

Cycads in the Vernacular A Compendium of Local Names

[Nombres Vernaculares de Cycadales—Un Compendio]

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Abstract

We present the first-ever worldwide compilation of traditional cycad names and discuss the significance of our findings. Using all available cycad literature and much personal consultation, we have compiled a table of scientific names, localities, languages, vernacular names and, where known, translations into English. We have uncovered at least one vernacular name for 145 of the 302 presently-known cycad species and a total of 494 vernacular names in 128 languages. Patterns of meaning revealed in our compendium include cycad-palm and cycad-fern homologies, a strong maize analogy (in Mesoamerican countries), toponymic references, allusions to morphological features, non-Western binomial taxonomies, references to local folklore, and references to economic uses of cycad products.

Resumen

Nombres Vernaculares de Cycadales—Un Compendio. Se presenta el primer compendio mundial de nombres tradicionales de Cycadales; se discute su significado. Haciendo uso de toda literatura disponible además de la consulta personal, hemos compilado una tabla de nombres científicos, localidades, idiomas, nombres vernaculares y traducciones al inglés (donde se sabe). Hemos descubierto por lo menos un nombre vernacular por 145 de las 302 especies de Cycadales reconocidas al presente, por un total de 494 nombres vernaculares en 128 idiomas. Nuestro compendio revela homologías entre Cycadales y palmas y entre Cycadales y helechos, una fuerte analogía con el maíz (en países mesoamericanos), referencias toponímicas, alusiones a rasgos morfológicos, taxonomías binomiales no occidentales, referencias al folclore, y referencias a los usos económicos de productos de Cycadales.

I. Introduction

The last few years have seen much activity in the field of cycad systematics, including many new species circumscriptions and a watershed meeting of cycad systematists in April 2002, in Miami, Florida, USA, with the consequent publication of the text *Cycad Classification: Concepts and Recommendations* (Walters and Osborne, 2003). These efforts address fundamental questions relating to the biological species concept vis-à-vis cycads and the relationships within and between cycad taxa. To complement this much-needed systematics work, it is also crucial that we not overlook the importance of cycads to local communities throughout the world. This importance is often demonstrated by a plethora of vernacular names and accompanying beliefs, and in some regions (e.g. China), the evolution of elaborate folk cycad taxonomies.

Why are the names and taxonomies of cycads in non-Western scientific contexts important to scientists? Although there are several reasons, perhaps paramount is the significance that traditional, ethnobotanical knowledge systems have for conservation in the broadest sense. A name, a meaning, a story, a toponym—where cycads are concerned, these indicate local awareness of populations of what are in many cases globally threatened species. The better these plants are known and appreciated locally, the easier it may be for conservation programs to argue for the type of village-level protection that botanists such as Willie Tang, Andrew Vovides and colleagues have pioneered in China and Mexico (Donaldson et al., 2003, Vovides et al., 2002).

Local names are more than mere curiosities or outdated folklore—rather, they are portals of entry into worlds of meaning that complement Western scientific insight. As cycad systematists labor to establish biological certainty, we offer this compilation as a parallel effort to inspire cycad aficionados to search out the cultural meanings that will allow a common language to be spoken by outsider and local person alike.

Another benefit of a cycad vernacular compendium is that it enhances the ability of scientists to locate current and historic populations of the plants. Recently, Bonta, upon discovering that the term *tiusinte* referred to *Dioon mejiae* in northeastern Honduras, located several populations during interviews with local cycad cone harvesters. In toponyms, the root ‘*tiusinte*’ was found, for example, in *El Tiusintal* (place of cycads, a hamlet), *Cerro del Tiusinte* (cycad hill) and *Quebrada del Tiusinte* (cycad stream). Previously, outside researchers had assumed that the term (often spelled ‘teocinte’) referred to *Zea mays*, thence overlooking *Dioon mejiae*. Without this knowledge of names, Bonta would never have been able to track down remote populations (Bonta, 2003). In a similar sense, Osborne had used the key word *imFingo* as a prompt to communication with Zulu medicine-men in kwaZulu-Natal, South Africa, leading to valuable revelations about the magical and medicinal uses of *Stangeria eriopus* (Osborne, 1994).

[*Note:* For clarity of presentation, we have omitted the authorities to species names in this text; all such authorities are shown in Table I.]

II. Methods

To summarize cycad folk taxonomies, we searched all the cycad literature known to us, and condensed the details to a table (Table I) showing scientific names, localities, languages, vernacular names, and translations into English (where known).

Table I is organized into regional areas on the basis of broad cultural delineations—for instance South Asia (the Indian subcontinent) is recognized as a cultural region distinct from East Asia. To our knowledge, other attempts to compile such a list have

been somewhat cursory and fraught with inaccuracies (as in Whiting, 1963). The sole comprehensive review on the economic botany of cycads (Thieret, 1958) makes scant mention of vernacular names and, distressingly, few of the recently published ‘popular’ cycad books include details of vernacular names (an exception is Whitelock, 2002).

The scientific names and plant localities in Table I are taken from the current World List of Cycads (Hill et al., this volume). Where there have been changes to the taxonomy, we have transferred the vernacular names to the new species names. For example, all except the Indian names used in the earlier literature for *Cycas circinalis* have been re-assigned to *C. rumphii*, *C. seemannii* and allied species, in accordance with the revised circumscription for the first species (Hill, 1995).

We have generally retained variants of a common theme. Where there is strong evidence for a dominant spelling or pronunciation, we have drawn attention to the apparent preferred term. For example, amongst the Tagalog (Filipino) words *bitogo*, *patubo*, *potago*, *pitógo* and *pitugo* used in reference to the seeds of Philippine *Cycas* species, we have highlighted *pitógo*, as it is most commonly cited in the literature. Similarly, from the Náhuatl-derived variants *teocinte*, *teosinte*, and *tiusinte*, as used for *Dioon mejiae*, we prefer *tiusinte* because it is consistent with the pronunciation most often encountered among local users in its native range. We caution that in cases like these, one may hear numerous pronunciations and see several spellings, all with the same meaning, but varying from village to village and province to province. A third example is the nomination of the better known term *coontie* from amongst the Seminole variants *conti*, *coonti*, *coontie*, *contihateka*, *koonti*, *koontie*, and so on, for the native Florida *Zamia*.

Our data-gathering process was followed by extensive email correspondence with cycad specialists and our final listing has been further scrutinized and refined by authorities on the different genera (see Acknowledgments). Finally, we have erred on the side of caution, eliminating names of doubtful authenticity. Here we are reminded of an anecdote where an intrepid botanist had faithfully recorded the name *rahampitso maraina* for a Madagascan palm, only to find out later that the harassed guide had used the phrase for ‘tomorrow morning’ in answer to the botanist’s persistent demands to locate the plant (H. Beentje, pers. comm.).

In the interest of remaining faithful to vernacular nomenclature, we have excluded Western horticultural terms altogether, because these are often of recent invention (for the convenience of the cycad trade) and rarely reflect local meanings. Indeed, widespread use of horticultural terms and their translations into local languages serve only to obscure, confuse, and in some cases eventually replace traditional concepts. (We do, however, include all known vernacular names in English, French, Spanish, and Portuguese.)

III. Discussion

All eleven cycad genera are represented in Table I, and we have located at least one vernacular name for 145 (48%) of the 302 cycad taxa currently recognized (Hill *et al.* this volume). The compendium reveals a rich cultural diversity involving a total of 494 vernacular names in 128 different languages, broken down as follows: Africa, 81 names for 38 spp. in 35 languages; Americas, 140 names for 50 spp. in 27 langs.; Oceania, 90 names for 21 spp. in 37 langs.; South Asia, 30 names for 5 spp. in 8 langs.; East Asia, 153 names for 31 spp. in 23 langs. (English, French, and Portuguese names occur in more than region). Not surprisingly, the genus *Cycas*, with the largest number of recognized species (99), contains the greatest number of vernacular names. Within that genus, the greatest taxonomic diversity is recorded for the Japanese

species *Cycas revoluta* (41 names for the plant alone). The rich documentation of *Cycas* folk taxonomy owes much to the work of Ken Hill and co-workers, who have taken pains to include details of vernacular names in their work. Furthermore, Hill has taken the laudable step of assigning two such names as subspecific epithets for *C. arnhemica*.

By contrast, relatively few names have been documented for the 41 species in another large genus, *Macrozamia*, in Australia. Sadly, this does not imply a lack of indigenous names but the fact that Australian ethnobotanists have given limited attention to local traditional cultures in areas where *Macrozamia* cycads are found. It also reflects the fact that Westernised generations of Aboriginal people have lost much of the cultural knowledge of their forebears.

The vernacular names we have recorded in Table I embody a variety of concepts. Because cycads occur across broad culture regions, we have separated the species into broad geographic groups to facilitate understanding of the conceptual linkages in folk knowledge. We discuss some of the more prominent themes in vernacular names below.

A. Cycad-palm and cycad-fern homologies

A unifying theme in the Latin American Spanish names is the morphological similarity of palms to four Mesoamerican cycad genera, as evidenced in names such as *palma bola*, *palma corcho*, *palma de chicle*, *palma de Dolores*, *palma de macetas*, *palma de pegamento*, *palma de Santa Teresita*, *palma de serrucho*, *palma del sol*, *palma de la Virgen*, *palma espinada*, *palma imperial*, *palma real*, *palmilla*, *palmita* and *palmiche* (in total, we have recorded 26 names with the “palma” root). The lumping of cycads with palms in folk taxonomies (many people in Latin American countries think of cycads as odd types of palms) may be ‘wrong’ in scientific terms, but it is ‘right’ in cultural context. Cycad leaves, particularly of *Dioon*, often complement or are used in place of palm fronds for Catholic ceremonies such as the Day of the Cross (Día de la Cruz) and the Day of the Dead (Día de los Difuntos), when they are fashioned into decorations such as wreathes, crosses, arcades, and altars.

The palm homology is not confined to the New World. In African languages one finds the Krobo terms *kpadei-atah* and *pardi attar* (both meaning ‘ghost palm’, *Encephalartos barteri*, Nigeria), the Madi word *ci-cia* (‘akin to a date palm’, *E. macrostrobilus*, Uganda) and the Ronga and Shona name *untopani* (‘palm-like plant’, *E. manikensis* and allied species, Mozambique). In Australia, the term *zamia palm* is frequently used by farmers in generic reference to *Macrozamia*.

Much less common than the allusion to palms is the occasional reference to a morphological similarity between cycads and ferns, which we ascribe to the shared features of circinate vernation and pinnately compound leaves. The genus name *Chigua* and the species *Zamia chigua* both derive from a Colombian term embracing both cycads and ferns, and referring to at least six *Zamia* and *Chigua* species. Similarly, the Spanish term *helecho* (fern) is applied to *Z. chigua*. In Southeast Asia, we find the Malay phrase *pakoe laut* (sea fern) used for *Cycas rumphii*, while in Australia, *Macrozamia* is sometimes known as ‘zamia fern’.

B. Maize analogy

A unifying feature of Mesoamerican cycads that emerges from this compendium is the analogy to maize seen in the comparisons to *Zea mays* subspecies such as *teosinte* (‘sacred ear of maize’) and the references to ‘old-time maize’, ‘maize lord’, ‘maize

shepherd' and similar terms. Across the Mesoamerican region (Mexico and northern Central America), *Ceratozamia*, *Dioon* and *Zamia* appear to have been linked to maize even in Precolumbian times, presumably because of the morphological similarity of their 'ears', as well as their dietary importance. Starch from cycad cones as well as from cycads stems is consumed widely in the region, and cycad food products, for example in *Dioon mejiae*, are given the same names as maize food products: most notably, 'tamales,' 'tortillas,' 'atol' (Bonta, this volume). In Mexico and Honduras, *Dioon* seeds have traditionally supplemented local diets in times of scarcity, particularly when maize stores became depleted. There is, in other words, a yet-unexplored complementarity of maize and cycads that is all the more intriguing because it pairs a rather unusual wild food with one of the world's preeminent domesticated crops, and with that crop's genetic ancestor.

C. References to starch and other household uses

Several names refer to cycads as a source of starch. For instance, *yuca* and *yuquilla* (referring to manioc (cassava), *Manihot esculenta*) is used for Cuban and Honduras *Zamia* cycads, while *Zamia integrifolia* has been called the *Florida arrowroot* or Conti Hateka, the 'white bread plant'. The Afrikaans word for *Encephalartos* is *broodboom* (bread tree), and Chamorro names *federico* and *fadang* both refer to the flour obtained from starch in *Cycas micronesica* seeds.

Many cycad names are inspired by household uses. For example, the Spanish names *palma de chicle* (rubber palm) and *palma de chicalite* (referring to the seed cooking and preservation process) are used for *Dioon spinulosum* in Mexico. Also in Mexico, *carrete* (ox cart) refers to a toy fashioned from the male cone of *Ceratozamia mixeorum*, while *chicalito* derives from the use of the stony sclerotesta of *Dioon* seeds to make bull-roarers (*zumbadores*), ocarina-type whistles that hum when tied to strings and whirled around. In Panama, the name *palma de pegamento* (glue palm, *Zamia fairchildiana*) alludes to the use of the plant's resinous gum as a sort of office paste. In Mozambique, the Tsonga name *chihanga* (vegetable coal) refers to the practice of roasting *Encephalartos* trunks to provide a convenient source of charcoal.

D. References to localities and habitats

As with many other plants, habitats or areas of occurrence feature commonly in cycad vernacular names and local place names. We have already mentioned the toponyms *El Tiusintal* (place of cycads, a village), *Cerro del Tiusinte* (cycad hill), *Quebrada del Tiusinte* (cycad stream) in reference to *Dioon mejiae* in Honduras. Also in the New World, habitat descriptors are found in *coyolito de cerro* (little mountain coyol palm, *D. spinulosum*), *piña del monte* (wild pineapple, *Ceratozamia mexicana*, *C. robusta*, *Zamia gentryi* and *Z. roezlii*), *tepetmaizte* or *tepemaizte* (hill or mountain maize, *C. morettii*), *yuquilla de paredón* (little cliff-dwelling manioc, *Zamia angustifolia* and *Z. pumila*) and *yuquilla de sabana* (little savanna manioc, *Z. kickxii* and *Z. pumila*). In Asia, we encounter the Thai names *prong khao* (mountain cycad, *Cycas clivicola*), *prong pa* (forest or field cycad, *C. pectinata*, *C. siamensis* and *C. simplicipinna*); the Chinese name *nanpan jiang su-tie* (Nanpan River cycad, *C. szechuanensis*); and the Vietnamese *thiên tuê ha long* (Ha Long Bay cycad, *C. tropophylla*).

E. References to morphology

Direct references to plant morphology are often incorporated in cycad names. In the New World, we encounter the Spanish names *pata de gallo* (cock's foot, *Ceratozamia*

hilda), *costilla de león* (puma's rib, *C. mexicana* and *C. robusta*), the Chiapaneco term *nimalari* (feather leaf, *Dioon merolae*) and the Spanish *espadaña* (church steeple) and *morrito* (small tree gourd with round fruit, *Crescentia* sp.), both also for *D. merolae*; as also the terms *palma de serrucho* (handsaw palm, *D. edule*), *peine* (comb, the comb-like leaf of *D. sonorensis*) and *camotillo* (small sweet potato, *Zamia standleyi*). The Colombian name *cacao del indio* (Indian cocoa, *Z. encephalartoides*) is apparently based on the similarity of its female cone to the fruit of *Theobroma cacao*. The Chinese use the words *cha-ye su-tie* (fork leafed cycad, *Cycas bifida*), *ci-bin su-tie* (spiny petioled cycad, *C. hainanensis*), *duoqi su-tie* (multipinnate cycad, *C. multipinnata*), and *bi-chi su-tie* (cycad with comb-like megasporophylls, *C. pectinata*), while the Japanese use *hou bi* (bird's tail feathers) and *hou bi shou* (broken banana leaf) for *C. revoluta*. In Vietnam, native cycads are generically referred to as *thiên tu?* (thousand year old cycad) with extensions for species, e.g. *thiên tu? chân voi-chân voi* (elephant leg cycad, *Cycas pachypoda*).

F. Specialized cycad vocabularies

Cycads that are the subject of intensive subsistence regimes inspire rich vocabularies describing morphological features, harvest techniques, pest control, indigenous conservation, folklore, food preparation, and other ethnobotanical aspects. For *Dioon mejiae*, Bonta has identified over 60 specialized terms, including *churute* (pollen cone), *cabeza* (female cone), *vestimento* (flush of young leaves), *alma* or *espíritu* (sprout), *tiusintero* (male cycad harvester), *tiusintera* (female cycad food preparer), *pan de tiusinte* (cycad bread), *cumbito* (seed), and *embargo* (season when cycad harvesting is prohibited by municipal decree) (Bonta et al., in prep.).

A similar situation is seen in some Australian Aboriginal languages. The Rirratjinu people in eastern Arnhem Land use terms for *Cycas orientis* which include *banbuy* or *nayakandi* (immature plants), *mulurrukun* (seeds lying on the ground), *meltjuntjun* and *melnathu* (the white sarcotesta within the seeds) from which the foodstuff *guyalpadi* is prepared (Yunupingu et al., 1995).

G. Non-Western taxonomic schemes

Cycad names in both Chinese and Thai are often nomenclatural binomials, analogous to the Western scientific genus name and specific epithet, and founded on a similar basis of hierarchical classification. In China the generic root *su-tie*, "cycad," is seen in the names *ci-bing su-tie* (*Cycas hainanensis*), *ba-he su-tie* (*C. hongheensis*), *long-kou su-tie* (*C. micholitzii*), *bi-chi su-tie* (*C. pectinata*) and *feng-wie su-tie* (*C. szechuanensis*), among others. In Thailand, the generic *prong* occurs in the names *prong khao* (*C. clivicola*), *prong thale* (*C. litoralis*), and *prong pa* (collectively for *C. pectinata*, *C. siamensis* and *C. simplicipinna*).

H. Folkloric associations

The least investigated vernacular names are those apparently derived from folklore. The Merina (Madagascar) name *batsimisaraka* (man eating plant, *Cycas thouarsii*) appears to be founded on a legend in which the leaves are blood-sucking tentacles (Schuster, 1932). Another African example is the Zulu *isiGqikisomkhovu*, zombie's pillow (*Encephalartos natalensis*).

For *C. circinalis*, we encounter the Hindi *jangli-madan-mast-ka-phul*, 'forest flower of sweet desire' and for *C. beddomei* the Telugu name is *madhanakamakshi*, 'nectar of [goddess] Kamakshi' (identified with sexual desire). These terms are

thought to be based on a concept of cycads as aphrodisiacs on the Indian subcontinent (Nadkarni, 1954; S. Bonta, pers. comm.). A similar situation is found in the names *guade teet* and *taudowa*, which both refer to the aphrodisiac properties attributed to a 'tea' prepared from the stem of *Zamia neurophyllidia* in Panama's Isla de Bastimentos and Isla de Popa, respectively (Holzman and Haynes, 2004).

IV. Conclusion

We hope this article generates a greater awareness of vernacular cycad taxonomies and inspires sustained scientific engagement with the 'cultural side' of cycads. We urge cycad taxonomists to include in their publications details of indigenous names, languages, meanings, and any relevant ethnobotanical notes. This follows exactly one of the stated 'guidelines for taxonomic descriptions' specified in Chapter 15 of *Cycad Classification: Concepts and Recommendations* (Walters and Osborne, 2003).

This compendium is also a window onto a little-explored field of cycad research. For example, Bonta's work on Honduran cycads has revealed not only names but also an intricate and hitherto unexplored local knowledge system that, in turn, is becoming the base for conservation intertwining local 'vernacular' experts and outside 'Western scientific' experts. We suggest that numerous rewarding opportunities exist for in-depth studies of cycad knowledge systems, and we hope that this compendium inspires not only biological scientists but also social scientists to explore these avenues.

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Table I

Scientific names, localities and vernacular names of African, American, Asian and Oceanian cycads.

[Abbreviations: Ab. Aboriginal; Aust. Australian; Ch. Chinese; dimin. diminutive; Eng. English; Fr. French; Jap. Japanese; lang. language; lit. literal; Náh. Náhuatl; pref. preferred; ref. reference; Sp. Spanish; translit. transliteration; unident. unidentified; Viet. Vietnamese.]

(A) Cycads of Africa and adjacent Indian Ocean islands

Scientific name	Locality	Vernacular name	References
<i>Cycas thouarsii</i> R.Br. ex Gaudich.	Comoros, Madagascar, Mozambique, Tanzania	Betsileo— <i>fahou, fahu, voafaho</i> ; Fr.— <i>faux sagoutier</i> (false sago), <i>samble</i> ; Merina— <i>batsimisaraka</i> (man-eating plant), <i>fato, fatra, fatzon, voafako</i> ; Swahili— <i>mpapindi</i> (also used for the palm <i>Dypsis pемbanus</i>), <i>mtapo, mtapu</i> ; unident. lang.— <i>tsambou</i>	Lamarque & Razafimahery, 1950; Schuster, 1932; Vorster & Vorster, 1973; Williams, 1949; H. Beentje, pers. comm.
<i>Encephalartos altensteinii</i> Lehm.	S. Africa (E. Cape)	Xhosa— <i>iSundu, umGuza, umPhanga</i>	Dold & Cocks, 1999; Pooley 1993; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos barteri</i> Carruth. ex Miq.	Benin, Ghana, Nigeria, Togo	Krobo— <i>kpadei-atah, pardi attar</i> (both ghost palm); Twi-akapim— <i>mamponmere</i>	Dalziel, 1937; Prain, 1917; Schuster, 1932
<i>Encephalartos ferox</i> Bertol. f.	Mozambique, S. Africa (kwaZulu-Natal)	Ronga— <i>chipissana</i> ; Ronga & Shona— <i>untopani</i> (palm-like plant); Tsonga— <i>chihanga</i> (vegetable coal); Zulu— <i>umThobane, uThobani</i>	da Graça Silva, 1983; de Koning, 1993; Pooley, 1993; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos friderici-guilielmi</i> Lehm.	S. Africa (E. Cape, kwaZulu-Natal)	Xhosa— <i>umGuza, umPhanga</i>	Pooley, 1993; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos ghellinckii</i> Lem.	S. Africa (E. Cape, kwaZulu-Natal)	Xhosa— <i>umGuza, umPhanga</i> ; Zulu— <i>isiDawu, isiGqikisomkhovu</i> (zombie's pillow)	Pooley, 1993; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos gratus</i> Prain	Malawi, Mozambique	Chichewa(?)— <i>gwerekwe</i> ; Yoa— <i>lichangwe</i>	Binns, 1972
<i>Encephalartos heenanii</i> R.A. Dyer; <i>E. paucidentatus</i> Stapf & Burt Davy	S. Africa (Mpumalanga), Swaziland	Swazi— <i>siJekwane</i>	von Breitenbach & von Breitenbach, 1992
<i>Encephalartos hildebrandtii</i> A. Braun & C.D. Bouché	Kenya, Tanzania	Boni— <i>icheli, tielle</i> ; Giriama— <i>kisapo</i> ; Sanya— <i>balacha, muka</i> ; Swahili— <i>mapo, mkamwa, mkwanga, msapo</i>	Beentje, 1994; Dharani, 2002; Weiss, 1979; H. Beentje, pers. comm.
<i>Encephalartos kisanbo</i> Faden & Beentje	Kenya	Taita— <i>kisanbo</i>	Faden & Beentje, 1989; Hurter, 1994
<i>Encephalartos laurentianus</i> De Wild.	Angola, Dem. Rep. Congo	Kiyaka— <i>malele, bundu-nguma</i>	Engler, 1908; Lebrun, 1930; Prain, 1917; Robyns, 1948
<i>Encephalartos macrostrobilus</i> S. Jones & Wynants	N. Uganda	Madi— <i>ci-cia</i> (like a date palm)	Jones & Wynants, 1997

<i>Encephalartos manikensis</i> (Gilliland) Gilliland and allied species incl. <i>E. chimanimaniensis</i> R.A. Dyer & I. Verd., <i>E. munchii</i> R.A. Dyer & I. Verd. and <i>E. turneri</i> Lavranos & D.L. Goode	Mozambique, Zimbabwe	Ronga— <i>chipissana</i> ; Ronga & Shona— <i>untopani</i> (palm-like plant); Shona— <i>muTata</i> , <i>muTete</i> , <i>unguarara</i> (dwarf plant); Tsonga— <i>chihanga</i> (vegetable coal)	da Graça Silva, 1983; de Koning, 1993; Gilliland, 1939; P. Capela, pers. comm.
<i>Encephalartos marunguensis</i> Devred	Dem. Rep. Congo	Kitabwa— <i>kavunduvundu</i> , <i>tusu</i>	Malaisse, 1969
<i>Encephalartos middelburgensis</i> Vorster and allied species incl. <i>E. dolomiticus</i> Lavranos & D.L. Goode, <i>E. dyerianus</i> Lavranos & D.L. Goode, <i>E. eugene-maraisii</i> I. Verd., <i>E. inopinus</i> R.A. Dyer and <i>E. lanatus</i> Stapf & Burt Davy	S. Africa (Mpumalanga, with allied species also in Limpopo)	North Sotho— <i>mofaka</i> (singular), <i>mefaka</i> (plural)	von Breitenbach & von Breitenbach, 1992; J. de Wet Bösenberg, pers. comm.
<i>Encephalartos natalensis</i> R.A. Dyer & I. Verd., and allied species incl. <i>E. aemulans</i> Vorster, <i>E. lebomboensis</i> I. Verd. and <i>E. senticosus</i> Vorster	Mozambique, S. Africa (kwaZulu-Natal), Swaziland	Swazi— <i>siJekwane</i> ; Xhosa— <i>umGuza</i> , <i>umPhanga</i> ; Zulu— <i>isiGqikisomkhovu</i> (zombie's pillow), <i>uJobane</i> , <i>uJubane</i> , <i>umHlungulo</i> , <i>umNgquabe</i>	Pooley, 1993; von Breitenbach & von Breitenbach, 1992; R. Osborne, pers. obs.
<i>Encephalartos poggei</i> Asch.	Dem. Rep. Congo	Baluba— <i>biondo</i> ; Kabwe— <i>katende</i> ; Kanioka— <i>tchiondo</i> , <i>tchiunda</i> ; Lulua— <i>kalaba</i> , <i>kalaba kabo</i> , <i>kalala kabo</i> , <i>lulondo</i>	Gentil, 1904; Prain, 1917; Robyns, 1948; Schuster, 1932; Whitelock, 2002
<i>Encephalartos princeps</i> R.A. Dyer	S. Africa (E. Cape)	Xhosa— <i>umGuza</i> , <i>umPhanga</i>	Pooley, 1993; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos schaijesii</i> Malaisse, Sclavo & Crosiers	Dem. Rep. Congo	Ndembo— <i>makindu ya dilungu</i>	Malaisse et al., 1993
<i>Encephalartos schmitzii</i> Malaisse	Dem. Rep. Congo, Zambia	Unident. lang.— <i>kanchindu</i>	Gono & Phiri, 2001
<i>Encephalartos septentrionalis</i> Schweinf.	Sudan, Uganda	Azande— <i>bopotele</i> ; Bongo— <i>kagga-kunda</i> , <i>kaggo kondo</i> ; Kredy-Ndugu lang.— <i>kotto</i> (alcoholic beverage from trunk); Niam-Niam lang.— <i>mevul-pia</i> , <i>mwue piah</i>	Prain, 1917; Robyns, 1948; Schuster, 1932; Schweinfurth, 1871

<i>Encephalartos tegulaneus</i> Melville	Kenya	Samburu— <i>lpision</i>	Beentje, 1994
<i>Encephalartos transvenosus</i> Stapf & Burt Davy and allied species	S. Africa (Limpopo)	North Sotho— <i>mofaka</i> (singular), <i>mefaka</i> (plural); Venda— <i>mutondolo</i> , <i>tshifhanga</i> , <i>tshitondolo</i>	von Breitenbach & von Breitenbach, 1992
<i>Encephalartos umbeluziensis</i> R.A. Dyer	Mozambique, Swaziland	Tsonga— <i>muanga</i>	de Koning, 1993
<i>Encephalartos villosus</i> Lem.	S. Africa (E. Cape, kwaZulu-Natal), Swaziland	Xhosa— <i>umGuza</i> , <i>umPhanga</i>	Dold & Cocks, 1999; von Breitenbach & von Breitenbach, 1992
<i>Encephalartos</i> spp. (generic)	S. Africa	Afrikaans— <i>broodboom</i> (bread tree) (often compounded with morphological or geographic adjectives)	common knowledge
<i>Stangeria eriopus</i> (Kunze) Baill.	S. Africa (E. Cape, kwaZulu-Natal)	Afrikaans— <i>bobbejaankos</i> (baboon food); Pondo(?)— <i>finguane</i> , <i>juma</i> ; Xhosa— <i>umFingwane</i> (whole plant), <i>umNcuma</i> (cone); Zulu— <i>imFingo</i> , <i>inFingo</i>	Osborne et al., 1994; Vorster & Vorster, 1974

(B) Cycads of the Americas

Scientific name	Locality	Vernacular name	References
<i>Ceratozamia hildae</i> G.P. Landy & M.C. Wilson	Mexico (Queretaro, San Luis Potosi)	Sp.— <i>pata de gallo</i> (cock's foot)	A. Vovides, pers. comm.
<i>Ceratozamia mexicana</i> Brongn.	Mexico (Hidalgo, Puebla, Veracruz)	Huastec Maya (also known as Teenek)— <i>tzalam-thipac</i> (Thipaak's shade—see <i>Zamia fischeri</i> , below); Sp.— <i>costilla de león</i> (puma's rib), <i>palma imperial</i> (imperial palm), <i>piña del monte</i> (wild pineapple)	Alcorn, 1984; Vovides et al., 1992
<i>Ceratozamia microstrobila</i> Vovides & J.D. Rees	Mexico (San Luis Potosi)	Sp. dimin. of Náh.— <i>chamalillo</i> (little <i>chamal</i> or little <i>Dioon edule</i>)	Vázquez Torres, 1990
<i>Ceratozamia miqueliana</i> H. Wendl.	Mexico (Chiapas, Tabasco, Veracruz)	Sp.— <i>palmita</i> (little palm)	Vovides et al., 1992
<i>Ceratozamia mixeorum</i> Chemnick, T.J. Greg. & Salas-Mor.	Mexico (Oaxaca)	Sp.— <i>carrete</i> (ox cart, as toy)	Chemnick et al., 1997
<i>Ceratozamia morettii</i> Vázq. Torres & Vovides	Mexico (Veracruz)	Náh.— <i>tepetmaizte</i> , <i>tepemaizte</i> (hill or mountain maize)	Vázquez Torres & Vovides, 1998
<i>Ceratozamia robusta</i> Miq.	Belize, Guatemala, Mexico (Chiapas, Oaxaca, Veracruz)	Sp.— <i>costilla de león</i> (puma's rib), <i>palma de camote</i> (sweet potato [<i>Ipomoea batatas</i>] palm); <i>palma imperial</i> (imperial palm), <i>palmita</i> (little palm), <i>piña del monte</i> (wild pineapple); Tzeltal— <i>tushku</i>	Vázquez Torres, 1990; Vovides et al., 1992; R. Osborne, pers. obs.

<i>Ceratozamia</i> Brongn. (generic, also including <i>Zamia</i> spp.)	Mexico (Chiapas)	Unident. langs.— <i>amendauí</i> , <i>amendu</i> , <i>amenduai</i> ; Sp.— <i>palma de jangó</i>	Patiño, 1989; M. A. Pérez-Farrera, pers. comm.
<i>Chigua bernalii</i> D. W. Stev. & <i>C. restrepoi</i> D. W. Stev.	Colombia	Sp.— <i>chigua</i> (ref. to both cycads and ferns)	Jones, 2002
<i>Dioon caputoi</i> De Luca, Sabato & Vázq. Torres	Mexico (Puebla)	Sp.— <i>palma real</i> (royal palm)	Vázquez Torres, 1990; Whitelock, 2002
<i>Dioon edule</i> Lindl.	Mexico (Gulf of Mexico coast)	Náh.— <i>chamal</i> , <i>quiotamal</i> , <i>sotol</i> , <i>tiotamal</i> (sacred tamale), <i>tzamal</i> ; Sp.— <i>palma de Dolores</i> (Our Lady of Sorrows palm), <i>palma de macetas</i> (flowerpot palm), <i>palma de Santa Teresita</i> (Saint Teresa's palm), <i>palma de serrucho</i> (handsaw palm), <i>palma de la Virgen</i> (Virgin's palm), <i>palmita</i> (little palm), <i>tullidora</i> (crippler)	Martinez, 1979; Schuster, 1932; Vázquez Torres, 1990; Vovides et al., 1992; Whitelock, 2002; J. Chemnick, pers. comm.
<i>Dioon holmgrenii</i> De Luca, Sabato & Vázq. Torres	Mexico (Oaxaca)	Sp.— <i>palma del sol</i> (sun palm), <i>plumilla</i> (little feather)	Whitelock, 2002
<i>Dioon mejiae</i> Standl. & L.O. Williams	N.E. Honduras	Sp. translit. of Náh.— <i>tiusinte</i> (pref. to <i>teocinte</i> , <i>teosinte</i>) (sacred ear of maize, <i>Zea mays</i>); Tol— <i>tiñuc</i>	Bonta, 2003, this volume
<i>Dioon merolae</i> De Luca, Sabato & Vázq. Torres	Mexico (Chiapas, Oaxaca)	Chiapaneco— <i>nimalari</i> (feather leaf); Sp.— <i>espadaña</i> (church steeple), <i>maíz viejo</i> (old time maize), <i>morrito</i> (small tree gourd with spherical fruit, <i>Crescentia</i> sp.), <i>palma espinuda</i> (spiny palm), <i>palmilla</i> (little palm)	de Luca et al., 1981; Website: Warnholtz et al.; A. Vovides, pers. comm.
<i>Dioon purpusii</i> Rose	Mexico (Oaxaca)	Chontal— <i>la-fane-tejua</i> , <i>lan-zi-le</i> , <i>lan-zi-li</i> ; Náh.— <i>chamal</i> ; Sp.— <i>palma real</i> (royal palm)	de Luca et al., 1978; Martinez, 1979; Schuster, 1932
<i>Dioon rzedowskii</i> De Luca, Moretti, Sabato & Vázq. Torres	Mexico (Oaxaca)	Mazatec— <i>tush-kju</i>	Whitelock, 2002
<i>Dioon sonorensis</i> De Luca, Sabato & Vázq. Torres	Mexico (N.W. coast)	Nah.— <i>peyote</i> ; Sp.— <i>palma de la Virgen</i> (Virgin's palm), <i>peine</i> (comb, ref. to the leaf),	de Luca, et al. 1984; A. Vovides, pers. comm.
<i>Dioon spinulosum</i> Dyer	Mexico (Oaxaca, Veracruz)	Sp.— <i>coyolito de cerro</i> (little hill coyol [<i>Acrocomia</i>] palm), <i>palma de chicle</i> (rubber palm), <i>palma de chicalite</i> (ref. to the seed preparation for foodstuff), <i>palma de Dolores</i> (Our Lady of Sorrows palm), <i>chicalito</i> (the seed, used to make bull-roarers or <i>zumbadores</i>), <i>coyolillo</i>	Schuster, 1932; Vázquez Torres, 1990; Whitelock, 2002; A. Vovides, pers. comm.
<i>Dioon tomasellii</i> De Luca, Sabato & Vázq. Torres	Mexico (S.W. coast)	Sp.— <i>palma</i> , <i>palma de la Virgen</i> (Virgin's palm), <i>palma del diablo</i> (Devil's palm), <i>palmita</i> (little palm), <i>peinetillo</i> (little comb)	de Luca et al., 1984; Gregory et al., this volume

<i>Dioon</i> Lindl. (generic)	Mexico (Oaxaca)	Sp.— <i>hueso de pescado</i> (fishbone), <i>maíz viejo</i> (old time maize), <i>palma de oro</i> (golden palm), <i>palma espinada</i> (spiny palm), <i>palmilla</i> (little palm)	Chemnick et al., 1997; Martinez, 1979; A. Vovides, pers. comm.
<i>Microcycas calocoma</i> (Miq.) A.DC.	Cuba	Sp.— <i>corcho</i> , <i>palma corcho</i> , <i>palma de corcho</i> (all ref. to cork palm)	Schuster, 1932
<i>Zamia amazonum</i> D. W. Stev.	Ecuador (Napo)	Quichua— <i>guagrapanga</i> ; Secoya— <i>ñanami jicó</i> ; Sp.— <i>rabo de raya</i> (ray [type of fish] tail)	F. Nicolalde-Morejón, in prep.
<i>Zamia angustifolia</i> Jacq.	Bahamas, Cuba	Sp. (Cuba)— <i>guáyara</i> , <i>yuca cimarrona</i> (wild manioc, <i>Manihot esculenta</i>), <i>yuca guáyara</i> , <i>yuquilla de paredón</i> (little cliff-dwelling manioc), <i>yuquilla de paredón de hoja menuda</i> (little small-leaved cliff-dwelling manioc), <i>yuquilla de ratón</i> (little mouse manioc)	Roig y Mesa, 1965
<i>Zamia boliviana</i> (Brong.) A. DC.	Bolivia, Brazil	Sp. (Bolivia)— <i>mauro</i> ; Port. (Brazil)— <i>sagueiro da terra</i>	Patiño, 1989
<i>Zamia chigua</i> Seem.	Colombia (Choco), Panama (Chiriquí)	Sp.— <i>chigua macho</i> (male <i>chigua</i> , ref. to both cycads and ferns), <i>helecho</i> (fern)	Norstog & Nicholls, 1997; Whitelock, 2002
<i>Zamia cunaria</i> Dressler & D.W. Stev.	Panama	Cuna— <i>obset</i> (plant), <i>obset e sana</i> (female cone)	Stevenson, 1993
<i>Zamia encephalartoides</i> D.W. Stev.	Colombia (Santander)	Sp.— <i>cacao del indio</i> (Indian cocoa, <i>Theobroma cacao</i>)	Stevenson, 2001; Whitelock, 2002
<i>Zamia fairchildiana</i> L.D. Gómez	Costa Rica, Panama	Sp.— <i>palma de cerro</i> (hill palm), <i>palma de pegamento</i> (glue palm)	J. Chemnick, pers. comm., C. Lopez-Gallego, pers. comm.
<i>Zamia fischeri</i> Miq. and <i>Zamia vazquezii</i> D.W. Stev., Sabato, A. Moretti & De Luca	Mexico (Querétaro, San Luis Potosi, Veracruz)	Huastec Maya (also known as Teenek)— <i>ahaatik a eem</i> (maize lord), <i>Thipaak</i> (mythical boy who brought maize to the Huastec), <i>tsakam way</i> (small ear of maize), <i>tsakam Thipaak</i> (little Thipaak), <i>tsalaam Thipaak</i> (Thipaak's shade), <i>ts'een thipaak</i> (mountain Thipaak); Náh.— <i>chamalillo</i> (little <i>chamal</i> or dwarf <i>Dioon edule</i>), <i>teocinte</i> (pref. to <i>teocintle</i>) (sacred ear of maize, <i>Zea mays</i>), Sp.— <i>amigo del maíz</i> (friend of maize), <i>mazorca</i> (maize ear, ref. to cone)	Alcorn, 1984; Vovides et al., 1992; B. Schutzman, pers. comm.
<i>Zamia furfuracea</i> L. f.	Mexico (Veracruz)	Sp.— <i>palma bola</i> (drunk palm)	A. Vovides, pers. comm.
<i>Zamia gentryi</i> Dodson	Ecuador (Esmeraldas)	Sp.— <i>piña de monte</i> (wild pineapple)	F. Nicolalde-Morejón, in prep.
<i>Zamia inermis</i> Vovides, J.D. Rees & Vázq. Torres	Mexico (Veracruz)	Sp.— <i>palmita</i> (little palm)	Whitelock, 2002
<i>Zamia integrifolia</i> L. f.	Bahamas, Cayman Islands, Cuba, USA (Florida, Georgia)	Eng. (Bahamas)— <i>bay-rush</i> ; Eng. (USA)— <i>comfort root</i> , <i>Florida arrowroot</i> , <i>wild sago</i> ; Seminole— <i>coontie</i> (pref. to <i>compte</i> , <i>comptie</i> , <i>comtie</i> , <i>conti</i> , <i>Conti Hateka</i> [white root, white bread-plant], <i>coonti</i> , <i>coontia</i> , <i>koontee</i> , <i>konti</i> , <i>koontie</i> , <i>kunti</i>)	Correll & Correll, 1982; Sleight, 1953; Small, 1921, 1933

<i>Zamia kickxii</i> Miq.	Cuba	Sp. (Cuba)— <i>yábuna</i> , <i>yuquilla</i> (little manioc, <i>Manihot esculenta</i>), <i>yuquilla de ratón</i> (little mouse manioc), <i>yuquilla de sabana</i> (little savanna manioc)	Roig y Mesa, 1965
<i>Zamia lecointei</i> Ducke	Brazil, Colombia (Amazonas, Antioquia), Peru (Loreto), Venezuela	Taiwano— <i>gaw</i>	Schultes & Raffauf, 1990
<i>Zamia loddigesii</i> Miq.	Guatemala (Petén), Mexico (Hidalgo, Oaxaca, Veracruz)	Náh.— <i>teocinte</i> , <i>teocintle</i> , <i>teosinte</i> (sacred ear of maize, <i>Zea mays</i>) (plants), <i>mazorca</i> (ear of maize); Sp.— <i>amigo del maíz</i> (friend of maize), <i>camotillo</i> , <i>cocalito</i> , <i>palmiche</i> (palmetto), <i>palmilla</i> (little palm); Zoque-poluca— <i>cahua</i> , <i>chacuhua</i> , <i>maíz de coshca</i> , <i>poua</i> ; unident. langs.— <i>guachumpoyó</i> ; <i>tzompollo</i>	Patiño, 1989; Standley & Steyermark, 1958; Vázquez Torres, 1990; Vovides et al., 1992; B. Schutzman, pers. comm.; A. Vovides, pers. comm.
<i>Zamia melanorrhachis</i> D.W. Stev.	Colombia (Amazonas, Cordoba, Santander)	Sp.— <i>corocito</i> (little cohune palm); unident. lang.—(<i>mui</i>) <i>ibarácú</i> ;	Stevenson, 2001
<i>Zamia muricata</i> Willd.	Colombia, Venezuela	Unident. lang.— <i>acesiva</i>	Patiño, 1989
<i>Zamia neurophyllidia</i> D.W. Stev.	Costa Rica, S. Nicaragua, N. Panama	Ngobere— <i>tadowa</i> ; Afro-Panamanian— <i>guade teet</i>	Holzman and Haynes, 2004
<i>Zamia obliqua</i> A. Braun	Colombia (Antioquia, Chocó, Valle), S. Panama	Sp.— <i>chigua macho</i> (male <i>chigua</i> , ref. to both cycads and ferns), <i>maicito</i> (little maize)	Bernal and Restrepo, 1991; Stevenson, 2001; F. Nicolalde-Morejón, in prep.
<i>Zamia poeppigiana</i> Mart. & Eichler	Ecuador	Sp.— <i>palma de goma</i> (glue palm), <i>palma tabaquillo</i> (little tobacco palm); Tsa'fiqui— <i>pichi richi</i>	MacBride, 1936; F. Nicolalde-Morejón, in prep.; Schultes & Raffauf, 1990
<i>Zamia portoricensis</i> Urban	Puerto Rico	Sp. (Puerto Rico)— <i>marunguey</i>	Schuster, 1932
<i>Zamia pumila</i> L.	Cuba, Dominican Republic, Puerto Rico	Sp.— <i>guáyara</i> , <i>guáyiga</i> , <i>guáyuya</i> , <i>yábuna</i> , <i>yuquilla de paredón</i> (little cliff-dwelling manioc, <i>Manihot esculenta</i>), <i>yuquilla de ratón</i> (little mouse manioc), <i>yuquilla de sabana</i> (little savanna manioc)	Grey, 1927; Roig y Mesa, 1965; Zaroni, 1982
<i>Zamia pygmaea</i> Sims	Cuba (W. Cuba, Isla de la Juventud)	Sp. (Cuba)— <i>yuquilla de ratón</i> (little mouse manioc, <i>Manihot esculenta</i>), <i>yuquilla de sabana</i> (little savanna manioc)	González Géigel, 2003; Roig y Mesa, 1965
<i>Zamia roezlii</i> Linden	Colombia (Amazonas, Chocó, Nariño, Valle), Ecuador	Chá palaa— <i>aafachi</i> ; Sp.— <i>chigua</i> (ref. to both cycads and ferns), <i>piña de monte</i> ; Tsa'fiqui— <i>pichi-richi</i>	Bernal and Restrepo, 1991; F. Nicolalde—Morejón, in prep.

<i>Zamia skinneri</i> Warsz. ex A. Dietrich	Central & N.W. Panama	Cuna— <i>elkia</i> ; Sp.— <i>cebolla</i> (onion), <i>cebolla roja</i> (red onion), <i>cebollina</i> (little onion)	Duke, 1975; J. Haynes, pers. comm.; D. Stevenson, pers. comm.
<i>Zamia standleyi</i> Schutzman	N. Honduras	Pech— <i>yojrá unicej</i> (venomous manioc, <i>Manihot esculenta</i>); Sp.— <i>camotillo</i> (little camote or sweet potato, <i>Ipomoea batatas</i>), <i>yuca de ratón</i> (mouse manioc)	Bonta (this volume)
<i>Zamia ulei</i> Dammer	W. Brazil, Colombia, Ecuador, Peru	Karijona— <i>ma-re-ká-mê</i> ; Yukuna— <i>koo-roó-chee</i> ; Tukano— <i>ku</i>	Bernal and Restrepo, 1991; Schultes & Raffauf, 1990; Whitelock, 2002
<i>Zamia variegata</i> Warsz.	Guatemala, Mexico (Chiapas)	Sp.— <i>camotillo</i>	Standley & Steyermark, 1959
<i>Zamia wallisii</i> A. Braun	Colombia (Antioquia)	Sp.— <i>chigua</i> (ref. to both cycads and ferns); unident. lang.— <i>acesiva</i>	Pérez-Arbelaez, 1956
<i>Zamia</i> L. spp. from the northwest Amazon (generic)	Colombia	Karapaná— <i>koo</i> ; Kubuyarí— <i>maw'-ti-ree-na</i> ; Tanimuka— <i>koo</i>	Schultes & Raffauf, 1990

(C) Cycads of Oceania: Australia, Eastern Indonesia, Papua New Guinea and S. Pacific islands

Scientific name	Locality	Vernacular name	References
<i>Bowenia serrulata</i> (W. Bull) Chamb.	Australia (Qld)	Eng.— <i>Byfield fern</i>	Jones, 2002
<i>Bowenia spectabilis</i> Hook. ex Hook. f.	Australia (Qld)	Yalanji Ab.— <i>bungkay</i> ; unident. Ab. langs.— <i>chiroo</i> , <i>gunyoo</i> , <i>jayur</i>	Wilson, 2002; R. Hill, pers. comm.
<i>Cycas angulata</i> R.Br.	Australia (NT, Qld)	Aust. Ab.— <i>munbuwa</i> (seed), <i>ngathu</i> (plant)	Beck, 1992, 1993
<i>Cycas apoa</i> K.D. Hill	Indonesia (Maluku, Papua), Papua New Guinea	Ekor village lang. (Halmahera I.)— <i>bico</i> ; Kaka— <i>apoa</i> ; Sentani— <i>handambo</i>	Hill, 1994a
<i>Cycas armstrongii</i> Miq.	Australia (NT)	Iwaidja Ab.— <i>manggugbu</i> , <i>wurarrngarr</i> ; Malakmalak Ab.— <i>walangkirrik</i> ; Matngala Ab.— <i>turtur</i> ; Tiwi Ab.— <i>kwaka</i> (seeds), <i>mintu</i> (female plant),	Blake et al., 1998; Lindsay et al., 2001; Puruntatameri et al., 2001
<i>Cycas arnhemica</i> subsp. <i>muninga</i> Chirwin & K.D. Hill	Australia (NT)	Anindilyakwa Ab.— <i>muninga</i>	Hill, 1994b
<i>Cycas arnhemica</i> subsp. <i>natja</i> K.D. Hill	Australia (NT)	Burarra Ab.— <i>natja</i> ; Djambarrpuyngu Ab.— <i>warraga</i> (plant), <i>laluk</i> (seeds)	Hill, 1994b; Wightman & Smith, 1989
<i>Cycas bougainvilleana</i> K.D. Hill	Papua New Guinea (Bougainville, New Britain), Solomon Is.	Ambungi village lang. (New Britain)— <i>di di</i> ; Matong and Pomio village langs. (New Britain)— <i>pago</i> ; Rennel & Baga Island langs. (Solomon Is.)— <i>bae bae</i> , <i>bai bai</i> ; Suvai village lang. (Bougainville)— <i>diriuna</i> ; Tonolei village lang. (New Britain)— <i>diduna</i>	Hill, 1994a

<i>Cycas calcicola</i> Maconochie	Australia (NT)	Malakmalak Ab.— <i>walangkirrik</i> ; Matngala Ab.— <i>turtur</i> ; Ngan'gikurunggurr and Ngan'giwumirri Ab.— <i>yerrysya</i> (plant), <i>misya</i> (seeds); Wardaman Ab.— <i>ngewerrin</i>	Lindsay et al., 2001; Marrfurra et al., 1995; Raymond et al., 1999
<i>Cycas canalis</i> K.D. Hill	Australia (NT)	Malakmalak Ab.— <i>walangkirrik</i> ; Matngala Ab.— <i>turtur</i>	Lindsay et al., 2001
<i>Cycas maconochiei</i> subsp. <i>lanata</i> K.D. Hill	Australia (NT)	Malakmalak Ab.— <i>walangkirrik</i> ; Matngala Ab.— <i>turtur</i> ; Ngan'gikurunggurr and Ngan'giwumirri Ab.— <i>yerrysya</i> (plant), <i>misya</i> (seeds)	Lindsay et al., 2001; Marrfurra et al., 1995
<i>Cycas maconochiei</i> Chirgwin & K.D. Hill subsp. <i>maconochiei</i>	Australia (NT)	Batjamal Ab.— <i>tjuntuju</i> ; Emi Ab.— <i>marra</i> ; Tiwi Ab.— <i>minta</i> (female plant), <i>kwaka</i> (seeds)	Puruntatameri et al., 2001; Smith & Wightman, 1990
<i>Cycas media</i> R.Br. subsp. <i>banksii</i> K.D. Hill	Australia (Qld)	Yalanji Ab.— <i>mara, marra</i> ; unident. Ab. langs.— <i>badur, bodell,</i> <i>kamamma, kimalo, mununa</i> (seeds), <i>nartu</i> (seeds), <i>nijar</i>	Bailey, 1902; Hill & Baird, 2003; Roth, 1901; Specht, 1958
<i>Cycas ophiolitica</i> K. D. Hill	Australia (Qld)	Bayali Ab.(?)— <i>baveu</i>	Bailey, 1902; Roth, 1901
<i>Cycas orientis</i> K.D. Hill	Australia (NT)	Rirratjину Ab.— <i>nathu</i>	Yunupingu et al., 1995
<i>Cycas papuana</i> F. Muell.	Papua New Guinea	Unident. lang.— <i>warnara</i>	Bailey, 1909
<i>Cycas scratchleyana</i> F. Muell.	Indonesia (Ambon, Maluku, Papua), Papua New Guinea, Australia (Qld)	Dsimakani lang.— <i>kataki</i> ; Mekeo lang.— <i>enge-enge</i> ; Medino village lang.— <i>notuweh</i>	Hill, 1994a
<i>Cycas seemanii</i> A. Braun	S.W. Pacific islands (Fiji, New Caledonia, Tonga, Vanuatu)	Bauan (Eastern Fijian)— <i>logologo</i> (pref. to variants <i>lagalaga, langalanga, langolango, longolongo, rongorong</i>); Bismala (Vanuatu)— <i>namele</i> ; Nadroga (Western Fijian)— <i>sisila</i> ; Sie (Eromanga Island, Vanuatu)— <i>no-moll</i> ; unident. langs. (Fiji)— <i>roro, tuawawa niu</i> (devil's coconut); unident. langs. (Vanuatu)— <i>mwele</i> (Pentecost I.), <i>namail</i> (Maskelynes Is.), <i>nemol</i> (Espiritu Santo); unident. langs.— <i>mandrai</i> (bread), <i>wiro</i>	Degener, 1949; Hill, 1994a; Keppel & Osborne, 2004; Parham, 1943; Smith, 1979
<i>Lepidozamia hopei</i> Regel	Australia (Qld)	Yalanji Ab.— <i>julbin, miray</i> ; other Aust. Ab.— <i>binggira, bingir,</i> <i>ngarumba, wunu</i>	Forster, 1996; R. Hill, pers. comm.
<i>Macrozamia communis</i> L.A.S. Johnson and allied spp. (also sometimes incl. <i>Lepidozamia</i> <i>peroffskyana</i> Regel)	Australia (NSW)	Dhurak Ab.— <i>burrawang</i> (pref. to <i>burrawan, burrawong</i>)	Kennedy, et al., 2001
<i>Macrozamia douglasii</i> W. Hill ex F.M. Bailey	Australia (Qld)	Badtjala Ab.— <i>coobine, goulbine</i>	Osborne, 2003
<i>Macrozamia</i> <i>macdonnellii</i> (F. Muell. ex Miq.) A. DC.	Australia (NT)	Eastern Arrerente Ab.— <i>atyikwarle, atywekekwerle</i> ; Western Arrerente Ab.— <i>tywekekwerle</i>	Latz, 1995; Osborne, 1999

<i>Macrozamia miquelii</i> (F. Muell.) A. DC.	Australia (Qld)	Bayali Ab.(?)— <i>banga</i>	Thozet, 1866
<i>Macrozamia riedlei</i> (Gaudich.) C.A. Gardner	Australia (WA)	Aust. Ab.— <i>booyo</i> ; Noongar Ab.— <i>baian, budjan, djiriji, dyergee, gigijee, jeerajee, jeerja, jeerli, koondagoor, kundagur, quinine, quinning</i>	Abbott, 1983; Bindon, 1996
<i>Macrozamia</i> Miq. (generic)	Australia	Eng. (Aust.)— <i>wild pineapple, zamia fern, zamia palm</i>	White, 1928; common knowledge

(D) Cycads of S. Asia (the Indian subcontinent)

Scientific name	Locality	Vernacular name	References
<i>Cycas beddomei</i> Dyer	India (Andra Pradesh)	Telugu— <i>madhana—kamakshi</i> (lust-eyed one, possible ref. to aphrodisiac properties), <i>per ita</i> ; unident. lang.— <i>konda itha</i>	Schuster, 1932; Whitelock, 2002
<i>Cycas circinalis</i> L.	India (Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu)	Hindi— <i>jangli-mada-mast-ka-phul</i> (forest flower of sweet desire); Kanarese— <i>mundi, mundicalu, mundi-ichlumara</i> ; Malayalam— <i>chananga, eandu, indu, indum podi, intalapanna, inthu, mouta panna</i> (egg plant), <i>todda panna</i> (palmlike plant), <i>tutapanna</i> (palmlike plant); Oriya— <i>odasa-mari, orguna</i> ; Port.— <i>armatoria das igresias, palma d'igresia</i> ; Sanskrit— <i>varaguna</i> ; Tamil— <i>alangarakonnai, alangarasolai, canningay</i> (convulsions of the hand), <i>eanchy, madanagama</i> ; Telugu— <i>kamkshi, per ita</i>	Miquel, 1840, 1844; Pant, 1962; R. Singh & P. Radha, pers. comm.; Srivastava & Chauhan, 2004; van Rheede, 1682.
<i>Cycas nathorstii</i> J. Schust.	Sri Lanka	Sinhalese— <i>madu</i> (nectar)	Schuster, 1932
<i>Cycas pectinata</i> Buch.-Ham.: see under (E), below			
<i>Cycas zeylanica</i> (Schuster) A. Lindstr. & K. D. Hill	India (Andaman Is.), Sri Lanka	Sinhalese— <i>maha-madu</i> (great nectar)	Lindstrom & Hill, 2002

(E) Cycads of East Asia

Scientific name	Locality	Vernacular name	References
<i>Cycas bifida</i> (Dyer) K.D. Hill	China (Guangxi, Yunnan), N. Vietnam	Ch.— <i>cha-ye su-tie</i> (fork-leafed cycad), <i>long-kou su-tie</i> (Longzhou cycad)	Chen et al., 1995; Walters & Yang, 1994
<i>Cycas chamaoensis</i> K.D. Hill	Thailand	Thai— <i>prong</i> (cycad)	Hill & Vatcharakorn, 1998
<i>Cycas chevalieri</i> Leandri	N. Vietnam	Viet.— <i>cáy ngen</i>	Whitelock, 2002
<i>Cycas clivicola</i> K.D. Hill	Malaysia, Thailand	Thai— <i>prong</i> (cycad), <i>prong khao</i> (mountain cycad)	Hill & Vatcharakorn, 1998

<i>Cycas curranii</i> (J. Schust.) K.D. Hill	Philippines (Palawan)	Tagalog— <i>bayit</i> (pref. to <i>bait</i> , <i>vait</i>), <i>oliva</i> (plant, pref. to <i>oliba</i> , <i>uliba</i> , <i>uliva</i>), <i>pitógo</i> (seed, pref. to <i>bitogo</i> , <i>patubo</i> , <i>pitugo</i> , <i>potago</i>)	Amoroso, 1986; Schuster, 1932; Zamora & Co, 1986; K. Hill, pers. comm.
<i>Cycas edentata</i> de Laub.	Philippines (Sulu)	Tagalog— <i>bayit</i> (pref. to <i>bait</i> , <i>vait</i>), <i>oliva</i> (plant, pref. to <i>oliba</i> , <i>uliba</i> , <i>uliva</i>), <i>pitógo</i> (seed, pref. to <i>bitogo</i> , <i>patubo</i> , <i>pitugo</i> , <i>potago</i>)	Amoroso, 1986; Schuster, 1932; Zamora & Co, 1986; K. Hill, pers. comm.
<i>Cycas elongata</i> (Leandri) D. Yue Wang	S. Vietnam	Viet.— <i>cáy-xuong-te</i>	Poilane, 1924
<i>Cycas guizhouensis</i> K.M. Lan & R.F. Zou	China (Guanxi, Guizhou, Yunnan)	Ch.— <i>feng-wei-cao</i> , <i>guan-yin-lian</i> , <i>shan-bo-lu</i> , <i>su-tie</i> (cycad)	Walters & Yang, 1994
<i>Cycas hainanensis</i> C.J. Chen	China (Hainan)	Ch.— <i>ci-bing su-tie</i> (spiny petioled cycad), <i>fenghuangdan</i> (phoenix egg), <i>hainan su-tie</i> (Hainan cycad)	Chen et al., 1995; Walters & Yang, 1994
<i>Cycas hongheensis</i> S.Y. Yang & S.L. Yang	China (Yunnan)	Ch.— <i>ba-he su-tie</i> , <i>hong-he su-tie</i> (Honghe [Red River] cycad)	Walters & Yang, 1994
<i>Cycas litoralis</i> K.D. Hill	Malaysia, Myanmar, Indonesia (Sumatra), Thailand, S. Vietnam	Malay— <i>kwale pahang</i> (woods on seashore); Thai— <i>prong thale</i> (sea cycad)	Hill & Vatcharakorn, 1998; Ridley, 1893
<i>Cycas macrocarpa</i> Griff.	Malaysia, Thailand	Malay— <i>pakoo galowe</i> ; Thai— <i>prong</i> (cycad), <i>pha kood ha yee</i>	Griffith, 1854; Hill & Vatcharakorn, 1998
<i>Cycas micronesica</i> K.D. Hill	Micronesia (Pohnpei, Yap), Gaum, N. Mariana Is., Marshall Is., Palau	Chamorro (Guam)— <i>fadan</i> , <i>fadane</i> , <i>fadang</i> , <i>federico</i> , <i>gab-gab</i> , <i>gaou-gaou</i> (refer to the seed starch); Marshallese (Marshall Is.)— <i>langok</i> , <i>lokok</i> ; Nukuoro (Pohnpei State, FSM)— <i>manuatababa</i> ; Sonsorolese (Palau)— <i>faretoul</i> ; unident. langs. (Palau)— <i>klemia</i> , <i>kokeal</i> , <i>remiang</i> , <i>rumiyan</i> ; unident. langs. (Yap State, FSM)— <i>fallutier</i> , <i>fratel</i> , <i>frotel</i>	Fosberg & Sachet, 1975; Whiting, 1963
<i>Cycas multipinnata</i> C.J. Chen & S.Y. Yang	China (Yunnan)	Ch.— <i>dujuetie</i> (single leaf cycad), <i>duoqi su-tie</i> (multipinnate cycad), Ha-ni— <i>lei-ze-ze-bo</i> (ghost's palm)	Chen et al., 1995; Si-Lin Yang, 1995
<i>Cycas nongnoochiae</i> K.D. Hill	Thailand	Thai— <i>prong</i> (cycad)	Hill & Vatcharakorn, 1998
<i>Cycas pachypoda</i> K.D. Hill		Viet.— <i>thiên tu? chân voi-chân voi</i> (elephant leg cycad)	Hill et al. (in preparation)
<i>Cycas panzhihuaensis</i> L. Zhou & S.Y. Yang	China (Sichuan, Yunnan)	Ch.— <i>e-bao-gong</i> , <i>e-boa-chi</i> , <i>panzhihua su-tie</i> (Panzhihua cycad)	Walters & Yang, 1994

<i>Cycas pectinata</i> Buch.-Ham.	Bhutan, China (Yunnan), India, Laos, Myanmar, Nepal, Thailand, Vietnam	Assamese— <i>thaljimura</i> ; Burmese— <i>môndaing</i> ; Ch.— <i>bi-chi su-tie</i> (cycad with comb—like megasporophylls), <i>feng-wei-jiao</i> , <i>feng-huang-dan</i> ; Khasi (India)— <i>dieng-sia-goda</i> ; Nepali— <i>thakal</i> ; Thai— <i>boka</i> , <i>plong</i> , <i>prong khao</i> , <i>prong pa</i> (forest or field cycad)	Chen et al., 1995; Hill & Vatcharakorn, 1998; Pant, 1962; Pant et al., 1994; Smitinand, 1972; Walters & Yang, 1994
<i>Cycas pranburiensis</i> S.L. Yang, K.D. Hill, W. Tang & Vatcharakorn	Thailand	Thai— <i>ma phrao si da</i>	Hill & Vatcharakorn, 1998
<i>Cycas revoluta</i> Thunb.	Japan	Ch.— <i>tieshu</i> (iron tree), <i>feng-wei-jiao-ye</i> (phoenix tail banana), <i>su-tie</i> (cycad); Jap. (main islands)— <i>sotetsu</i> (preferred) (coming back from the dead by iron), <i>ban shou</i> (barbarian's banana), <i>hou bi</i> (bird's tail feathers), <i>hou bi shou</i> (broken banana leaf), <i>sha ka shou</i> (firebreak banana), <i>tesshou</i> , <i>tessio</i> (iron banana), <i>tosso</i> ; Jap. (Ryukyu Islands)— <i>hichichi</i> , <i>hitichi</i> , <i>satetsu</i> , <i>shichichi</i> , <i>sichi</i> , <i>sichidzi</i> , <i>sidzichi</i> , <i>sidzidzui</i> , <i>sihittu</i> , <i>sirichi</i> , <i>sitechi</i> , <i>sitichi</i> , <i>sitidzi</i> , <i>sitochi</i> , <i>sitsuchi</i> , <i>sitsudzu</i> , <i>situchi</i> , <i>suchichi</i> , <i>suidzu</i> , <i>susitykuki</i> , <i>sutachi</i> , <i>suticha</i> , <i>sutichi</i> , <i>sutta</i> , <i>sutuku</i> , <i>suutichi</i> , <i>syutta</i> , <i>syutto</i> , <i>tsudzu</i> (all ref. to whole plants); <i>kyungama</i> , <i>mii</i> , <i>nadzu</i> , <i>nari</i> , <i>suitsi-nari</i> , <i>yanabu</i> (ref. to seeds only)	Osborne & Tomiyama, 1995
<i>Cycas riuminiana</i> Porte ex Regel	Philippines (Luzon)	Ilocano— <i>sawang</i> (pref. to <i>sauang</i>); Tagalog— <i>bayit</i> (pref. to <i>bait</i> , <i>vait</i>), <i>oliva</i> (plant, pref. to <i>oliba</i> , <i>uliba</i> , <i>uliva</i>), <i>pitôgo</i> (seed, pref. to <i>bitogo</i> , <i>patubo</i> , <i>pitugo</i> , <i>potago</i>), <i>tamok</i>	Amoroso, 1986; Schuster, 1932; Zamora & Co, 1986; K. Hill, pers. comm.; R. Villas, pers. comm.
<i>Cycas rumphii</i> Miq.	Indonesia (S. Borneo, N.E. Java, Maluku, Papua, Sulawesi), Papua New Guinea	Ambonese Malay (Maluku)— <i>utta niwel</i> , <i>utta nuer</i> ; Biak (Amdoei village, Papua)— <i>nufuès</i> ; Javanese— <i>pakis rady</i> ; Malay— <i>haji</i> , <i>hajo</i> , <i>pakoe laut</i> , <i>paku laut</i> (both sea fern), <i>paku rajah</i> (Rajah's fern), <i>sajor calappa utam</i> ; Ternate (Maluku)— <i>djudjara</i> , <i>djoedjaroet</i> , <i>madjong utu</i> ; Wapi (Yakoi village, Papua)— <i>sumo</i> ; Weda (Halmahera I.)— <i>ftoi</i> ; unident. lang. (Mussau Is., PNG)— <i>otou</i> ; unident. lang.— <i>bakutu</i>	Hill, 1994a; Lepofsky, 1992; Miquel, 1844; Pant, 1962; Schuster, 1932
<i>Cycas saxatilis</i> K.D. Hill & A. Lindström	Philippines (Palawan)	Tagalog— <i>bayit</i> (pref. to <i>bait</i> , <i>vait</i>), <i>oliva</i> (plant, pref. to <i>oliba</i> , <i>uliba</i> , <i>uliva</i>), <i>pitôgo</i> (seed, pref. to <i>bitogo</i> , <i>patubo</i> , <i>pitugo</i> , <i>potago</i>)	Amoroso, 1986; Schuster, 1932; Zamora & Co, 1986; K. Hill, pers. comm.
<i>Cycas siamensis</i> Miq.	Cambodia, Laos, Myanmar, Thailand, S. Vietnam	Burmese— <i>môndaing</i> ; Lao— <i>ma prou tou</i> ; Thai— <i>maphrao tao</i> , <i>phrao tao</i> , <i>prong pa</i> (forest or field cycad), <i>talapat ruesi</i> (pref. to <i>talapat rusi</i>)	Hill & Vatcharakorn, 1998; Pant, 1962; Schuster, 1932; Smitinand, 1972
<i>Cycas simplicipinna</i> (Smitinand) K.D. Hill	China (Yunnan), Laos, Myanmar, Thailand, N. Vietnam	Ch.— <i>kong-que-bao-dan</i> , <i>shan-ba-buo</i> , <i>shen-xian-mi</i> , <i>xiang-wei-cai</i> ; Thai— <i>maphrao tao</i> , <i>phrao tao</i> , <i>plong</i> , <i>prong pa</i> (forest or field cycad), <i>talapat ruesi</i>	Hill & Vatcharakorn, 1998; Smitinand, 1972; Walters & Yang, 1994

<i>Cycas szechuanensis</i> C.Y. Cheng, W.C. Cheng & L.K. Fu	China (Fujian, Guangdong)	Ch.— <i>feng-wei su-tie</i> , <i>feng-wie-tie</i> , <i>guizhou su-tie</i> (Guizhou cycad), <i>nanpan jiang su-tie</i> (Nanpan River cycad), (<i>qiannian</i>)- <i>feng-wei cao</i> (thousand-year phoenix grass), <i>sichuan su-tie</i> (Sichuan cycad)	Chen et al., 1995; Walters & Yang, 1994; Zhong & Zhou, 1999
<i>Cycas taitungensis</i> C.F. Shen, K.D. Hill, C.H. Tsou & C.J. Chen	China (Taiwan)	Ch.— <i>tai-dong su-tie</i> (Taidong cycad); <i>taiwan-feng-wei-jiao</i>	Chen et al., 1995; Walters & Yang, 1994
<i>Cycas taiwaniana</i> Carruth.	China (Guangdong)	Ch.— <i>guangdong su-tie</i> (Guangdong cycad), <i>hai-te-koe</i> (sea-iron fowl)	Shen et al., 1994
<i>Cycas tansachana</i> K.D. Hill & S.L. Yang	Thailand	Thai— <i>prong</i> (cycad)	Hill & Vatcharakorn, 1998
<i>Cycas tropophylla</i> K.D. Hill & P.K. Loc	N. Vietnam	Viet.— <i>thiên tu? ha long</i> (Ha Long Bay cycad)	Hiệp & Kiew, 2000
<i>Cycas wadei</i> Merrill	Philippines (Culion)	Tagalog— <i>bayit</i> (pref. to <i>bait</i> , <i>vait</i>), <i>oliva</i> (plant, pref. to <i>oliba</i> , <i>uliba</i> , <i>uliva</i>), <i>pitógo</i> (seed, pref. to <i>bitogo</i> , <i>patubo</i> , <i>pitugo</i> , <i>potago</i>)	Amoroso, 1986; Schuster, 1932; Zamora & Co, 1986; K. Hill, pers. comm.