KEY TO CROTON IN SOUTHERN BRAZIL

1 Indumentum of foliage never truly lepidote (radii may be in one plane)

2 Leaves unlobed or slightly lobed
   bisexual
   3 Lower nodes of inflorescence with both staminate and pistillate flowers;
   leaves glandular at base. CYCLOSTIGMA
   4 Styles 4-fid to multifid subsect. Palamos stigma
   5 Leaves distinctly palmatinerved

   6 Stamens 50 or more; seeds ribbed
      7 Stems and foliage densely floccose; petioles 2.5-5 mm thick;
         stamens c. 100 vulnarius
      7 Stems and foliage less densely floccose, the petioles 1-2 mm
         thick; stamens 50-70

   8 Fruiting sepals c 3 mm celtidifolius
   8 Fruiting sepals 7-8 mm alchorneicarpus

   6 Stamens less than 25; seeds smooth
   5 Leaves pinnatinerved; stamens less than 25
      subsect. CYCLOSTIGMA Styles bifid; stamens 15-20; leaves, c. 30, less
      glandular, exude macrobotrys
      4 Styles bifid; stamens 15-20; leaves, c. 30; less, glandular, exude macrobotrys
      7 Stipules foliaceous; filaments pilose
      7 Stipules narrow; filaments glabrous

   3 Lower nodes of bisexual inflorescences with pistillate flowers only

   8 Pistillate sepals reduplicate-valvate; trichomes stellate (or if stellate-lepidote,
      9 Styles multifid
      10 Stamens 13-16; [Calyx (+ Venet)]

     11 Stipules mostly 10-15 mm long, 1 mm broad or more; hairs on upper leaf surface stellate-lepidote; fruiting pedicel
        5-8 mm long; capsule echinate

     11 Stipules 2-3 mm long, less than 1 mm broad; hairs on lower leaf surface stellate-lepidote; fruiting pedicel 2-3 mm long; capsule
        not echinate

     10 Stamens 8-11; fruiting pedicel less than 1 mm long; pistillate
        sepals dentate
          [Calyx + si + Reduplicate] Cucumis c. 1

     10' Pistillate sepals, having 3 or 5, 5.5 cm or less, c. 2, 3.5 mm
        angustil., 3 x 2.5 mm

     8 Pistillate sepals, angled 0.5 cm or
          10' Cucullae, less than 1 mm long; pistillate
        sepals dentate
          [Calyx + Reduplicate] CODONOPHYLLUS

     10' Cucullae, 3 x 2.5 mm

     9 Stipules plump

     10' Cucullae, less than 1 mm long; pistillate
        sepals dentate
9 Styles bifid; stipules glandular-dentate

12 Monoecious; ovary stellate-tomentose; pistillate sepals entire

12 Dioecious [CUDONOCALYX]

13 Pistillate sepals dentate; ovary stellate-tomentose

13 Pistillate sepals entire

14 Ovary glabrous

14 Ovary stellate-tomentose

15 Pistillate sepals c. 10 mm long

15 Pistillate sepals c. 5 mm long

8 Pistillate sepals not reduplicate-valvate

16 Styles multifid; plants unisexual or bisexual.

17 Leaves glandular at base, penninerved

18 Leaves entire; smooth and nearly glabrous above;
   stamens 12-15, filaments villose

18 Leaves coarsely serrate, scabrid above;
   stamens 9 or 10, filaments glabrous

17 Leaves eglandular at base

18 Leaves glabrous above; pistillate sepals unequal; stipules dentate

18 Leaves stellate above; pistillate sepals not unequal

19 Stipules entire; calyx not glandular-serrate

20 Ovary stellate-tomentose; pistillate sepals entire;
   leaves not over 0.5 cm broad

21 Filaments nearly glabrous; stipules ovate

21 Filaments villose; stipules narrower

20 Ovary glabrous; pistillate sepals glandular-dentate;
   leaves 1 cm broad or more, with colored margin

19 Stipules glandular-dentate or lobed

22 Pistillate sepals over 1 cm long in fruit; stems long-hirsute; staminate sepals 5-6 mm long

22 Pistillate and staminate sepals smaller
23 Inflorescences head-like; pistillate sepals glandular-toothed but not glandular-setose [LIMANDRA] [MEDCA]

24 Filaments pubescent

25 Bracts comose; leaves not impressed-punctate heterodoxus

25 Bracts not comose; leaves impressed-punctate 'dichotomus'

24 Filaments glabrous

26 Leaves dentate throughout; seeds rugulose serratus

26 Leaves dentate only in distal half; seeds smooth debilis

23 Inflorescences more or less elongated; pistillate sepals glandular-setose

27 Styles twice bifid but not flabellate; anthers pubescent

28 Leaves glandular-serrate; staminate petals pubescent on both faces; filaments hirsutulous below vestitus

28 Leaves entire; staminate petals glabrous on inner face; filaments hirsutulous throughout T. fuscum

27 Styles with flabellate branches; anthers glabrous josephinus

29 Leaves entire garckeanus

29 Leaves serrate

30 Filaments glabrous; seeds smooth serratifolius

30 Filaments hirsutulous; seeds rugulose MYRIOGYPHOMPHOS

31 Bracts entire; stipules linear-lanceolate chaetophorus

31 Bracts pinnatifolobed; stipules triangular fuscus

16 Styles bifid; plant bisexual

23a Leaves glandular at base CASCARILLA

32 Leaves glandular at base l

33 Stamens 17-15 or more

34 Leaves glabrous above

35 Stems conspicuously setose (hairs over 1 mm); seeds rugulose kleini

35 Stems not conspicuously setose

36 Leaves stellate-tomentose beneath; seeds rugulose hilarii/confinis

36 Leaves stellate-lepidote beneath; seeds smooth on back patrum ichthygaster
34 Leaves pubescent above

37 Leaves with appressed stellate hairs above, obtuse or acute

38 Pistillate sepals not unequal; seeds 5 mm long

38 Pistillate sepals unequal; seeds 4-4.5 mm long

37 Leaves with spreading hairs above, acuminate

33 Stamens 9-11

39 Shrubs or large coarse herbs; pistillate sepals not markedly unequal

40 Stipules and pistillate sepals not stipitate-glandular

41 Leaves obovate, coarsely dentate, palmatinerved, tomentose beneath; pistillate pedicel 4-5 mm long; receptacle of staminate flower lanate

41 Leaves oblong, less coarsely dentate, penninerved, appressed-stellate beneath; pistillate flowers subsessile, fruiting pedicel c. 1 mm long; receptacle of staminate flower nearly glabrous

40 Stipules and pistillate sepals stipitate-glandular; leaves ovate, coarsely crenate, palmatinerved, villose beneath

39 Herbs with serrate leaves, pistillate flowers clustered at the base of short (0.5-2 cm) inflorescences

42 Pistillate flowers separated from males by a distinct gap (usually well over 1 cm); pistillate sepals not markedly unequal

42 Pistillate flowers not separated from males by a distinct gap; pistillate sepals distinctly unequal

42a Leaves entire, 4-4.5 mm long; seeds tuberculose

43 Leaves coarsely and sharply serrate; stamens 8-10; styles less than 1.5 mm long

43 Leaves finely or bluntly toothed; stamens mostly 11; styles over 1.5 mm long, erect

44 Stems coarsely hispid; leaves pointed at tip, petiolar glands stalked; bracts with gland-tipped processes; seeds 2.6-3.1 mm long

44 Stems not coarsely hispid; leaves blunt at tip, petiolar glands sessile; bracts eglandular; seeds 2.8-3.5 mm long
32 Leaves eglandular at base

33' Stamens 15-20; stipules obsolete or absent

33'' Capsule subglobose

34' Filaments pubescent

34'' Capsule subglobose

35' Leaves glabrous above, stipules obsolete; seeds smooth, 4 mm long

35' Leaves pubescent above

36' Stems stiffly long-hirsute; staminate petals glabrous on both faces

36' Stems loosely tomentose; staminate petals pubescent (?)

37' Stems pannose

37' Stems closely tomentose

34' Capsule elliptic; anthere broad

34' Filaments glabrous; seeds ribbed (?)

33' Stamens 9-12; stipules developed

38' Leaves entire, penninerved, densely pubescent above; seeds minutely punctate

38' Leaves coarsely serrate, palmatinerved, glabrescent above; seeds smooth on the back

occidentalis

ypanemensis

grandivelum

campestris

regnellianus

incertus

incertus

dracunculoide

chorchoropsis

glechomifolius
Key to Croton in S Brazil: p. 5

2 Leaves (at least in part) distinctly 3-5-lobed; staminate receptacle glabrous or nearly so

45 Stems woody at base, tomentose above; leaves entire and 3-lobed ■ paulinus
45 Stems herbaceous, hirsute above; leaves all 3-lobed ■ lobatus

1 Indumentum of foliage lepidote (at least on lower surface)

46 Pistillate sepals reduplicate-valvate; leaves stellate-lepidote beneath, eglandular ■ floribundus
46 Pistillate sepals not reduplicate-valvate

47 Styles 4-fid to multifid; leaves eglandular at base or Codon

48 Leaves glandular at base; ovary stellate-tomentose; filaments pubescent; ■ pycnocephalus
49 Monoecious; staminate bracts exerted; calyces with 1-1.5 mm spines 314-16
49 Dioecious; staminate bracts not exerted ■ leptophyllus
48 Leaves eglandular at base

50 Leaves lepidote above; stamens 11; ovary lepidote pubescent ■ cinerellus
50 Leaves / above; ovary stellate-tomentose

51 Leaves stellate above; scales on lower surface denticulate; stamens 13 ■ serpyllifolius
51 Leaves with simple hairs above; scales on lower surface deeply divided (stellate-lepidote); stamens 11 ■ fallax

7 Styles bifid

52 Leaves glandular at base, stellate-puberulent above; stamens 12-18, densely lanate below; ovary stellate-tomentose; seeds rugose ■ stenotrichus
52 Leaves eglandular at base; pistillate sepals unequal

53 Leaves glabrous above ■ gaudichaudii
54 Monoecious; petals not lepidote ■ uruguayensis
54 Dioecious; petals lepidote
53 Leaves not glabrous above

55 Leaves with simple hairs above, stellate-lepidote beneath; stamens 11, filaments glabrous ■ ceanothifolius
55 Leaves with compound hairs above
56 Leaves with stellate hairs above
Key to Croton in S Brazil: p. 6

57 Ovary stellate-tomentose; scales on lower leaf surface deeply divided
   ... man...  
   57 Ovary lepidote; scales on lower leaf surface denticulate
   56 Leaves lepidote on both faces; pistillate sepals unequal
   58 Dioecious

58 Monoecious
   59 Pistillate sepals lepidote outside, stellate inside; stamens 15
   60 Bracts lacinate; indumentum pale
   59 Pistillate sepals lepidote on both faces; stamens 11
   56' Leaves with stipitate scales; stamens 16-20; filaments hirsutulous

56' Leaves lepidote beneath (radii of scales united more than \( \frac{1}{2} \)); seeds
55' Pistillate sepals c. 2 mm long;
54' Leaves stellate-lepidote beneath (radii of scales united less than \( \frac{1}{2} \)); seeds
   54' Leaves lepidote beneath (radii of scales united more than \( \frac{1}{2} \)); seeds
   smooth, 4 mm long
   55' Pistillate sepals c. 3.5 mm long, obovate

53' Leaves glabrous above; stamens 11
   54' Leaves stellate-lepidote beneath (radii of scales united less than \( \frac{1}{2} \)); seeds
   linearifolius
   55' Pistillate sepals c. 2 mm long;
55' Pistillate sepals c. 3.5 mm long, obovate

53' Leaves stellate above
   56' Leaves stellate-lepidote beneath (radii of scales united less than \( \frac{1}{2} \))
   57' Stamens mostly 14-16
   57' Stamens mostly 11

58' Leaves and bracts ovate
59' Leaves obovate, bracts elliptic
60 Bracts entire; indumentum ferrugineus

52' Pistillate sepals not markedly dissimilar
53' Leaves glabrous above; stamens 11
   54' Leaves stellate-lepidote beneath (radii of scales united less than \( \frac{1}{2} \)); seeds
   ventrally ribbed, 3.5 mm long
   54' Leaves lepidote beneath (radii of scales united more than \( \frac{1}{2} \)); seeds
   55' Pistillate sepals c. 2 mm long;
55' Pistillate sepals c. 3.5 mm long, obovate

53' Leaves stellate above
56' Leaves stellate-lepidote beneath (radii of scales united less than \( \frac{1}{2} \))
   57' Stamens mostly 14-16
   chloroleucus
   57' Stamens mostly 11
   58' Leaves and bracts ovate
   59' Leaves obovate, bracts elliptic
   56' Leaves lepidote beneath (radii of scales united more than \( \frac{1}{2} \))
   parvulus
   thymelinus
   clusenii
   migrans