#### JATROPHA DE MEXICO

#### El género Jatropha (Euphorbiaceae)

- Tiene alrededor de 180 especies.
- Su distribución natural es América. África,
  Península arábiga y la India.
- Pero J. curcas se cultiva en los trópicos de todo el mundo.
- En México se han registrado 46 especies (dos de ellas son cultivadas) y de las 45 nativas, 38 son endémicas al país (el 84.4%).

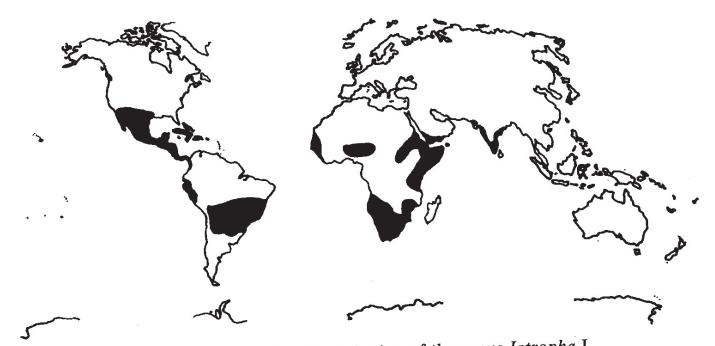


Figure 3. Geographical distribution of the genus Jatropha L.

#### Jatropha

 Trees, shrubs, facultative anual or rhizomatous subshrubs, or tuberous perennial herbs. Latex pale, cloudy, yellow to red but never milky. Roots fleshy or slender. Bark of the woody species smooth, wrinkled, with fissures and cracks, or peeling with pubescence o glabrous; short shoots common in xeric taxa. Leaves alternate, long petiolate to subsessile, blades simple to palmately, 3-, 5- or 7-lobed.

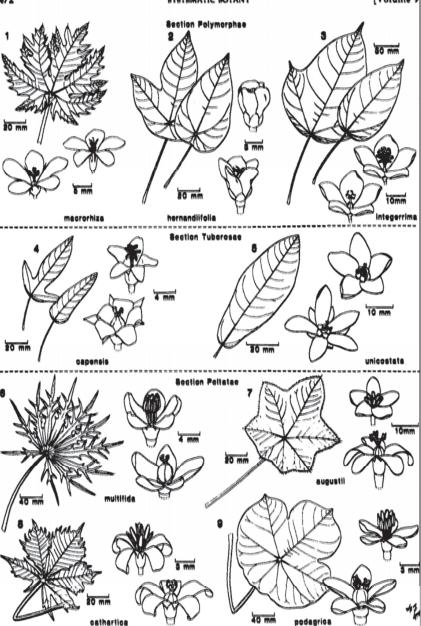
#### Jatropha

- Venation palmate or pinnate,
- brochidodromous (or exceptionatelly craspedodromous), margins entire, glandular, o conspicuously serrate, with o without mucronate tips or glands, lamina glabrous, glaucous, or with varying degrees of pubescense or tomentose, stipules simple or branched, long filiform, filiform and gland tipped, spinose, reduced or rarely ausent.

- Inflorescencia cimosa. Flores unisexuales.
- Sépalos libres o ligeramente connados.
- Pétalos libres o gamopétalos.
- Corola campanulada, tubular o urceolada
- blanca, amarillenta o rojiza.
- Estambres 8-10 monadelfos o libres, generalmente biseriados. Nectarios 5.
- Pistilo y fruto 1-3 locular y con 1-3 semillas
- Semillas con carúncula o sin ella. Oblongas o globosas.

# Jatropha tiene dos subgéneros, sensu Dehgan y Webster, 1997.

 Subgénero Jatropha. Monoecious, calyx lobes free and distinct to connate, neither distinctly imbricate nor foliaceous, petals free, coherent or connate. Stamens 8(-10), free or monadelphus, carpels always 3, fruit trilocular, seeds oblong with large caruncule. Trichomes unicellular and multicellular, never verrucose. Only J. cathartica Terán & Berlandieri, J. gaumeri Greemn. and J. macrorhiza Benth in México. And cultivars of J. gosiipyfolia and J.podagrica.



Figs. 1-9. Leaves and flowers of species in Jatropha subg. Jatropha. 1-3. Sect. Polymorphae. 1. J. macrorhiza Benth. (B74.075-Arizona). 2. J. hernandiifolia Vent. (B67.281-Jamaica). 3. J. integerrima Jacq. (B67.280-Cuba). 4-5. Sect. Tuberosae. 4. J. capensis (L.f.) Sonder. (B67.045-S. Africa). 5. J. unicostata Balf. (B67.471-Socotra). 6-9. Sect. Peltatae. 6. J. multifida L. (B74.157—New Guinea). 7. J. augustii Pax & Hoffm. (B74.056— Peru). 8. J. cathartica Teran & Berland (B67.471-Texas). 9. J. podagrica Hook. (B74.011-Puerto Rico).

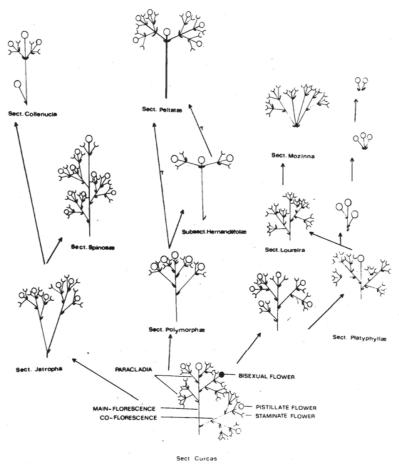


Figure 2. Evolution of inflorescence in the genus Jatropha L.

4. Reduction of inflorescences to a few flowers or to a single flower is probably due to the

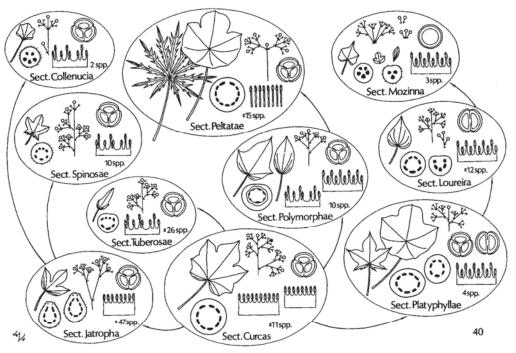


Fig. 40. Schematic presentation of evolutionary pathways in the genus Jatropha. Section Curcas (J. curcas, in particular) is considered to be the least advanced of all sections, from which other taxa arose in response to ecogeographical changes from southern wet humid tropics to northern deserts of the old and the new worlds. New World taxa of section Curcas all have ten stamens but the old World taxa have eight. Bisexual flower (darkened) are occasionally produced in J. curcas. Corresponding modifications and reductions are self explanatory. For a more complete morphological treatment see Dehvan and Webster. 1979

# Sección Polymorphae Pax. Jatropha macrorhiza



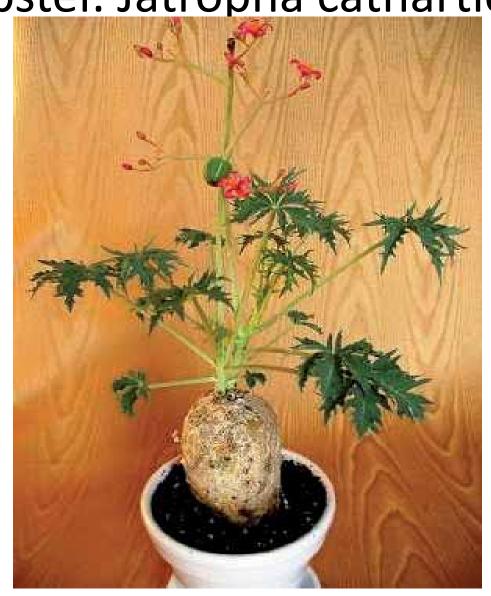
## Flor de Jatropha macrorhiza



## Jatropha gaumeri.



Sección Peltatae (Pax)Dehgan et Webster. Jatropha cathartica



#### Jatropha cathartica. Flor estaminada



### Jatropha cathartica. Flor pistilada



 Subgénero Curcas (Adans.) Pax. Dioecious, gynodioecious, or occasionally monoecious. Sepals imbricate, the pistilate sometimes foliaceous, petals coherent to connate, not enterely distinct. Stamens 10(rarely 8), at least the inner series monadelphous, carpels and fruits 1-3 locular, seeds mostly spherical. Trichomas verrucose and unicellular(except in sect. Curcas). 41 mexican species.

- 1.-J. alamanii Müll.Arg. Oaxaca. SBC,SMS, BE. arbusto
- 2.-J.andrieuxii Müll.Arg.Gro. Oax.Pue.SBC. arbusto, Árbol
- 3.-J.bartletii Wilbur.Jal. SBC. Árbol
- 4.-J.bullockii E.J. Lott. Jal. BQ, SBC. Árbol
- 5.-J. cardiophylla (Torr.) Müll. Arg. USA, NL. Son. SBC, BE. Arbusto

- 6.- J. chamelensis Pérez-Jiménez. Jal., Mich. SMS, SBC. Árbol
- 7.-J. ciliata Sessé ex Cerv. Df., Oax., Pue., Gro. SBC. Arbusto
- 8.- J. cinerea(Ort.)Müll.Arg. USA, BCS, Son., Sin., SBC, MX. Arbusto
- 9.-J. contrerasii J. Jiménez Ram. et Martínez Gordillo. Gro. SBC.Árbol
- 10.-J. conzatii J. Jiménez Ram. Oax.SBC. Árbol o arbusto
- 11.-J. cordata(Ort.)Müll.Arg. Chih., Dgo,Son., Sin., Zac., SLP, Mich. BE, MX. Árbol
- 12.- J. cuneata Wiggins et Rollins. USA. BC, Son., Sin. Arbusto
- 13.- J. curcas L. México, centroámerica y sudámerica. SBC, SMS.
- 14.- J. dehganii J.Jiménez Ram. Jal. SBC. Arbusto.
- 15.- J.dioica Cerv. Desierto chihuahuense hasta DF. MX. Arbusto

- 16.- J. elbae J.Jiménez Ram. Gro. SBC. Árbol o arbusto.
- 17.- J.fremontioides Standl. Oax., MX. Arbusto
- 18.- J.galvanii J. Jiménez Ram. et L.M. Jiménez Contreras. Gro, Mich. SBC. Árbol
- 19 .- J.giffordiana Dehgan et Webster.
  BC.MX.arbusto

- 20.-J.- hintonii Wilbur. Zac. Arbusto.
- 21.- J. jaimejimenezii Steinmann. Mich.
  Arbusto
- 22.-J. krusei J. Jiménez Ram. et Martínez-Gordillo. Gro. SBC.arbusto
- 23.-J. malacophylla Standl. Chih., Son., Sin., Jal., Oax. SMS, SBC. Arbusto

- 24- J. mcvaughii Dehgan et Webster. Sin., Jal.
  SBC, MX. Arbusto
- 25.-J. moranii Dehgan et Webster. BC. MX.
  Arbusto
- 26.- J. neopauciflora Pax. Pue, Oax. SBC, MX. Árbol o arbusto.
- 27.- J. oaxacana J. Jiménez Ram. et R. Torres. Pue., Gro., Oax. SBC, BE. Arbusto

- 28.- J. ortegae Standl. Sin. MX. Árbol
- 29.-J.- pereziae J.Jiménez Ram. Mich. SBC.Árbol
- 30.- J. peltata Jal., Sin., Nay., Mich., Gro.SBC, SMS. Árbol o arbusto.
- 31.- J. pseudocurcas Müll. Arg. Oax. Arbusto
- 32.-J. purpurea Rose. BC., Son., Sin. MX. Arbusto
- 33.-J. riojae Miranda. Pue. SBC. Arbusto

- 34.-J. rufescens Brandegee. Pue., Oax. BE. Árbol
- 35.J.-rzedowskii J.Jiménez Ram. Oax., Pue. SBC, MX. Arbusto
- 36.-J. sotoi-nunyezii Fernández Casas et Martínez Salas. Tamps., Ver.SBC.Árbol
- 37.-J. stephanii J. Jiménez Ram. et Martínez-Gordillo. Mich. SBC. Árbol
- 38.- J. sympetala S.F. Blake. Oax., Gro., Mich., Jal. SBC. Árbol

- 39.-J. tlalcozotitlanensis J. Jiménez Ram. Gro. SBC. Arbusto
- 40.- J. vernicosa Brandegee. BC. SBC. Arbusto
- 41.-J. websterii J. Jiménez Ram. Gro. SBC. Arbusto

#### Estados con más especies

- Guerrero 10
- Oaxaca 10
- Jalisco 9
- Michoacán 8
- Puebla 8
- Sonora 5

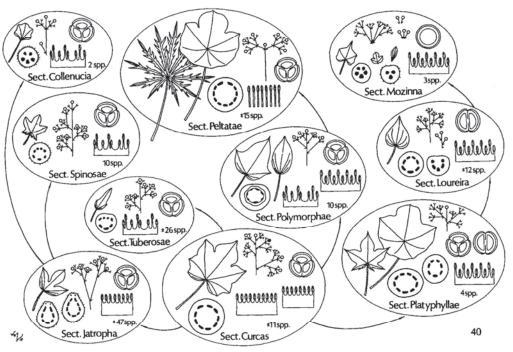


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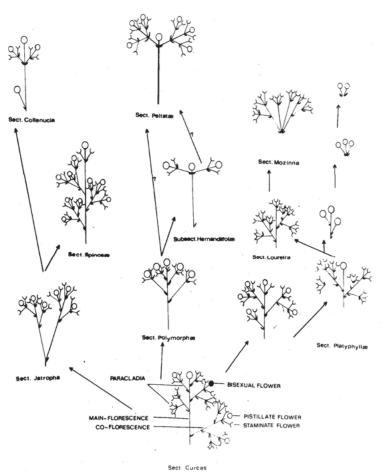
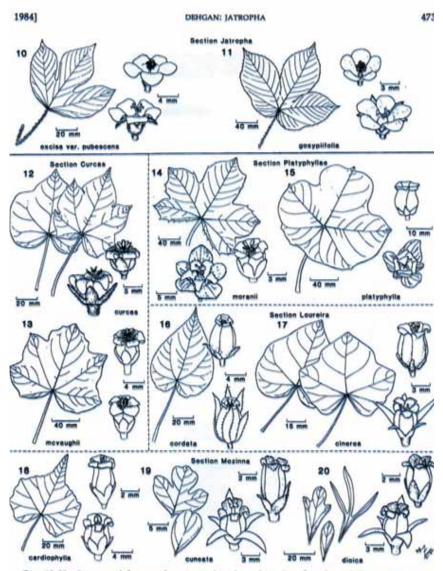


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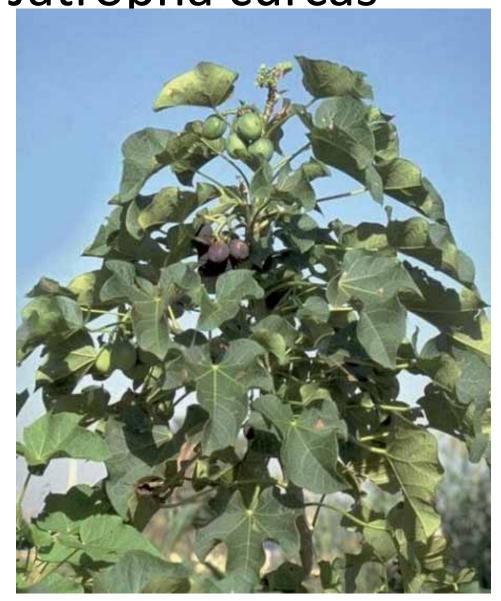


Figs. 10-20. Leaves and flowers of species in Jatropha. 10-11. Sect. Jatropha. 10. J. excisa Griseb. vas pubescens Lourteig & O'Donnell (B74.166—Argentina). 11. J. gossypiifolis L. (B74.016—India). 12-20. Subg Curcas. 12-13. Sect. Curcas. 12. J. curcas L. (B68.286—Senegal). 13. J. mcossghii Dehgan & Webster (B74.232—Mexico). 14-15. Sect. Platyphyllae. 14. J. moranii Dehgan & Webster (B75.052—Baja California). 15. J. platyphylla Muell. Arg. (B69.300—Mexico). 16-17. Sect. Loureira. 16. J. cordata (Ortega) Muell. Arg. (B72.129—

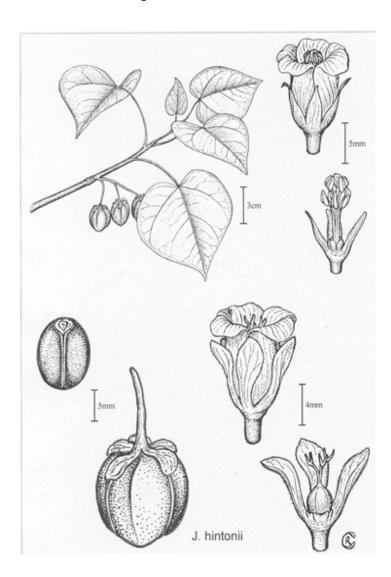
## Sección Curcas. Jatropha curcas



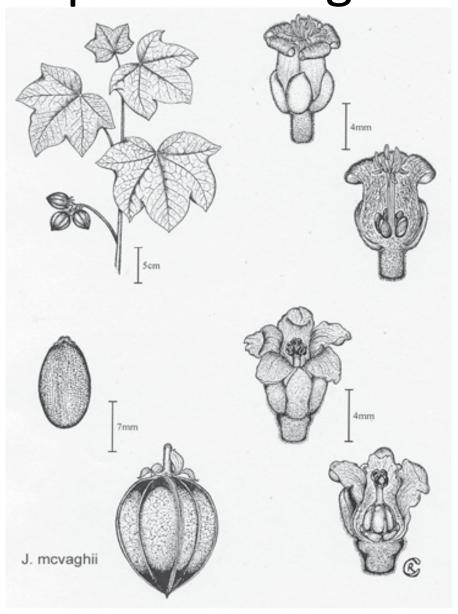
Jatropha curcas



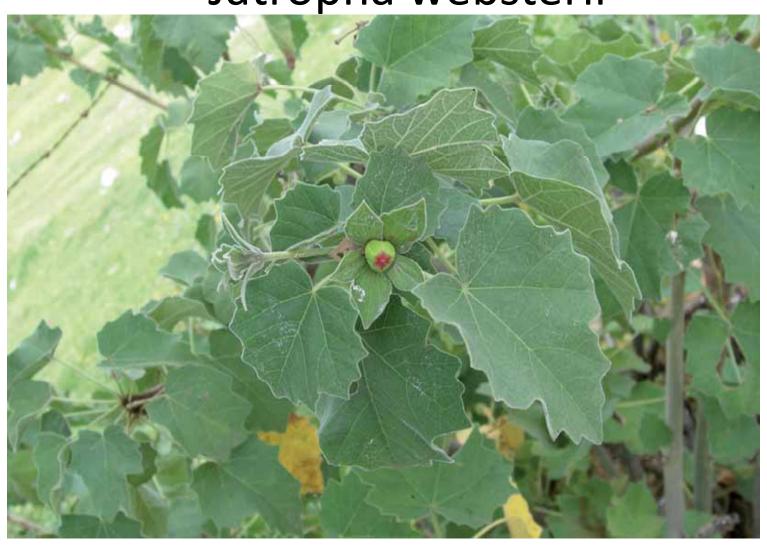
## Jatropha hintonii



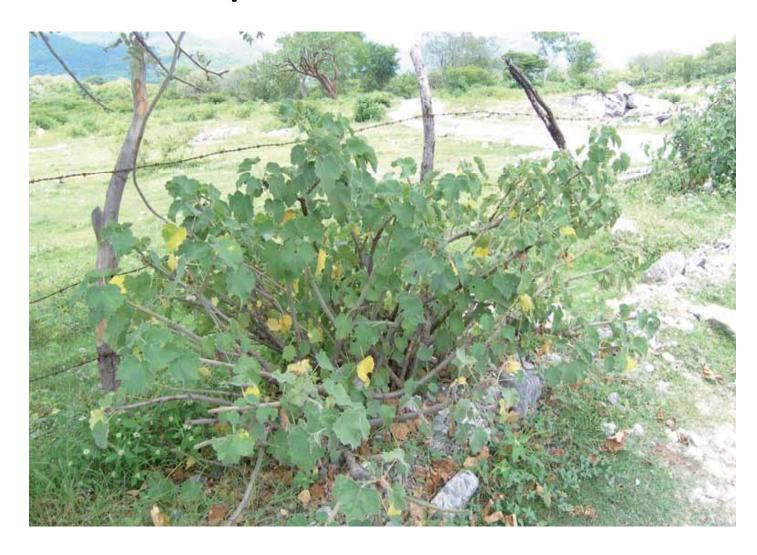
Jatropha mcvaughii

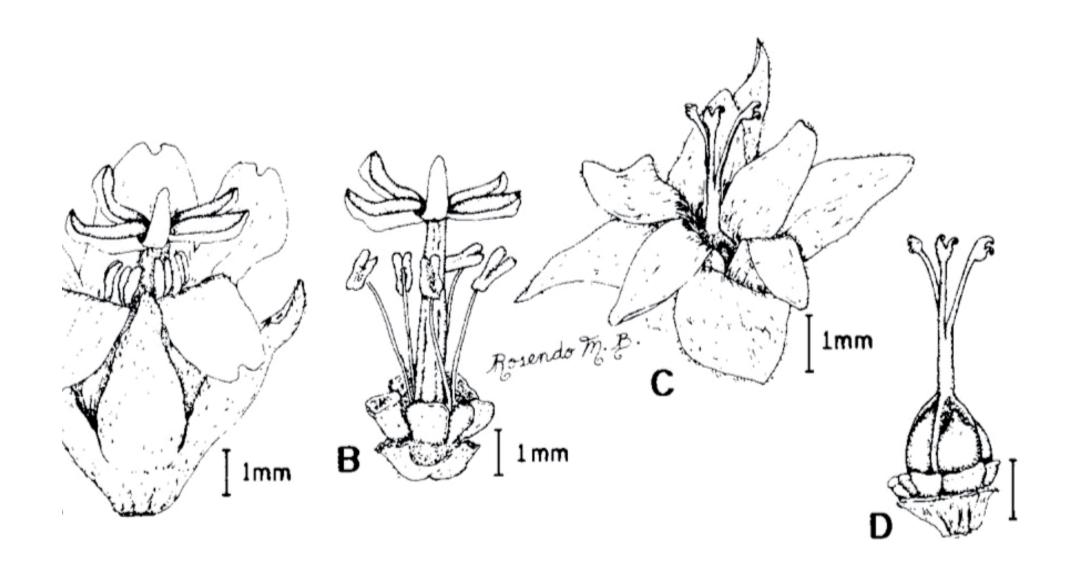


Sección Platyphyllae. Jatropha websterii



## Jatropha websterii





RA 2 Jatropha websteri (basado en J. Jiménez R.111). A. Flor estaminada completa. B. Flor estamir sin cáliz ni corola. C. Flor pistilada completa. D. Flor pistilada sin cáliz ni corola.

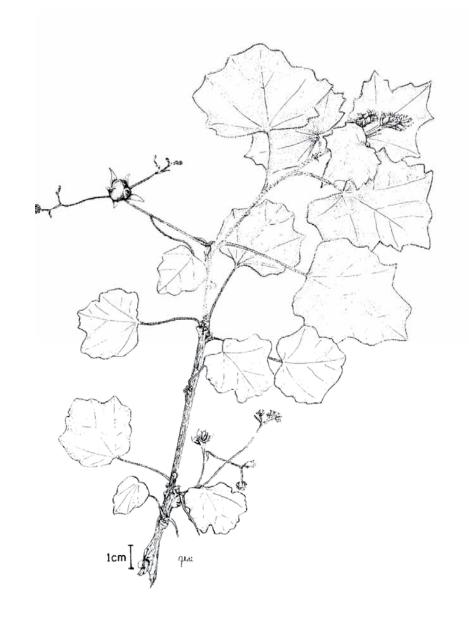
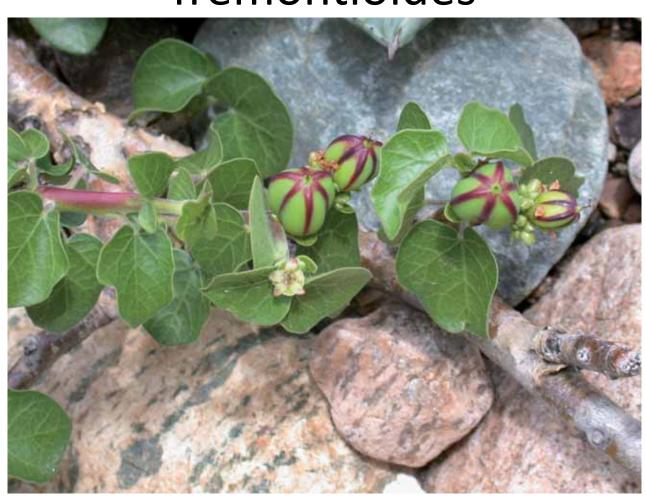


FIGURA 1. Jatropha websteri. Rama con inflorescencias (J. Jiménez R. 111).

# Sección Loureira (Cav.) Müell. Arg. Jatropha fremontioides



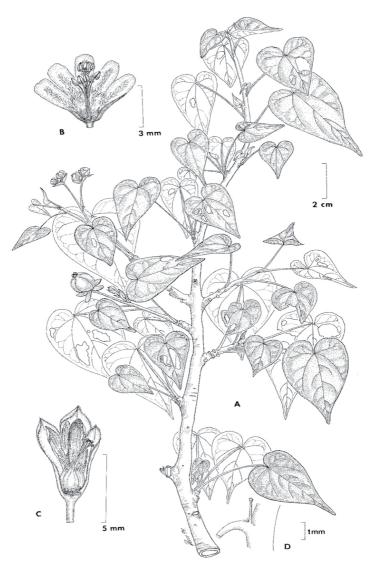


Fig. 1. *Jatropha krusei*. A. rama con flores y fruto inmaturo; B. flor estaminada; C. flor pistilada; D. estípula (*Kruse 2596*, MEXU).

# Jatropha sympetala



### Jatropha cinerea



#### Flor de Jatropha cinerea



# Fruto de Jatropha cinerea



#### Jatropha conzatti



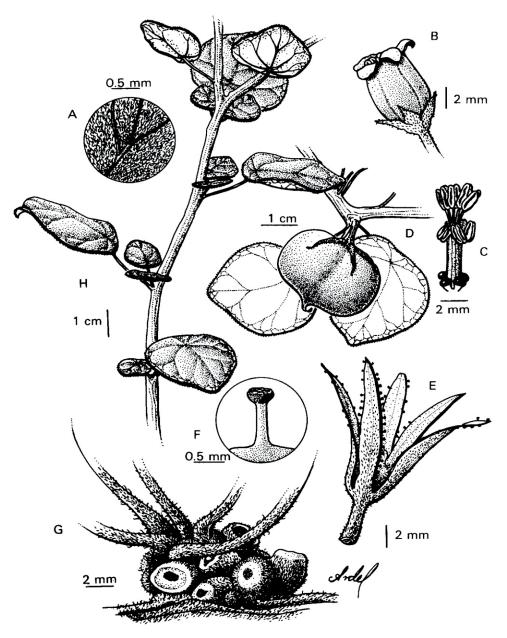
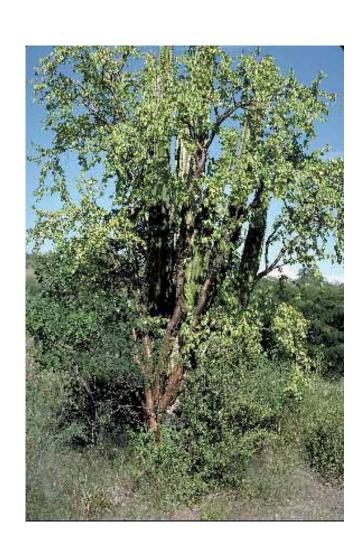


Fig. 1 Jatropha conzattii. A. Vestidura del envés. B. Flor estaminada. C. Estambres y glándulas del disco. D. Cápsula y fragmento de rama. E. Cáliz pistilado. F. Glándula marginal del cáliz pistilado. G. Braquiblasto con pecíolos. H. Aspecto general de la rama. A, D, E, F, G y H basada en M. Martínez Gordillo 378

#### Jatropha cordata



### Jatropha cordata



# Jatropha bullockii



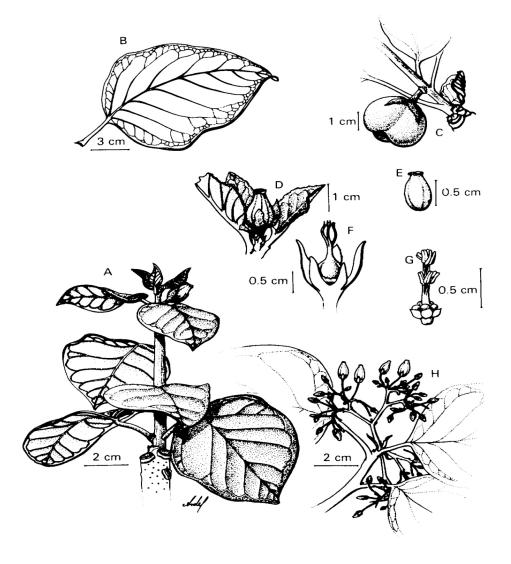
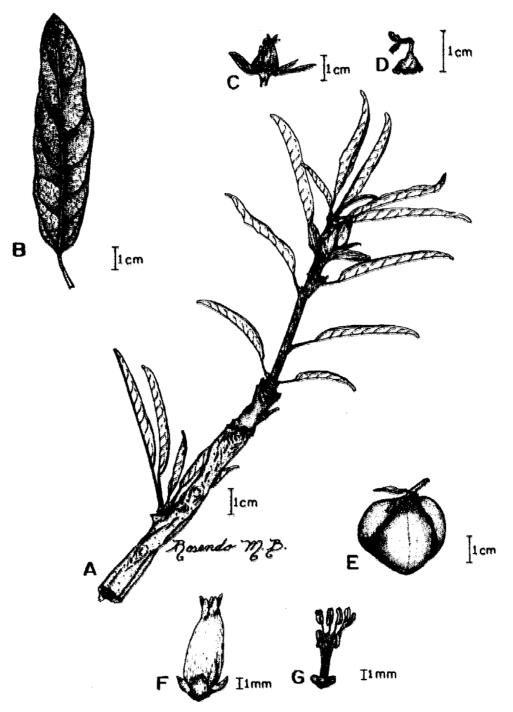


Fig. 1. Jatropha stephani. A. Rama joven. B. Hoja madura. C. Fruto inmaturo. D. Flor femenina y hojas jóvenes. E. Corola masculina. F. Cáliz y pistilo de la flor femenina. G. Cáliz, glándulas del disco y estambres de la flor masculina. H. Inflorescencia masculina. A, C, D y F basados en J. L. Contreras Jiménez 2758, B en E. Martínez 24320-A y E, G y H en J. L. Contreras Jiménez 2759.

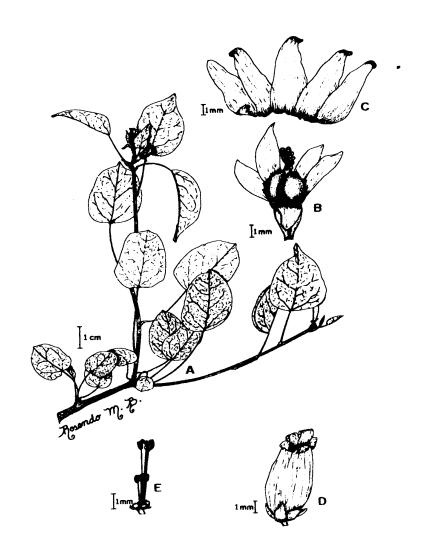
#### Jatropha chamelensis





ropha pereziae. A. Rama joven con una flor pistilada; B. Hoja madura; C. Flor pistilada; D.

# Jatropha dehganii

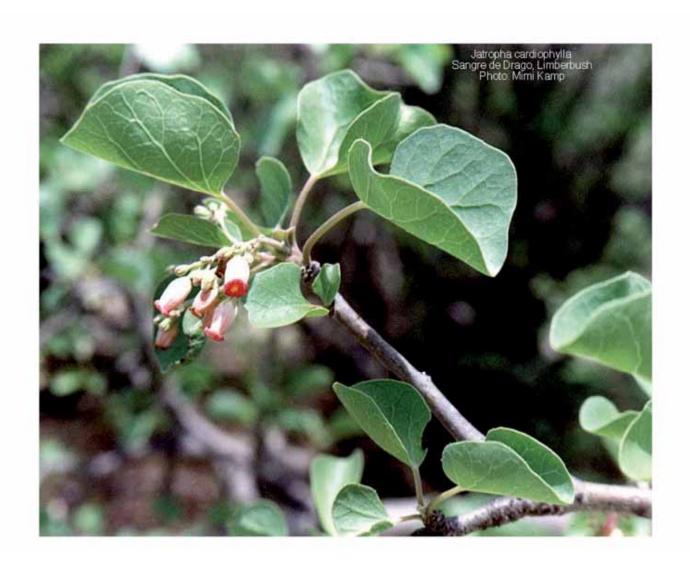


#### Sección Mozinna (Ortega) Pax

#### Jatropha cardiophylla



# Flor de Jatropha cardiophylla



### Jatropha dioica



### Jatropha elbae



#### Jatropha oaxacana



#### Jatropha oaxacana



#### Jatropha rzedowskii



#### Jatropha rzedowskii



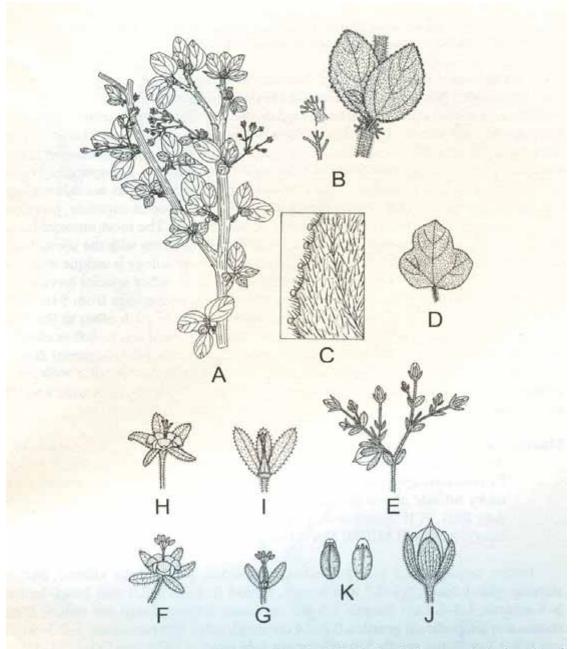


FIG. 4. Jatropha jaimejimenezii. A. Flowering branch, ×0.5. B. Node with leaves and stipules, ×1, and tail of two stipules. C. Leaf margin, ×5. D. 3-lobed leaf, ×0.4. E. Inflorescence, ×1. F. Staminate flower, .3. G. Staminate flowers with petals and two sepals removed, ×1. H. Pistillate flower, ×1.5. I. Pistillate wers with petals and two sepals removed, ×1.5. J. Capsule with accrescent sepals, ×1.2. K. Seed, dorsal d ventral views, ×1.2.