

## A preliminary survey of the genus *Phallus* sensu lato

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Applying a broad generic and a narrow species concept, the nearly cosmopolitan genus *Phallus* L.: Pers. sensu lato (incl. *Dictyophora* Desv., *Aporophallus* A. Möller, *Itajahya* A. Möller, *Echinophallus* P. Henn. and *Endophallus* Zang et R.H. Petersen) is recognized with 31 species. The genus is articulated in 5 subgenera and 5 sections. Several new combinations, one new name are proposed.

**Key words:** *Phallus*, *Dictyophora*, *Aporophallus*, *Itajahya*, *Echinophallus*, *Endophallus*, distribution, taxonomy.

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Je rozlišeno 31 druhů kosmopolitního rodu *Phallus* L.: Pers. s.l. (inkl. *Dictyophora* Desv., *Aporophallus* A. Möller, *Itajahya* A. Möller, *Echinophallus* P. Henn. a *Endophallus* Zang et R.H. Petersen), při uplatnění širokého rodového pojetí a úzkého druhového pojetí.

### INTRODUCTION

Although the family Phallaceae belongs to the most striking representants of larger fungi on all continents, few attempts have been made to establish a synopsis of the family or at least of its most conspicuous genus, *Phallus* sensu lato (Ventenat 1798, Fischer 1888 – 1905, Lloyd 1909, Fischer 1933). But there is a lot of information scattered in floras and papers from all over the world which justifies a new approach to summarize the present knowledge of this genus.

In the genus *Phallus* Hadr. Jun. ex L.: Pers. sensu lato, at least 147 names on specific range and 27 names of infraspecific taxa have been published hitherto. A part of these names refers to species excludenda which actually are combined with genera as *Helvella*, *Gyromitra*, *Leotia*, *Morchella*, *Mutinus*, and *Rhizina*. Other names apparently or supposedly are synonyms. The author, applying a rather narrow species concept and a broad generic concept, recognizes 31 species within *Phallus* sensu lato.

The distribution of *Phallus* s.l. is nearly cosmopolitan, but the genus is not recorded from temperate South America, New Zealand, the arctic and subarctic Europe, Iceland, Greenland, Faer Oer, Shetland and Orkney Islands, and Hebrides. The distribution in Siberia is unknown. On the other hand, the genus is represented on rather remote islands as Hawaii, Tahiti, and Tasmania.

From the 31 recognized species, 3 are limited to the New World, 18 to the Old World, and 10 are known from both hemispheres, although in a few cases (*Ph. rugulosus*, *Ph. merulinus*) the actual wide distribution may be due to introduction by man. The center of diversity is in China incl. Taiwan, and South East Asia, with 21 recognized species, many of them endemic to that area. A minor diversity with only few endemic species is known from the South Pacific (Indonesia, Papua New Guinea, etc.) and from tropical Africa, each of these regions with 9 species. No endemic species are known from Europe, Middle East, Japan, and Australia. Of course, surprising discoveries still are possible nowadays and may modify the present biogeographic picture if this genus.

Important morphological criteria for the infrageneric taxonomy of *Phallus* are shape and surface configuration of the pileus (glabrous, granulate, rugose, reticulate, wig-like; apex perforate or imperforate), yellow to red pigments (carotenoids) in receptaculum (but loss of pigment components by mutation seems to be not rare), pinkish to violet discoloration in volva and mycelial strand. Moreover, the smell of mature gleba is variable (fetid, bread-like, flowery, etc.).

The importance of an indusium for the taxonomy of the group has been overestimated by most authors in the past. Species without and with indusium may be closely related (*Ph. hadriani* - *Ph. indusiatus*; *Ph. lauterbachii* - *Ph. echinovolvatus*), and one species may have receptacula without or with indusium or with a rudimentary indusium hidden under the pileus (*Ph. impudicus* var. *impudicus*, var. *pseudoduplicatus*, var. *obliteratus*).

#### GENERIC CONCEPT

*Phallus* Hadr. Jun. 1562 ex L. 1753 : Pers. 1801 sensu lato

Typus generis: *Phallus impudicus* L. 1753 : Pers. 1801

#### Synonyms

= <i>Dictyophora</i> Desvaux 1809	<i>Ph. indusiatus</i>
= <i>Satyros</i> Bosc 1811	<i>S. rubicundus</i>
= <i>Hymenophallus</i> Nees 1816	<i>Ph. indusiatus</i>
= <i>Dictyopeplos</i> Kuhl et Van Hasselt 1824	<i>D. elegans</i>
= <i>Sophronia</i> Pers. in Gaudichaud 1826	<i>S. brasiliensis</i>
= <i>Dictyophallus</i> Corda 1842	<i>Ph. aurantiacus</i>
= <i>Kirchbaumia</i> S. Schulzer 1866	<i>K. imperialis</i>
= <i>Omphalophallus</i> Kalchbr. 1883	<i>O. muellerianus</i>
= <i>Ithyphallus</i> (Fr. 1823) E. Fischer 1886 non <i>Ithyphallus</i> S. F. Gray 1821 (= <i>Mutinus</i> Fr. 1849, nom. cons.)	<i>Ph. impudicus</i>
= <i>Aporophallus</i> A. Möller 1895	<i>A. subtilis</i>

#### Type species

= <i>Itajahya</i> A. Möller 1895	<i>I. galericulata</i>
= <i>Cryptophallus</i> Peck 1897	<i>C. albiceps</i>
= <i>Alboffiella</i> Speg. 1898	<i>A. argentina</i>
= <i>Echinophallus</i> P. Henn. 1898	<i>I. lauterbachii</i>
= <i>Clautriavia</i> (Pat. 1998) Lloyd 1909	<i>D. irpicina</i>
= <i>Jaczevska</i> Mattirollo 1913	<i>J. phalloides</i>
= <i>Endophallus</i> Zang et R. H. Petersen 1989	<i>E. yunnanensis</i>

**1. *Phallus* subgenus *Aporophallus* (A. Möller 1895) Kreisel, stat. nov.**

Basionym: *Aporophallus* A. Möller, Brasilische Pilzblumen p. 145, 1895.

Pileus campanulate, imperforate, surface glabrous. No indusium. Receptaculum without pigments. Type species: *A. subtilis* A. Möller 1895.

*Phallus subtilis* (A. Möller 1895) C.G.Lloyd 1909

Subtropical South America (Brazil, endemic).

**2. *Phallus* subgenus *Itajahya* (A. Möller 1895) Kreisel, stat. nov.**

Basionym: *Itajahya* A. Möller, Brasilische Pilzblumen p. 148, 1895.

Pileus campanulate or wig-like, with flat and edged apex, imperforate. No indusium. Receptaculum without pinkish or without pigments. Type species: *Itajahya galericulata* A. Möller 1895.

*Phallus glutinolens* (A. Möller 1895) O. Kuntze 1898

Subtropical South America (Brazil, North Argentina).

*Phallus galericulatus* (A. Möller 1895) Kreisel, comb. nov.

Basionym: *Itajahya galericulata* A. Möller, Brasilische Pilzblumen p. 148, 1895.

= ? *Alboffiella argentina* Speg. 1898 (Argentina)

Tropical and subtropical South America, Caribbean, southern USA, South Africa.

*Phallus roseus* Delile 1813 (Egypt)

= *Itajahya rosea* (Delile) E. Fischer 1929

Mediterranean, North Africa, Pakistan, India.

The taxonomic relations of *Phallus roseus* Delile, *Itajahya galericulata* A. Möller, and *Alboffiella argentina* Speg. require further study. They have been discussed by Malencon (1953), but no additional data have been reported since.

**3. *Phallus* subgenus *Endophallus* (Zang et R. H. Petersen) Kreisel, stat. nov.**

Basionym: *Endophallus* Zang et R.H.Petersen, Mycologia 81: 488, 1989.

Pileus campanulate, apex perforate, surface reticulate. Indusium rudimentary. Receptaculum with basal disc, nearly not extending. No pigments. Type species: *E. yunnanensis* Zang et R. H. Petersen 1989.

*Phallus yunnanensis* (Zang et R. H. Petersen 1989) Kreisel, comb. nov.

Basionym: *Endophallus yunnanensis* Zang et R. H. Petersen, Mycologia 81: 488, 1989.

Southern China (Yunnan, endemic).

4. *Phallus* subgenus *Satyryus* (Bosc 1811) Kreisel, stat. nov.

Basionym: *Satyryus* Bosc, Mag. Ges. Naturf. Freunde Berlin 5: 86, 1811.

Small species of *Mutinus* habitus. Pileus campanulate, acute or obtuse or truncate, granulate or rugulose or meruloid. No indusium. Receptaculum with yellow, orange, or red pigments. Type species: *Satyryus rubicundus* Bosc 1811.

*Phallus rugulosus* (E. Fischer 1886) O. Kuntze 1891 (Japan)

= ? *Ithyphallus aurantiacus* var. *pusillus* Pat. 1890 (Vietnam)

Temperate to subtropical East Asia (China, Japan, Vietnam): probably introduced recently to USA (New Jersey) and Spain (1991 Cáceres).

*Phallus nanchangensis* Z. Z. He 1989

Southern China (Jianxi, endemic).

*Phallus taibeiensis* Liu and Bau 1982

= *Ph. formosanus* Lee 1957, non Kobayasi 1938

Southern China (Taiwan, endemic)

*Phallus rubicundus* (Bosc 1811) Fr. 1823 (USA, Carolina)

= *Ph. canariensis* Mont. 1840 (Canary Islands)

= *Ph. aurantiacus* Mont. 1841 (Southern India)

= *Ithyphallus balansae* Pat. 1890 (Vietnam)

= *Ph. celebicus* P. Henn. 1900 (Celebes)

= *Ph. coralloides* (Cobb 1906) C. G. Lloyd 1910 (Hawaii)

Canarian Islands, tropical and subtropical Africa, Celebes, Java, Australia, Hawaii, southern USA (Texas, Upper Carolina).

A widespread pantropic species, characterized by the rounded pileus, often covered by fragments of the volva.

*Phallus novae-hollandiae* Corda 1854 (Australia, N. S. Wales)

= *Ph. sanguineus* P. Henn. 1901 (Cameroon)

= *Ph. gracilis* (E. Fischer 1890) C. G. Lloyd 1907 sensu Lloyd (Australia), non Lloyd 1909 (= *Ph. corallinus* = *Ph. rubicundus*, see above; Hawaii).

Tropical and subtropical Africa, Australia. The records from Tasmania (Cunningham 1944) possibly belong here.

The species is characterized by a broadly truncate apex of pileus. A similar arrangement in the *Phallus rubicundus* group was suggested by Dring and Rayner (1967, p. 14), but no definite solution was communicated, and the concept was changed by Dring and Rose (1976).

*Phallus caliendricus* Dring and Rayner 1967

Tropical Africa (Mt. Kenya, endemic).

**5. *Phallus* subgenus *Phallus***

Pileus campanulate to conical with perforate apex. Indusium absent or present. Pigments pinkish to violet or yellow/orange/red or lacking.

**5a. *Phallus* sect. *Granophallus* Kreisel, sect. nov.**

Receptaculum cum superficie pilei granulosa, sine indusio, disco basali instructo. Funiculus mycelialis rubescens vel violascens. Species typica: *Phallus ravenelii* Berk. and Curt. 1873.

Pileus surface granulose. No indusium. Receptaculum with basal disc. Pinkish to violet pigments in the mycelial strand.

*Phallus ravenelii* Berk. et Curt. 1873 (USA, S. Carolina)

= *Ithyphallus cucullatus* Pat. 1890 (USA, Massachusetts)

Temperate North America (Canada, USA, Mexico: Morelos).

This species endemic to North America stands rather isolated within the genus. The characteristic flat basal disc of receptaculum remembers of *Ph. (Endophallus) yunnensis* from China (cf. Zang and Petersen 1989).

**5b. *Phallus* sect. *Clautriavia* (Pat. 1898) Kreisel, stat. nov.**

Basionym: *Dictyophora* subgenus *Clautriavia* Patouillard, Bull. Soc. Myc. France 14: 190, 1898.

Pileus surface rugulose to meruloid. Indusium present or absent. Volva may be provided with echinate protuberances. Receptaculum not pigmented. Type species: *Dictyophora irpicina* Pat. 1898.

*Phallus lauterbachii* (P. Henn. 1894) Kreisel, comb. nov.

Basionym: *Echinophallus lauterbachii* P. Henn., Englers Bot. Jahrb. 18, Beibl. 44: 36, 1894. (Papua New Guinea, Kaiser-Wilhelmsland).

= *Echinophallus dahlii* P. Henn. 1898, nomen provis. (same loc.)

= *Echinophallus papuanus* E. Horak in litt. (same loc.)

South Pacific (Papua New Guinea, endemic).

*Phallus echinovolvatus* (Zang et al. 1988) Kreisel, comb. nov.

Basionym: *Dictyophora echinovolvata* Zang, Zheng and Hu, Mycotaxon 33: 146, 1988 (China, Hunan).

Southern China (Hunan, Kweichow, endemic).

*Phallus merulinus* (Berk. 1866) C. G. Lloyd 1907 (Indonesia, Java)

= *Ph. irpicinus* (Pat. 1898) C. G. Lloyd 1907 (Indonesia, Java)

Southern China, tropical Asia from Pakistan to South Pacific, Australia; Carribbean (Tobago, possibly introduced).

5c. *Phallus* sect. *Flavophallus* Kreisel, sect. nov.

Receptaculum pileo superficie reticulata instructum, cum vel absque indusio, pigmentis flavis, aurantiacis vel rubris coloratum. Species typica: *Ithyphallus tenuis* E. Fischer 1886.

Pileus surface reticulate. Indusium present or absent. Yellow, orange, or red pigments in receptaculum and/or indusium.

*Phallus flavocostatus* Kreisel, nom. nov.

= *Ithyphallus costatus* Penzig, Ann. Jard. Bot. Buitenzorg 16: 147, 1899.

= *Phallus costatus* (Penzig 1899) C. G. Lloyd 1909 (Indonesia, Java), non *Ph. costatus* Ventenat 1798

Southern China, Japan, subtropical and tropical Asia, Indonesia (Java). Sri Lanka.

The new name is required for the earlier homonym *Phallus costatus* Ventenat, Diss. genre Phallus p.510, 1798 = *Morchella costata* (Vent.) Pers.

*Phallus tenuis* (E. Fischer 1886) O. Kuntze 1891 (Indonesia, Java)

= ? *Ph. sulphureus* H. Lohwag 1937 (China, Yunnan)

Temperate and southern China, Japan, Indonesia (Java), Sri Lanka, tropical Africa (Tanzania; F. D. Calonge pers. comm.)

*Phallus formosanus* Kobayasi 1938 (Taiwan)

= *Ithyphallus roseus* Sawada 1929 (Taiwan), non *Ph. roseus* Delile 1813

Southern China (Taiwan, endemic).

*Phallus callichrous* (A. Möller 1895) C. G. Lloyd 1907 (Brazil)

= *Dictyophora chlorocephala* De Seynes 1897 (Congo)

Tropical and subtropical Africa and Asia, Australia and South America (Brazil).

*Phallus multicolor* (Berk. et Br. 1883) C. G. Lloyd 1907 (Australia, Queensland)

= *Ph. daemon* Rumphius 1743 ex Fr. 1823 (Indonesia, Amboin)

= ? *Ph. tahitensis* Schlechtendal 1861/62 (Tahiti)

= *Ph. quadricolor* Berk. et Br. 1883 (Australia, Queensland)

= *Dictyophora echinata* P. Henn. et Nyman 1900 (Indonesia, Java)

Tropical and subtropical Africa and Asia (including temperate China: Hunan), South Pacific, Australia.

*Phallus cinnabarinus* (Lee 1957) Kreisel, comb. nov.

Basionym: *Dictyophora cinnabarina* Lee, Mycologia 49: 156, 1957

Southern China (Taiwan, endemic).

*Phallus spec.*

= *Dictyophora indusiata* f. *lutea* Kobayasi

Japan. A taxon which needs further study.

5d. *Phallus* sect. *Dictyophora* (Desvaux 1809) Kreisel, stat. nov.

Basionym: *Dictyophora* Desvaux, Journ. Bot. (Paris) 2: 92, 1809.

Pileus surface reticulate. Indusium absent or present. Pinkish or violet pigments present in volva, mycelial strand and partly in receptaculum. Type species: *Phallus indusiatus* Ventenat 1798 : Pers. 1801.

*Phallus hadriani* Ventenat 1798 : Pers. 1801 (Netherlands)

= *Ph. iosmus* Berk. 1836 (England)

= *Ph. imperialis* (S. Schulzer 1866) S. Schulzer 1873 (Hungary)

= *Ph. purpuratus* Cragin 1895 (USA, Kansas)

= *Ithyphallus impudicus* var. *carneus* Lemmermann 1901 (Germany, Juist island)

= *Ph. impudicus* var. *americanus* E. Ulbrich 1932 (North America)

= *Ph. arenarius* Kallenbach 1936, nomen nudum (Germany, Darmstadt)

Temperate and mediterranean Europe, central Asia, China, Japan, North America (Alberta, USA, Mexico). Records from Seychelles (Dring and Rayner 1967) and South Africa (Pearson 1948) need confirmation.

*Phallus macrosporus* Liu, Li et Du 1980

Temperate NE. China (Liaoning, endemic).

*Phallus duplicatus* Bosc 1811 (USA, Upper Carolina)

= *Ph. togatus* (Kalchbr. 1884) Farlow 1885 (USA, Massachusetts)

= *Ph. impudicus* var. *togatus* (Kalchbr. 1884) Cost. and Dufour 1895

= *Ph. mauritianus* C. G. Lloyd 1909 (Mauritius)

Temperate North America (USA), Mauritius, tropical Africa, South Africa. All records from Europe, China and Japan are erroneous (see *Ph. impudicus*).

A rather strange distribution pattern which suggests the existence of an additional taxon in the Paleotropis.

*Phallus indusiatus* Ventenat 1798 : Pers. 1801 (Surinam)

= *Dictyophora phalloides* Desvaux 1809 (Surinam)

= ? *Sophronia brasiliensis* Pers. in Gaudichaud 1826 (Brazil)

= ? *Dictyophora campanulata* Nees in Lév. 1827 (Indonesia, Java)

= ? *Dictyophora speciosa* Meyen 1843 (Philippines)

= ? *Dictyophora bicampanulata* Mont. 1848 (Tahiti)

= ? *Phallus brasiliensis* Schlecht. 1861/62 (Brazil)

Tropical and subtropical Africa and Asia, temperate China, Japan, South Pacific, Australia, South America.

- var. *roseus* C. G. Lloyd 1909 (French Guyana)

= *Hymenophallus roseus* Ces. 1879 (Borneo)

Tropical Africa (Cameroon), South Pacific (Borneo), tropical South America.

*Phallus rubrovolvatus* (M. Zang et al. 1976) Kreisel, comb. nov.

Basionym: *Dictyophora rubrovolvata* M. Zang, Ji et Liu, Acta Bot. Yunnanica 2: 11, 1976.

Southern China (Yunnan, endemic).

**5e. *Phallus* sect. *Phallus***

Pileus surface reticulate. Indusium absent or present. Receptaculum, volva, and mycelial strand not pigmented.

*Phallus impudicus* L. 1753: Pers. 1801 (Sweden, Smaland)

= *Ph. vulgaris* Micheli 1729 (Italy)

= *Ph. volvatus* Rothman 1742 ex Batsch 1783 (Sweden, Smaland)

= *Ph. foetidus* Sow. 1801 (England)

= *Ph. impudicus* f. *reticulatus* E. Ulbrich 1932 (Germany)

Temperate to mediterranean Europa, Middle East, Central and Eastern Asia, Japan, North and South Africa, Canary Islands; in North America only documented from Eastern Canada (Ontario, Schalwijk-Barendsen 1991), possibly introduced by man.

- var. *obliteratus* (Malencon 1957) Kreisel, comb. nov.

Basionym: *Dictyophora duplicata* var. *obliterata* Malencon, Bull. Soc. Nat. Oyonnax 10/11: 66, 1957 (Morocco)

= *Ph. impudicus* f. *subindusiatus* Pilát 1958 (Bohemia)

Temperate Europe, North Africa (Morocco).

This variety has a rudimentary indusium hidden under the pileus, and is easily overlooked for this reason.

- var. *pseudoduplicatus* O. Andersson 1989 (Sweden, Skane)

Pseudonyms:

= *Ph. duplicatus* / *Dictyophora duplicata* sensu auct., europ., non Bosc 1811

= *Ph. impudicus* var. *togatus* (Kalchbr.) Cost. and Dufour sensu Pegler et al. 1995, non Kalchbrenner 1884

Temperate Europe, North Africa, Asia incl. Japan.

This is the so-called "*Dictyophora duplicata*" of European and Asiatic authors. The arguments of Andersson (1989) are fully accepted and supported. Apparently the true *Phallus indusiatus* Bosc has never been introduced to Europe, as it was emphasized by Ulbrich (1932) and many subsequent authors. Recently, Pegler et al. (1995) used the name *togatus* Kalchbr. 1884 for the European taxon which is equally erroneous, because Kalchbrenner's taxon has a type from Massachusetts, North America, and the iconotype agrees clearly with that of *Phallus duplicatus* Bosc.



*Phallus amurensis* (Jaczewski 1911) Pilát 1958  
Temperate Eastern Asia (Amur district; endemic ?).

*Phallus fragrans* Zang 1985 (China, Xizang)  
Southern and continental China.

*Phallus favosus* (Penzig 1899) E. Fischer (Indonesia: Java)  
South Pacific (Higher mountains of Sumatra and Java; endemic).

*Phallus moelleri* C. G. Lloyd 1909 (Brazil)  
= *Dictyophora phalloidea* sensu A. Möller 1895  
Tropical Africa, China, Japan, subtropical South America (Brazil).

This taxon is distinguished from *Ph. indusiatus* by its indusium which is inserted somewhat beneath the apex of receptaculum, so that it does not touch the margin of pileus – moreover by lack of pinkish/violet pigments in volva and mycelial strand, and, possibly, by stronger fetid smell (the smell of *Ph. indusiatus*, as the author has observed in Cuba, is less aggressive, nearly bread-like, and remembers that of *Ph. hadriani*). *Ph. moelleri* is typified by Möller's classic, frequently reproduced illustration named *Dictyophora phalloidea* (Möller 1895, pl. 1).

#### REFERENCES

- ANDERSSON O. (1989): Stinksvampen, *Phallus impudicus*, i Norden. – Svensk Botanisk Tidskrift 83: 219 – 241.
- CUNNINGHAM G. H. (1944): The Gasteromycetes of Australia and New Zealand. – Dunedin N.Z. 236 pp., 37 pl.
- DRING D. M. and RAYNER R. W. (1967): Some Gasteromycetes from Eastern Africa. – Journ. East Afr. Nat. Hist. Soc. 26: 5 – 46.
- DRING D. M. and ROSE A. C. (1976): Additions to West African Phalloid Fungi. – Kew Bull. 31 (3): 741 – 751.
- FISCHER E. (1888 – 1905): Phalloideae. In Saccardo P. A., Sylloge fungorum 7: 3 – 14 and 469; 9: 262 – 264; 11: 152 – 154; 14: 254; 16: 224 – 228; 17: 212. Patavii.
- FISCHER E. (1933): Reihe Gasteromyceteae. In Engler A, und Prantl K. (ed.), Die natürlichen Pflanzenfamilien, Band 7a. Leipzig. 122 pp.
- LLOYD C. G. (1909): Synopsis of the known Phalloids. Bull. Lloyd Library no. 13: 1 – 96.
- MALENCON G. (1953): Itajahya rosea (Delile) Ed. Fischer, très rare Phalloïdée découverte dans l'Adrar Mauritanien par M. le Pr. Th. Monod. – Bull. Soc. Hist. Nat. Afr. Nord 44: 70 – 75.
- MÖLLER A. (1895): Brasilische Pilzblumen. – Jena. 152 pp.
- PEARSON A. A. (1949): *Phallus imperialis* Schulzer. – Journ. South Afr. Bot. 15: 176.
- PEGLER D. N., LAESSOE T. and SPOONER B. M. (1995): British puffballs, earthstars and stinkhorns. An account of the British gasteroid fungi. – Kew. 255 pp.
- SCHALWIJK-BARENDSEN H. M. E. (1991): Mushrooms of western Canada. – Edmonton, Alberta. 415 pp.
- ULBRICH E. (1932): *Dictyophora duplicata* (Bosc) Ed. Fischer, ein für Europa neuer Vertreter der Phallaceae. – Ber. Deutsch. Bot. Ges. 50: 359 – 366.
- VENTENAT E. P. (1798): Dissertation sur le genre *Phallus*. – Mém. Inst. nat. sci. arts. Sci. math. phys. 1: 503 – 523.
- ZANG H. and PETERSEN E. H. (1989): *Endophallus*, a new genus in the Phallaceae from China. – Mycologia 81: 486 – 489.