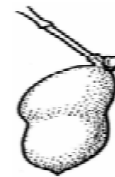


ILLUSTRATED KEY TO THE NEOTROPICAL GENERA OF ANNONACEAE

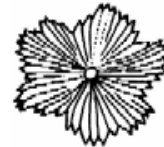
by Paul J.M. Maas

1a. Leaves spirally arranged; flowers 4(-6)-merous; indument composed of stellate hairs. The Amazon region and French Guiana in the North and the Pacific coast of Colombia in the West ... *Tetrameranthus*



1b. Leaves arranged in two rows along the stem (distichous); flowers 3-merous (very rarely 2-merous); indument of various types (simple, stellate, or scale-like hairs) ... 2.

2a. Indument composed of stellate or scale-like hairs (well visible with a hand lens); fruit pseudosyncarpous and carpels strongly coherent, but only partly connate, the lower carpels sterile and often forming a basal collar. From Costa Rica in the North to Bolivia and Paraguay in the South ... *Duguetia*



2b. Indument composed of simple hairs or lacking (hairs sometimes stellate in *Annona*, microscopic stellate to furcate hairs occur in *Anaxagorea*); fruit either apocarpous or syncarpous, but not as above ... 3.

3a. Flowers and fruit axillary (sometimes leaf-opposed in *Anaxagorea brevipes*) or sometimes arising from the trunk (cauliflorous); fruit apocarpous ... 4.

3b. Flowers and fruit terminal, leaf-opposed, or supra-axillary, rarely arising from the trunk; fruit apocarpous or syncarpous ... 22.

4a. Upper side of leaves with impressed midrib. ... 5.



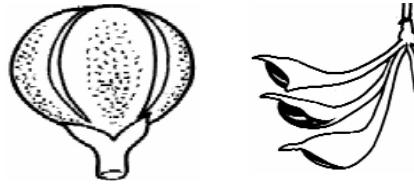
4b. Upper side of leaves with raised midrib. ... 14.



5a. Petals often thick and fleshy (2-10 mm thick) and covered with microscopic, brownish hairs; monocarps club-shaped, explosively dehiscent, 2-seeded. All over the Neotropics, except for the West Indian islands ...

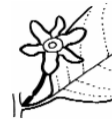
Anaxagorea

5b. Petals generally much thinner and covered with much larger hairs or glabrous; monocarps never club-shaped, generally globose to ellipsoid, indehiscent, or non-explosively dehiscent, 1-several-seeded ... 6.



6a. Pedicels with a suprabasal articulation (a few millimeters above the base of the pedicel). All over the Neotropics ... **Guatteria**

6b. Pedicels with a basal articulation ... 7.



7a. Sepals 2; petals 4; carpels 1(-2). Mexico ...

Tridimeris

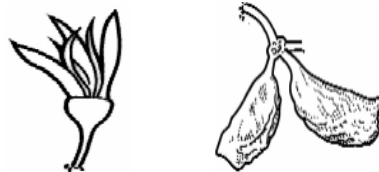
7b. Sepals 3; petals 6; carpels generally numerous ... 8.



8a. Monocarps dehiscent, 1-several-seeded; seeds distinctly arillate; young twigs mostly lenticellate; leaves generally small and narrow. All over the Neotropics ...

Xylopia

8b. Monocarps indehiscent, 1-several-seeded; aril absent or indistinct; young twigs not lenticellate; leaves mostly much larger and broader ... 9.



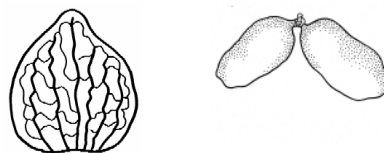
9a. Monocarps several-seeded ... 10.

9b. Monocarps 1-seeded ... 11.

10a. Petals often maroon, large, 10-80 by 10-50 mm, distinctly veined; inner petals much shorter than the outer ones; monocarps 1-12. SE USA to S Canada ...

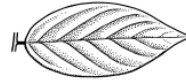
Asimina

10b. Petals mostly white, 7-23 by 1-3 mm, not veined; petals subequal or inner petals longer than the outer ones; monocarps 1-2. Tropical South America, but mainly Amazonian ... **Diclinanona**



11a. Upper side of leaves with distinctly impressed venation; monocarps long-stipitate (stipes 5-35 mm)

long); petals 8-12 mm long. Tropical South America, but mainly in NE Brazil ... *Ephedranthus*



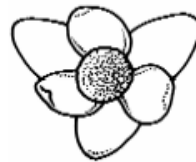
11b. Upper side of leaves with flat, not or slightly impressed venation; monocarps short- to long-stipitate; petals 4-70 mm long ... 12.

12a. Pedicels bearing 3-6, tiny bracts; stipes of monocarps under 8 mm long; petals 4-8 mm long; all flowers bisexual. All over the Neotropics ... *Oxandra*



12b. Pedicels provided with 1-2 bracts; stipes of monocarps over 10 mm long, generally much more; petals 7-70 mm long; flowers androdioecious (male and bisexual flowers present) ... 13.

13a. Pedicels with 1 bract above the articulation; petals 8-21 mm long, spreading and leaving the floral center uncovered; raphe of seeds raised, straight. Western South America ... *Pseudomalmea*



13b. Pedicels without a bract above the articulation; petals 10-30 mm long, concave, covering the floral center; raphe of seeds impressed, straight to slightly sinuous. Tropical South America up to Costa Rica in the North ... *Klarobelia*



14a. Petals often fleshy (2-10 mm thick) and covered with microscopic, brownish hairs; innermost stamens staminodial; monocarps club-shaped, explosively dehiscent, 2-seeded. All over the Neotropics, except for the West Indian islands ... *Anaxagorea*



14b. Petals generally much thinner and covered with much larger hairs or glabrous; all stamens fertile or outermost stamens staminodial (*Fusaea*); monocarps globose to ellipsoid, indehiscent or non-explosively dehiscent, 1-several-seeded ... 15.

15a. Leaves with distinct marginal vein, almost touching the margin (except in *P. espirito-santensis*); petals 4-15 mm long. Tropical South America ...



Pseudoxandra

15b. Leaves without a marginal vein (except in *Oxandra* p.p., but then much further removed from the

margin); petals 4-35 mm long ... 16.

16a. Lower side of leaves glaucous; monocarps transversely ellipsoid, 1-seeded; petals 25-35 mm long.

Western part of South America ... *Ruizodendron*



16b. Lower side of leaves not glaucous; monocarps ellipsoid to globose, 1-several-seeded; petals 4-20 mm long ... 17.

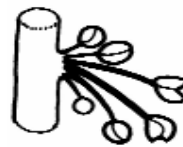
17a. Monocarps 1-2, sessile, 2-4-seeded; petals 4-8.5 mm long, provided with a small, incurved, tail-like, apical appendage. Tropical South America ...



Onychopetalum

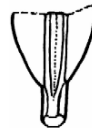
17b. Monocarps generally much more (up to 30), mostly distinctly stipitate, often 1-seeded; petals 2.5-20 mm long, without an apical appendage ... 18.

18a. Leaves asymmetrical; petals 2.5-4.5 mm long; monocarps 1-seeded (except in *B. pleiosperma*), shortly stipitate. Tropical South America. ... *Bocageopsis*



18b. Leaves symmetrical; petals mostly > 5 mm long; monocarps 1-several-seeded, mostly distinctly stipitate ... 19.

19a. Upper side of leaves with a distinctly grooved midrib. From Costa Rica in the North to Bolivia in the South, eastwards up to the Guianas, and S of the Amazon River ... *Crematosperma*



19b. Upper side of leaves with a non-grooved midrib ... 20.

20a. Leaves with distinctly raised veins on both sides; petals 10-15 mm long; seeds 25-30 mm long. Amazonian SW Venezuela and adjacent Brazil ...



Pseudephedranthus

20b. Leaves with veins on the upper side (except for the raised midrib) not or indistinctly raised; petals 4-10 mm long; seeds 8-20 mm long ... 21.

21a. Inflorescences often 1-flowered and shortly pedicellate, the flower stalk densely beset with 3-6 bracts; apical prolongation of connective tongue-shaped; monocarps 1-seeded. All over the Neotropics ...



Oxandra

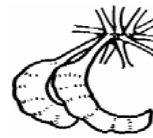
21b. Inflorescences often branched, if 1-flowered, the flower stalk not densely beset with bracts; apical prolongation of connective discoid; monocarps 1-several-seeded; seeds pitted. From Mexico (Oaxaca) in the North to Bolivia, N Paraguay, and S Brazil in the South ... ***Unonopsis***



22a. Bracts absent ... 23.

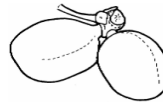
22b. Bracts present ... 29.

23a. Flowers pendent on long (40-60 mm) pedicels; inner petals boat-shaped. All over the Neotropics, except for the West Indian islands ... ***Cymbopetalum***



23b. Flowers non-pendent and pedicels much shorter; inner petals not boat-shaped ... 24.

24a. Leaves asymmetrical; monocarps 20-90 by 30-40 mm, thick-walled (wall 2.5-4 mm thick). From Costa Rica in the North through Western South America to Bolivia, and SE Brazil ... ***Porcelia***



24b. Leaves symmetrical; monocarps smaller, thin-walled ... 25.

25a. Petals basally connate ... 26.

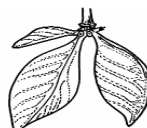
25b. Petals free ... 27.

26a. Petals basally connate into a tube of 2-4 mm long; monocarps dehiscent, falciform, yellow or orange; aril fleshy, 2-lobed. Tropical South America ...



Cardiopetalum

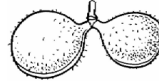
26b. Petals free; monocarps indehiscent, fusiform to linear, green; aril fibrous. Western South America ...



Froesiodendron

27a. Leaves triplinerved at the base; monocarps 3-9;

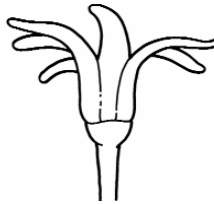
flower buds globose; stamens .c. 40. Tropical South America, lacking in the central Amazon basin ...



Trigynaea

27b. Leaves not triplinerved at the base; monocarps 1-3; flower buds globose or conical; stamens <20. E and SE Brazil ... 28.

28a. Flower buds conical; petals linear, recurved to patent; calyx cup-shaped, without distinct lobes; flowers solitary or in many-flowered inflorescences; inflorescences often flagellate and produced from the main stem. E and SE Brazil ... ***Hornschuchia***



28b. Flower buds globose; petals ovate to elliptic, erect; calyx distinctly 3-lobed; flowers solitary. E and SE Brazil ... ***Bocagea***

29a. Upper side of the leaves with raised midrib ... 30.

29b. Upper side of the leaves with impressed midrib ... 31.

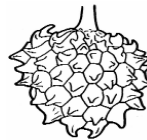
30a. Fruit apocarpous, the monocarps distinctly stipitate; seeds pitted; sepals <5 mm long; inner base of inner petals with food bodies. From Mexico in the North to Peru in the South ... ***Mosannonia***



30b. Fruit pseudosyncarpous, the carpels strongly coherent; seeds smooth; sepals >9 mm long; petals without food bodies. Amazonian Brazil (Upper Rio Negro) ... ***Duckeanthus***

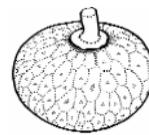


31a. Flowers winged; fruit syncarpous (very rarely apocarpous). All over the Neotropics ... ***Annona p.p.***



31b. Flowers not winged; fruit apocarpous or syncarpous ... 32.

32a. Outermost stamens staminodial; fruit syncarpous and provided with an almost woody basal collar. Tropical South America ... ***Fusaea***

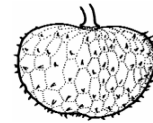


32b. All stamens fertile; fruit apocarpous or syncarpous, but then without a basal collar ... 33.

33a. Fruit syncarpous, each carpel 1-seeded; petals often thick and fleshy. All over the Neotropics ...

Annona

33b. Fruit apocarpous, each monocarp 1-several-seeded; petals thin ... 34.



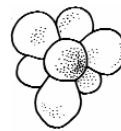
34a. Pedicels often provided with 1 leafy bract. Mexico and Central America and adjacent N Colombia ...

Desmopsis

34b. Pedicels without leafy bracts ... 35.

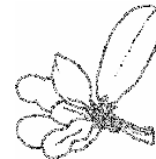


35a. Monocarps 1-seeded; petals yellow to cream, margins ciliate. From Panama in the North to Peru in the South, also 1 species in SE Brazil (Bahia) ... *Malmea*



35b. Monocarps 1-several-seeded; petals red, purple, brown, or rarely cream, not ciliate ... 36.

36a. Petals distinctly veined, length-width ratio 2-5; flowers often with a fetid scent; monocarps 13-100 mm long; seeds with lamellate rumination. Mexico and Central America ... *Sapranthus*



36b. Petals not distinctly veined, length-width ratio 5-20; flowers without a fetid scent; monocarps 10-30 mm long; seeds with spiniform rumination. Mexico, Central America to the Pacific coast of Colombia ... *Stenanona*

