Salix alba L.

Standardized Common Name: White Willow

Family: Salicaceae

Taxonomy: There are over 500 species of *Salix*, mostly native to cold or temperate parts of the Northern Hemisphere. The taxonomy of the genus is therefore complicated, with numerous sections recognized. *Salix alba* is classified in Subg. *Salix*, Sect. *Salix*, along with species such as *S. fragilis* L. (Brittle Willow) and *S. babylonica* L. (Weeping Willow). It has been reported to hybridize with these and other species, including *S. nigra* Marsh. (Black Willow) and *S. lucida* Muhl. (Pacific Willow). It is a native of Eurasia and is widely naturalized in eastern North America.

Description: Tree to 25 m high, with short trunk and ascending, spreading crown; bark grayish, irregularly ridged or fissured; twigs thin and flexible, often hanging downward, olive to brown or reddish brown, soft-pubescent. Leaves alternate, petiolate, narrowly lanceolate to lanceolate or narrowly oblong, 4–13 cm long; base attenuate to cuneate; apex acute to long-acuminate; margins minutely serrate; upper surface grayish-green, lower surface whitish; young leaves softly pubescent on both surfaces, becoming nearly glabrous at maturity especially above. Flowers minute, unisexual, borne in unisexual catkins 3–5 cm long, each flower subtended by a scale. Perianth absent; male flowers consist of 2 stamens, female flowers of an ovary with 2–4 stigmas. Fruit a capsule, 3–5 mm long, 1-loculed, 2–4 valved; seeds numerous, with long downy hair.

Parts in Commerce: Bark, primarily from 2–3-year-old branches, or young twigs

Identification:

- Pieces from small branches channeled, 1–2 cm broad; larger pieces nearly flat
- 1–2(–3) mm thick
- Outer surface greenish to grayish brown; young bark smooth, old bark dull, slightly wrinkled and sometimes dark brown
- Inner surface pale reddish or cinnamon, longitudinally striated to nearly smooth
- Fracture short in outer portion, coarsely fibrous in inner portion
- Cork very thin, brown; cortex and secondary phloem reddish to cinnamon-colored, sometimes appearing multilayered, sometimes separating irregularly into fibrous layers especially in small pieces
- Phloem in transverse section contains many thin interrupted layers of fiber cells; this may be visible (with a dissecting scope) on a moistened cut surface as lines of tiny, elongated, slightly darker spots broken into segments by very narrow, slightly paler perpendicular rays
- Young twigs, if included, have whitish xylem
- Sometimes has weak aromatic odor
- Taste astringent, slightly bitter

Adulterants: Numerous other species of willow are used medicinally, including those mentioned above, *S. purpurea* L. (Purple Willow), and *S. daphnoides* Vill. (Violet Willow). Some of these could be confused with *S. alba* in the wild. According to European authorities, all species of acceptable chemical content (which will have a similar taste) may be sold collectively as "willow bark." Indeed, many species are more potent than *S. alba* in terms of salicin content. In the United States, *Herbs of Commerce* specifies that each such species should be sold under a different common name. Distinguishing among some of these species with certainty, given only the bark, may be possible only by chemical fingerprinting (assuming that reliable differences among species can be found). Some useful microanatomical features have been identified; for example, unlike many of the commercially valuable species, *S. alba* has stone cells only in the cortex, not in the phloem. However, it seems unlikely that numerous closely related species of *Salix* could be adequately differentiated through bark anatomy alone.

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