1. CYCAS, Linn.

Male cones oblong-ovoid or globular, the scales cuneate, hard, the thickened apex more or less produced into a straight or incurved point. Female cones at first globular, but opening out by the growth of the central shoot, the scales elongated, tomentose or woolly, flat, bearing on each margin 2 to 5 ovules, erect in distant notches, the apex of the scale dilated acuminate and toothed or pinnatifid, the scales at first loosely imbricate, at length spreading or recurved. Seeds large, erect. Leaves simply pinnate, the pinnæ numerous, linear, with a prominent midrib, circinnate in vernation.—Leaves long, simply pinnate, the pinnæ numerous, linear, with the midrib prominent underneath.

The genus extends over the Indo-Australian region, reaching Madagascar and the east coast of Africa to the westward and Japan to the northward. The Australian one or more species are believed to be endemic, but the distinctive characters are very insufficiently known.

CYCAD

Cycas basaltica

CYCAD.

Cycas furfuracea

Cycas lane-poolei

1. **C. media,** *R. Br. Prod.* 348. Trunk sometimes attaining 6 to 10 ft. sometimes twice that height, rarely branched at the top. Leaves 2 to 4 ft. long or even more, the pinnæ very numerous, straight or falcate, obtuse or pungent-pointed, flat or slightly concave above when young, prominently keeled underneath, the margins often at length recurved, mostly slightly decurrent on the rhachis, glabrous or slightly pubescent when young, the longer ones varying from 3 to 8 inches, the lower ones shorter and more contracted at the base, the lowest passing into small prickles which are sometimes very few or scarcely any, sometimes continued almost to the base of the petiole. Cones variable in size, but apparently smaller than in *C. circinnalis*, which the species otherwise resembles. Seeds 1 to 1½ in. long, glabrous—A. DC. Prod. xvi. ii. 527.

N. Australia. North-west and north coasts, *A. Cunningham;* Port Essington, *Armstrong;* Escape cliffs, *Hulls.*

Queensland. Burnett and Dawson rivers, *F. Mueller;* Cape Upstart, *Burdekin Expedition;* Rockingham bay and Mount Elliott, *Dallachy;* Rockhampton, *Thozet;* Castlereagh bay (*W. Hill?*).

Three Australian species of *Cycas* have been described, the above *C media*, *C. angulata*, Br. Prod. 348, A. DC. Prod. xvi. ii. 527, and *C. gracilis*, Miq. in Versl. K. Akad. Wet. Amsterdam, xv. 366, A. DC. l.c. 528; but whether these three are really distinct, and by what characters they are to be separated from one or the other of the common Asiatic species, we have unfortunately no materials for determining. These allied Asiatic ones, *C. circinnalis*, Linn. (*C. sphærica*, Roxb.) and *C. Rumphii*, Miq. (*C. circinnalis*, Roxb.) are distinguished most readily by the scales of their male cones, which are unknown in the great majority of the Australian specimens. I have only seen two, both in F. Mueller's collection; in both the scales are much smaller than in the Indian species. In one, belonging to Hull's Escape Cliff specimens, they are rather narrow, 1½ in. long, the anther-cells commence almost at the base and occupy fully ¾ of the scale; in the other, collected by the Burdekin Expedition, the scales are still smaller, 1 to 1¼ in. long, and the anther-cells cover rather less of the under surface, not reaching to the base, and ceasing rather lower down. These were described by Miquel as his *C. gracilis*, but there are no leaves with them. In the *C. gracilis* of our gardens, the fronds are small with the rhachis slightly furfuraceous. In Castlereagh bay specimens similar small leaves are slightly woolly-pubescent; in almost all other specimens the full-grown leaves are very glabrous. We have female cone-scales of several specimens varying much in the number of ovules or seeds they bear, 2 to 5 on each margin; but I am quite unable to connect these differences with any characters derivable from the leaves. It is much to be urged on resident botanists in tropical Australia carefully to collect and to match with accuracy male and female cones with the leaves of all these species or varieties of *Cycas*, in order to determine their systemic value.