The gasteral *Basidiomycetes* of Mascarenes and Seychelles

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Abstract: Actual finds of *Gasteromycetes* from La Réunion, Mauritius, and the Seychelles are recorded. Macro- and microscopical descriptions of interesting collections are given. One species, *Bovista halophila*, is described as new for science. All former records of *Gasteromycetes* from this region are included in our paper. In total 35 taxa are enumerated. Colour plates of ten species are presented, most of them being the first coloured illustrations of these taxa.

Zusammenfassung: Aktuelle Funde von Gasteromyceten aus La Réunion, Mauritius und den Seychellen werden mitgeteilt. Von interessanten Aufsammlungen werden makro- und mikroskopische Beschreibungen gegeben. Eine Art, *Bovista halophila*, wird neu beschrieben. Alle bisher bekannten Publikationen von Gasteromyceten-Arten aus diesem Gebiet werden in unsere Arbeit einbezogen. Insgesamt werden 35 Taxa aufgeführt. Zehn Arten werden farbig abgebildet, die meisten davon erstmals.

Our actual knowledge about existence of gasteral and secotioid *Basidiomycetes* on the Mascarenes and Seychelles is confined to few publications, some of them very old (LLOYD 1906, 1909, 1917; ZELLER & DODGE 1918; DRING & RAYNER 1967; BRODIE 1975; DRING 1980).

Mycological study tours of the second author on these islands (mainly on Mauritius, three times on La Réunion, and once on the Seychelles) resulted in a great number of interesting collections of which up to date only a part has been identified resp. thoroughly studied. Six species of *Mycena* have been described as new (MAAS GEESTERANUS & HAUSKNECHT 1995, 1996, 1998, 1999; ROBICH & HAUSKNECHT 2001), and the *Bolbitiaceae* have been studied more closely (WATLING & HAUSKNECHT 1997; HAUSKNECHT 1998, 2002). In the present paper the collections of gasteral *Basidiomycetes*, supplemented by a few samples of F. DÄMMRICH (Limbach-Oberfrohna, Germany), shall be documented. Most results have been included already in a checklist presented in the previous year (KREISEL 2001).

Specimens are deposited in the herbarium of the University of Vienna (WU) and the personal herbaria KREISEL (Kr) and HAUSKNECHT (H).

Aseroë rubra LABILL. 1806

Aseroë rubra is a pantropical species, but rarely recorded from Africa. It is most frequent on Hawaii (GOOS 1970), New Guinea, New Zealand, and western parts of Australia; the type is from Tasmania. It was introduced to England (SPOONER 1994).

Specimen: Mauritius: no data (DRING 1980).

Bovista cunninghamii KREISEL 1967

Characters:

Fruitbody: subglobose, 10-15 mm diam., base with a straight whitish mycelial cord.

Exoperidium: cream white, furfuraceous, granulose or spinulose, partly areolate.

Endoperidium: rather thin, ochraceous to reddish brown, dull. Opening lobulate, small, 2 mm diam.

Gleba: olive brown, floccose.

Subgleba: none.

Spore deposit: clear ochraceous or olivaceous brown.

Spores: s. m. brownish, globose, 3.5-4.5 µm diam., punctate, apedicellate.

Exostratum: composed mainly by vesicular elements which are hyaline, thin-walled, ellipsoid to sphaerical, 10-15 µm diam., mixed with a few hyphal elements.

Capillitium: of transitory type, subelastic, tough, s. m. yellowish brown, moderately thick-walled, with small to medium pits 0.5-1.5 µm broad, with rare septa, dichotomously branched, 6.0-9.0 µm thick. Paracapillitium absent.

Specimen: Mauritius: Pamplemousses, Nôtre Dame, Crève Cœur, south exposed open place among grasses in tropical bush, 26. 1. 2001, leg. F. BLIZENEC, det. H. KREISEL (Kr MS 02).

The species is characterized by a tough, pitted capillitium of transitory type, conical-verrucose exoperidium composed of mainly vesicular elements, and lack of subgleba (KREISEL 1967).

This rare species has been recorded from SE Australia (type), continental Spain and Baleares (CALONGE & ZAMORA 2000). The discovery on Mauritius bridges the large distance of these few localities.

Bovista halophila KREISEL & HAUSKNECHT, spec. nova (Colour fig. VII, Fig. 1 a-c)

Diagnosis latina:

Bovista halophila KREISEL & HAUSKNECHT, spec. nova. Fructificationes globosae vel subdepressae, basi funiculis mycelialibus albidis praeditae. Exoperidium crustaceum, candidum, in areolas parvas cum endoperidio umbrino contrastantes desintegrans, aetate deciduum; stratum exterius e hyphis constructum. Endoperidium tenue, brunneum, ore 1-2 mm amplo dehiscens. Gleba olivaceobrunnea vel umbrina, floccosa. Subgleba desens.

Sporae globosae, 3,5-4,7 µm diam., subglabrae vel punctatae, apedicellatae, in cumulo olivaceobrunneae. Capillitium fragile, septatum, poris parvis 0,2-0,6 µm am-

plis praeditum, laxe dichotomum, modo generis *Lycoperdon* ramificatum, hyphae capitales 5,0-9,0 µm crassae.

Habitat: in insula La Réunion in terra nuda aqua salina conspersa.

Typus: La Réunion, Les Avirons, Pointe de Portail, prope *Scaevola taccata* (GAERTN.) ROXB. (*Goodeniaceae*), 19. 2. 2000, leg. A. HAUSKNECHT (WU 20607, holotypus; isotypus in herbario Kr RE 67).

Characters:

Fruitbody: globose to somewhat depressed, 5-13 mm large, 4-8 mm high, single or somewhat fasciculate. Base connected with an up to 9 mm long whitish mycelial cord.

Exoperidium: white, later cream white, forming a thin cottony to granulose cover which soon desintegrates in plaques exposing the strongly contrasting darker endoperidium (forming an areolate pattern similar to *Lycoperdon mammiforme* PERS.), finally vanishing.

Endoperidium: rather thin, at first golden (KORNERUP & WANSCHER 1975: 5-6C4), later café-au-lait, brown (6D3, 6DE4) to umber, after vanishing of exoperidium glabrous, dull or somewhat shining in basal parts. Opening irregularly fimbriate, small, 1-2 mm wide.

Gleba: olive brown to umber brown, floccose-cottony, without columella.

Subgleba: none.

Spore deposit: olive brown.

Spores: globose, subglabrous to punctate, s. m. yellowish to brownish, 3.5-4.7 µm diam., apedicellate, no relicts of sterigmata.

Exostratum: without sphaerocysts, formed by hyaline to yellowish hyphae which are partly septate, no clamp connections, often branched, 2.5-6.0 µm broad.

Capillitium: of *Lycoperdon* type, s. m. yellow to brown with a somewhat thickened yellow wall, with frequent small pits (0.2-0.6 µm wide), scarcely septate, fragile, not branched, often strongly undulate, main strands 5.0-9.0 µm thick. Paracapillitium very scarce, aseptate.

Habitat: both collections near coast, on bare volcanic soil permanently sprayed with salt water, associated with the halophytic plant *Scaevola taccata* (*Goodeniaceae*).

Specimen (besides type): **La Réunion:** St. Lou, Pointe de Châteaux; at beach, on sandy soil near *Scaevola taccata*, 19. 2. 2000, leg. A. HAUSKNECHT (WU 20615, Kr RE 68).

This little *Bovista*, apparently halophilic, reminds of *Bovista limosa* ROSTRUP in habitus and small size, but microscopically it is quite different by apedicellate spores and capillitium of *Lycoperdon* type. We describe it as a new species of *Bovista* subg. *Globaria* sect. *Lagoperdon* ser. *Pusillae* KREISEL.

The new species differs from *Bovista pusilla* BATSCH: PERS. by smaller fruitbodies and the purely hyphal structure of exostratum; from *B. delicata* BERK. & CURT. by smaller fruitbodies and distinctly smaller capillitium pits.

***Bovista pusilla* (BATSCH 1789): PERS. 1801 emend. SCHUMACHER**

Characters:

Fruitbody: globose, 13-18 mm diam.; base provided with fine greyish white mycelial cords.

Exoperidium: whitish to yellowish, furfuraceous-granulose.

Endoperidium: thin papery, clear greyish-brownish, slightly shining. Opening small (2 mm), circular-lobulate.

Gleba: light umber, without pseudocolumella.

Subgleba: none.

Spore deposit: umber brown with weak olivaceous tint.

Spores: globose, 4.0-4.8 µm diam., verruculose, apedicellate; not mixed with fragments of pedicels.

Exostratum: formed by thin-walled vesicular ellipsoid cells up to 32 x 27 µm, mixed with undulate hyphae.

Capillitium: of *Lycoperdon* type, fragile, s. m. clear umber brown, rather thick-walled, with numerous small to medium circular pits (0.3-1.0 µm, most 0.5 µm diam.), with false septa, dichotomously branched, up to 5.5 µm thick; no paracapillitium.

Specimen: Mauritius: Le Palmar, east coast, on sandy soil, 15. 2. 2000, leg. F. DÄMMRICH, det. H. KREISEL (Kr 4699).

It is *Bovista pusilla* as emended by SCHUMACHER (1803) and in the sense of HOLLÓS (1904, as *Lycoperdon pusillum*) and KREISEL (2001). Some contemporary authors use the name *B. furfuracea* (J. F. GMELIN): PERS. for this taxon which is distributed probably in all continents and climates.

***Clathrus mauritianus* (LLOYD 1917) D. M. DRING 1980** (Colour figs. VIII, IX; Fig. 1 d)

Characters:

Fruitbody: when young a whitish globe up to 15 mm diam. with a subsquamose surface, semi-hypogeous, already in egg-state breaking the soil surface. Rhizoids whitish, to 1.5 mm thick. Peridium membranaceous, whitish, when mature rupturing apically and exposing the receptacle.

Receptacle: composed of 3-5 columns 4-8 mm thick and up to 70 mm long, partly bifurcate, apically fused and remaining so for a long time, not reflexed, occasionally anastomosing to form an indistinct lattice, bright red or raspberry red, near the base clear red, externally venose and verrucose, very brittle.

Gleba: dark olivaceous brown, slimy, glutinous, when mature with a slight fetid smell.

Spores: cylindrical to narrow ellipsoid, 4.2-5.4 x 1.6-2.0 µm, s. m. hyaline to pallid yellowish.

Specimens: Mauritius: leg. C. A. O'CONNOR (type of *Pseudocolus mauritianus* LLOYD 1917); - Grand Port, Le Val Nature Park; near living and dead bamboo roots, 27. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20252); - Black River, Black River National Park, in tropical rain forest on leaf litter at wayside, 1. 2. 2001, leg. A. HAUSKNECHT (WU 21166).

This species was known formerly only from the original description and drawing of LLOYD (1917), redrawn by DRING (1980), who discussed the taxonomy of this and similar *Clathraceae*. We can present here the first coloured illustrations of this rare species, possibly endemic to Mauritius or to the Mascarenes.

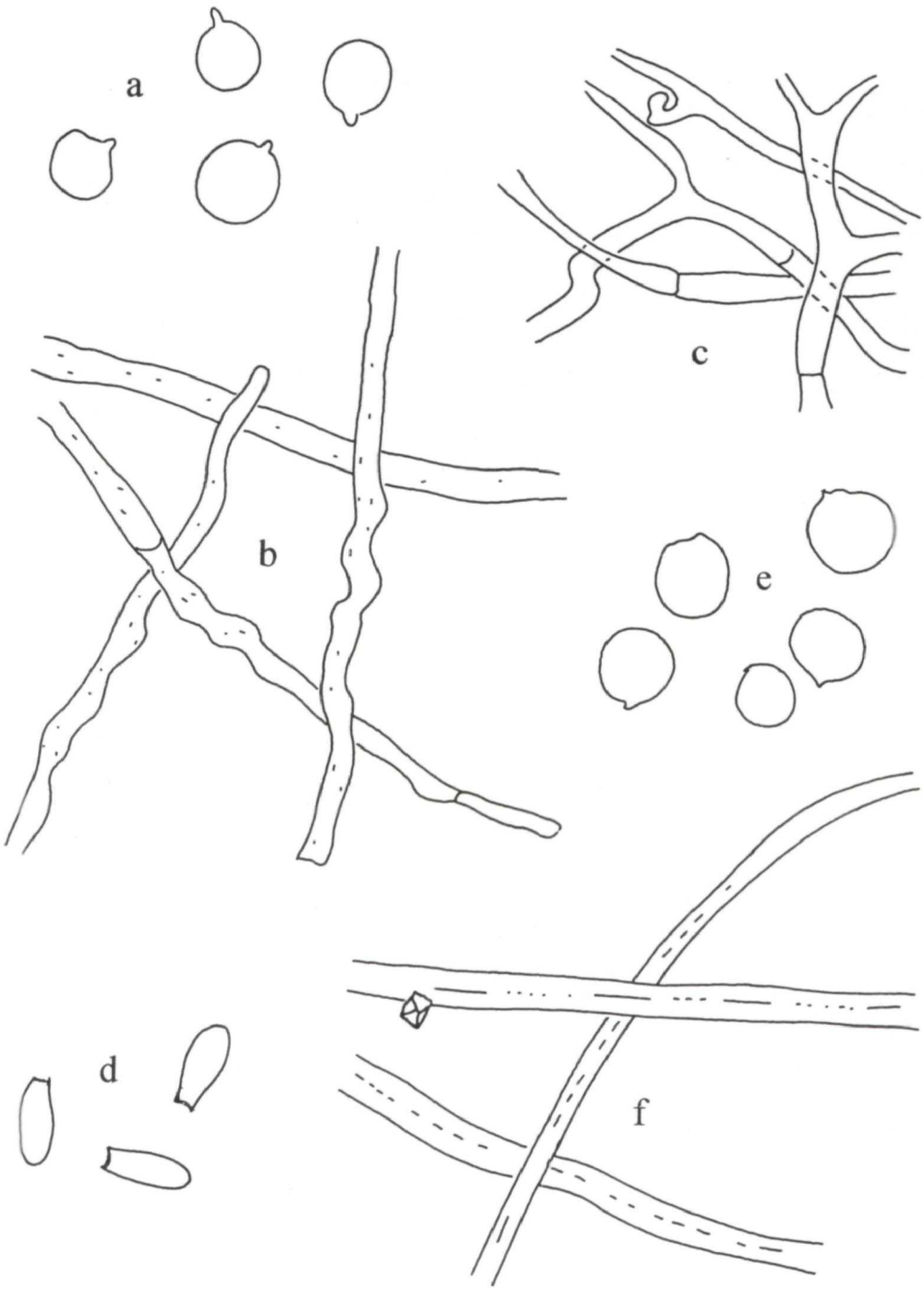

Fig. 1 *a-c. Bovista halophila* (Holotypus). *a* spores, x 2500, *b* capillitium, x 1000, *c* hyphae of the exoperidium, x 1000. Fig. 1 *d. Clathrus mauritianus* (WU 20252), spores, x 2500. Fig. 1 *e, f. Geastrum pulverulentum* (WU 20860). *e* spores, x 2500, *f* hyphae of the capillitium, x 1000.

Cyathus berkeleyanus (TUL. & C. TUL. 1844) LLOYD 1906

Characters:
Fruitbody: conical or turbinate, 6-8(-12) mm high, 4-10 mm broad, margin straight, sometimes bent outward, base not stipitate, sometimes arising from a nodule. Peridium outside ochraceous to umber brown, tomentose-villose (hairs arranged in tufts); inside whitish to grey or brownish, shining, smooth or slightly striate.

Peridioles: 6-8 per fruitbody, flat, circular, 2-2.5 mm diam., blackish, initially covered by a silvery tunica, smooth. Cortex one-layered.

Spores: subglobose to ovoid, hyaline, smooth, 6.2-9.5 x 5.0-7.2 µm (average 7.0 x 6.5 µm), thin-walled (ca. 1 µm).

Specimens: Mauritius: Pamplemousses, Botanic Garden, on dead roots of broad-leaved tree, 4. 3. 1993, leg. & det. A. HAUSKNECHT (WU 14873); - Plaines Willems, Macchabee Forest, on dead branches and twigs, 30. 1. 1995, leg. & det. A. HAUSKNECHT (WU 14874); - Moka, St. Pierre, Le Pouce, on fallen branches of broad-leaved trees, 9. 2. 1995, leg. & det. A. HAUSKNECHT (WU 14875); - Black River, Piton de la Rivière Noire, on fallen branch of guave (*Psidium guajava* L., *Myrtaceae*), 26. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20255, Kr MT 15); - South coast, Rivière des Anguilles, on wood of broad-leaved tree, copious, 26. 2. 2000, leg. F. DÄMMRICH, det. H. KREISEL (Kr 4722); - Black River, Black River National Park; frequent in rain forest on dead wood as well as on wood debris mixed with plant detritus, 12. and 16. 7. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20861, 20862; Kr. MT 116, 133).

It is a frequent silvicolous species, pantropical-subtropical, originally described from Brazil and known from South Africa.

Cyathus canna LLOYD 1906

The rare species is known from the Caribbean, Mexico, and Mauritius (BRODIE 1975, 1984). It was originally described from Barbados (LLOYD 1906).

Specimen: Mauritius: no data (BRODIE 1975).

Cyathus crassimurus BRODIE 1971 (Colour fig. X)

Characters:
Fruitbody: broad conical, 6-7 mm high, not stipitate, with straight, fimbriate margin (erect stiff hairs). Peridium outside reddish brown, tomentose-villose (hairs forming tufts); inside vivid brown, somewhat shining, smooth.

Peridioles: flat, subcircular, 2 mm diam., cinereous, somewhat shining. Cortex one-layered.

Spores: long-ellipsoid, 17-21 x 10-12 µm, hyaline, smooth, thick-walled (wall 2-3 µm).

Specimen: La Réunion: St. Philippe, Basse Vallée, ca. 300 m s. m., in tropical rain forest on fallen branch, 19. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20256, Kr RE 78).

This species was formerly known only from the type locality on Hawaii (BRODIE 1975). It is characterized by the stiffly hirsute margin and large, thick-walled spores.

Cyathus limbatus TUL. & C. TUL. 1844

Cyathus limbatus is a common pantropical species growing on wood debris and herbaceous culms in forests.

Specimen: Mauritius: Pouce Rouge, 1861, leg. AYRES (K, DRING & RAYNER 1967).

Cyathus triplex LLOYD 1906

The type of this species is from Mauritius (LLOYD 1906). The pantropical species is known also from Tanzania, India, Sri Lanka, Thailand, Nepal, Guam, and the tropical-subtropical America from Mexico to Venezuela.

Specimens: Mauritius: "Suite des grandes pluies de mars" (K, ex herb. BERKELEY and Herb. HOOKER, DRING & RAYNER 1967); - BPI, type of *Cyathus triplex* LLOYD 1906.

Gastrosporium simplex MATT. 1903

Characters:

Fruitbody: up to 10 mm diam., globose or subglobose, often fasciculate; base provided with conspicuous cream white, branched rhizomorphs.

Peridium: white or whitish, not discolouring, surface mealy, including crystals; no aperture.

Gleba: olivaceous yellow, then ochraceous, spongy, then pulverulent. Subgleba indistinct, white, compact.

Spore deposit: argillaceous.

Spores: globose, broadly ellipsoid, pear-shaped or even rounded-triangular, very unequal, 3.5-5.0 µm diam., punctate-asperate, thin-walled, apedicellate.

Capillitium: none. Paracapillitium scarce, hyaline, thin-walled, smooth, elastic, septate, with clamp connections, 2.5-4.0 µm broad.

Specimen: Mauritius: Prov. Moka, Eureka House, on bare soil of a loamy wall, connected with roots of a tropical tree or shrub, 14. 7. 2000, leg. A. HAUSKNECHT (WU 20707, Kr. MT 24).

The small collection was perfectly corresponding with European material (KRISAI-GREILHUBER 1992, MONTECCHI & SARASINI 2000). It is the first tropical record of this mainly steppicole species whose area extends from SW Europe to Siberia (KREISEL 2001, IOSFIDOU & AGERER 2002) and includes North America (MILLER & ASKEW 1982) as well as C Argentina.

Geastrum fornicatum (HUDS. 1762) HOOK. in CURTIS 1819

This widespread species is recorded from much of Europe, Canaries, South Africa, Australia, North America, and Argentina.

Specimen: Mauritius: leg. H. BOLUS, ex Herb. BERKELEY (photo in K, DRING & RAYNER 1967).

Geastrum javanicum LÉV. 1845 agg.

It is a widespread species of the tropical and subtropical climates of the Old and New World, known from South Africa, tropical Africa, Malaysia, Indonesia, Samoa, Hawaii, southern USA, Panama, Caribbean, and Venezuela. The species is known under

the synonym *G. velutinum* MORGAN, described from Ohio, what suggests the existence of a very similar species in temperate North America.

Specimen: Mauritius: leg. TELFAIR, ex Herb. W. BOJER [K, DRING & RAYNER 1967, ut *G. schweinitzi* (BERK. & CURT.) ZELLER].

Geastrum minimum SCHW. 1822

It is one of the most widespread earth-stars in the Old and New World, recorded from Greenland and Swedish Lappland southward to Cape Verde, South Africa, and Madagascar, from Australia, Hawaii, North America, the Caribbean, and Venezuela. In tropical regions as in La Réunion it seems to be restricted to higher elevations, but exact informations are lacking in most cases.

Specimen: La Réunion: St. Paul, Piton Maïdo, on grassy place near *Acacia heterophylla* (LAM.) WILLD. and *Ulex europaeus* L. on volcanic soil, 11. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20580).

Geastrum pulverulentum WAKEFIELD 1914 (Colour fig. XI, Fig. 1 e, f)

Characters:

Fruitbody: expanded 25-45 mm broad, not hygrometric, arcuate, growing in dense groups. Substrate penetrated by a dense mycelium.

Exoperidium: splitted in 6-7 rays, 1.5 mm thick, light to dark brown, smooth or transversely rugose, then breaking; outside perimyceliate, covered with humus soil; mycelial layer abscissing in pellicular patches, exposing the yellowish grey fibrous layer.

Endoperidium: about 11 mm diam., cream white to light ochraceous (strikingly contrasting with the brown exoperidium), sessile, depressed, dull, mealy to furfuraceous; peristome tubular, coarsely fimbriate (subplicate), narrow, not bound by a circular ridge.

Gleba: cottony, very clear, cream coloured to greyish.

Spore deposit: clear brown.

Spores: globose to subglobose, 3.5-4.6 µm diam., smooth or indistinctly punctate, apedicellate, s. m. pallid ochraceous yellowish.

Capillitium hyphae: hyaline, not ramified, elastic, very thick-walled to nearly massive with narrow interrupted lumen, not septate, 2.5-5.5 µm thick.

Specimen: Mauritius: Prov. Moka, Eureka House, on accumulated plant debris (leaves, palm fronds), 14. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20860, Kr MT 123).

This collection is characterized by 6-7 rayed exoperidium, cream white to pallid ochraceous endoperidium with mealy to furfuraceous surface and coarsely fimbriate (subplicate), nearly tubular mouth without peristomal ring. The spores are clear brown, in light microscope pallid ochraceous, smooth to punctate, globose to subglobose, 3.5-4.4 µm diam. Apart of being smaller in size, it coincides well with the description and illustration of DRING (1964: Fig. 7 e-g).

KREISEL (2001) recorded this collection erroneously as *G. lloydianum* RICK.

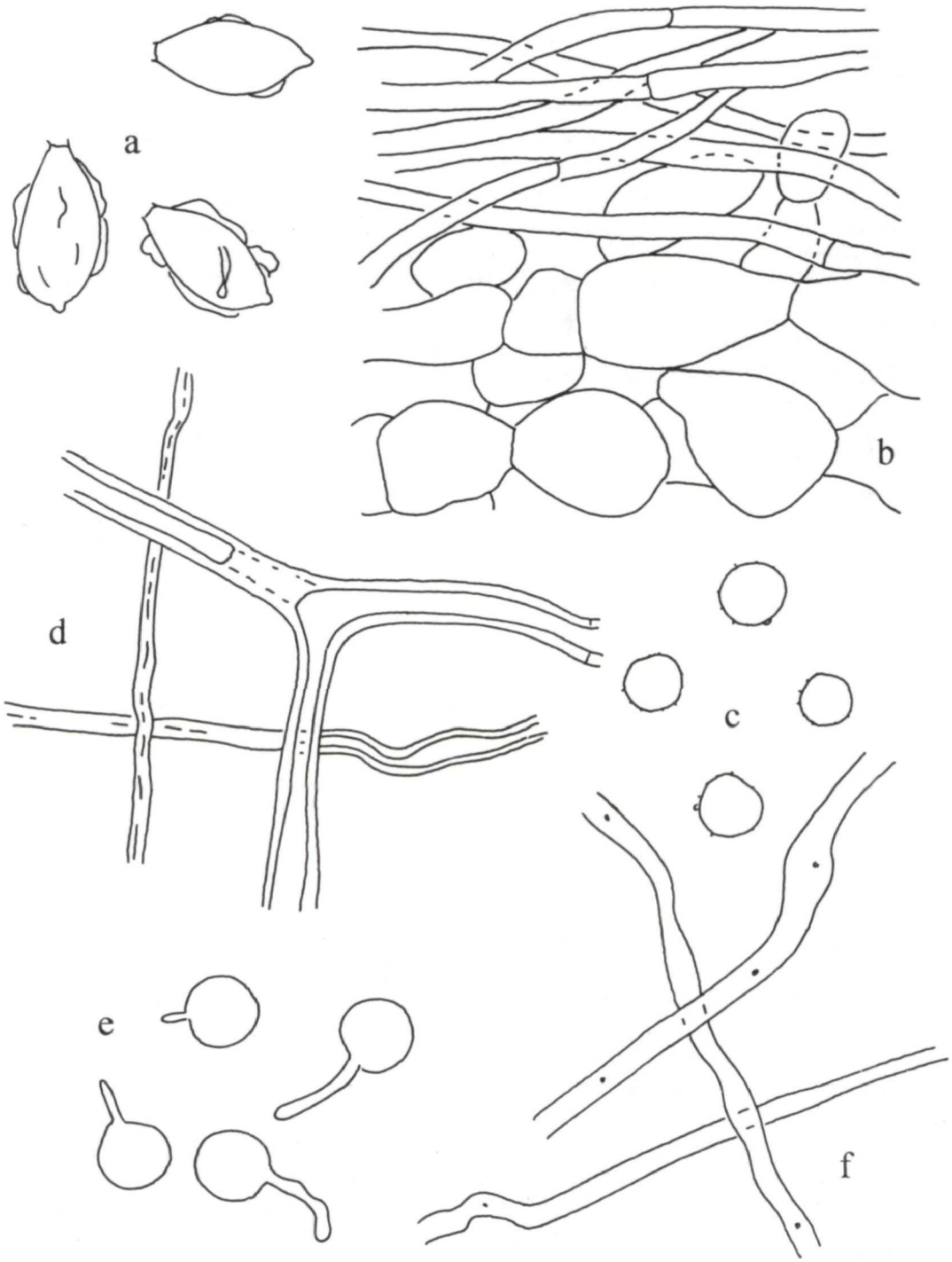

Fig. 2 *a*, *b*. *Hysterangium* aff. *coriaceum* (WU 20856). *a* spores, x 2500, *b* outer peridial layer, x 1000. Fig. 2 *c*, *d*. *Lycoperdon* aff. *marginatum* (WU 21170). *c* spores, x 2500, *d* capillitium, x 1000. Fig. 2 *e*, *f*. *Lycoperdon asperum* (WU 20259). *e* spores, x 2500, *f* capillitium, x 1000.

***Hysterangium* spec. aff. *coriaceum* HESSE 1891** (Colour fig. XII, Fig. 2 a, b)

Characters:
Fruitbody: semi-hypogeous to epigeous, at maturity protruding to 1/3 above soil surface, 5-15 mm diam., irregularly globose to tuberiform (potatoe-shaped); base provided with distinct white to cream-coloured branched mycelial cords.

Peridium: 0.2-0.4 mm thick, hard and firm, two-layered, outside young whitish and smooth, then clear brownish and with pardelate pattern, on bruising somewhat ferrugineous. Inner layer cartilagineous, much thicker than the outer layer.

Gleba: fresh ivy green (1F3), then opaque green (26D3) to vivid greyish green (28F2, 28F2-3), very finely chambered (loculi hollow, about 0.3 mm wide), slimy-gelatinous; smell of older fruitbodies insignificant. Columella gummose-gelatinous.

Spores: pin-shaped to long ellipsoid, 7.9-10.3 x 3.8-4.8 µm (average 9.2 x 4.3 µm), thin-walled, smooth, s. m. yellowish, enveloped by a distinct hyaline perisporium with undulate outline (up to 2 µm distant); base broadly truncate, apex not mucronate.

Outer peridial layer: formed by parallel, partly interwoven, up to 4 µm broad hyphae; inner layer pseudoparenchymatous with oblong to globose, up to 16 µm broad elements.

Specimens: Mauritius: Black River, Black River National Park, ca. 100 m s. m., in tropical rain forest on bare soil, copious, growing in numerous groups up to 50 fruitbodies (ca. 500 fruitbodies altogether), subhypogeous to epigeous, 12. 7. and 16. 7. 2000, leg. A. HAUSKNECHT (WU 20856-59, Kr MT 115, 130).

The specimens from Mauritius are notable by their green gleba colour, small spores, and a pseudoparenchymatous peridial layer; with these characters they come close to the central and south European *Hysterangium coriaceum* which has a more ochraceous gleba and slightly bigger spores.

***Lycoperdon asperum* (LÉV. 1846) SPEG. 1881** (Colour fig. XV, Fig. 2 e, f)

Characters:
Fruitbody: 10-17 mm diam., globose to somewhat pear-shaped or turbinate; base with short white mycelial cords and balls of mineral soil.

Exoperidium: white to cream, composed of pyramidal, later composed fine spines, soon detaching and leaving an indistinct subareolate pattern.

Endoperidium: papery, brown, glabrous without areoles, dull, when aged somewhat shining; opening irregular, small, about 3 mm wide.

Gleba: cream, then clear olivaceous to ochraceous brown; no pseudocolumella.

Subgleba: lacking or rudimentary, microcellular.

Spore deposit: olivaceous green.

Spores: globose, 3.6-4.6(-5.0) µm diam., verruculose, pedicellate; pedicels hyaline, straight, 9-20 x 1 µm, sometimes breaking in fragments 2-7 µm long.

Capillitium: of *Lycoperdon* type, elastic, s. m. olivaceous brown to reddish brown, somewhat thick-walled, with rare small circular pits (0.5 µm), most hyphae not pitted, aseptate, up to 5.0 µm thick, dichotomously branched.

Specimen: La Réunion: St. Paul, Piton Maïdo, ca. 2000 m s. m., open place among *Ulex europaeus* and small shrubs of *Acacia heterophylla* on volcanic soil, 11. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20259, Kr RE 28).

This species was originally described from Chile as *Bovista aspera* LÉV. 1846 and redescribed under this name by KREISEL (1967), but the pyramidal, partly composed spines of the exoperidium and a weakly developed small-celled subgleba indicate that its position is better in *Lycoperdon.* Apart of its early collections from Chile (Santiago to Magellan Street), it is known also from Australia (Tasmania and Thursday Island), South Africa, and Congo. LIU (1984) indicated it from several parts of China "on ground in the woods".

***Lycoperdon* aff. *marginatum* VITT. ex MORIS & DE NOT. 1839** (Fig. 2 c, d)

Characters:
Fruitbody: 30 mm broad and 20 mm high, turbinate, base plicate-rugose, with whitish mycelial cords originating in leaf litter.

Exoperidium: umber to blackish brown, composed of conical, acute, single or composed spines with plate-shaped bases, durable, dehiscing only near apex and leaving there an alveolate pattern.

Endoperidium: papery, ochraceous greyish, surface densely pitted, as hammered; opening fimbriate.

Gleba: dark blond (5D4), olivaceous grey, lanose, without pseudocolumella.

Subgleba: distinct, concolourous with the gleba, surface concave, finely cellular; no diaphragma or pseudodiaphragma.

Spore deposit: clear olivaceous brown.

Spores: globose, 3.0-4.1 (average 3.4) µm diam., most nearly smooth, some punctate to asperulate, apedicellate, no fragments of sterigmata visible.

Capillitium: of *Lycoperdon* type, elastic, s. m. yellowish to olivaceous yellow or yellowish brown, moderately thick-walled, not pitted, not septate, much dichotomously branched, a few subseptal ramifications present, up to 8.5 µm thick. Paracapillitium abundant, hyaline, septate.

Specimen: Seychelles: Mahé, Anse Soleil, tropical rain forest, on soil covered with fallen leaves, 11. 2. 2001, leg. A. HAUSKNECHT, det. H. KREISEL (WU 21170, Kr SE 04).

It is a widespread terricolous species in warm temperate to mediterranean climates of the Old and New World, possibly an aggregate. The Seychelles collection (only one fruitbody) deviates from European material by the dark exoperidium, particular surface pattern of endoperidium, and not pitted capillitium. More tropical collections are necessary to decide whether this is an additional species.

***Lysurus corallocephalus* WELW. & CURREY 1868**

This collection consisted mostly of primordia and closed eggs, some of which allowed a longitudinal section.

This species, widely known as *Kalchbrennera corallocephala* (WELW. & CURREY) KALCHBR. or *K. tuckii* BERK., is widespread in tropical and subtropical Africa south of the Sahara. The record from Mauritius is the first outside the African continent.

Specimen: Mauritius: Moka, Eureka House, on bare soil on wayside, 28. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL after colorslide (WU 20251).

***Lysurus periphragmoides* (KLOTZSCH 1831) D. M. DRING 1980** (Colour figs. XIII, XIV; Fig. 3 c)

Characters (of the Mauritius collections):

Fruitbody: when young a globose to ovoid egg, 10-25 mm diam., whitish, alabaster (5A2) or orange-white, rupturing at the apex and exposing the receptacle which is distinctly differentiated in stem and lattice. Base with long white mycelial cords.

Receptacle: formed of a 10-40 mm long and 5-14 mm thick stalk which is cylindrical or somewhat tapering below, bright orange, near the base yellowish orange, hollow, with surface punctate-floccose, transversely rugose or somewhat longitudinally striate, surmounted by a morel-like subglobose lattice, up to 22 mm broad and 18 mm high, light orange to orange (6A6, 6A5) and even bright cinnabarine, with isodiametrical meshes; branches transversely striate or meandrical.

Gleba: olivaceous grey to olive brown, slimy-glutinous, smell initially pleasant, remembering apricots, later unpleasant, fetid, remembering decayed boletes.

Spores: 3.5-5.0 x 1.5-1.8 µm (average 4.4 x 1.6 µm), cylindrical, subhyaline, thin-walled.

Specimens: Mauritius: Bois Chéry, leg. A. TELFAIR (Herb. BOJER, K, type of *Simblum periphragmoides* KLOTZSCH 1831; DRING & RAYNER 1967, DRING 1980); - Rivière du Rempart, Grand Baie, Bougain Villas; on bare soil in sand under a palm, 1. and 10. 3. 1993, leg. A. HAUSKNECHT, det. H. KREISEL (WU 12585, H 2675.0).

Seychelles: Mahé, Jardin du Roi, under papaya (*Carica papaya* L., *Caricaceae*), 16. 2. 2001, leg. A. HAUSKNECHT, det. H. KREISEL (WU 21172).

The collection from the Seychelles deviates in several aspects from the Mauritius material by its fasciculate growth, more yellowish colours, and different smell. According to DRING (1980) *Lysurus periphragmoides* "is an extremely variable species, and many abnormalities occur", so he felt unable to maintain a taxonomic difference between *Simblum periphragmoides* and *S. sphaerocephalum* SCHLECHT., as it was suggested by former authors.

For synonymy and distribution of this pantropical species, see DRING (1980). In Africa it is rare, known only from Tanzania incl. Zanzibar.

***Morganella afra* KREISEL & D. M. DRING 1967** (Colour fig. XVI, Fig. 3 a, b)

Characters:

Fruitbody: young pear-shaped with a distinct stipitate part, later globose, depressed-globose or turbinate, 10-40 mm broad, 10-35 mm tall, growing in groups or loose fascicles on mossy wood.

Exoperidium: initially blackish purple, later purplish brown, finally ochraceous brown, composed of furfuraceous particles to conical warts, not spiny, deciduous, leaving small areoles near the apex.

Endoperidium: papery, young purplish, then brownish to ochraceous, dull or slightly shining, initially with a fine reticulate pattern, later smooth. Opening irregular.

Gleba: cottony, clear olivaceous brown, later umber brown.

Subgleba: small, white to yellowish, with distinct small-cellular structure.

Spore deposit: greyish brown, without olivaceous tint.

Spores: globose, 3.6-4.3 µm diam., verruculose-spinose, apedicellate, s. m. yellowish.

Capillitium: lacking. Paracapillitium scarce, hyaline to yellowish, rather thin-walled, septate, fragile, not branched, up to 5.5 µm thick.

Specimen: La Réunion: Plaine des Palmistes, Sentier Botanique de Petit Plaine, ca. 1000 m s. m., in montane rain forest on a big mossy trunk, 20. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20236, Kr RE 86).

This lignicolous species with purplish tints on the exoperidium, distinctly small-celled subgleba, and verruculose to spinose spores is a paleotropical taxon, widespread in tropical Africa and also known from Sao Tomé. The related, apparently vicariant species *M. purpurascens* (BERK. & CURT.) KREISEL & D. M. DRING is similar, differing by compact subgleba, more pitted endoperidium, and a lower spore ornament. It occurs in tropical and subtropical Asia, Bonin Islands, Philippines, New Guinea, New Caledonia, and Australia. The genus *Morganella* ZELLER actually includes eight or nine species of mainly tropical distribution, all of them lignicolous (KREISEL & DRING 1967).

***Octavianina* spec.** (Colour fig. XVII, Fig. 3 d-f)

Characters:

Fruitbody: hypogeous to semi-hypogeous, at maturity protruding with its apex above soil surface, 7-15 mm diam., irregularly tuberiform to slightly turbinate, base in youth thickened forming a pseudostipe; covered by arachnoid rhizoids; white mycelial cords are distinct even in aged fruitbodies. No latex was observed in immature specimens (in the second collection, found in heavy rain, a colourless sap was feigned).

Peridium: white when young, soon cream to clear carneous, surface discolouring bright raspberry red (10D6, 10D7) when bruised or in heavy rain, glabrous, rugulose, dull, 1-2.5 mm thick.

Gleba: whitish, later olivaceous, with blackish globose locules (about 1 mm diam.) and contrasting ivory white to yellowish tramal plates. Smell unpleasant, nauseous, remembering *Geranium robertianum* L., ruccola, or bugs [*Lactarius quietus* (FR.: FR.) FR.]. Young fruitbodies with a sterile layer near base.

Spores: globose to subglobose, 8.0-11.5 x 8.7-10.7 µm (average 10.3 x 9.4 µm), nearly stellate, with coarse blunt conical warts and ribs, some with reticulate pattern, s. m. olivaceous yellow, tobacco brown, or rusty brown, with short hyaline pedicel 1.5-5.0 x 1.5-2.0 µm.

Basidia: 4-spored.

Peridium: constructed by subhyaline hyphae in interwoven, outwards more parallel arrangement.

Specimens: La Réunion: St. Philippe, Sentier Botanique de Mare Longue, sub-hypogeous in tropical rain forest among leaf litter and roots, 9. 3. 1996, leg. A. HAUSKNECHT (WU 18296); - - 8. 2. 2001, leg. A. HAUSKNECHT (WU 21171, Kr RE 11).

The accomodation of these two collections from tropical lowland rain forest is difficult. The red discoloration remembers *Octavianina asterosperma* (VITT.) O. KUNTZE, but no latex was observed, and the basidia are mainly 4-spored. *Wakefieldia* has big

spores with large blunt warts as in the Réunion collection, but does not have a sterile base, and there are few common features otherwise.

Phallus hadriani VENT. 1798: PERS. 1801

It is a species of open field, grassland, and dunes of the temperate to mediterranean belts of Europe, Asia, and North America south to Mexico, moreover from the Canaries and South Africa. The record mentioned above is the first from a tropical country.

Specimen: Seychelles: Mahé Brillant, 7. 10. 1961, leg. C. JEFFREY (K, DRING & RAYNER 1967).

Phallus indusiatus VENT. 1798: PERS. 1801

This common pantropical species is known from all tropical regions, moreover from China and Japan.

The scarce material of *Phallus mauritianus* (LLOYD 1909, Fig. 17) was originally regarded as a form of *P. duplicatus* BOSC, but the photo presented by LLOYD shows the typical narrow and shallow reticulation of *P. indusiatus*, which also is known otherwise from the considered region.

Specimens: Mauritius: leg. C. O'CONNOR (LLOYD 1909, partly type of *Phallus mauritianus* LLOYD).

Seychelles: Praslin, Vallée de Mai, 1962, leg. C. JEFFREY (K; DRING & RAYNER 1967).

Pisolithus arhizos (SCOP. 1786: PERS. 1801) RAUSCHERT 1959 agg.

The striking ectomycorrhizal species has a nearly cosmopolitical distribution from temperate to subtropical climates, with a broad spectrum of ectomycorrhizal hosts. It is frequent on Mauritius and La Réunion. The fruitbodies on these localities are usually much smaller than in collections from Europe. PEGLER & al. (1995) suggest that the species originates from Australia and has gained world-wide distribution by culture of *Eucalyptus*. KOPE & FORTIN (1990) report the existence of three types of spore ornamentation, one occurring in European and North American material, one in South Africa, and the third in Australia. No material of tropical provenience has been included in that study.

Specimens: Mauritius: Savanne, Surinam, Rochester Falls, near broad-leaved trees, 5. 3. 1993, leg. & det. A. HAUSKNECHT (WU 12553); - Grand Port, Domaine de Chasseur, on bare soil, 6. 3. 1993, leg. & det. A. HAUSKNECHT (WU 12554).

La Réunion: St. Philippe, Basse Vallée, in rain forest on wayside, 19. 2. 2000, leg. & det. A. HAUSKNECHT (WU 20258).

Pseudocolus fusiformis (E. FISCHER 1890) LLOYD 1909

The wide distribution of this species is pantropical-subtropical, but there is no record from continental Africa. The type was from Réunion. For synonymy and details of distribution see DRING (1980). The species has been introduced frequently to eastern USA.

Specimen: La Réunion: (type of *Colus fusiformis* E. FISCHER 1890; picture redrawn in LLOYD 1909).

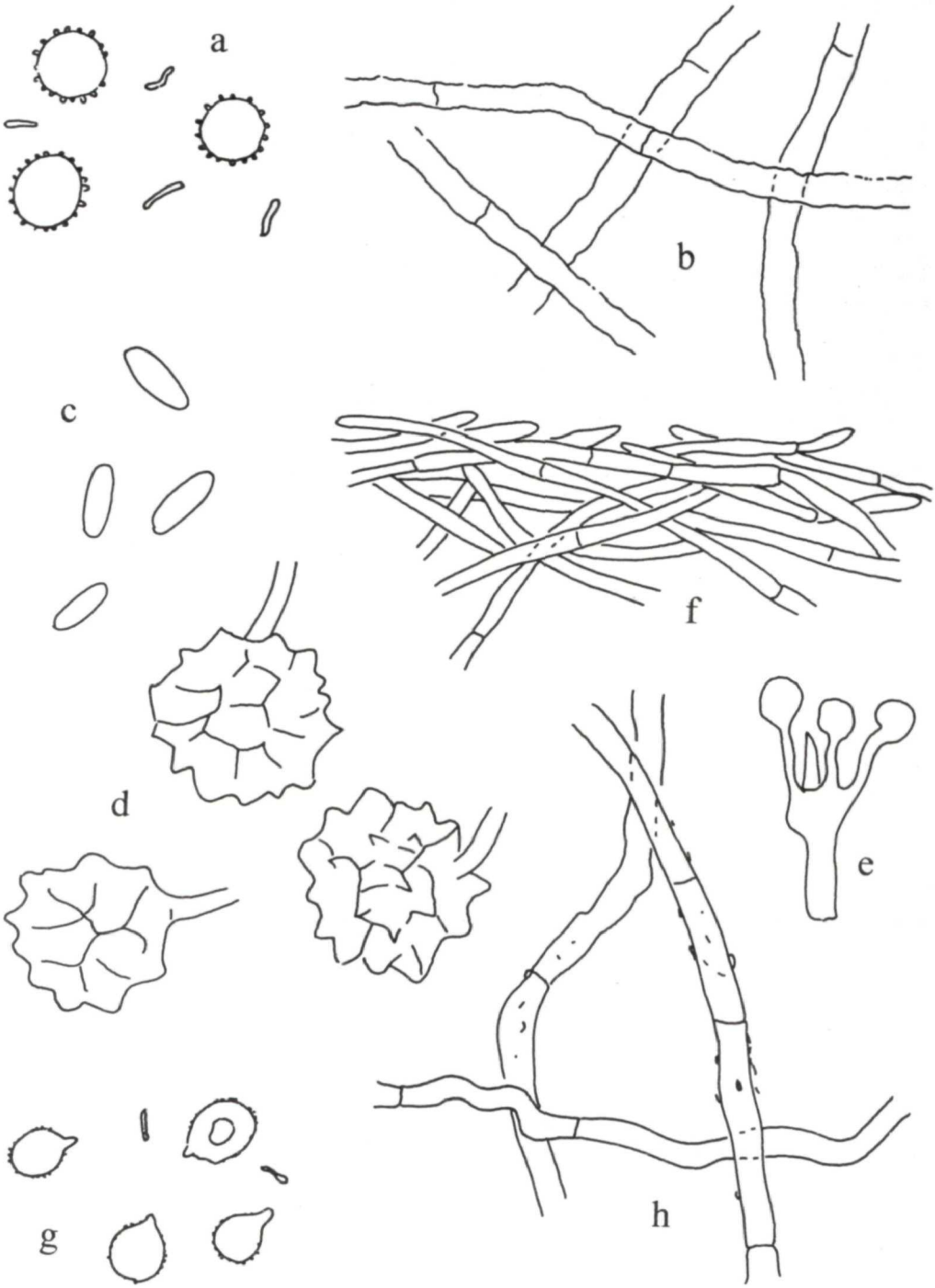

Fig. 3 *a*, *b*. *Morganella afra* (WU 20236). *a* spores, x 2500, *b* paracapillitium, x 1000. Fig. 3 *c*. *Lysurus periphragmoides* (WU 12585), spores, x 2500. Fig. 3 *d-f*. *Octavianina* spec. (WU 21171). *d* spores, x 2500, *e* basidium, x 1000, *f* hyphae of the peridium, x 1000. Fig. 3 *g*, *h*. *Vascellum endotephrum* (WU 14894). *g* spores, x 2500, *h* paracapillitium, x 1000.

Rhizopogon rubrocorticeus ZELLER & DODGE 1918

The species is known only by the type collection.

Specimen: Mauritius: type (ZELLER & DODGE 1918).

Rhizopogon spec.

Three collections from Mauritius originate from different habitats and were partly immature, partly overripe, and partly nearly dissolved. Therefore it does not even appear sure that all of them represent the same species. The only species known from Mauritius at present is *Rhizopogon rubrocorticeus* (see above), but this can be excluded for the mentioned collections showed no reddish or red discoloration in any phase of development – at most they became yellowish and, in age, blackish.

Specimens: Mauritius: Moka, Piton du Milieu, under and at the roots of "Watsab tree" (probably a species of *Casuarina*), 9. 3. 1993, leg. A. HAUSKNECHT (WU 13392); - Savanne, Grand Bassin, ca. 670 m s. m., under "Watsab tree", 27. 1. 1995, leg. A. HAUSKNECHT (WU 14898); - Plaine Willems, Curepipe, Botanic Garden, under tropical broad-leaved trees, 6. 2. 1995, leg. A. HAUSKNECHT (WU 14899).

Scleroderma cepa PERS. 1801 sensu COCCIA & al. 1990

Characters:

Fruitbody: opened cup-shaped with very short stalk, 53-55 mm diam., without mycelial cords.

Peridium: clear greyish ochraceous, yellowish brown, with appressed squamules, hard and thick (in exs. 4 mm), in section clear ochraceous. Opening at the apex broad, cup-like.

Gleba: greyish brown, pulverulent.

Spore deposit: greyish brown.

Spores: globose to subglobose, 7.5-11 µm diam. (excluding ornament), verruculose, not reticulate, surrounded by hyaline vesicular cells of 3 µm diam.

Peridial hyphae: septate, without clamp-connections.

Paracapillitium: abundant, mostly collapsed, hyaline, septate, without clamp-connections.

Specimen: Mauritius: Curepipe, Botanic Garden, ca. 500 m s. m., under *Pinus* cf. *radiata* D. DON., 22. 2. 2000, leg. A. HAUSKNECHT & G. KOVACS, det. H. KREISEL (WU 20262, Kr MT 02).

The species is understood in the sense of COCCIA & al. (1990), not ss. GUZMÁN (1970). Its distribution includes Europe, Africa, Canaries, and Mauritius.

Scleroderma flavidum ELLIS & EVERH. 1885

Characters:

Fruitbody: globose, subglobose, depressed, astipitate or with a short and slim stalk, 9-32 mm diam.; base with white to cream, much branched mycelial cords.

Peridium: straw yellow with small appressed umber brown squamules, 0.3-0.8 (in basal parts to 4.5) mm thick, in section whitish, dried brownish to rufous. Fresh specimens of WU 20983 showed an orange to carrot red discoloration.

Gleba: olive brown, olivaceous black to violaceous black, pulverulent, with yellowish fibres.

Spore deposit: dark brown to blackish brown.

Spores: globose, 8.5-12 µm diam. (ornament excluded), 10-15 µm (ornament included), densely spinose, not reticulate, s. m. dark reddish brown.

Peridial hyphae: in the peripheral layer 3-4 µm thick, septate, without clamp-connections; in the inner layer broad (6-18 µm), partly inflated, fusiform to ellipsoidal.

Paracapillitium: hyaline to yellowish, 3-6 µm broad, septate, without clamp-connections, fragile.

Specimens: Mauritius: Moka, Eureka House, 100 m s. m., on wayside in rain forest on bare soil and among plant debris, 14. 7. 2000, leg. A. HAUSKNECHT (WU 20983, Kr MT 122); - Black River, Black River National Park, 250 m s. m., along way in rain forest on bare soil and among plant debris, 16. 7. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 20864, Kr MT 129); - Rodriguez Island, near St. Gabriel, in rather dry forest on barren embankment, 28. 1. 2001, leg. A. HAUSKNECHT, det. H. KREISEL (WU 21167, Kr MS 04); - Grand Port, Domaine de Chasseur, on bare soil, 30. 1. 2001, leg. & det. A. HAUSKNECHT (WU 21168).

La Réunion: Cirque de Cilaos, Forêt de Cilaos, ca. 1400 m s. m., 6. 2. 2001, leg. A. HAUSKNECHT, det. H. KREISEL (WU 21169, Kr RE 04).

This is *S. cepa* PERS. as interpreted by GUZMÁN (1970). The species is rather frequent on the Mascarenes from the lowland until about 1400 m s. m. The collections coincide well with the material documented by COCCIA & al. (1990) from Europe.

The distribution includes western and southern Europe, Canaries, C and S Africa, India, Australia, New Zealand, Hawaii, North America from Canada to Mexico, and Cuba (GUZMÁN 1970, as *S. cepa*).

Scleroderma texense BERK. in HOOKER 1845

Characters:

Fruitbody: depressed globose, astipitate, exs. ca. 32 mm diam., base conical; opening still not formed.

Exoperidium: yellowish grey, areolate-rimose, with small clear brownish appressed squamules, in exs. 1 mm thick, in section three-layered, brownish with a white central layer.

Gleba: violaceous black, chambered with fine whitish dissepiments.

Spores: subglobose, 7-10 µm diam., excluding the verrucose to spinulose ornament, s. m. brown, enveloped by hyaline cells of about 2 µm diam.

Peridial hyphae: 4-6 µm broad, septate with clamp-connections.

Paracapillitium: not seen.

Specimens: Mauritius: leg. C. A. O'CONNOR (BPI, LLOYD 32029, type of *S. patens* LLOYD 1906, revised by GUZMÁN 1970); - Bon Accueuil, ca. 200 m s. m., *Pinus* forest, 22. 2. 2000, leg. F. DÄMMRICH (Kr 4707).

It is determined following GUZMÁN (1970). This American species was described from Mauritius already as *S. patens* LLOYD 1906. Possibly it was introduced from the New World with roots of imported pines. The species is distributed in N and C America, Jamaica, Australia, China, India, and France (GUZMÁN 1970).

***Scleroderma verrucosum* (BULL. 1789/91): PERS. 1801**

It is a widespread species, common in temperate to tropical climates of the Old and New World (GUZMÁN 1970, KREISEL 2001).

Scleroderma spp. apparently belong to the most frequent gasteral *Basidiomycetes* in the considered area. As the genus is known as obligatory ectomycorrhizal, in contrary to most other genera treated in the present paper, it would be highly desirable to note the associated tree species in future collections of *Pisolithus*, *Rhizopogon*, and *Scleroderma*.

Specimen: La Réunion: leg. E. DUPONT (BPI LLOYD 28943; rev. GUZMÁN 1970).

***Vascellum endotephrum* (PAT. 1902) DEMOULIN & D. M. DRING 1975** (Colour fig. XVIII, Fig. 3 g, h)

Characters:

Fruitbody: depressed globose to turbinate, 10-16 mm broad, 8-15 mm high, base with several fine whitish mycelial cords, connected with the substrate (litter, grass remnants).

Exoperidium: whitish, orange white (5AB2), pallid ochraceous, spinulose with conical, angular, composed or twice-composed spines with plate-like enlarged bases, detersile, but apparently not falling in patches.

Endoperidium: papery, whitish, later yellowish grey, dull, finely alveolate (as hammered), rugose near base; opening irregular.

Gleba: fresh beautiful violaceous grey, later olivaceous or violaceous grey, without pseudocolumella.

Subgleba: rudimentary to distinct, up to 8 mm high, beige, cellular with small chambers. Diaphragma present, papery.

Spore deposit: dark olivaceous green.

Spores: globose to broadly ellipsoid, ovoid, 3.3-4.0 x 3.0-3,8 µm (average 3.5 x 3.2 µm; Q = 1.05-1.15), verruculose, apedicellate; no fragments of sterigmata.

Capillitium: lacking. Paracapillitium hyaline, thin-walled, septate without clamp-connections, 5.0-6.0 µm broad.

Specimens: Mauritius: Plaines Willems, Macchabee Forest, under "Watsab tree" in the litter, 30. 1. 1995 and 24. 2. 2000, leg. A. HAUSKNECHT, det. H. KREISEL (WU 14894, 20254; Kr MT 10); - Pamplemousses, Nôtre Dame, Crève Cœur, south exposed open place among grasses in tropical bush, 26. 1. 2001, leg. A. HAUSKNECHT & F. BLIZENEC, det. H. KREISEL (WU 21165, Kr MS 01).

It is a widespread paleotropical species, characteristic of open places as all of this genus. It was described originally from Madagascar (see KREISEL & HAUSKNECHT 2001) and is recorded from Congo, Sri Lanka, Nepal, Assam, and Philippines, but only once (by introduction?) from the New World (Brazil).

***Vascellum pratense* (PERS. 1797: PERS. 1801) KREISEL 1962**

Vascellum pratense is a widespread species of temperate to mediterranean climates of the Old and New World. Its occurrence in the tropical Mauritius should be confirmed by revision of the mentioned material determined by DRING & RAYNER before publication of actual keys (KREISEL 1993, KREISEL & HAUSKNECHT 2001).

Specimen: Mauritius: Pouce Rouge, Jan. 1863, leg. TELFAIR (K, DRING & RAYNER 1967).

***Vascellum* spec.**

Characters:

Fruitbody: only one immature fruitbody of 9 mm diam., turbinate with a crustaceous whitish exoperidium and a poorly developed grey-brownish, cellular subgleba with distinct papery diaphragma. Base provided with a long, snow-white mycelial cord. The opening destroyed.

Capillitium hyphae: present in the peripheric part of the gleba, reddish brown with dispersed small pits; paracapillitium abundant, hyaline, septate, 3-7 µm broad.

Spores: subglobose to broadly ovoid, 3.2-3.6(-5.0) x 3.2(-4.0) µm, punctate, apedicellate.

Specimen: Mauritius: Pamplemousses, Nôtre Dame, Crève Cœur, south exposed open place among grasses in tropical bush, 26. 1. 2001, leg. F. BLIZENEC, det. H. KREISEL (Kr MS 02).

The poor material does not allow a determination, although the presence of true capillitium suggests *V. curtisii* (BERK.) KREISEL, actually known from North America and Japan, while the weakly ornamented ovoidal spores suggest the neotropical *V. floridanum* A. H. SMITH, which recently was discovered in Italy. *Bovista cunninghamii* and *Vascellum endotephrum* were collected on the same place (see above).

Discussion

A total of 35 taxa of gasteral *Basidiomycetes* have been enumerated here from La Réunion, Mauritius, and the Seychelles; 31 of them were determined to species. 25 species now are known from Mauritius, ten from La Réunion, and only four from the Seychelles. No gasteral *Basidiomycetes* are known from the Comores, but at least ten from Madagascar.

Actually no one of these species is recorded from all three areas under consideration, and only two species (both ectomycorrhizal) are common to La Réunion and Mauritius, and two (both saprobes) to Mauritius and the Seychelles.

Two species (*Phallus mauritianus* and *Rhizopogon rubrocorticeus*) in Mauritius and one species (*Bovista halophila*) in La Réunion seem to be endemic to the considered area, but the mycological exploration of tropical countries is by far not complete, and surprising records are possible every time in all warmer countries. The differences in Gasteromycete flora of the three areas actually seem to be fundamental, but may decrease if more collections can be studied.

According to our present knowledge, many of the enumerated taxa are of pantropical to nearly cosmopolitical distribution. Typical African elements are *Geastrum pulverulentum*, *Lysurus corallocephalus*, *Morganella afra*, while *Vascellum endotephrum* is paleotropical. *Bovista cunninghamii* and *Lycoperdon asperum* show floristic relations to the southern hemisphere (Australia, temperate South America, South Africa).

A strange case is that of *Cyathus crassimurus* which now is known only from Hawaii and La Réunion, although *Cyathus* belongs to the relatively well-studied genera. It may be found elsewhere in the paleotropics in future.

Northern elements (mainly warm temperate in distribution) are few: *Lycoperdon marginatum*, *Phallus hadriani*, *Scleroderma cepa*, *S. flavidum*, and *Vascellum pratense*. The floristic relations of the still unidentified subhypogeous species (*Hysterangium* spec., *Octavianina* spec., *Rhizopogon* spec.) remain to be elucidated.

The island La Réunion, with elevations ascending to 3069 m s. m., offers in higher elevations suitable habitats for temperate elements such as the south temperate *Lycoperdon asperum* and the more widespread, but mainly north temperate *Geastrum minimum* and *Scleroderma flavidum*. On Mauritius and the Seychelles, with elevations up to 826 resp. 912 m s. m., only tropical vegetation can be found.

Ectomycorrhizal species are *Pisolithus arhizos*, *Rhizopogon* spp., *Scleroderma* spp., and possibly *Octavianina* spec. They have been found rather frequently on Mauritius and La Réunion, but not on Seychelles. Their host plants on the Mascarenes are not exactly known, but *Pinus* cf. *radiata* and the enigmatic "Watsab tree" (possibly *Casuarina cunninghamiana* MIQ.) have been noted by the collectors. *Casuarinaceae* are partly known to form ectomycorrhiza with *Pisolithus* and *Scleroderma* (DELL & al. 1995). Further observations are necessary to elucidate the question of ectomycorrhizal relations on Mascarene islands.

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Colour fig. VII. *Bovista halophila* (holotype). Colour figs. VIII, IX. *Clathrus mauritianus* (VIII WU 20252, IX WU 21166). Colour fig. X. *Cyathus crassimurus* (WU 20256). – Phot. INGRID HAUSKNECHT (VIII-X), A. HAUSKNECHT (VII).

Colour fig. XI. *Geastrum pulverulentum* (WU 20860). Colour fig. XII. *Hysterangium* aff. *coriaceum* (WU 20857). Colour figs. XIII, XIV. *Lysurus periphragmoides* (XIII WU 12585, XIV WU 21172). – Phot. INGRID HAUSKNECHT.

Colour fig. XV. *Lycoperdon asperum* (WU 20259). Colour fig. XVI. *Morganella afra* (WU 20236). Colour fig. XVII. *Octavianina* spec. (WU 21171). Colour fig. XVIII. *Vascellum endotephrum* (WU 20254). – Phot. INGRID HAUSKNECHT.