

typus(SYS) .

Trunk 1 m tall. Leaves simple pinnate 160~ 180 cm long, 42~ 50 cm wide, petioles 40 cm long, spines 42~ 47 pairs 3~ 4 mm long; pinnae thinly coriaceous yellowish green in dry state about 74~ 82 pairs 20~ 28 cm long, 1. 0~ 1. 3 cm wide sessiles decurrent, midrib raised on both surfaces. Microsporophyll 2. 0~ 2. 5 cm long glabrous, anthers usually 4 conglomerate. Carpophyll deltoid-ovate 12~ 17 cm long, 6~ 7 cm wide glabrous, lower part pedicellate, pedicel 5~ 8 cm long glabrous, upper part deltoid-ovate 7~ 9 cm long, 5~ 7 cm wide, pinnatifid, segments 28~ 34 pairs, 2~ 3 cm long, 1. 0~ 1. 5 mm wide. Seeds glabrous.

Guangxi Xiling, in sand stone, alt. 780 m, June 27, 1995, Y. C. Zhong 80196, ♀ type.

This species differs from *C. diannanensis* Guan et Tao by the shorter leaves and narrower pinnae, smaller and glabrous carpophyll, and glabrous seeds.

广 西 苏 铁 植 物 新 种

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摘 要 发表 4个苏铁属新种. 十万大山苏铁 *Cycas Shiwandashanica* Chang et Y. C. Zhong以小孢子叶球及大孢子叶球均较短小为特征;龙陵苏铁 *C. longlingensis* Chang et Y. C. Zhong以小羽片较狭窄,大孢子叶球的裂片较宽而裂片为数较少而与四川苏铁有别;西林苏铁 *C. xilingensis* Chang et Y. C. Zhong以小羽叶较薄,大孢子的裂片薄而尖长,顶生裂片宽大等而与 *C. segmentifida* Wang et Deng和 *C. guizhouensis* Lan et Zhou不同;多裂苏铁 *C. multifida* Chang et Y. C. Zhong则以大孢子叶裂片多,秃净无毛,种子亦无毛而与滇南苏铁 *C. diannanensis* Guan et Tao有别.

关键词 苏铁属,十万大山苏铁,龙陵苏铁,西林苏铁,多裂苏铁

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New *Cycas* from Guangxi^{*}

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Keywords *Cycas*, *C. shiwandashanica*, *C. longlinensis*, *C. xilingensis*, *C. multifida*

1 *Cycas shiwandashanica* Chang et Y. C. Zhong, sp. nov.

Species a *C. siamensi* Miq. foliis brevioribus et angustioribus, pinnis angustioribus glabris, strobilis masculis et carpophyllis ambitu brevioribus angustioribusque differt; A *C. ferruginea* Wei spinis foliis longioribus, pinnis latioribus longioribusque, margine planis non revolutis, segmentis carpophyllorum paucioribus brevioribusque recedit.

Truncus erectus ad 1.8 m altus. Folia ad apicem trunci aggregata, simplicipinnata 120 ~ 160 cm longa, 50 ~ 60 cm lata, petiolis 50 ~ 110 cm longis, spinis 18 ~ 34 jugis, 3 ~ 7 mm longis erectis, pinnis circ. 50 jugis 21 ~ 32 cm longis, 1.2 ~ 1.8 cm latis glabris planis, inter se 1.0 ~ 2.1 cm remotis, petioulis 4 ~ 5 mm longis, basi decurrentibus, costis utrinque manifeste elevatis. Strobilus masculus cylindricus 18 cm longus 4 ~ 5 cm latus pedicellatus, pedicellis 9 cm longis brunneo-tomentosis squamosis, squamis 6 ~ 15 lanceolatis 4 ~ 7 mm longis tomentosis; microsporophylla cuneata 1.5 ~ 2.0 cm longa 1 cm lata, apice obtusa vel breviter subacuta, supra glabra subtus brunneo-tomentosa, antheris 3 vel 4 conglomeratis. Carpophylla ovata 8 ~ 10 cm longa 2 ~ 3 cm lata, parte inferiore pedicello 5 ~ 7 cm longo brunneo-tomentoso, utrique ovulo solitario vel rarius duo instructa, parte superiore lamina ovata pectinatim-pinnatifida 2 ~ 3 cm longa 2 ~ 3 cm lata, segmentis 6 ~ 9 jugis 1.0 ~ 1.5 cm longis 1 mm latis sparse brunneo-tomentosis. Semina subglobosa 2.8 ~ 3.5 cm longa, 2.0 ~ 2.8 cm lata glabra.

Guangxi Fangcheng, alt. 180 m, julius 30, 1990, Y. C. Zhong 88015, ♀ typus (SYS): Shiwadashan alt. 125 m, Maius 2, 1988 Y. C. Zhong 88011 ♂.

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Trunk 1.8 m tall. Leaves pinnate lanceolate 1.2~1.6 m long 50~60 cm wide; petioles hollow cylindrical pinnae 50 pairs, 21~32 cm long, 1.2~1.8 cm wide, about 1 cm interval from each other, margin plane, midrib elevated on both surfaces; petiolules 4~5 mm long decurrent. Male cone evate cylindrical 18 cm long 4~5 cm wide, pedicel 9 cm long brownish tomentose, scales 6~15 triangular lanceolate 4~7 mm long; microsporophyll narrowly cuneate 1.5~2.0 cm long, apex obtuse mucronate, upper part 1 cm wide glabrous, brownish tomentose below, anthers 3 or 4 conglomerate. Carpophyll 8~10 cm long, lower part pedicellate, pedicel 5~7 cm long brownish tomentose, upper part ovate 2~3 cm long 2~3 cm wide slightly tomentose, pectinate lobate, lobes 8~9 on each side, 1.0~1.5 cm long 1~2 mm wide; ovules 1~2 on each side sessile. Seeds broadly ellipsoid 3.0~3.5 cm long, 2.0~2.8 cm wide glabrous.

This species differs from *C. siamensis* Miq. by the shorter leaves, shorter and smaller male and carpophyll; differs from *C. ferruginea* Wei by the longer spines, broader and longer pinnae with plan margin, and shorter carpophyll with less segments.

Guangxi Fangchen, Na-so, alt. 180 m, under broad leaf forest, July 30, 1990, Y. C. Zhong 88015, ♀ type; shiwandashan, alt. 125 m, may 2, 1988, Y. C. Zhong 88011 ♂.

2 *Cycas longlinensis* Chang et Y. C. Zhong, sp. nov.

Species a *Cycas hainanensis* Chen foliis petiolis ut pinnis longioribus, carpophyllis latioribus, segmentis longioribus, segmento terminali gracili differt; a *C. guizhouensi* Lan et Zhou et *C. szzechuanensis* Cheng et Fu petiolis et foliis longioribus, pinnis pluris et longioribus angustioribusque, carpophyllis brevioribus, segmentis paucioribus latioribusque, ovulis paucioribus distincta.

Truncus cylindricus 4 m altus. Lamina pinnata 1.2~1.8 m longa, 45~55 cm lata glabra, petiolis 60~70 cm longis compressius cylindricis tomentosis brunneolis demum glabris, dimidis superioris spinosis, spinis 20~25 jugis circ. 2 mm longis, inter se circ. 1.5 cm distantibus, pinnis 90~110 jugis suboppositis inter se 1.0~1.4 cm distantibus, segmento lineari 20~24 cm longo 8~10 mm lato glabro, margine revoluta, basi decurrenti, costa utrique elevata. Carpophylla late ovata 12~13 cm longa 7~8 cm lata brunneo-tomentosa, parte inferiore pedicello 6~8 cm longo utrinque ovulo duo instructa, parte superiore ovata 6~7 cm longa, 7~8 cm lata, pectinatim pinnatifida, pinnis 9~10 jugis linearibus 3~4 cm longis, 2.5~3.5 mm latis, apice acuminatis. Ovula glabra in sicco nigra.

Guangxi Longlin, Mt. Jin Zhong Shan, alt. 860 m, in arenoso-saxum, Dec. 14, 1991, Y. C. Zhong 80848, ♀ typus (SYS).

Trunk 4 m tall. Leaves 1.2~1.8 m long, 45~55 cm wide glabrous; petioles 60~70 cm long, flattened cylindrical brownish tomentose and glabrous at last, upper half spiny, spines 20~25 pairs about 2 mm long, and 1.5 cm interval from one another. Pinnae 90~110 pairs subopposite about 1.0~1.4 cm interval, linear-lanceolate 20~24 cm long, 8~10 mm wide glabrous, midrib elevate on both surfaces, margin revolute, base decurrent.

Carpophyll broadly ovate brownish tomentose, lower part pedicellate, pedicel 6~ 8 cm long, ovules 2 pairs at the upper part of the pedicel; upper part of the carpophyll broadly ovate 6~ 7 cm long 7~ 8 cm wide, pectinate pinnatifid, pinnae 9~ 10 pairs linear 3~ 4 cm long, 2.5~ 3.5 mm wide, apex acuminate Ovules glabrous blackish.

Guangxi Longlin County, Mt. Jinzhongshan, alt. 860 m, in sandstone; Dec. 14, 1991, Y. C. Zhong 80840, $\frac{\sigma}{\tau}$ type (SYS).

The species differs from *Cycas hainanensis* Chen by the longer leaves, petioles and pinnae, and the broader carpophyll with broader pinnae, and without broadened terminal pinna at the top; differs from *C. guizhouensis* Lan et Zhou and *C. szeduanensis* Cheng by the longer petioles and leaves, numerous, narrower and longer pinnae, and the shorter carpophyll with fewer and broader segments, and fewer ovules.

3 *Cycas xilingensis* Chang et Y. C. Zhong, sp. nov.

Cycas segmentifida Wang et Deng in Encephartos, 43 11~ 16, 1995, pro parte, quoad specimina infra citata.

Species a *C. segmentifida* Wang et Deng foliis brevioribus, pinnis angustioribus paucioribusque, petiolis brevioribus, spinis paucioribus brevioribusque, carpophyllis longioribus angustioribus, segmentis paucioribus latioribus articulatisque, segmentis terminali longiore latioreque differt; a *C. guizhouensi* Lan et Zhou pinnis longioribus, carpophyllis longioribus, segmentis paucioribus, segmento terminali longiore latioreque distincta.

Truncus erectus circ. 1 m altus. Folia pinnatifida 1.4~ 1.6 m longa, 50~ 70 cm lata, pinnis 73 jugis, 25~ 35 cm longis, 1.2~ 1.4 cm latis sessilibus basi decurrentibus, margine leviter revoluta, costa utrinque elevata, petiolis 64~ 70 cm longis spinulatis, spinis circ. 35 jugis 2 mm longis, inter se 1.5~ 2.5 cm remotis. Carpophylla ovata 12~ 13 cm longa (pedicellis exclusis), 7~ 8 cm lata brunneo-tomentosa pinnatifida, segmentis 11~ 13 jugis, 2~ 4 cm longis 2~ 4 mm latis articulatis, segmento terminali 8~ 9 cm longo 6~ 8 mm lato pinnatifido, pinnulis 3~ 4 jugis. Ovula utrinque 4~ 6 glabra.

Guangxi Xiling, alt. 880 m, Julius 18, 1994, Y. C. Zhong 80866, $\frac{\sigma}{\tau}$ typus (SYS).

Trunk 1 m tall. Leaves pinnate 1.4~ 1.6 m long, 50~ 70 cm wide, pinnae 73 pairs, 25~ 35 cm long, 1.2~ 1.4 cm wide, sessile and decurrent, margin slightly revolute, midrib elevated on both surfaces, petioles 64~ 70 cm long, spines 35 pairs 2 mm long, 1.5~ 2.5 cm interval from each other. Carpophyll ovate 12~ 13 cm long (pedicel exclude) 7~ 8 cm wide brownish tomentose, pectinate pinnatifid, pinnae 11~ 13 pairs 2~ 4 cm long, terminal segment 8~ 9 cm long and 6~ 8 mm wide pinnatifid, pinnules 3~ 4 pairs. Ovules 4~ 6 each side.

The type specimen Y. C. Zhong 80866 was erroneously induced as *Cycas segmentifida* by Wang and Deng, it differs from *C. segmentifida* Wang et Deng by the shorter leaves, narrower and less pinnae, shorter petioles with less and shorter spines, and by the longer

carpophyll, less broader and articulate segments, and the terminal segment is much longer and wider.

4 *Cycas multifida* Chang et Y. C. Zhong, sp. nov.

A *C. diannanensi* Guan et Tao foliis et pinnis brevioribus angustioribusque, carpophyllis brevioribus minoribusque glabris, ovulis glabris differt.

Truncus ad 1 m altus. Folia simplicipinnata 160~180 cm longa, 42~50 cm lata, petiolis circ. 40 cm longis, spinis 42~47 jugis, 3~5 mm longis, pinnis tenuiter coriaceis in sicco luteo-viridibus, 74~82 jugis, 20~28 cm longis, 1.0~1.3 cm latis sessilibus decurrentibus, costis utraque elevatis. Microsporophylla circ. 2.0~2.5 cm longa glabra, antheris plerumque 4 conglomeratis. Carpophylla deltoido-ovata 12~17 cm longa 6~7 cm lata glabra, parte inferiore pedicello 5~8 cm longo glabro, utrinque ovulo solitario vel duo instructa, parte superiore lamina deltoido-ovata pectinatifida 7~9 cm longa 5~7 cm lata, segmentis 28~34 jugis 2~3 cm longis 1.0~1.5 mm latis. Semina glabra.

Guangxi Xiling, in areno-saxa, alt. 780 m, junius 27, 1995, Y. C. Zhong 80196, ♀

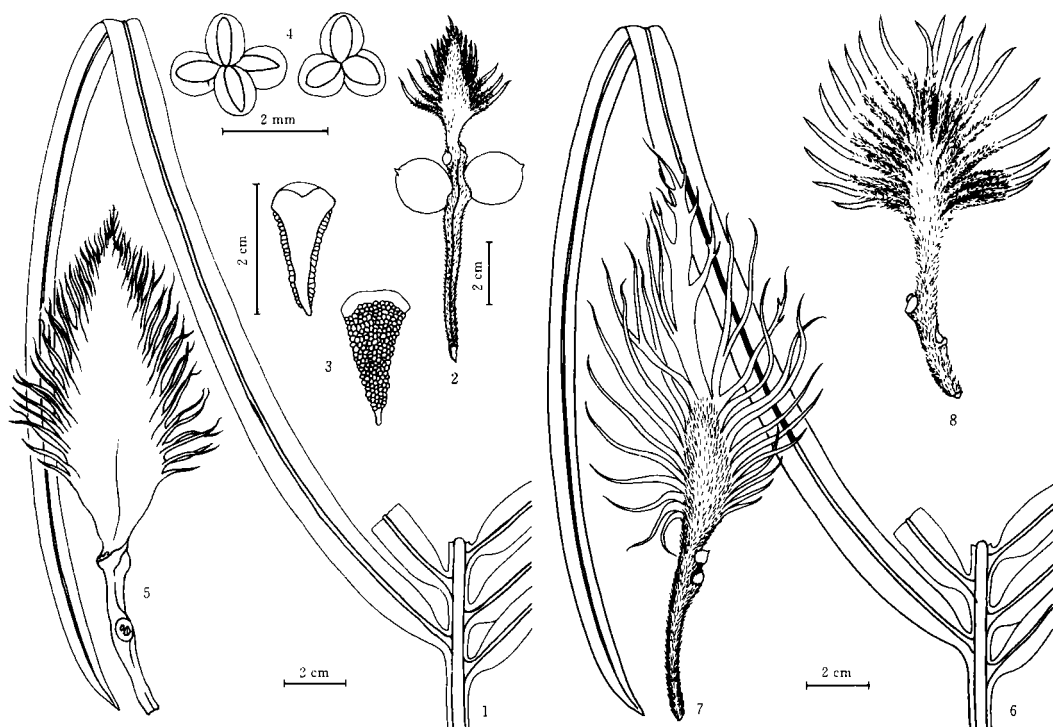


Fig. 1 Four New *Cycas*

1-4 *Cycas shiwandashanica* Chang et Y. C. Zhong 1 leaf; 2 carpophyll and seed; 3 both sides of microspore; 4 microsporophyll; 5 *Cycas multifida* Chang et Y. C. Zhong carpophyll; 6-7 *Cycas xilingensis* Chang et Y. C. Zhong 6 leaf; 7 carpophyll; 8 *Cycas longlinensis* Chang et Y. C. Zhong macrospore-phyll