

Abreae (5.01)

Genus: *Abrus* M. Adanson

Phylogenetic Number: 5.01.

Tribe: Abreae.

Species Studied—Species in Genus: 10 spp.—17 spp.

Fruit a legume; unilocular; 3–4.5 × 1 × 0.5 cm; with deciduous corolla; with deciduous calyx; straight; not plicate; not twisted; asymmetrical or symmetrical; oblong; with 1 straight and 1 curved suture; widest near middle or D-shaped; not inflated; compressed; without beak; short tapered at apex; apex aligned or right-angled with longitudinal axis of fruit; short tapered or rounded at base; base oblique with longitudinal axis of fruit (slightly); with the apex and base uniform in texture; coriaceous; seed chambers externally visible or invisible; with the raised seed chambers not torulose. Fruit margin not constricted; without sulcus; plain. Fruit wings absent. Fruit substipitate. Fruit with all layers dehiscent; splitting along sutures. Dehiscence of valves along 1 or along both sutures; apical and down; active; with valves twisting. Replum invisible. Epicarp dull; monochrome; tan; pubescent but soon deciduous; with 1 type of pubescence; puberulent; with pubescence gray-brown or gray; with pubescence uniformly distributed; with simple hairs; pliable; with hair bases plain; eglandular; without spines; smooth (nearly); not veined; not tuberculate; checking; with or without cracks; cracking oblique to fruit length. Mesocarp thin; 1-layered; without balsamic vesicles; solid; ligneous (sub). Endocarp dull; monochrome; tan or white; smooth; septate (fragile and conspicuously developed to slightly developed septa) or subseptate; with septa thin (tissue paper-like), flexible; with the septa eglandular; coriaceous; not exfoliating (though somewhat in *A. precatorius*); remaining fused to epicarp; entire. Seeds 3–7; length oblique to fruit length (slightly); neither overlapping nor touching; in 1 series. Funiculus 2–3 mm long; of 1 length only; thick; straight, hooked, or triangular. Aril fleshy or dry; annular; covering less than 1/2 of seed; tongue-aril; tan.

Seed 3.5–7 × 2.3–5.5 × 1.8–5.5 mm; not overgrown; not angular; symmetrical (except hilum); oblong; terete (*A. precatorius*) or quadrangular; without visible radicle and cotyledon lobes; without umbo on seed faces. Testa not adhering to endocarp; glossy; not modified by a bloom; colored; monochrome, bichrome (*A. precatorius*

black at hilum end and scarlet to dark reddish-brown at opposite end), mottled, or streaked; with frequent to infrequent mottles; with frequent to infrequent streaks; black, brown, gray, ivory, olive, orange, red, purple, or scarlet; with black overlay; glabrous; smooth or not smooth (*A. gorsei* J. Berhart, *A. canescens* J.G. Baker); with elevated features; shagreen; coriaceous. Pleurogram absent. Fracture lines absent. Rim absent. Raphe visible or not visible; from hilum through lens to base of seed and terminating or from hilum to near base of seed and terminating; color of testa; flush. Hilum visible or partially concealed; concealed by funicular remnant (*A. canescens*); with faboid split; with the lips of the faboid split the same color as the rest of the hilum or lighter colored than the rest of the hilum and therefore conspicuous; larger than punctiform; 1.2–3 mm long; with curved or straight outline; circular; oblong; subapical or marginal according to radicle tip (*A. canescens*); recessed; within rim. Hilum rim color of testa (but duller). Lens discernible or not discernible (*A. fruticosus* N. Wallich ex R. Wight & G.A.W. Arnott); equal to or greater than 0.5 mm in length; up to 2 mm long; with margins straight or curved; irregular or linear; not in groove of raphe; adjacent to or confluent with hilum; up to 1 mm from hilum; recessed; dissimilar color from testa; darker than testa; black; not within corona, halo, or rim. Endosperm thin; 1/2 covering entire embryo; adnate to testa. Cotyledons smooth; both outer faces convex; both the same thickness; both more or less of equal length; not folded; margin entire 180 degrees from base of radicle; not concealing radicle; entire over radicle; without or with lobes; with lobes not touching; without basal groin formed by lobes; with the interface division terminating at base of radicle; white or yellow; inner face flat; glabrous around base of radicle. Embryonic axis deflexed; parallel to length of seed. Radicle linear; deflexed and parallel to cotyledon length; centered between cotyledons; less than 1/2 length of cotyledons. Plumule well developed; glabrous.

Distribution: Pantropic and pansubtropic.

Notes: Polhill (1981e, 1994a,b) evaluated the placement of *Abrus* and concluded that the genus is best placed in its own monotypic tribe situated between the Dalbergieae and Amorphaeae. Verdcourt (1970c) monographed *Abrus*, and in accepting this work, we reject Breteler (1960). *Abrus precatorius* has bicolored scarlet (red) and black seeds which are deadly poisonous when chewed (Gunn 1969), and according to Verdcourt, *A. aureus* R. Viguier also has red and black seeds.

Similarly colored seeds include *Rhynchosia pyramidalis* (10.80) and species of *Ormosia* (2.15). For additional micrographs of the testa, see Lersten and Gunn (1982). Because of human selection, seeds of *A. precatorius* range in color from bicolor (scarlet to dark red and black) to monochrome brown, tan, yellow, and ivory.

Abrus: *A. precatorius* C. Linnaeus (*C–E*), *A. spp.* (*A–B*). *A*,
Fruit and valves ($\times 1.4$); *B*, seeds ($\times 3.5$); *C–D*, testa
($\times 30$, $\times 1000$); *E*, embryos ($\times 5.2$).

