

MCVAUGHIA, A NEW GENUS OF MALPIGHIACEAE FROM BRAZIL

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Introduction

The state of Bahia has one of the least known and most interesting floras in Brazil. Since the visits of several European botanists in the last century, the flora of interior Bahia, especially the northern part, has remained largely uncollected and unstudied. Thus it is good news indeed that Dr. Raymond M. Harley of Kew has successfully taken two botanical expeditions into Bahia in the last four years. Among the Malpighiaceae Dr. Harley has sent for my study have been several new to science; the most interesting of them is described here as a new genus and species.

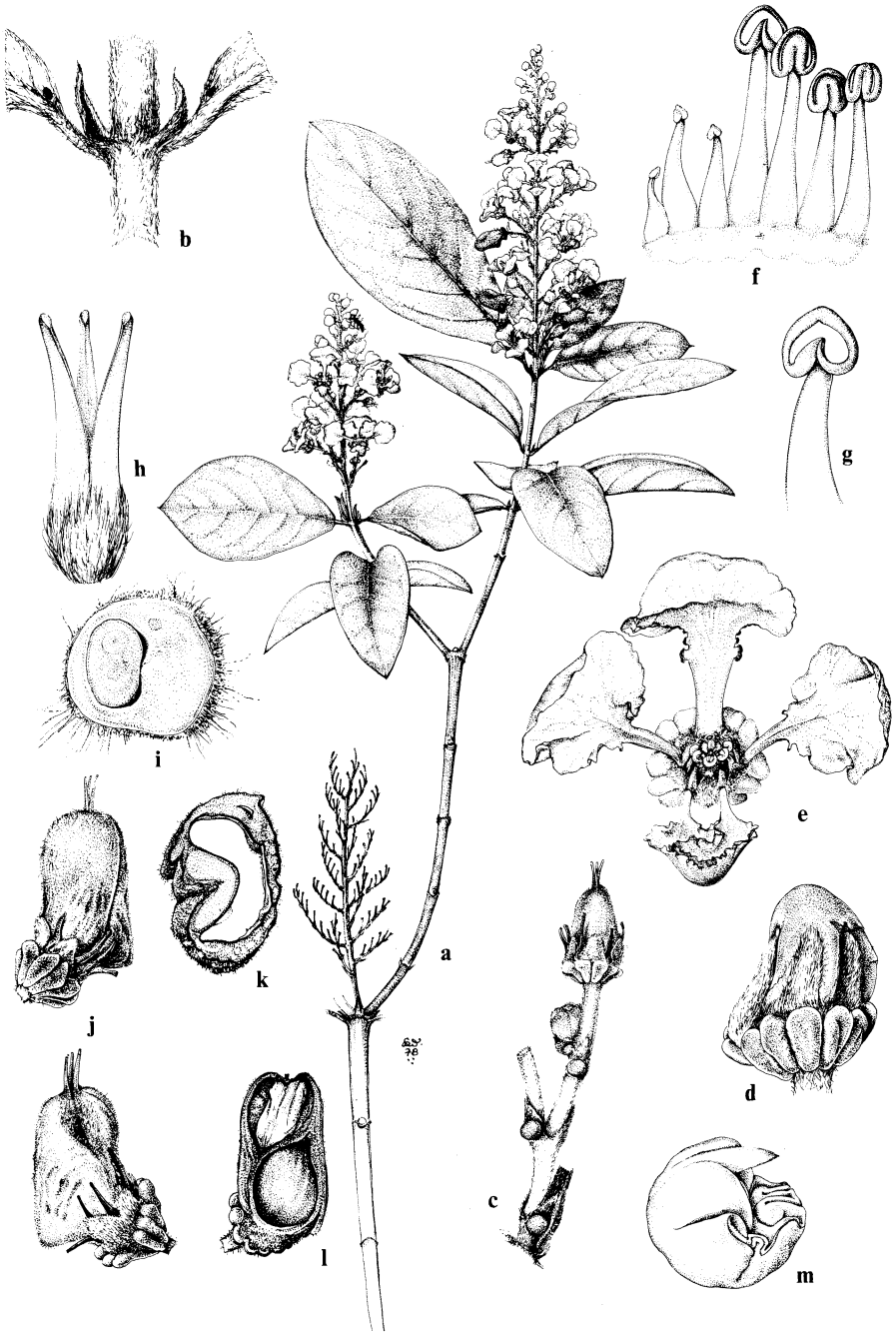
Mcvaughia W. R. Anderson, gen. nov.

Frutex foliis decussatis, lamina glandulis abaxialibus instructa, stipulis intra- et epipeptiolaribus, omnino connatis, in petiolo persistentibus. Inflorescentia terminalis, plerumque simplex, interdum ternata, thyrsus ex cincinnis brevibus compositus, bracteis bracteolisque persistentibus, bracteola prima et bracteolis alternis glandula abaxiali excentrica instructis. Alabastrum sphaeroideum, parum gibbosum, rectum (non circinatum). Sepala 5, omnia biglandulifera. Petala 5, glabra, aurea, 2 antico-lateralia remanentia imbricata ut in alabastro, minora quam 2 postico-lateralia. Torus utrinque staminum glaber. Stamina 10, 7 antica fertilia, 3 postica plerumque parva et sterilia, interdum 1 vel raro 2 fertilia; antherae fertiles \pm similes, glabrae, hippocrepiformes, loculis apice continuis, connectivo parvo. Pollen 4-(5-) colpdatum. Ovarium carpellis 3 omnino connatis, 1 carpello paene postico et 2 \pm anticis, uniloculare, loculo postico et 1 antico omnino absentibus, loculo fertili 1 ovulum continenti; styli 3, apicales, graciles et subulati, stigmatibus parum internis. Fructus nux parva indehiscens viridis, matura sicca et brunnea, 2 cavitates continens, cavitate proximali (loculo vero) muro tenaci et semen unicum continenti, distali muro tenuiore et substantia viridi oleaginea partim repleta. Semen sphaeroideum, cotyledonibus latis tenuibusque, corrugatis plicatisque et versus hypocotylum reflexis. Chromosomatum numerus: $n=10$. Figurae 1 et 2.

Type: *Mcvaughia bahiana* W. R. Anderson.

Mcvaughia is referable to the subfamily Byrsonimoideae and the tribe *Byrsonimeae* (Anderson, 1978). Its closest relative is *Burdachia*, which differs from *Mcvaughia* in the following characters (Anderson, in prep.): Flower buds circinate; petals pink or white, the 4 laterals alike; all 10 anthers fertile and subsimilar, with linear, distinct locules often exceeded at the apex by the thick, fleshy connective; ovary with 1 carpel nearly anterior and 2 \pm posterior, 3-locular but 1 of the posterior locules empty and smaller; fruit with a fibrous or aerenchymatous wall; cotyledons thick, 1 folded back once lengthwise, the other embracing it. *Burdachia* is a genus of Amazonia and Guyana, where the trees usually grow by rivers or in periodically inundated *igapós*; the fruits are adapted for dispersal by water. Of the two known collections of *Mcvaughia*, one was found in very dry *caatinga* (thorn scrub) and the other in flooded ground near a river (probably only very temporarily flooded). The small fruit has no obvious adaptation for dispersal, unless the green, oily tissue in the distal chamber can serve as food for small rodents. It is suggestive that that chamber

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is easily pierced, while the proximal seed-containing chamber is much better protected.

Aside from its peculiar fruit, *Mcvaughia* is notable for its petals and androecium. The two anterior petals, which are outermost in bud, remain cupped one inside the other and incompletely expanded, making the flower appear four-petaled. This is unique in the family. The only other genus in the Byrsonimoideae with a reduced androecium is *Diacidia*, in which the stamens lost are anterior, not posterior, and the stamens (including filaments) are completely lost there, not just reduced as in *Mcvaughia* (Anderson, in prep.). The horseshoe-shaped anther is most unusual; I do not recall seeing its like in any other member of the subfamily. Finally, the chromosome number is noteworthy because I have recently (Anderson, 1978) suggested that numbers of $n=6$ or 12 help to distinguish the subfamily Byrsonimoideae. *Mcvaughia* contradicts that generalization, yet there is no doubt, when all characters are considered, that it belongs in this subfamily. It will be especially interesting to see how many pairs of chromosomes are in *Burdachia*.

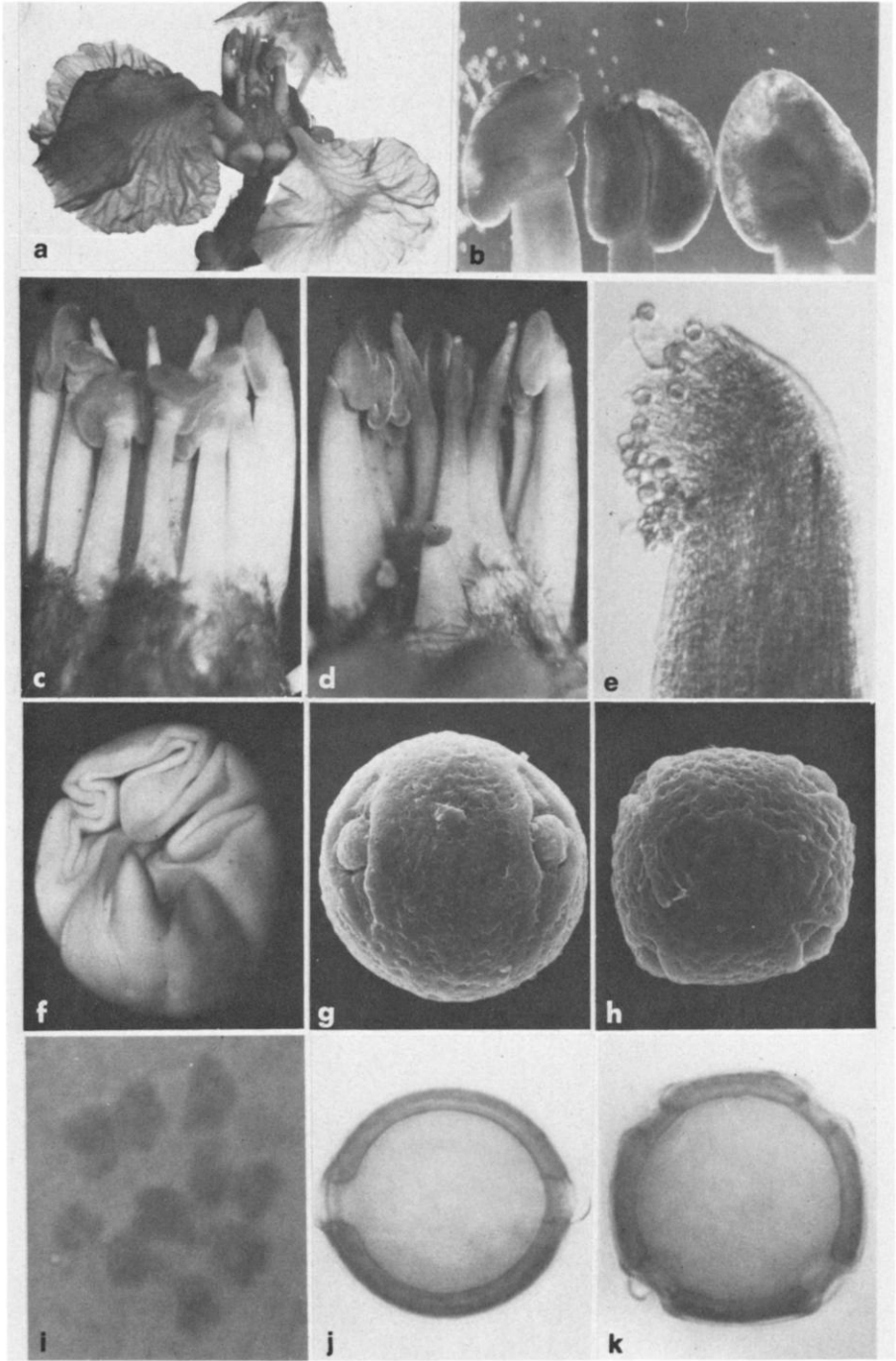
This genus is named for Rogers McVaugh, my mentor, colleague, and friend. For 15 years he has been an unfailing source of information, advice, and inspiration. May his years in "retirement" be as productive as the last 45 years.

Mcvaughia bahiana W. R. Anderson, sp. nov.

Frutex usque 3 m altus, ramosus, internodiis vegetativis teretibus, primum dense sericeis, demum glabrescentibus. Lamina foliorum majorum 4.5–8.5 cm longa, 2.0–4.5 (–5.0) cm lata, elliptica vel obovata, basi cuneata vel rotundata, apice acuta vel rotundata et apiculata, supra novella tomentosa mox glabrescens, subtus dense et pertinaciter tomentosa vel lanata, pilis trabecula ca 1.5 mm longa, tenuissima, subrecta vel serpentina, appressa vel patenti, medifixa pede brevissimo, subtus basi prope costam 2 glandulis magnis et interdum distaliter 1–aliquot glandulis parvis munita, nervis lateralibus supra impressis et subtus prominentibus, venis tertiariis parallelis et subtus prominulis; petiolus 3–7 mm longus, pertinaciter sericeus, eglandulosus; stipularum par 2.5–5.0 mm longum, ovatum vel triangulare, abaxialiter sericeum, adaxialiter glabrum. Inflorescentia 3–10 cm longa, sericea, erecta, ex 12–24 cincinnis composita, quoque cincinnis 2–7 flores continenti, bracteis 2–7 mm longis, anguste triangularibus, abaxialiter sericeis, adaxialiter glabris, bracteolis bracteis similaribus sed tantum 1.5–2.5 mm longis, pedunculo florifero 1.5–4.5 mm longo (ex bracteola glandulifera subtendenti menso), laxe sericeo. Pedicellus verus (i.e., ultra articulum inter pedunculum pedicellumque) 0–0.5 mm longus (–1.0 mm fructu). Sepala superantia glandulas 2–3 mm, 1.5–2.0 mm lata, triangularia, per anthesin appressa, abaxialiter sericea, adaxialiter glabra, glandulis 1.5–2.5 mm longis, aureis, obovatis, compressis praeter par anticum. Petala antico-lateralia ungue 1.2–1.5 mm longo, limbo 3.0 mm longo et 4.5 mm lato (non complanato), profunde concavo, paene erecto, margine denticulato et eglanduloso vel basi 2 glandulis minutis instructo; petala postico-lateralia ungue 2.0 mm longo, limbo 5.5–6.5 mm longo, 6.0–7.0 mm lato, plano vel parum concavo, subcirculari, patenti, margine eroso et eglanduloso vel basi 2 glandulis minutis instructo; petalum posticum



Fig. 1. Mcvaughia bahiana: a) flowering branch, $\times 0.5$; b) stipules and leaf-bases, $\times 1.5$; c) cincinnus, $\times 2$; d) flower bud, $\times 5$; e) flower (anterior petals bent downward slightly), $\times 3.5$; f) staminodes and 4 fertile stamens, adaxial view (middle staminode opposite posterior petal; stamen at far right opposite anterior sepal), $\times 7.5$; g) stamen, adaxial view, $\times 10$; h) gynoeceum, viewed from front of flower, $\times 10$; i) ovary, cross-section, $\times 20$; j) fruit, two views, $\times 2.5$; k) fruit, cross-section of distal chamber, showing oil-tissue bent around furrow, $\times 5$; l) fruit, cut longitudinally, showing distal chamber with oil-tissue and proximal locule (seed removed), $\times 2.5$; m) embryo, $\times 5$. Drawn from the type by Karin Douthit.



ungue 3.0–4.0 mm longo et crassissimo, limbo 6.0–7.0 mm longo, 7.0–8.0 mm lato, late obovato, valde reflexo, margine basi utrinque 3–4 glandulis instructo et distaliter eroso. Filamenta staminum fertiliium 2.0–3.0 mm longa, 3 antica breviora quam altera, glabra, libera vel brevissime connata, recta; antherae 0.7–1.0 mm longae; staminodia breviora, 2 sepalis posticis opposita interdum sepalis tecta. Ovarium 1.0–1.3 mm altum, laxe sericeum; styli 2.5–2.7 mm longi, glabri, recti vel parum curvati. Fructus 7.0–8.5 mm longus, 4.0–5.0 mm latus, laxe tomentosus et minute pilosus pilis longioribus deciduis, proximaliter rugosus, 1 calcari basali et sulco distali instructus. Chromosomatum numerus (in typo numeratus): $n=10$. Figurae 1 et 2.

Type. Roadside caatinga in coarsely sandy soil, 12 km SE of Santaluz on road from Conceição do Coité, ca 39° 20' W, 11° 20' S, elev 460 m, Bahia, Brazil, 6 Mar 1976, *William R. Anderson 11740* (holotype MBM, isotypes F, G, K, MICH, NY, P, RB, SP, U, UB, US).

Paratype. Flooded ground with standing trees and grazed grassland near river, 20 km E of Camaleão on Itiúba-Cansanção road, ca 39° 33' W, 10° 40' S, Bahia, Brazil, 21 Feb 1974, *R. M. Harley 16465* (CEPLAC-CEPEC (Centro de Pesquisas do Cacau, Itabuna, Bahia, Brazil), MICH).

This is the only known species of *Mcvaughia*. The specific epithet refers to the state of Bahia, which can be expected to yield many more interesting novelties in the next few years as collecting there accelerates under the auspices of CEPLAC and the Projeto Flora Nordestina.

Acknowledgements

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References

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Fig. 2. *Mcvaughia bahiana*: a) flower from behind, $\times 3.8$; b) anthers, left to right side, adaxial, and abaxial views, $\times 33$; c) androecium and gynoecium from front of flower, $\times 12.5$; d) androecium and gynoecium from behind, $\times 12.5$; e) stigma, $\times 115$; f) embryo, $\times 11$; g) pollen, side view, $\times 1350$; h) pollen, polar view, $\times 1350$; i) chromosomes at metaphase of meiosis II, $\times 4000$; j) pollen, optical section through poles, $\times 1350$; k) pollen, optical section through equator, $\times 1350$.