

Pandanus tectorius S. Parkinson

Thatch Screwpine

(*Pandanus baptistii*, *Pandanus fascicularis*, *Pandanus odoratissimus*, *Pandanus odoratus*, *Pandanus remotus*, *Pandanus sinensis*, *Pandanus veitchii*)

Other Common Names: Bacua, Hala, Nicobar Breadfruit, Pandan, Pandanus, Screw-Pine, Screwpine, Textile Screwpine, Veitch Screwpine, Walking-Tree.

Family: *Pandanaceae*.

Cold Hardiness: Screwpines are truly tropical plants, suffering with temperatures much below about 55°F; these USDA hardiness zones 10b (10a) to 13 plants are sometimes used in our region in extreme South Texas, in very highly protected locations along the Gulf Coast, or in interiorscapes.

Foliage: Evergreen linear-lanceolate sword-shaped strap-like leaves are clustered in tight alternate spirals on the terminal portions of the branches; the spine-like (actually prickles) margined leaves mature at about 3" across by 3' to 5' long and are clustered near the ends of the branches; prickles may also occur along the back of the main vein; green to bluish green in color, the individual leaves often arch or are somewhat pendulous and are folded in cross-section.

Flower: Dioecious, female flowers consist of a single stout spike with a yellowish spathe, whereas male flowers have multiple spikes in white, often pendent, spathes that are highly fragrant.

Fruit: Fruit are globose knobby composite fruits with partially fused keys or segments with a composite structure that sort of reminds one of a cross between a pineapple and a war mace; sizes are typically 8" to 12" in length; fruit transition from green to brownish yellow to orange-yellow at maturity and the segments break apart as they ripen; segments, called phalanges, are wedge-shaped and buoyant so as to distribute the seeds on ocean currents; phalanges may contain from two to as many as eight seeds; fruits require several months to ripen and production usually begins within seven or eight years of age.

Stem / Bark: Stems — very stout stems grow irregularly upright to horizontal with prominent leaf scars encircling the stems in a spiral fashion; Buds — terminal foliate buds progressively produce leaves and may eventually terminate in the production of fruit; Bark — the smooth gray bark is marked with prominent spiral leaf scars.

Habit: Thatch Screwpine is a slow grower eventually reaching heights of 15' to 20' (25') with a similar or greater spread; large branches form prop roots as they enlarge and are weighted over by foliage and fruit, eventually creating a rounded spreading mound with many supporting prop roots; tufts of large lanceolate leaves spiral about the ends of branches that extend in irregular directions, creating a sparsely foliated interior where leaves are concentrated on the periphery; the overall texture and that of most individual components of the plant is coarse.

Cultural Requirements: Screwpines are tough, tolerating heat, extreme salt exposure, and are one of our front line defenses to tropical storms winds and waves because of their extensive prop root system; full sun to partial sun are the best exposures; plants are highly adaptable as to soils, but have very limited cold tolerance; avoid over watering during cool temperatures; reports on drought tolerance are variable, but most *Pandanus* are found in sandy well drained soils that have moisture below the surface; plants grow best where temperatures remain 55°F or above; pruning to remove spent leaves can be a hassle; rate of growth is slow; be cautious when pruning, if you prune a limb it does not usually regenerate from dormant buds, so shaping should be done with great care.

Pathological Problems: *Pandanus* are reported to contract the same lethal yellows pathogen which affects many species of palms (*Arecaceae*); mealy bugs and scales have occasionally been reported as problematic; beetle larvae sometimes feed on the growing points and must be treated.

Ornamental Assets: Thatch Screwpines offer highly interesting growth habits, lush foliage, interesting flowers and fruits, and assist in soil and coastal stabilization; traditional cultures used portions of the plant for fiber and foods; wildlife feed on the fruits.

Limitations & Liabilities: The primary limitation is cold temperatures; liabilities include the prickly margined leaves and large fruit which can be maintenance and pedestrian hazards.

Landscape Utilization: Screwpines are commonly found growing or planted as a substitute for Mangroves along coastal regions of the tropics due to their tolerance to oceanside conditions and

numerous prop roots that make them very stable in storm conditions; the picturesque habit is highly valued and some cultivars are used for edible production of the flesh or seeds in the fruit as well as other portions of the plants; not all cultivars are edible and many need special preparation so caution should be exercised; the tough durable leaves are used to weave a number of useful items from baskets to thatching; *Pandanus tectorius*, along with some of the other smaller species, are sometimes used in high light interiorscapes for their unique foliage and architectural habits.

Other Comments: Screw-pines are architecturally fascinating plants and scream tropics; these plants are sometimes improperly used where they contact pedestrians, causing issues; the genus name is a Latinized version of the native Malayan name of Pandan for this species; the specific epithet derives from the Latin word tectum meaning a roof, shelter or cover, alluding to the use of the leaves as thatching materials; see Chin (2003) for interesting discussions of this taxon's non-landscape uses.

Native Habitat: Widely distributed and naturalized nearly pantropically, *P. tectorius* is thought to have originated from South Asia, tropical Australia, and Polynesia.

Related Taxa: *Pandanus* S. Parkinson (*Dorystigma*, *Euduxia*, *Eydouxia*, *Fisquetia*, *Foullioya*, *Heterostigma*, *Keura*, *Martellidendron*, *Ryckia*, *Souleyetia*, *Sussea*, *Tuckeya*, *Vinsonia*) is a highly variable genus with over 500 species and considerable debate about which taxa are separate species and which are simply variants within a broader species interpretation; in retrospect this should not be surprising as *Pandanus* are native to many tropical regions of the world, particularly in the Eastern Hemisphere and Pacific Islands; they range from seashores to mountainous regions and various species mature in size from 3' to nearly 100' tall; fruit vary from the size of a grapefruit to the dimensions of a moderate size pumpkin; numerous cultivars have been selected over the years for fruit, seed, or fiber properties and their genetic origins are lost to antiquity; although some domesticated cultivars have been selected for lower amounts of the irritating compounds, many wild species, and some cultivars, contain significant quantities of calcium-oxalate crystals which can cause irritation of the mouth and digestive tract, so never consume *Pandanus* without knowing which cultivar you are eating and how it was prepared; handsome yellowish to creamy white variegated forms are available with even larger leaves than *P. tectorius* and lacking prickled margins.

Pandanus utilis J.B.G.G.M. Bory

Common Screw-pine

(*Pandanus sativus*, *Vinsonia utilis*)

- A closely related African species to *P. tectorius*, *P. utilis* is also known as Palma De Cinta, Pandano, or Screw-pine but is somewhat larger, maturing at 25' to 30' (60') in height; the growth habit tends to be more pyramidal and uniform than with *P. tectorius*; leaves are green to bluish green with red tinged prickles on the margins and back of the main vein and leaves are flattened and more erect than with *P. tectorius*, becoming pendulous only toward the tips; fruits are rounder and borne singly; otherwise it is fairly similar in appearance to *P. tectorius*; although planted in the ground, its best use in our region is probably in large containers where it can be moved for winter protection when needed.
- Usually recommended only for USDA hardiness zones 10b (10a) to 13, this species is sometimes grown in protected locations in 9b; *Pandanus utilis* is reported to be grown in a few protected locations along the Texas coast; the specific epithet means useful and refers to the many purposes to which the various plant parts have been utilized; although very effective for controlling beach erosion, *P. utilis* is a slow grower; this species needs well drained soils, but fairly uniform moisture; pruning spent leaves creates an interesting spiral pattern of leaf scars that are retained on even larger trunks.

References: Chin, 2003; Holttum and Enoch, 1991; Llamas, 2003; Riffle, 1998; Whistler, 2000.