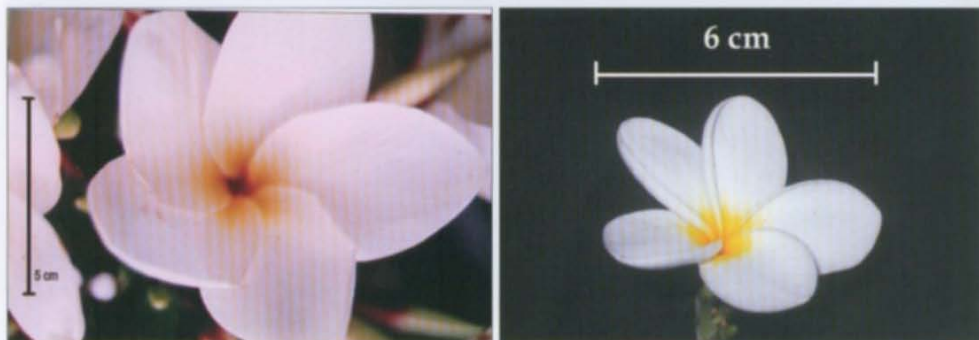


Fig. 8. Flowers of *Plumeria mariaeleanae* J.F. Gutiérrez and J. Linares (left) showing the floral segments larger than those of *Plumeria rubra* f. *acutifolia* (right).

prominent nerves on the upper side and underside, dark green, brilliant when young, then lightly glaucous, completely hairless when mature, petiole 5.2 up to 7 cm long, flattened, not canaliculate, with a gland at 8 mm from the base.

Pseudo-terminal inflorescence placed at the tips developed previous year, paniculate, 10-15 cm long (including corollas). Peduncle 1-4 cm long and ca. 5 mm thick, reddish brown, pubescent, white hairs, 9 (11) lateral branches.

Flowers in pedicels measuring 5-11 x 2-3 mm, thick, clavate; calyx pentamerous, imbricated lobes of 1.4-2 x 1.5 mm, deltoid to triangular; salverform corolla, tube 1.7-2 cm, carmine red, throat pubescent; petals 5, 5.8 x 3.5 cm, elongated, slightly oblique, with a blunt tip, unguiculate, with a claw from 0.4 up to 0.5 cm, clearly ciliate at the base and very slightly in the blade, white, tinged with carmine red towards the throat and in the outside and basal part of the tube; 5 stamens. Anthers approximately 2 x 1 mm, triangular, sessile, laterally dehiscent. Ovary 2-2.5 mm, with two carpels, stigma bifid, each branch 0.5 mm long.

Fruit in two follicles 20 - 23.5 x 2.2-2.5 cm, divergent, rarely convergent, spindle-shaped, always in pairs, brown to reddish brown although when immature, covered with darker, lengthened spots, sharply lens-shaped. Winged seeds 6 x 1-1.3 x 0.4-0.5 cm, body 2 x 1-1.3 x 0.4-0.5 cm, wing 4 x 1-1.3 cm, light brown.

**Common name:** Calachucha.

#### **Distribution, Habitat and Phenology.**

*Plumeria mariaeleanae* is only known from two small villages: the first one, the type locality, placed just on the border between Honduras and El Salvador in an area which was beforehand in a quarrel between both countries; the second in the municipality of La Campa, in the Department of Lempira. In both villages it grows between 1000-1100 m in alt., on very pronounced hillsides and on exposed steep cliffs, in very superficial and rocky

soils.

At the type locality it grows in a mixed wood of a low forest more or less caducifolious with wood of *Pinus oocarpa* and *Cupressus lusitanica* (Fig. 3). Between the species associated to these wood are, at least in the type locality, *Decatropis paucijuga*, *Sideroxylon tepicense*, *Ulmus mexicana*, *Chusquea coronalis*, *Beucarnea* sp., *Bernoullia flammea*, *Lonchocarpus schiedeianus*, *Dalbergia* sp. nov., *Bursera simaruba*, *Maytenus* sp. and *Cupania guatemalensis*.

Flowering from December till March and fruiting from March till May.

Examined additional material: **HONDURAS**. OCOTEPEQUE: Municipio Ocotepaque. Loc. Quebrada El Salto de Cayaguanca (Ticacao o Tiana),  $\pm 7.2$  km of Nueva Ocotepaque and 0.9 km N. of Peña of Cayaguanca. Alt. 1050 m, January 9th, 2005, J.L. Linares and F.J. 8300 (EAP, MEXU, K, NY, F) Gutiérrez. LEMPIRA. Mpio. La Campa, Loc. La Campa, undated, Byron E. Córdova 31 (EAP).

## ETYMOLOGY

The species is dedicated to Maria Elena Pérez (1982-), specialist of dry wood in Central America, for the admiration and the respect with which the first author carries for her as a professional and as a person.

## DISCUSSION

This species would seem to be close to *Plumeria rubra*, from which it distinguishes itself by the characteristics mentioned in the Table 1. Specimens from La Campa had been identified as *P. alba*; however, the resemblance with this species, besides the number of nerves, is difficult to make. *Plumeria mariaeanae* is distinguished, even in the vegetative stage by the shape, the size and the slightly glaucous tinge of the leaves, as well as by the number of nerves and by the indument of the leaves which is puberulent to densely pubescent in *P. rubra* and completely hairless in *P. mariaeanae*. (Figs. 4 and 5). In *Plumeria mariaeanae* leaves are agglomerated in a more or less dense shape at the end of branches, while in the wild and on cultivated forms of *Plumeria rubra* they are more separated (Figs. 6 and 7).

The new species distinguishes itself by flowers that are much larger than those of the wild and cultivated forms of *Plumeria rubra* (Fig. 8). Furthermore, the size of the inflorescence (Table 1) clearly separates both species. The new species has almost no smell at all during day, while *Plumeria rubra* has a strong characteristic perfume, one of its main attractions in the cultivated forms, the commercial forms being specially appreciated for this characteristic. In *Plumeria mariaeanae* the smell is almost completely absent during day and is moderated, slightly musky during the night.

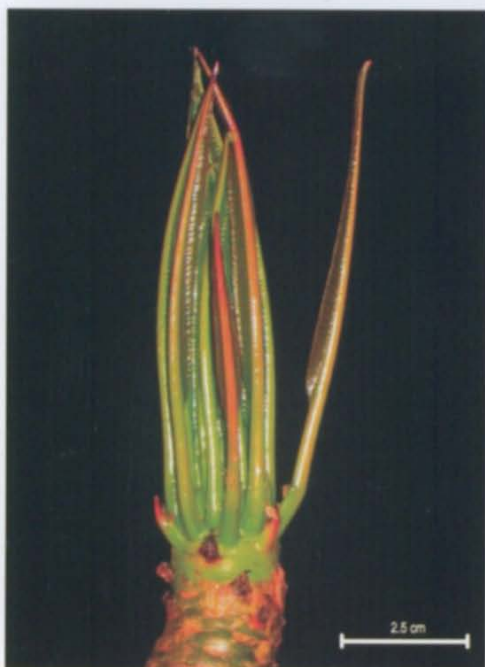


Fig. 5. Branch of *Plumeria mariaeleanae* J.F. Gutiérrez and J. Linares beginning to develop the new leaves.



Fig. 4. Branch of *Plumeria rubra* f. *acutifolia* beginning to develop the new leaves.

Table 1.

**Comparison of characters between *Plumeria rubra* and *Plumeria mariaeleanae***

	<i>Plumeria rubra</i>	<i>Plumeria mariaeleanae</i>
Leaf size	5-21 x 5.5-8 cm	27-33 x 3.5-5 cm
Leaf shape	elongated to elliptic	strictly elliptic
Leaf tip	Pointed to blunt	Acuminate
Lateral nervures	20-30, drawn	50 or more, prominent
Pubescence of underside	densely pubescent, in the central nerve, rarely hairless.	completely hairless
Petiole	3.2-4 cm	5.2-7 cm
Petiolar gland	at 1-15 mm from the base of petiole	at 8 mm from the base of petiole
Floral branches	smooth, green	hard, grayish brown
Inflorescence size	18-33 cm	10-15 cm
Peduncle size	9-14 cm	1-4 cm
Flower size	5 cm diam	10 cm or more in diameter
Floral tube	1.5 cm, diam 5 cm.	2 cm or more, 10 cm or more in diam.
Scent	diurnal, chocolate, pleasant	nocturnal, musky



Fig. 2. Distribution map of *Plumeria mariaeelenae* J.F. Gutiérrez and J. Linares

The observations realized at the type locality in 2004 and 2005 in El Salvador and in Honduras allowed to verify that in *P. rubra*, fruits were always lemon green to light green, brilliant and uniform, while in the new species they are always brown reddish brown with dark red to brown spots with many lenticels.

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#### ACKNOWLEDGEMENTS

Thanks to Dr. Ferdinand Chiang for the diagnosis in Latin and for the invaluable comments on the manuscript, to Oscar Ascencio for the illustrations, and to Frank Sullyvan Cardoza for the photos of Figs. 4, 5, 6 and 7.

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