



Notes on the genera *Asterolibertia* and *Cirsosia* (Fungi: Ascomycota)

V.B. Hosagoudar

Tropical Botanic Garden and Research Institute, Palode
Thiruvananthapuram, Kerala 695562, India
Email: vbhosagoudar@rediffmail.com

The ascomycetous genera having orbicular thyriothecium with central stellate dehiscence at the centre are classified under the family Asterinaceae, while, the genera having oval to elongated thyriothecium dehiscence all along at the centre are classified under the family Lembosiaceae. Both these families are grouped under the order Asterinales. These fungi are characterized by having brown superficial hyphae, possessing appressoria or nutritive hyphae. Fruiting body is of thyriothecium, scutate with radiating cells on the upper surface.

Some of the genera possess lateral appressoria while a few have in the hyphal cells (intercalary). Asterinaceous fungi having intercalary appressoria belong to two genera: *Asterolibertia* (Asterinaceae) and *Cirsosia* (Lembosiaceae); the former genus having orbicular thyriothechia dehiscing stellately at the centre and the latter genus having oval or elongated thyriothechia dehiscing longitudinally at the centre (Arx & Muller 1975; Hosagoudar et al. 2001). Stevens & Ryan (1939) have provided a check list of the genera and species but enough changes have been taken place in the study of this group of fungi since there no monographic work of this group. Hosagoudar & Abraham (2000) have listed the number of taxa belonging to the genus *Asterina*, Song et al. (2003) have listed the till then known species of the

genus *Lembosia* and Goos (1999) for *Echidnodella*. The present account is also in the same line to help in the identification of the fungi belonging to these two genera.

The Genus *Asterolibertia* (Fig. 1).

Asterolibertia Arn., Les Asterinees, 1: 161, 1918; Hansf., Mycol. Pap. 15: 189, 1946; Muller & Arx, Beitr. Krypt. Schw. 11: 97, 1962; Luttrell in Ainsworth et al. (eds.). The Fungi. An advanced Treatise 4: 207, 1973; Arx & Muller, Stud. Mycol. 9: 43, 1975; Bilgrami, Jamaluddin & Rizwi, Fungi of India p. 54, 1991; Hosag., Abraham & C.K. Biju, J. Mycopathol. Res. 39: 61, 2001; Singh, Duke, Bhandari & Jain, J. Econ. Taxon. Bot. 30: 185, 2008.

Steyaertia Bat. & Maia, Univ. Recife, Inst. Mycol. Publ. 295: 5, 1960.

Wardina Arn., Les Asterinees 1:165, 1918.

Leaf parasites. Mycelium ectophytic, appressoria intercalary, setae absent. Thyriothechia orbicular with radiating cells, astomatous, dehiscence stellately at the center; asci globose, octosporous, bitunicate; ascospores conglobate, uniseptate, brown.

Type sp.: *A. couepiae* (Henn.) Arn.

Enumeration of the species

Host: Anacardiaceae

Asterolibertia hydnocarpi Hosag. & Abraham, J. Mycopathol. Res. 35: 55, 1997.

On leaves of *Hydnocarpus macrocarpus*, *H. pentandra*, India.

Date of publication (online): 26 August 2010
Date of publication (print): 26 August 2010
ISSN 0974-7907 (online) | 0974-7893 (print)

Editor: Richard Mibey

Manuscript details:

Ms # o2465
Received 24 May 2010
Finally accepted 06 July 2010

Citation: Hosagoudar, V.B (2010). Notes on the genera *Asterolibertia* and *Cirsosia* (Fungi: Ascomycota). *Journal of Threatened Taxa* 2(9): 1153-1157.

Copyright: © V.B. Hosagoudar 2010. Creative Commons Attribution 3.0 Unported License. JoTT allows unrestricted use of this article in any medium for non-profit purposes, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Acknowledgements: I thank the Director, Tropical Botanic Garden and Research Institute, Palode for the facilities.

OPEN ACCESS | FREE DOWNLOAD

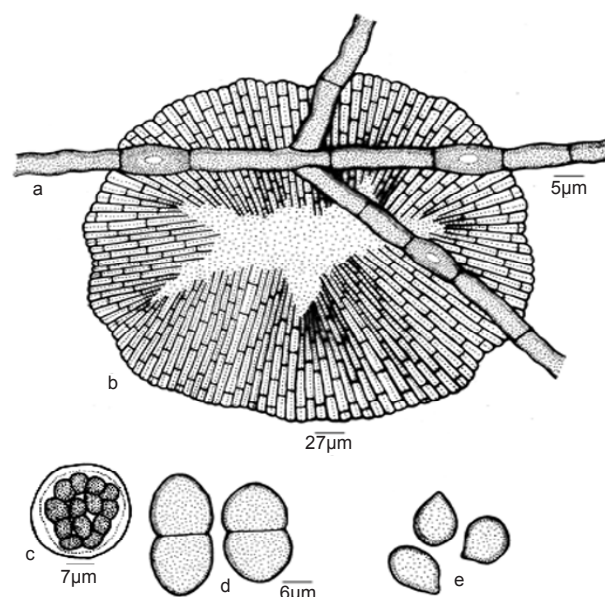


Figure 1. The genus *Asterolibertia* Arn.

a - Intercalary appressoriolate mycelium; b - Thyriothecium; c - Ascus; d - Ascospores; e - Pycnothyriospores

Asterolibertia mangiferae Hansf. & Thirum., Farlowia 3: 303, 1948.

On leaves of *Mangifera indica*, India

Asterolibertia nothopegiae Hosag. & Abraham, New Botanist 24: 109, 1997.

On leaves of *Nothopegia aureo-fulva*, India.

Host: Annonaceae

Asterolibertia nodulosa (Cooke) Hansf., Proc. Linn. Soc. London 160: 140, 1948.

Asterina nodulosa Speg., Fungi Puigg. No. 353 in Biol. Acad. Sci. Cordoba 11: 563, 1889.

On leaves of *Guatteria dolichopoda*, Costa Rica.

Host: Bignoniaceae

Asterolibertia peruviana Hansf., Sydowia 9: 81, 1955.

On leaves of Bignoniaceae member, Peru.

Host: Burseraceae

Asterolibertia santiriae (Sydow) Hansf., Reinwardtia 3: 126, 1954.

Asterinella santiriae Sydow, Ann. Mycol. 15: 248, 1917.

Prillieuxina santiriae (Sydow) Ryan in Stev. & Ryan, Illinois Biol. Monographs 17: 80, 1913.

On leaves of *Santiria nitida*, Philippines.

Host: Chrysobalanaceae

Asterolibertia licaniae (Cooke) Hansf., Proc. Linn. Soc., London 160: 140, 1949.

Asterina licaniae Cooke, Grevillea 12: 85 1884.

On leaves of *Licania* sp., Brazil.

Asterolibertia licanicola Hansf., Proc. Linn. Soc. London 160: 140, 1949.

On leaves of *Licania* sp., Brazil.

Asterolibertia schroeteri (Rehm) Arx in muller & Arx, Beitr. Krypt. der Schweiz, p.98, 1962.

Seynesia schroeteri Rehm, Hedwigia 37: 326, 1898.

Asterina schroeteri (Rehm) Theiss., Abh. Zool. Bot. Ges. Wien. 7: 3, 1913.

On leaves of *Chrysobalanus* sp., South America.

Host: Dipterochrysoideae

Asterolibertia anisopterae (Sydow) Hansf., Proc. Linn. Soc., London 160: 139, 1949.

Morenoella anisopterae Sydow, Ann. Mycol. 12: 560, 1914.

Asterina anisopterae Sydow, Ann. Mycol. 12: 556, 1914.

On leaves of *Anisoptera thursifera*, Philippines.

Asterolibertia flabellariae (Sydow) Hansf., Proc. Linn. Soc., London 158: 44, 19497.

Lembosia flabellariae Sydow, Ann. Mycol. 36: 189, 1938.

On leaves of *Flabellaria paniculata*, Sierra Leone

Asterolibertia vateriae Hosag. in Hosag., H. Biju & Appaiah, J. Mycopathol. Res. 44: 13, 2006.

On leaves of *Vateria indica*, India.

Host: Fabaceae

Asterolibertia spatholobi Hansf., Reinwardtia, 3: 127, 1954.

On leaves of *Spatholobus ferrugineus*, Java.

Host: Lauraceae

Asterolibertia cryptocaryae (Cooke) Hansf., Proc. Linn. Soc. N.S.W. 79: 106, 1954.

Asterins cryptocaryae Cooke in Herb., Kew.

Asterinella cryptocaryae (Cooke) Theiss., Broteria 10: 107, 1912.

Prillieuxina cryptocaryae (Cooke) Ryan in Stev & Ryan, Illinois Biol. Monographs 17: 79, 1939.

On leaves of *Cryptocarya* sp., Australia.

Asterolibertia cryptocaryae (Cooke) Hansf. var ***nodulifera*** Hansf., Proc. Linn. Soc. N.S.W. 79: 106, 1954.

On leaves of *Cryptocarya rigida*, Australia.

Host: Malpighiaceae

Asterolibertia ulei Hansf., Proc. Linn. Soc. London 16: 142, 1949.

On leaves of Malpighiaceae member, Brazil.

Asterolibertia couepiae (Henn.) Arn., Les Asterinees 1: 165, 1918.

Asterina couepia Henn., Hedwigia, 34: 104, 1895.

Steyaertia couepiae Bat. & Maia, Univ. Recife, Inst. Micol. Publ. 295: 5, 1960.

On leaves of *Couepia ovalifolia*, *C. rufa*, Brazil.

Host: Myrtaceae

Asterolibertia crustacea (Ell. & Ev.) Hansf., Sydowia 9: 80, 1955.

Asterella crustacea Ell. & Ev., Publ. Field. Mus., Columbia Bot. 2: 15, 1900.

Asterina crustacea (Ell. & Ev.) Sacc. & Trott., Syll. Fung. 22: 539, 1913.

On leaves of *Psidium guajava*, San Domingo.

Host: Poaceae

Asterolibertia sporoboli Castellani & Graniti in Graniti, Nuovo G. Bot. Ital. 57: 50, 1950.

On leaves of *Sporobolus ruspolanus*, British Somaliland.

Host: Polygalaceae

Asterolibertia bredemeyerae (Rehm) Arx in Muller & Arx, Beitr. Krypt. der Schweiz, p.98, 1962.

Asterina bredemeyerae Rehm, Hedwigia 40: 161, 1901.

Asterinella bredemeyerae Orejuela, Mycologia 36: 443, 1944.

On leaves of *Bredemeyera* spp., South America

Host: Rosaceae

Aserolibertia parinari (Sydow) Hansf., Proc. Linn. Soc. London 159: 36, 1947.

Asterina parinari Sydow, Ann. Mycol. 36: 180, 1938.

On leaves of *Parinarium excelsum*, Sierra Leone, Africa.

Host: Rubiaceae

Asterolibertia burchelliae (Doidge) Doidge, Bothalia 4: 315, 1942.

Asterinella burchelliae Doidge, Trans. Royal Soc. South Africa 8: 267, 1920.

Prillieuxina burchelliae (Doidge) Ryan in Stev. & Ryan, Illinois Biol. Monograph 17: 77, 1939.

On leaves of *Burchellia capensis*, *Terenna pavettoides*, Rubiaceae.

Asterolibertia gibbosa (Gaill.) Hansf., Proc. Linn. Soc. London 160: 141, 1948.

Asterina gibbosa Gaill., Bull. Soc. Mycol. France 13: 180, 1897.

On leaves of *Bananacantha spinosa*, *Randia* sp., Brazil.

Asterolibertia megathyria Doidge, Bothalia 4: 314, 1942.

Asterina gibbosa Gaill. var. *megathyria* Doidge, Trans. Royal. Soc. South Africa 8: 248, 1920.

Asterinella ugandensis Hansf., Proc. Linn. Soc. London 153: 48, 1941

On leaves of *Tricalysia* spp., South Africa.

Asterolibertia randiae (Doidge) Arx in Muller and Arx, Beitr. Krypt. der Schweiz. p.99, 1962.

Asterolibertia megathyria Doidge var. *randiae* Doidge, Bothalia 4: 315, 1942.

On leaves of *Randia dumetorum*, *Canthium* spp., South Africa

Host: Styracaceae

Asterolibertia hiiranensis Yamamoto, Sci. Rep. Hyogo. Univ. Agric., Agric. Biol. Ser. 3: 29, 1957.

Asterina hiiranensis Yamamoto., Sci. Rep. Hyogo. Univ. Agric., Agric. Biol. Ser. 2: 35, 1956.

On leaves of *Styrax hayataiana*, Formosa, Taiwan.

Doubtful species

Asterolibertia inaemelis (Mont.) Arn., Ann.Sci.Nat. Bot.Ser.Sev.10, 7: 721, 1925.

This is known on the members of three host families (Muller & Arx, 1962).

Asterolibertia mycoproides (Sacc.& Bercl.) Arx in Muller and Arx, Beitr. Krypt. der. Schweiz, p.100, 1962.

This is known on the members of two host families (Muller & Arx, 1962).

Asterolibertia thaxteri Hansf., Sydowia 11: 63, 1957.

Known on unknown host.

The genus *Cirsosia* (Fig. 2)

Cirsosia Arn., Ann. Ecol. Nat. Agric. Montpellier 16: 127,1918; Hansf., Mycol. Pap. 15: 189, 1946; Muller & Arx, Beitr. Krypt. der. Schweiz. 11:113, 1962; Luttrell in Ainsworth et al. (eds.). The Fungi. An advanced Treatise 4: 207, 1973; Arx & Muller, Stud. Mycol. 9: 44, 1975; Hosag., Abraham & C.K. Biju, J. Mycopathol. Res. 39: 62, 2001; Singh, Duke, Bhandari & Jain, J. Econ. Taxon. Bot. 30: 186, 2008.

Cirsosiella Arn., Les Asterinees 1:127, 1918.

Halbania Arn., Les Asterinees 1: 163, 1918.

Leaf parasites. Mycelium ectophytic, appressoria intercalary. Thyriothecia oval, ellipsoidal, X or Y shaped, elongated with radiating cells, astomatous, dehiscence longitudinally at the center; asci oval, octosporous, bitunicate; ascospores brown, conglobate, uniseptate.

Type sp.: *C. manaosensis* (Henn.) Arn.

Enumeration of the species

Host: Arecaceae

Cirsosia arecacearum Hosag. & Pillai, Mycol. Res. 98:128, 1994.

On leaves of *Calamus thwaitesii*, India

Cirsosia globuliferae (Pat.) Arn. in Muller & Arx, Beitr. Krypt. der Schweiz, p.114. 1962.

Lembosia globuliferae Pat., J. Bot. p.65, 1890.

Asterina globuliferae (Pat.) Theiss., Abh. Zool. Bot. Ges. Wein 7: 56, 1913.

Cirsosiella globuliferae (Pat.) Arn., Les Asterinees 1:

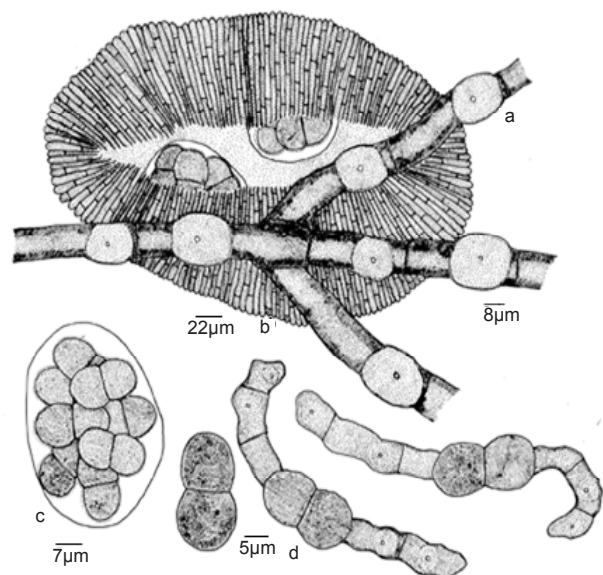


Figure 2 .The genus *Cirsosia* Arn.

a - Intercalary appressariate mycelium; b - Thyriothecium; c - Ascus; d. Ascospores

Table 1. Host and species index

<i>Anisoptera thursifera</i>	<i>Asterolibertia anisopterae</i> <i>Morenoella anisopterae</i> <i>Asterina anisopterae</i>
<i>Bananacantha spinosa</i>	<i>Asterolibertia gibbosa</i> <i>Asterina gibbosa</i>
Bignoniaceae member	<i>Asterolibertia peruviana</i>
<i>Bredemeyera</i> spp.	<i>Asterolibertia bredemeyerae</i> <i>Asterina bredemeyerae</i> <i>Asterinella bredemeyerae</i>
<i>Burchellia capensis</i>	<i>Asterolibertia burchelliae</i> <i>Asterinella burchelliae</i> <i>Prillieuxina burchelliae</i>
<i>Calamus</i> sp.	<i>Cirsosia globuliferae</i> <i>Lembosia globuliferae</i> <i>Asterina globuliferae</i> <i>Cirsosiella globuliferae</i> <i>Asterina bakeri</i> <i>Asterolibertia bakeri</i> <i>Cirsosia transversalis</i> <i>Asterina transversalis</i> <i>Morenoella transversalis</i> <i>Cirsosiella transversalis</i>
<i>Calamus thwaitesii</i>	<i>Cirsosia arecacearum</i>
<i>Canthium</i> spp.	<i>Asterolibertia randiae</i> <i>Asterolibertia megathyria</i> Doidge var. <i>randiae</i>
<i>Chrysobalanus</i> sp.	<i>Asterolibertia schroeteri</i> <i>Seynesia schroeteri</i> <i>Asterina schroeteri</i>
<i>Clonodia verrucosa</i>	<i>Cirsosia manaosensis</i> <i>Lembosia manaosensis</i>
<i>Couepia ovalifolia</i>	<i>Asterolibertia couepiae</i> <i>Asterina couepiae</i> <i>Steyaertia couepiae</i>
<i>Couepia rufa</i>	<i>Asterolibertia couepiae</i> <i>Asterina couepia</i> <i>Steyaertia couepiae</i>
<i>Cryptocarya rigida</i>	<i>Asterolibertia cryptocaryae</i> (Cooke) Hansf. var. <i>nodulifera</i>
<i>Cryptocarya</i> sp.	<i>Asterolibertia cryptocaryae</i> <i>Asterina cryptocaryae</i> <i>Asterinella cryptocaryae</i> <i>Prillieuxina cryptocaryae</i>
<i>Flabellaria paniculata</i>	<i>Asterolibertia flabellariae</i> <i>Lembosia flabellariae</i>
<i>Gutteriae dolichopoda</i>	<i>Asterolibertia nodulosa</i> <i>Asterina nodulosa</i>
<i>Hydnocarpus macrocarpus</i>	<i>Asterolibertia hydnocarpi</i>
<i>Hydnocarpus pentandra</i>	<i>Asterolibertia hydnocarpi</i>
<i>Licania</i> sp.	<i>Asterolibertia licaniae</i> <i>Asterina licaniae</i> <i>Asterolibertia licanicola</i>
Malpighiaceae member	<i>Asterolibertia ulei</i>
<i>Mangifera indica</i>	<i>Asterolibertia mangiferae</i>
<i>Nothopegia aureo-fulva</i>	<i>Asterolibertia nothopegiae</i>
<i>Parinarium excelsum</i>	<i>Asterolibertia parinari</i> <i>Asterina parinari</i>
<i>Psidium guajava</i>	<i>Asterolibertia crustacea</i> <i>Asterella crustacea</i> <i>Asterina crustacea</i>

<i>Randia dumetorum</i>	<i>Asterolibertia randiae</i> <i>Asterolibertia megathyria</i> Doidge var. <i>randiae</i>
<i>Randia</i> sp.	<i>Asterolibertia gibbosa</i> <i>Asterina gibbosa</i>
<i>Santiria nitida</i>	<i>Asterolibertia santiriae</i> <i>Asterinella santiriae</i> <i>Prillieuxina santiriae</i>
<i>Spatholobus ferrugineus</i>	<i>Asterolibertia spatholobii</i>
<i>Sporobolus ruspolanus</i>	<i>Asterolibertia sporoboli</i>
<i>Styrax hayataiana</i>	<i>Asterolibertia hiiranensis</i> <i>Asterina hiiranensis</i>
<i>Terenna pavettoides</i>	<i>Asterolibertia burchelliae</i> <i>Asterinella burchelliae</i> <i>Prillieuxina burchelliae</i>
<i>Tricalysia</i> spp.	<i>Asterolibertia megathyria</i> <i>Asterina gibbosa</i> <i>Asterinella ugandensis</i>
Unknown hosts	<i>Asterolibertia inaemelis</i> <i>Asterolibertia myocoproides</i> <i>Asterolibertia thaxteri</i>
<i>Vateria indica</i>	<i>Asterolibertia vateriae</i>
<i>Vatica obtusifolia</i>	<i>Cirsosia irregularis</i> <i>Asterina irregularis</i> <i>Morenoella irregularis</i> <i>Cirsosiella irregularis</i> <i>Halbanina irregularis</i>

128, 1916.

Asterina bakeri Sydow, Ann. Mycol. 14: 367, 1916.

Asterolibertia bakeri (Sydow) Hansf., Proc. Linn. Soc. London 160: 139, 1948.

On leaves of *Calamus* sp., Asia.

Cirsosia transversalis (Sydow) Bat. & Maia, Rev. Biol. 2: 128, 1960.

Asterina transversalis Sydow, Leafl. Philippine Bot. 62: 1542, 1911.

Morenoella transversalis (Sydow) Theiss Ann. Mycol. 11: 457, 1913.

Cirsosiella transversalis (Sydow) Arn., Les Asterinees 1: 128, 1918.

On leaves of *Calamus* sp., Philippines.

Host: Dipterocarpaceae

Cirsosia irregularis (Sydow) Arx in Muller & Arx, Beitr. Krypt. der Schweiz 115, 1962.

Asterina irregularis Sydow, Leafl. Philipp. Bot. 62: 1540, 1911.

Morenoella irregularis (Sydow) Theiss., Ann. Mycol. 11: 458, 1913.

Cirsosiella irregularis (Sydow) Arn., Les Asterinees 1: 128, 1918.

Halbanina irregularis (Sydow) Hansf., Reinwardtia 3: 119, 1954.

On leaves of *Vatica obtusifolia*, Philippines

Host: Malphigiaceae

Cirsosia manaosensis (Henn.) Arn., Les. Asterinees
1: 27, 1918.

Lembosia manaosensis Henn., Hedwigia 43: 265,
1904.

On leaves of *Clonodia verrucosa*, Brazil.

REFERENCES

Arx, J.A.V. & E. Muller (1975). A Re-evaluation of the Bitunicate Ascomycetes with key to the Families and Genera. *Stud. Mycol.* 9: 1-159.

Hosagoudar, V.B. & T.K. Abraham (2000). A list of *Asterina* Lev. species based on the literature. *Journal of Economic and Taxonomic Botany* 24: 557-587.

Hosagoudar, V.B., T.K. Abraham & C.K. Biju (2001). Re-evaluation of the family Asterinaceae. *Journal of Mycopathol. Research* 39: 61-63.

Song, B. & V.B. Hosagoudar (2003). A list of *Lembosia* species based on the literature. *Guizhou Science* 21: 93-101.

Goos, R.D. (1999). Notes on the genus *Echidnodella* (Asterinaceae). *Mycotaxon* 73: 455-454.

Stevens, F.L. & M.H. Ryan (1939). The Microthyriaceae. *Illinois Biological Monograph* 17: 1-138.

