

CNEORACEAE

牛筋果科 niu jin guo ke

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Shrubs (sometimes scrambling or rarely somewhat climbing) or rarely small trees, monoclinal or andromonoecious, armed or unarmed, apparently without oil glands. Stipules absent. Leaves alternate, simple, odd-pinnate, or digitately trifoliolate; blades of simple leaves entire at margin, those of compound leaves crenulate, crenate, lobulate, or rarely entire at margin. Flowers solitary and axillary or in terminal and/or axillary cymes, racemes, or rarely thyrses, actinomorphic, hypogynous, 3–5(or 6)-merous. Sepals distinct or connate to ± half their length. Petals distinct, imbricate or narrowly so in bud. Stamens equal to or 2 × as many as petals, inserted in lateral pits on disk or at base of disk; filaments distinct, linear, with or without adaxial ligulate appendage at base; anthers longitudinally dehiscent. Disk within androecium, nectariferous, columnar to barrel-shaped or pulvinate to cup-shaped. Gynoecium 3–5(or 6)-carpellled and -loculed; ovaries axially or ± completely connate; placentation apical-axile; ovules pendulous, solitary or collateral in each locule; style terminal, stylar elements coherent or rarely distinct at base; stigma 3- or 4-branched or capitate (often slightly lobed). Fruit drupaceous, of separating mericarps or ± completely syncarpous, drying brown to black or rarely pale gray-brown when ripe; abortive carpels, if any, persistent; outer pericarp (exocarp and mesocarp) ± fleshy; endocarp bony next to locule(s), otherwise woody, in mericarps developed from 2-ovuled carpels forming a median longitudinal partial partition within locule. Seeds pyriform or rarely irregular in shape; seed coat membranous or thin and brittle; endosperm copious or ± scant, fleshy; embryo relatively large, bent double or rarely broadly horseshoe-shaped; cotyledons plano-convex and linear or ± flattened and elliptic-oblong; hypocotyl superior.

Two genera and six species: tropical Africa, S and SE Asia, N Australia, Canary Islands, NW Mediterranean region, Cuba; one species in China.

As here circumscribed, the Cneoraceae consist of two genera: *Cneorum* Linnaeus and *Harrisonia*. *Cneorum* comprises three species: *C. tricoccon* Linnaeus, native of the NW Mediterranean region; *C. pulverulentum* Ventenat, of the Canary Islands; and *C. trimerum* (Urban) Chodat, of Cuba.

In the study of five collections each of *Cneorum pulverulentum* and *C. tricoccon*, and two of *C. trimerum*, the second author has observed gland-like structures in some of the leaf blades of each species, but in being opaque, very irregular in distribution on the blade, and irregular in shape (mostly ± isodiametric but some considerably longer than wide) they are quite unlike those seen in Rutaceae (see discussion paragraph following the description of Rutaceae in this volume) and are probably not oil glands.

Chen Pangyu. 1997. *Harrisonia*. In: Chen Shukun, ed., Fl. Reipubl. Popularis Sin. 43(3): 15–16.

1. HARRISONIA R. Brown ex A. Jussieu, Mém. Mus. Hist. Nat. 12: 517. 1825, nom. cons., not *Harrisonia* Adanson ex Léman (1821).

牛筋果属 niu jin guo shu

Shrubs (often scrambling or rarely somewhat climbing) or rarely small trees, armed. Leaves odd-pinnate or digitately trifoliolate; leaflet blades crenulate to lobulate or rarely entire at margin. Flowers in terminal and/or axillary cymes, racemes, or rarely thyrses, 4- or 5(or 6)-merous. Stamens 2 × as many as petals; filaments inserted at base of disk, with hairy ligulate appendage at base. Disk pulvinate to cup-shaped. Gynoecium 4- or 5(or 6)-carpellled and -loculed; ovaries ± completely connate; ovules 1 per locule; stylar elements sometimes distinct at base, otherwise coherent; stigma capitate and often slightly lobed. Fruit subglobose, completely syncarpous or slightly lobed, drying black when ripe. Seeds pyriform; seed coat thin and brittle; endosperm ± scant; embryo bent double; cotyledons ± flattened, elliptic-oblong.

Three species: tropical Africa (*Harrisonia abyssinica* Oliver), S and SE Asia (*H. perforata* and *H. brownii* A. Jussieu), N Australia (*H. brownii*); one species in China.

In the study of fresh material of *Harrisonia brownii* and relevant herbarium specimens at hand (which comprise 30 collections of *H. brownii*, nine of *H. perforata*, and four of *H. abyssinica*), we have found no evidence (with the possible exception of occasional specimens of *H. perforata*; see description below) that the plants produce oil glands.

1. *Harrisonia perforata* (Blanco) Merrill, Philipp. J. Sci., C, 7: 236. 1912.

牛筋果 niu jin guo

Paliurus perforatus Blanco, Fl. Filip. 174. 1837; *Feroniella pubescens* (Wallich ex J. D. Hooker) Tanaka; *Harrisonia citrinocarpha* Elmer; *Lasiolepis multijuga* Bennett; *L. paucijuga* Ben-

nett & R. Brown; *Limonia pubescens* Wallich ex J. D. Hooker; *P. dubius* Blanco.

Shrubs nearly erect or somewhat climbing, 1–2 m tall. Leaves odd-pinnate, 3–17-foliolate, 3–14 cm; rachis usually winged; leaflet blades equilaterally or inequilaterally ovate to obovate, 1.5–4.5 × 0.7–2 cm, margin crenulate or sometimes entire, in occasional specimens some crenulations with pellucid

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cavities that seem to lack oil and may be hydathodes. Inflorescences cymose to racemose, to 3 cm, few to many flowered. Flowers bisexual, mostly 5-merous. Sepals ca. 1.5 mm, connate at base or to \pm half their length. Petals ovate-elliptic or lanceolate, 5–7 mm. Stamens to 9 mm. Gynoecium usually 5-carpelled and -loculed; ovary glabrous, slightly lobed, ca. 1 mm; style

pubescent, to 8 mm. Fruit subglobose, entire or slightly lobed, 1–1.5 cm in diam.; endocarp ca. 1 mm thick. Seeds ca. 3.5 mm. Fl. Apr–May, fr. May–Aug.

Sparse forests, scrub; low elevations. SW Guangdong (Leizhou Bandao), Hainan [Cambodia, India (Andaman Islands), Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam].