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HARVARD UNIVERSITY. — XLI.

*PRELIMINARY DIAGNOSES OF NEW SPECIES OF  
LABOULBENIACEÆ. — I.*

BY ROLAND THAXTER.



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SINCE the publication by the Academy of the writer's "Contribution toward a Monograph of the Laboulbeniaceæ,"\* a large amount of material of the group has been accumulated, the greater portion of which has been derived from an examination of the entomological collections at the Jardin des Plantes in Paris, the South Kensington Museum of Natural History in London, the Hope Museum in Oxford, the collection of Italian Carabidæ in the Museo di Storia Naturale at Florence, and the National Museum at Washington. It is the writer's intention to publish as soon as practicable a Supplement to the Monograph just mentioned, including figures of all the species; but although a portion of the illustrations are already finished, it will be impossible to complete them without considerable delay, and it has therefore seemed advisable to publish preliminary diagnoses of the new species of the genus *Laboulbenia*, which will be followed shortly by a second paper, including such new forms as belong to other genera.

The writer desires in this connection to express his great obligations to the gentlemen in charge of the collections mentioned for the courtesies extended to him, due acknowledgment of which will be made in connection with the Supplement already referred to. It should be mentioned also that a set of duplicate preparations has been prepared and will be deposited at Paris, London, and Oxford, so that a majority of the new forms, as well as many others, will be accessible to European students of the group.

In the following descriptions no comparison of the forms has been attempted in the absence of figures which might render such comparison

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\* *Memoirs*, Vol. XII. No. 3.



intelligible. The very large mass of material obtained naturally contains many of the species previously reported, illustrating more fully than was formerly possible the geographical distribution, variation, and hosts of many of the species, notes concerning which are likewise reserved for a more extended paper. The numbers referred to apply to the specimens examined, which in the Hope and British Museum collections were labelled if found to be infested. A portion of the specimens examined at Paris were also labelled, but unfortunately this was not done in all cases.

*Laboulbenia Acrogenis* nov. sp.

Perithecium rather slender, free except at its base, pale yellowish or straw-colored, becoming yellowish brown, tapering to the neck-like rather slender often almost clavate apex, the lip-cells hyaline, well distinguished, the pore obliquely external: below more or less deeply suffused with smoky brown, especially the outer half, the posterior (outer) subterminal wall-cells very often becoming deeply suffused with smoky brown. Receptacle rather short, becoming slightly suffused with yellowish brown, normal in form, sometimes slightly inflated between cells I and II. Outer appendage consisting of a large rounded basal cell bearing four to eight branches arranged antero-posteriorly in a more or less definitely double row, their insertions forming a continuous deeply blackened area, their cells inflated, with blackened septa, successively once to three times branched antero-posteriorly. The inner appendage consisting of a much smaller basal cell producing from one to two branches similar to those of the outer, one on either side. The antheridia solitary or from two to four, borne rather regularly on short branchlets. Perithecium  $90-175 \times 28-35 \mu$ . Antheridia  $14 \mu$  long. Total length to tip of the perithecium  $190-360 \mu$ . Appendages  $85-100 \mu$ . Spores about  $40 \mu$ .

On *Acrogenys hirsuta* MacLeary, Brit. Mus. Nos. 668 and 528, "Australia" and Union Reefs, Australia. Occurring on the inferior posterior margin of the prothorax and the adjacent portions of the thorax.

*Laboulbenia adunca* nov. sp.

Perithecium long and slender, straight or nearly so, the outer half clear dark translucent brown, the inner pale olivaceous, wholly free, a very short narrow hyaline neck formed by the basal wall-cells; the tip well distinguished, wholly blackish below or especially on the inner



side, the inner lips black-margined, curved outward over the outer lips in a characteristic hook-like fashion. Receptacle uniform dirty olivaceous, cell I paler, the cells about it faintly punctate. Insertion-cell black, broad, indistinguishable from the blackened basal portions of the basal cells of the appendages. Outer appendage consisting of a large nearly triangular basal cell, becoming wholly blackened except its upper margin and surmounted by a series of usually six superposed hyaline cells curved toward the perithecium, each cell producing externally a single simple branch consisting of a basal portion made up of two roundish short cells constricted at the dark septa and a distal portion six or more times as long, tapering, hyaline or tinged with brownish; the inner appendage consisting of a basal cell wholly or almost wholly black, giving rise on either side to a short series of cells, usually three or four, similar to that of the outer appendage and similarly branched. Perithecia  $225-245 \times 40 \mu$  (including neck, which is about  $18 \mu$  long). Total length to tip of perithecium, average  $450 \mu$ ; to insertion-cell  $200 \mu$ , greatest width  $50 \mu$ . Appendages  $150 \mu$ .

On *Galerita unicolor* Dej., Brit. Mus. No. 516, Amazon River. Inferior surface of prothorax.

#### *Laboulbenia Aerogenidii* nov. sp.

Form short and stout. Perithecium suffused with smoky brown, translucent, becoming distally rather abruptly subhyaline, contrasting with the abruptly differentiated tip; the latter black-brown, opaque or nearly so below, the lip-cells usually symmetrical, rounded, spreading broadly and rather abruptly, the lip-edges translucent; sometimes asymmetrical with the inner lip-cells only prominent and the pore external: the wall-cells with a slight spiral twist. Receptacle hyaline below, becoming more or less tinged with smoky brown above, especially cells III and IV and the region immediately below the perithecium; the suffused parts indistinctly punctate. Appendages consisting of two basal cells; the inner producing two short branches on either side, which usually bear a rather compact cluster of antheridia; the outer giving rise to from two to four branches placed antero-posteriorly with more or less regularity, the outer for the most part soon broken and deeply blackened, the rest especially the outermost more or less suffused with brown, commonly twice branched, above the basal and subbasal cells, elongate though for the most part broken. Total length to tip of perithecium  $200-220 \mu$ . Appendages  $200-250 \mu$ . Perithecium  $110-120 \times 35-45 \mu$ , the apex reaching a width of  $35 \mu$ .



On *Aerogenidion Bedeli* Tsch., Mon-Pin (China?), Paris, No. 179. Along the margins of the elytra.

*Laboulbenia Anaplogenii* nov. sp.

Perithecium nearly hyaline or pale yellowish, becoming tinged with pale amber-brown, stout, free except at its base, the outer margin mostly straight, the inner convex; the tip rather small and abruptly distinguished, blackish except the hyaline lip-margins. Receptacle concolorous with the perithecium, rather short and stout, cell V relatively large, cell IV divided by transverse septa into from two to several superposed cells, usually extending upward beyond the insertion-cell, thus forming a blunt outgrowth external to it. Basal cells of the appendages nearly equal, each producing as a rule two similar branches antero-posteriorly, once or twice branched in the same plane, the branchlets rather elongate and slender, concolorous with the receptacle. Spores  $50 \times 4.5 \mu$ . Total length to tip of perithecium 300–350  $\mu$ , to insertion-cell 200–240  $\mu$ , greatest width 50–70  $\mu$ . Appendages, longest 600  $\mu$ , average 300  $\mu$ .

On *Anaplogenius circumcinctus* Moh., Brit. Mus. Nos. 622 and 665, China. Also immature material of apparently the same species on an undetermined Carabid, Paris Museum, No. 4, from Madagascar. On the elytra.

*Laboulbenia Anchonoderi* nov. sp.

Pale amber-yellow, perithecium slightly darker, about two thirds free, the inner lip-cells suffused below with blackish brown, an external prominence involves the upper portion of the subbasal and lower portions of the subterminal wall-cells, forming, in the specimens from *A. subæneus*, an abruptly defined hunch. Receptacle normal, the basal and subbasal cells usually slender and somewhat darker, the subbasal more distinctly marked with fine transverse striations which are less distinct on the cells above it. Appendages concolorous, the outer simple (always?), the inner consisting of a basal cell similar to that of the outer, about twice as long as broad, giving rise on either side to a single branch which may be once branched above its basal cell; all the branches somewhat flexed. Insertion-cell red-brown or purplish, more or less oblique through the upgrowth of cell V. Spores about  $45\text{--}48 \mu$ . Perithecia (larger)  $185 \times 48 \mu$ , average  $125 \times 48 \mu$ . Total length to tip of perithecium 275–500  $\mu$  (longest 535  $\mu$ ). Appendages about 200  $\mu$ .

On *Anchonoderus subæneus* Reiche, San Felix, Panama, and *A. binotatus* Reiche, Guatemala City, Brit. Mus. (Biologia coll.), Nos. 706 and 707. On the elytra.



*Laboulbenia angularis* nov. sp.

Perithecium wholly free, symmetrically inflated, straight, evenly suffused with smoky brown except the very short narrow hyaline neck-like base; the tip well differentiated, black, distally hyaline, the whole perithecium inserted nearly at right angles to the axis of the receptacle. Receptacle amber-yellow or amber-brown, the basal cell tinged with smoky brown, cell II abruptly broader and long, all the cells except cell I more or less conspicuously marked by short transverse striæ, cell V bulging on the inner side and carrying the black insertion-cell out free from the neck of the perithecium. Outer appendage consisting of an erect series of about six obliquely superposed cells, the lower becoming nearly opaque, the basal one larger and darker, opaque externally and below; each cell bearing externally a single simple branch, the branches consisting of a basal portion of three short cells prominently constricted at the blackish septa, and a terminal portion (broken in the types): the inner appendage consisting of a basal cell which gives rise to a series of superposed cells on either side, like that of the outer appendage and similarly branched, one of the series in the types much shorter than the other (two and four celled), the branches all erect, closely apposed, more or less suffused with brownish. Perithecia  $280 \times 45-55 \mu$ . Total length to tip of perithecium  $680 \mu$ ; to insertion-cell  $420 \mu$ ; greatest width  $75 \mu$ . Appendages (broken)  $55 \mu$ .

On *Galerita unicolor* Dej., Brit. Mus. No. 516, Amazon River. Inferior surface of prothorax.

*Laboulbenia anomala* nov. sp.

Perithecia nearly symmetrical, free except at the base, tapering distally, the tip somewhat lighter, subtruncate with one (or more?) of the lip-edges modified to form a prominent large somewhat irregular blackish brown median projection which causes the tip to appear notched on the inner side. Receptacle dirty olive-brown, finely punctuate, the whole curved almost to a horseshoe form: cells I and II about equal in length and diameter, the base of the perithecium opposite cell III, insertion-cell unmodified external subtriangular, cell V similar to it, about twice as large and occupying a corresponding position on the inner side; the two together with the terminal portion of cell IV, on either side of which they lie, form the free broadly clavate terminal portion of the receptacle above the narrower and also wholly free basal half or more of cell IV. Basal cells of appendages not distinguishable, giving rise to a number of prominences (about twelve) each forming the base of a branch, the branches



simple or rarely branched, hyaline, of two kinds, the one with long slightly inflated basal cells, the other closely septate, intermediate forms occurring in which the septa are more remote; all the septa brownish purple. Perithecia  $140 \times 40 \mu$ . Total length to tip of perithecium about  $450 \mu$ ; to tip of free end of receptacle  $450 \mu$ . Appendages  $140-160 \mu$ .

On *Orectogyrus suturalis* Reg., Paris, No. 102, Zambesi River, Africa; on *O. glaucus* Klug., Brit. Mus. No. 465, Coast Castle, Egypt. On elytra.

*Laboulbenia aquatica* nov. sp.

Perithecium free nearly to its base, rather short and stout becoming dark olive-brown, the wall-cells very slightly twisted, the blackened tip well differentiated; nearly symmetrical, subtruncate, the lip-edges hyaline, the lip "valves" prominent. Receptacle rather short and distally broad, olivaceous, lighter below. Insertion-cell unmodified, external, about as large as and nearly symmetrical with cell V, the two lying side by side above cell IV. The appendages consisting of an outer basal cell from which is formed a primary dark brown terminal prominence bearing several small branches distally, while about its base externally and often on only one side several secondary unmodified prominences arise, each producing usually a single terminal branch. The inner basal cell moderately distinct, at first simple, later apparently divided or lobed and bearing several branches. All the branches hyaline, constricted at the lower (four to about six) dark, mostly oblique septa; the distal portion slender, elongate, subrigid, tapering, without constrictions or colored septa, the basal segments bearing numerous typical flask-shaped antheridia. Spores  $70 \times 4.5 \mu$ . Perithecia, average  $100 \times 38 \mu$ . Total length to tip of perithecium average  $220 \mu$ ; to insertion-cell  $150 \mu$ ; greatest width  $30 \mu$ . Appendages, longest  $175 \mu$ .

On *Gyretes*? sp., Paris Museum, No. 106, Venezuela. On elytra.

*Laboulbenia aristata* nov. sp.

Perithecium less than one half free from the receptacle, pale amber-yellow, straight and symmetrical or nearly so, the tip well distinguished, symmetrical, blackish, the lip-cells symmetrically rounded and protruding slightly on either side, their distal margins straight and horizontal or nearly so. Receptacle concolorous with the perithecium, cell I tinged with brown, a brownish shade below the base of the perithecium, cell IV bulging distally where it is rather faintly suffused with blackish. Outer



appendage simple, the basal cell more than twice as long as it is broad, the two cells above it abruptly narrower and equal; two or three of the cells above these broader with thicker walls, the rest of the appendage tapering; the whole rigid, straight, erect or bent toward the tip of the perithecium, a part of which it may overlap; inner appendage consisting of a small basal cell bearing a very short one or two celled branch on either side. Perithecia  $95-110 \times 30 \mu$ . Total length to tip of perithecium  $240-260 \mu$ ; to insertion-cell  $185-200 \mu$ ; greatest width  $60 \mu$ . Appendages  $260-330 \mu$ .

On Carabid (? near *Pericallus*), Hope Collection, No. 322, Bouro, East Indies (A. R. Wallace). On superior margin of prothorax.

*Laboulbenia Asiatica* nov. sp.

Perithecium and receptacle as in typical forms of *L. elongata*, more or less suffused with dirty brownish yellow, the perithecium somewhat smoky brown above the basal wall-cells. Outer appendage consisting of a large subtriangular hyaline basal cell, which gives rise from a deeply blackened area of insertion to an antero-posterior series of short stout cells, themselves outwardly blackened and giving rise to from one to three branchlets also placed antero-posteriorly and themselves mostly once branched in a similar plane, the ultimate branchlets rather long and remotely septate, the basal septa only blackened. The inner appendage consists of a smaller basal cell which gives rise on either side to a series of from two to three branches arranged antero-posteriorly on a blackened insertion as in the outer appendage, the branches once or twice branched, the branchlets shorter than those of the outer appendage. Perithecium  $140 \times 45 \mu$ . Total length to tip of perithecium  $400-500 \mu$ . Appendages (longest)  $400 \mu$ .

On *Casnonia* sp., Asia, Paris, No. 139. Elytra.

*Laboulbenia Assamensis* nov. sp.

Perithecium mostly long and slender, free except at its very base, evenly suffused with dark slightly reddish brown, paler distally, tapering very slightly and gradually to the not abruptly differentiated tip which is somewhat rounded and slightly bent inward, suffused with blackish brown; the left lateral lip-cell prolonged to form a blackish blunt-tipped prominent outgrowth which is either erect or bent slightly outward or inward. Receptacle dirty brownish yellow with fine rather indistinct transverse striations, cell V very small, often hardly visible against the perithecium.



Appendages concolorous with the receptacle, the outer simple, straight, rigid, mostly somewhat divergent; the inner consisting of a basal cell often as large as that of the outer, and giving rise on either side distally to a branch similar to the outer appendage which bears several lateral antheridia near the base. Perithecium (including outgrowth  $18\ \mu$ )  $185-190 \times 33-37\ \mu$ . Total length to tip of perithecium  $375-450\ \mu$ ; to insertion-cell  $185-300\ \mu$ ; greatest width about  $48\ \mu$ . Appendages,  $150\ \mu$ .

On *Catascopus?* sp., Brit. Mus. No. 663, Assam, India. Inferior surface.

*Laboulbenia barbata* nov. sp.

Perithecium large, pale yellowish or brownish becoming slightly tinged with amber-brown, often symmetrically inflated and tapering gradually to the tip, which is brownish below becoming black on the inner side, the lips subhyaline, turned slightly outward. Receptacle concolorous with the perithecium, normal except that cell V is greatly enlarged and extends upward covering nearly one half of the inner margin of the perithecium, bulging strongly outward and carrying out the insertion-cell which is thus made lateral in position. Insertion-cell externally concave or indented. The outer appendage consisting of a small roundish basal cell giving rise to two, rarely more, branches antero-posteriorly, which are usually once branched near the base, the branchlets very elongate, slender, attenuated, curved outward and downward: the inner appendage consisting of a similar basal cell from which arise usually two branches, one on either side, similar to those of the outer appendage, the whole forming a hanging beard-like tuft. Perithecia  $190-200 \times 55-60\ \mu$ . Total length to tip of perithecium, average  $400\ \mu$ ; to insertion-cell, average  $190-200\ \mu$ . Appendages, longest  $450-650\ \mu$ . Spores  $100 \times 6\ \mu$ .

On *Morio Georgii* Pal., Brit. Mus. No. 690 (Biologia Collection), El Zambador, Mexico; on *M. simplex*, Dej., Brit. Mus. No. 581, Cayenne; on *M. monilicornis*, Latr., Hope Collection, No. 289, "North America." On the elytra.

*Laboulbenia bicornis* nov. sp.

Perithecium wholly free, dark brown tinged with olive becoming opaque, lighter at the base; very elongate, nearly straight, slightly and gradually inflated from the neck-like base to about the middle, thence tapering very slightly to the tip, which is distinctly though not abruptly differentiated: the two inner lip-cells symmetrical each terminating in a small rounded prominence which bears a second smaller rounded terminal



prominence; from the base of the lower prominence a long slender brown or olive-brown horn-like process grows downward, inward, and upward, the two symmetrical and similar and resembling the horns of an ox; though formed from the *inner* lip-cells, a slight twist in the wall-cells usually makes them appear lateral or even external. The two outer lip-cells grow beyond the inner and are closely united forming a large bluntly pointed nose-like projection, its inner margin slightly convex while externally it is nearly straight and slightly oblique. Receptacle short and stout, evenly dark olive-brown; cell I short, slender, cell II abruptly larger, broad and short. The basal cells of the appendages opaque and indistinguishable, giving rise as in allied aquatic species to cladophorous prominences, the branches once or twice branched, hyaline, the lower three or four septa dark, the cells between them slightly inflated, the distal portion elongate, cylindrical, thin-walled, blunt-tipped, without dark septa, the whole forming a dense tuft. Spores  $125-140 \times 7-8 \mu$ . Perithecia  $340-750 \times 60-75 \mu$ . Total length to tip of perithecium, longest  $1150 \mu$ ; to insertion-cell  $340-400 \mu$ ; greatest width  $120-130 \mu$ .

On *Dineutes aereus* Klug., Brit. Mus. No. 461, Hadramaut, Arabia; on *Dineutes* sp., Brit. Mus. No. 463, Ambaca, Angola, W. Africa. On abdomen, elytra, thorax, and head.

#### *Laboulbenia bidentata* nov. sp.

Wholly suffused with pale dirty brown. Perithecium rather darker, free except at its base, somewhat inflated below, tapering symmetrically from the extremity of the basal wall-cells to the rather narrow apex; the two inner lip-cells suffused with blackish brown and projecting beyond the others to form two blunt prominences, their tips hyaline, contrasting. Receptacle rather short and stout, uniform pale dirty brown, inconspicuously flecked with minute somewhat darker points, the lower part of the small basal cell mostly hyaline. Outer appendage consisting of a basal cell several times as large as that of the inner, bearing a single branch, the basal cell of which is somewhat rounded and gives rise distally to an outer and an inner branchlet, each commonly once branched, the outer deeply blackened at the base (usually broken): the inner appendage consisting of a basal cell which bears a branch on either side which may be twice branched, bearing solitary antheridia laterally. Spores  $50 \times 4 \mu$ . Perithecia  $115-130 \times 45 \mu$ . Total length to tip of perithecium  $220-270 \mu$ ; to insertion-cell  $135-150 \mu$ . Greatest breadth  $70 \mu$ .



On *Homothis* sp., St. George's Sound, Australia, Hope Coll., No. 309.  
On elytra.

*Laboulbenia Brachionychi* nov. sp.

Perithecium wholly free, rather deeply suffused with smoky or reddish brown, subclavate or almost symmetrically inflated, tapering from the middle to the nearly symmetrical, or externally slightly oblique blunt tip, the basal wall-cells contracted to form a long slender neck-like subhyaline stalk. Receptacle abnormally developed, cells I and II nearly equal, cells III and V forming a stalk which is deeply suffused with blackish brown especially externally, and rather coarsely punctate in the darker areas, of equal diameter throughout and quite free, except at its very base, from the rest of the receptacle: cell IV larger than cell III, cell V small and separated by an oblique septum; cell VII and the basal cells of the perithecium small. Outer appendage consisting of a basal cell deeply blackened externally, and bearing a long slender simple branch, distally hyaline, more or less suffused with smoky brown towards the base: the inner appendage consisting of a basal cell about half as long as that of the outer, producing a single branch on either side which may be once or twice branched, the antheridia borne usually in twos or threes on short branchlets near the base. Spore  $110 \times 7 \mu$ . Perithecia exclusive of stalk,  $270-340 \times 65 \mu$ ; including stalk  $340-430 \mu$ . Total length to tip of perithecium  $650-800 \mu$ ; to insertion-cell  $400-500 \mu$ . Stalk-like portion of receptacle  $138 \times 38 \mu$ . Appendages  $400-470 \mu$ .

On *Brachionychus* sp., Nos. 99 and 822, Cochin China; on *Episcosoma laticollis*, No. 85, Cochin China; on *Episcosoma* sp., No. 86, Java. All in Paris Coll. Usually on inferior surface of thorax.

*Laboulbenia Caffi* nov. sp.

Perithecium almost wholly free, pale amber-colored or straw-yellow, transparent, stout, the tip blunt, with blackish basal suffusions, well distinguished, especially on the inner side. Receptacle short and stout, pale amber-colored, normal in form. Insertion-cell broad, often not deeply blackened. The appendages consisting of an outer and an inner series of from four to six superposed cells which, through a twist of the insertion-cell, become lateral instead of antero-posterior in position; each cell of these series produces externally a single simple short branch usually three-celled, the two lower cells short and inflated, the upper longer tapering to a blunt apex. Perithecia  $140-165 \times 60-70 \mu$ . Total length to tip of perithecium  $310-350 \mu$ , to insertion-cell about  $170 \mu$ . Appendages, longest  $85 \mu$ .



On *Cafius seminitens* Horn, and *C. canescens* Mann, U. S. National Museum, Los Angeles, California. On *C. sericeus* Holme, Brit. Mus. No. 437, Great Britain. On *Cafius* sp., Brit. Mus. No. 425, "Europe," No. 395, Hong Kong; *C. bisulcatus* Sol., Chili. On elytra and legs.

*Laboulbenia celestialis* nov. sp.

Perithecia almost wholly free, rather deeply suffused with dark reddish brown except the almost hyaline basal wall-cells; tapering slightly to the well distinguished rather large tip, which is turned slightly outward, the lip-cells blackened except around the pore. Receptacle uniformly pale dirty brown, rather short and stout, somewhat abruptly expanded below the perithecium; cell IV broader than insertion-cell. Outer appendage consisting of a somewhat rounded basal cell deep brown externally and bearing usually two branches placed antero-posteriorly, the basal cell of the outer nearly round, deep brown externally and bearing two branches placed antero-posteriorly which are very long and slender, remotely septate and more or less suffused with dirty brown: the inner appendage consisting of a smaller basal cell producing a branch on either side, the basal cells of which are short with suffused septa and bear solitary antheridia or short sterile branches which are blunt and shorter than the perithecium. Perithecia  $110 \times 35 \mu$ . Total length to tip of perithecium  $280 \mu$ ; to insertion-cell  $156 \mu$ . Greatest width  $55-60 \mu$ . Appendages (longest)  $400 \mu$ .

On *Drypta lineola* Dej., Brit. Mus. No. 507, China. Elytra.

*Laboulbenia ceratophora* nov. sp.

Perithecium wholly free, borne on a short nearly hyaline stalk, tinged not deeply with brown, for the most part nearly straight, rather slender, hardly inflated, the outer margin usually slightly concave; tapering slightly and rather abruptly to the peculiarly modified tip; the tip black except externally immediately about the pore, a large blunt tooth-like prominence projecting inward the upper surface of which is nearly horizontal while it is continued upward and outward into a longer more slender horn-like bluntly tipped outgrowth, the lower or external margin of which may be partly hyaline. Receptacle yellowish tinged with brown subdistally, rather narrow distally, cell IV small and hardly longer than cell V. Insertion-cell opposite the distal extremity of the short perithecial stalk. The basal cell of the outer appendage longer and narrower than that of the inner, becoming concolorous with



the insertion-cell bearing a single branch of usually three cells more or less deeply tinged with brown, each of which may give rise distally on the inner side to a short simple branchlet; the inner appendage consists of a basal cell shorter and broader, which usually bears distally on either side a branch, the basal cell of which usually bears distally two erect simple branchlets, one of them sometimes replaced by a single large long-necked brown antheridium. Perithecia, including the stalk ( $17\ \mu$ ),  $150-155 \times 30\ \mu$ . Total length to tip of perithecium  $290-310\ \mu$ ; to insertion-cell  $150\ \mu$ ; greatest width  $35\ \mu$ . Appendages, longer  $200\ \mu$ .

On *Serrimargo guttiger* Schaum, Hope Collection, No. 300, Sumatra; on *Miscelus Javanus* Klug., Hope Collection, No. 303, Java; on *Miscelus* sp., New Guinea, Paris Museum, No. 114. On elytra and inferior surface of the prothorax.

**Laboulbenia Ceylonensis nov. sp.**

Perithecium wholly free, suffused with smoky brown, relatively short and small, straight, slightly inflated, somewhat abruptly contracted distally to form the unusually large broad tip, the distal half of which is hyaline, distinguished from the opaque black lower half by a clean cut line of demarcation: the basal cells forming a short stout hyaline neck narrower than the body of the perithecium. Receptacle elongate, of nearly the same diameter throughout, the basal cell nearly hyaline, the cells above it more or less deeply suffused with smoky brown, cell V and the upper portion of cells IV and VII hyaline, the distal suffused portion obscurely punctate. Outer appendage consisting of a basal cell deeply blackened externally (the blackened area continuous with the black insertion-cell and involving also the external walls of the two cells immediately above it) producing from one to three branches arranged antero-posteriorly, which may be once or twice branched in a similar fashion, the branchlets long, slender, drooping, hyaline, some of the lower cells suffused with reddish brown: the inner appendage consisting of a basal cell about half as large as that of the outer, producing in the types a single branch which may be once branched as in the outer. Perithecium  $105 \times 32\ \mu$ . Total length to tip of perithecium  $445\ \mu$ ; to insertion-cell  $320\ \mu$ . Greatest breadth  $42\ \mu$ . Appendages  $340\ \mu$ .

On *Hexagonia*?, Ceylon, Hope Coll. No. 288. On elytra.

**Laboulbenia Chiriquensis nov. sp.**

Perithecium yellowish brown, straight, the inner margin convex, the outer slightly concave, tapering distally to the broad short blackened tip,



which is bent abruptly inward almost at right angles. Receptacle yellowish brown, deeper in the region of cell III, the basal cell slightly curved, its upper half rather abruptly expanded; a more or less distinct bulge below the perithecium. Outer appendage usually simple, stout, the basal cell of the inner usually much smaller bearing a branch on either side usually once branched above the basal cell; all the branches stout and constricted at the lower septa. Spores  $60 \times 4 \mu$ . Perithecium  $100-125 \times 37 \mu$ . Total length to tip of perithecium  $200-270 \mu$ ; to insertion-cell  $135-160 \mu$ . Greatest width  $55 \mu$ .

On *Calleida scintillans* Bates, Brit. Mus. (Biologia Coll.), No. 735, Vale de Chiriqui, Panama. On margin of elytron.

*Laboulbenia Clivinalis* nov. sp.

Usually rather slender. Perithecium three fourths or more free, more or less deeply tinged with blackish olive-brown, distally curved slightly outward, the tip black with hyaline lip-edges. Receptacle wholly hyaline, or cells III and IV becoming more or less suffused with blackish brown, the suffused areas punctate: bulging distally below the perithecium. Insertion-cell well differentiated, black. Appendages consisting of an inner and an outer basal cell, which may remain simple or become longitudinally divided, sometimes also transversely or even obliquely: the outer basal cell hyaline, often several times as long as broad, its distal septum blackened; when simple, bearing a single branch, if divided, several; the basal cell of the outer branch usually rather short and somewhat suffused, commonly bearing two branchlets. The basal cell of the inner appendage usually smaller than that of the outer, sometimes equal, and like it simple or divided; when simple, bearing a branch on either side, or more if it is divided. All the branches of both appendages hyaline or nearly so, mostly once branched above their basal cells. Spores about  $55 \times 4.5 \mu$ . Perithecia  $120-150 \times 35-50 \mu$ . Total length to tip of perithecium  $275-400 \mu$ ; to insertion-cell  $200-340 \mu$ . Appendages, longest  $300-400 \mu$ .

On *Clivina collaris* Herbst, Hope Coll. No. 348, and Brit. Mus. No. 456, both from England. On *Clivina fossor* Linn., Hope Coll. Nos. 353, 275 and 475, England; No. 295, "Europe"; Florence Mus., Italy. Usually on elytra and superior prothorax, but occurring elsewhere.

*Laboulbenia coarctata* nov. sp.

Perithecium short and stout, dark brown and opaque, its upper half free, its contour evenly rounded, the small papillate translucent tip turned



slightly inward and abruptly differentiated, the lips well defined. Receptacle dirty brown finely and obscurely punctate, of the typical form, lighter below, short, stout, cell I much narrowed below, cell II very broad, slightly inflated. Basal cells of appendages well developed bearing about eight erect short stout simple branches with broad basal constricted blackened septa, their rounded tips slightly exceeding the tip of the perithecium. Spores  $70 \times 7 \mu$ . Perithecia  $140-170 \times 62 \mu$ . Total length to tip of perithecium  $325-400 \mu$ ; to insertion-cell  $250-300 \mu$ ; greatest width  $100 \mu$ .

On *Orectochilus*?, Hope Coll. Nos. 233 and 234; Brit. Mus. No. 466, Bengal, India. Along median depression of elytra.

*Laboulbenia Colpodis* nov. sp.

Perithecium wholly free, very large, uniform clear translucent brown, slightly inflated or the margins straight, the basal wall-cells forming a well marked hyaline neck as broad as the base of the ascigerous portion from which it is not abruptly distinguished; the tip rather narrow and well distinguished, darker, the distinct lip-edges hyaline or translucent. Receptacle very small, cell I hyaline or yellowish, the rest more or less deeply suffused with blackish brown becoming nearly opaque, especially cells III and IV, which lie side by side and are about equal in size, cell III forming a rounded prominence just below the outer edge of the insertion-cell, cell V triangular, about as large as cells III and V combined. Insertion-cell not at first deeply blackened, but becoming indistinguishable in the general blackish brown suffusion of the adjacent cells. Outer appendage consisting of a nearly erect series of obliquely superposed small cells (sometimes as many as thirteen) at first hyaline, the basal cell and sometimes several of the cells above it becoming deeply suffused, which produce externally a single simple branch curved upward, its basal portion consisting of two cells, sometimes three, longer than broad and more or less deeply suffused with brown, constricted at the dark septa; its distal portion elongate, reaching nearly to the tip of the perithecium, strongly tapering hyaline except at its base where it is involved by the brown suffusion of the basal part; the inner appendage consisting of a basal cell surmounted on either side by a series of cells similar to that of the outer appendage, but fewer in number, similarly branched except that the two or three lowest cells of each series bear single large stout straight brown antheridia, the basal cells of the series, as in the outer appendage, becoming suffused with blackish brown. Perithecia  $190-220 \times 40-45 \mu$ . Total length to tip of perithecium  $300-$



375  $\mu$ ; to insertion-cell 75–80  $\mu$ ; greatest width 55  $\mu$ . Appendages, longest 220  $\mu$ .

On *Colpodes Chiriquinus* Bates, Brit. Mus. No. 735 (Biologia Coll.), Vale de Chiriqui, Panama. On elytra.

*Laboulbenia constricta* nov. sp.

Perithecium more than one half free, short, stout, inflated, somewhat olive-brown, the tip not differentiated, one of the lip-edges becoming modified to form a flattish or roundish brown prominence which lies usually in a median position between two rather ill defined prominences on either side of it. Receptacle usually with a double curvature, its basal cell very large, somewhat inflated distally, the base and posterior margin paler, cell II shorter, suffused below, strongly constricted distally, the constricted portion paler or hyaline: the distal portion of the receptacle short, deeply suffused, bulging strongly anteriorly below the insertion of the appendages. Insertion-cell not blackened, the appendages arising much as in *L. Orectochili* and *L. strangulata*, the branches hyaline, the basal portion closely septate, simple, without persistent blackened basal portions. Spores  $70 \times 6 \mu$ . Perithecia, average  $130 \times 60 \mu$ . Total length to tip of perithecium, average 400  $\mu$ ; to insertion-cell 340  $\mu$ . Appendages 70  $\mu$  (or more?).

On *Orectogyrus glaucus* Klug., Brit. Mus. No. 465, Coast Castle, Egypt. On elytra.

*Laboulbenia Copteæ* nov. sp.

Very slender. Perithecium free except the base, nearly straight, curved outward slightly at the tip, which is blackish with hyaline lip-edges; dull translucent olive-brown, concolorous with the receptacle, or with the basal wall-cells nearly hyaline. Receptacle slender, bulging slightly at the base of the perithecium, cell II narrower distally than cell I, the base of which is hyaline. Outer appendage consisting of a basal cell several times as long as broad, hyaline, usually curved strongly outward, constricted distally where the septum is suffused with dark brown below the single straight branch, which is more slender, elongate, tapering, hyaline, simple or once branched above its basal cell. Inner appendage consisting of a small basal cell bearing a short branch on either side, simple or once branched, usually not longer than the perithecium. Perithecium  $120\text{--}140 \times 35 \mu$ . Total length to tip of perithecium 340–470  $\mu$ ; to insertion-cell 220–300  $\mu$ . Appendages (longest) 400  $\mu$ .



On *Coptea armata* Lup., Brit. Mus. No. 595, Santarem, Amazon River, Brazil. On elytra and superior prothorax.

*Laboulbenia corethrospis* nov. sp.

Perithecium relatively large, translucent brown or yellowish brown, generally larger distally through a subterminal external bulge, the tip moderately well differentiated, often bent rather abruptly inward, wholly blackish brown or hyaline in the median line, the inner lip-cells smaller and usually more prominent than the outer, sometimes overlapping them, the whole perithecium free from the receptacle. Receptacle short and rather stout, cells II-IV becoming externally blackish brown, the rest concolorous with the perithecium; cells III and IV rather prominent. Outer appendage wholly opaque, its successive cells indistinguishable as are the basal and insertion-cells, consisting of a blackened axis erect or bent outward, from the inner side of which arise several more or less blackened branches, the basal portion of the appendage only, as a rule, remaining. The inner appendage, consisting of a basal cell which is indistinguishable from the insertion-cell, being quite opaque, producing a branch on either side, the axis of the branches erect, becoming blackened and opaque, except the inner margins of the distal cells, bearing externally from six to ten or even more branchlets which are more or less deeply suffused. The general habit suggesting a species of *Corethromyces*. Perithecium  $130-150 \times 30-33 \mu$ . Total length to tip of perithecium  $190-240 \mu$ ; to insertion-cell  $90-130 \mu$ . Greatest width  $40-50 \mu$ . Appendages, longest (broken)  $185 \mu$ .

On *Miscelus Javanus* Klug., Hope Collection, No. 304, Java; on *Miscelus* sp., Paris Museum, No. 114, New Guinea. On inferior surface of abdomen, and on elytra.

*Laboulbenia corrugata* nov. sp.

Perithecium rather small, irregular, free from the receptacle except at the base, blackish brown, darker and almost opaque below, a rounded distal elevation extending completely round the perithecium, broader externally, forming a nearly opaque broad collar above which the tip is very abruptly distinguished; the latter subhyaline basally, a dark median external and internal suffusion, the lips translucent, faintly brownish, the two outer rounded and curved inward between the two inner, which form two free slightly unequal divergent blunt-pointed projections. Receptacle rather long and slender, pale brownish yellow with deeper



brown suffusions about the distal region of cell I and the basal region of cell II; the basal cells of the perithecium opaque and cell IV and V more deeply suffused; a series of prominent blackish brown tuberculate ridges extend more than half way across the receptacle from the anterior margin, beginning below the insertion cell and present as far as the base of cell II; cell IV bulging distally outside the insertion-cell. Outer appendage simple, erect, tapering, yellowish, perhaps once branched above the basal cell; inner appendage consisting of a smaller basal cell with a similar and shorter branch on either side. Perithecia  $120 \times 37-40 \mu$ . Total length to tip of perithecium  $340 \mu$ ; to insertion-cell  $200 \mu$ ; greatest width  $60 \mu$ . Appendages  $185 \mu$ .

On *Serrimargo guttiger* Schaum., Hope Collection, No. 300, Sarawak, Borneo. On base of elytra.

#### *Laboulbenia Cubensis* nov. sp.

Perithecium short and stout, free except at the base, slightly curved toward the appendages, blackish olive, the lip-cells prominent but flattened backward and outward. Receptacle elongate, cells I and II dirty olive, cell III hyaline, long, contrasting with cells IV and V, which, together with the basal cells of the perithecium, are deeply suffused with blackish olive; cell VI as long as cell III and lying beside it, becoming tinged with dirty olive; basal cells of appendages dark olive, indistinguishable, producing concolorous prominences which give rise to a number of hyaline branches, the basal cells of which are large, swollen distally, and bear numerous terminal and subterminal branchlets externally; the branchlets once or twice branched, the septa olive. Perithecia  $155-190 \times 75-85 \mu$ . Total length to tip of perithecium  $480-800 \mu$ . Appendages, longest  $140 \mu$ .

On *Dineutes longimanus* Oliv., Paris Museum, No. 101, Cuba. On tip of abdomen.

#### *Laboulbenia dactylophora* nov. sp.

Perithecium relatively small, its upper third only free from the receptacle, translucent smoky brown, the tip prominent, not abruptly differentiated, its upper half hyaline, black-tipped, symmetrical or irregularly sulcate, the lower half blackened. Receptacle very elongate, concolorous with the perithecium or paler, finely punctate, tapering below, its curved base hyaline, the basal cell expanding distally to the very broad upper septum, which forms the middle of a somewhat one-sided enlargement involving the adjacent extremities of cells I and II, cell II more dis-



tinctly punctate, very long, tapering very slightly nearly to its distal extremity, cell V producing two outgrowths, one on either side, erect, usually similar, brown, distally somewhat enlarged, the rounded tips often bent slightly outward, extending to or beyond the tip of the perithecium. Appendages consisting of two (or more?) basal cells from which several protrusions arise bearing groups of branches which are several times branched, forming a dense tuft not as long as the outgrowths from cell V, the lower septa brown or blackish, between the short cells. Perithecia  $170-190 \times 48-50 \mu$ . Total length to tip of perithecium  $750-880 \mu$ ; to insertion-cell  $680-810 \mu$ ; cell II about  $425 \mu$  long. Outgrowths from cell V,  $58 \mu$ . Appendages  $50 \mu$ .

On *Orectogyrus specularis* Aube, Paris Museum, No. 100, Gold Coast, W. Africa. Margin of elytra.

*Laboulbenia Darwinii* nov. sp.

Perithecium hyaline becoming pale straw or amber-yellow, sometimes with a shade of brown, relatively small, its upper third or less free from the receptacle, the tip black, abruptly distinguished, the broad lip-edges translucent purplish brown. Receptacle relatively stout, indistinctly punctate with short lines or dots of darker yellowish color, cells II, III, and IV often unusually broad. Insertion-cell well developed, deep purplish brown or black. Outer appendage consisting of a short angular brownish basal cell, which bears an outer and an inner branch distally, the outer simple or once branched above its basal cell, the inner mostly simple; the outer branchlet mostly shorter, divergent, often deeply suffused with reddish brown, the rest less deeply colored, rigid, erect. The inner appendage consisting of a smaller basal cell which may produce a single branch, or two placed laterally or antero-posteriorly, short, simple with lateral antheridia or once branched. Perithecia  $100 \times 30-35 \mu$ . Total length to tip of perithecium  $150-275 \mu$ ; to insertion-cell  $135-250 \mu$ . Appendages, longest  $200-250 \mu$ .

On *Oezena parallela* W., Brit. Mus. No. 572, Rio de Janeiro (legit C. Darwin), on *Pachyteles* spp., Paris Mus. No. 137, South America, Hope Collection, Nos. 284 and 285, Brazil. Occurring usually at the base of the posterior legs.

*Laboulbenia denticulata* nov. sp.

Perithecium free, olivaceous with blackish shades below the paler tip, rather narrow, straight; the tip broad, one of the inner lip-cells forming a short brown conical terminal prominence which is straight or bent



toward the pore contrasting with the nearly colorless lip-edges below it. Receptacle pale brown or dirty olivaceous, elongate, normal. The insertion-cell nearly horizontal external to cell V, unmodified. The outer basal cell of the appendages giving rise to a single subconical brown prominence bearing branches terminally and externally and protruding beyond the inner basal cell, which is indistinguishable from the very numerous branches arising from it in all directions; all the branches hyaline, their basal cells bearing distally several branchlets which may again be branched, the four to eight lower septa dark. Perithecia, average  $175 \times 44 \mu$ ; the spine-like apex  $10-12 \mu$ . Total length to tip of perithecium  $400-575 \mu$ ; to insertion-cell  $275-400 \mu$ ; greatest width  $55-70 \mu$ . Appendages about  $70 \mu$ .

On *Dineutes*?, Brit. Mus. No. 482, Adelaide River, Australia.

*Laboulbenia Dineutis* nov. sp.

Perithecium free except at the base, dark brown, the inner margin straight, the outer curved from the base to the tip, which is not well differentiated, the lip-cells inconspicuously modified to form an inner tooth-like brown prominence curved inward, and a median small brown rounded elevation, which is covered by an outer hyaline externally brown broad irregular elevation. Receptacle elongate or rather short, dark brown inconspicuously punctate. Appendages much as in *L. heterocheila*, the branchlets closely septate with dark septa near the base and (in unbroken specimens) with long hyaline aseptate or remotely septate terminations three to four times as long as the basal part. Measurements very variable. Perithecium, (Ceylon)  $275 \times 72 \mu$ , (India)  $140 \times 40 \mu$ . Total length to tip of perithecium, (Ceylon) 1 mm., (India)  $400 \mu$ , (Madagascar)  $350 \mu$ . Appendages, (Ceylon)  $200 \mu$ . Spores, (Ceylon)  $75 \times 6 \mu$ .

On *Dineutes subspinosus* Klug., Paris, Nos. 33 and 34, Madagascar and Isle de France; Hope Collection, No. 236, no locality. On *Dineutes* spp., Hope Collection, Nos. 230, 231, 232, and 235, Bengal, "Pondich Guera," Asia, Ceylon, Mauritius. On *Dineutes*, Brit. Mus. No. 483, Nilgiri Hills, India. On margin of elytra and tip of abdomen.

*Laboulbenia Dercyli* nov. sp.

Perithecia free except at the base, short, stout, becoming tinged with brown, straight or the usually very broad tip turned slightly outward, the latter black, contrasting with the hyaline lip-edges. Receptacle elongate,



faintly and uniformly tinged with smoky brown, normal except that cell V is pushed up even beyond the hyaline unmodified insertion-cell which becomes thus external to it. Appendages recalling those of *L. variabilis*, typically consisting of an inner and an outer basal cell, the outer bearing a single oblique or nearly vertical more or less irregular row of branches arising antero-posteriorly; the inner basal cell bearing a similar row on either side, all the branches hyaline or yellowish brown, more or less copiously branched; the lower cells somewhat inflated, the septa blackened, often oblique, the basal cells of the branches bearing distally and externally from one to three obliquely superposed branchlets with blackened septa, which may branch again; the ultimate branchlets tapering slightly, the septa transverse and hyaline, usually cohering in an erect mass. A third group of branches similar to the rest sometimes arises between these and the perithecium, apparently from the distal portion of cell V. Perithecia  $140-200 \times 55-60 \mu$ . Total length to tip of perithecium  $475-875 \mu$ ; to insertion-cell  $400-700 \mu$ . Appendages, longest about  $175 \mu$ .

On *Dercylus tenebriosus* Laf. (= *Eurysoma tenebrioides*?), Hope Coll. No. 328, Para; Brit. Mus. No. 586, "S. America." Margin of right elytron.

*Laboulbenia distincta* nov. sp.

Perithecium short and broad, wholly united to the receptacle except the tip, clear dark brown, darker distally, the tip large, blackish, somewhat compressed, the lips translucent smoky brown, not prominently distinguished. Receptacle short and stout, the distal portion larger than the basal; cells I, II, and VI transparent yellowish, the rest smoky brown, marked by closely set fine transverse lines; cells III and IV relatively very large, subequal. Insertion-cell two thirds as broad as cells IV-V. Outer appendage consisting of three superposed flat cells, hyaline becoming dark brown, the two lower larger and nearly equal, the middle cell producing a single branch curving upward from its inner side, the third cell producing a similar branch from its inner side and a terminal branch which is deep brown curved outward and upward, slender, simple; the inner branches of the three cells all at first hyaline, mostly once branched, later developing a dark brown contrasting suffusion above their basal cells: the inner appendage consisting of a small basal cell producing a branch on either side the basal cell of which is larger than that of the appendage, and bears two branchlets basally suffused with brown like those of the outer appendage. Perithecia  $130 \times 50 \mu$ . Total length to



tip of perithecium  $275\ \mu$ ; to insertion-cell  $250\ \mu$ ; greatest width  $95\ \mu$ . Appendages, longest  $235\ \mu$ .

On *Pericallus cæruleovirens*, Tat., Brit. Mus. No. 570, Singapore. On margin of elytra.

*Laboulbenia drepanalis* nov. sp.

Perithecium smoky olive, the inner half or less usually much paler, the upper three fourths free, falcate; the inner margin concave, the tip undifferentiated, the lip-edges forming a small hyaline rounded abruptly distinguished papilla. Receptacle rather short, concolorous with perithecium; cell I paler or hyaline with a basal blackish suffusion; cell V large, growing upward above the oblique insertion cell which is thus pushed out free from the perithecium together with the basal cells of the appendages. Insertion-cell small, unmodified. Basal cells of the appendages closely united, finally indistinguishable from one another, forming a prominent rounded outgrowth which gives rise to about six or eight branches, their dark basal septa of variable diameter only remaining, as a rule; the basal cells of the branches are distally inflated, and bear several branchlets externally and terminally, the basal cells of the branchlets mostly similar to those of the primary branches and similarly branched, the ultimate branchlets closely septate, the septa dark. Perithecia, Mexican specimens  $100 \times 40\ \mu$ , Amazon  $140 \times 35\ \mu$ . Total length to tip of perithecium, Mexican  $210\ \mu$ , Amazon  $275\ \mu$ ; to insertion-cell, Mexican  $130\ \mu$ , Amazon  $140\ \mu$ .

On *Gyretes acutangulus*, Sharp, Brit. Mus. No. 771 (Biologia Coll.), Bugaba, Panama; on *Gyretes* sp., Brit. Mus. No. 477, Amazon. On mid-elytron.

*Laboulbenia Egæ* nov. sp.

Perithecium free or nearly so, slender, usually somewhat curved inward, becoming evenly suffused with pale olive-brown, the broad tip not differentiated from the body of the perithecium, the lip-cells more or less suffused with darker brown. Receptacle pale yellowish, often elongate, the basal cell short; cell II several times as long, becoming amber-brown with transverse striations; cells III and VI about equal, elongate. Insertion-cell not deeply blackened. Outer appendage consisting of a usually somewhat inflated basal cell with thick outer wall, bearing one or two branches placed close together antero-posteriorly, the branches simple or once branched, subhyaline; the inner appendage consisting of a basal cell half as large as that of the outer, bearing usually a single simple or



once divided branch on either side: the branches of both appendages subhyaline, mostly thin-walled, erect in a compact small tuft, tapering slightly, hardly exceeding the tip of the perithecium. Perithecium  $190-225 \times 34 \mu$ . Total length to tip of perithecium  $540-680 \times 65 \mu$ ; to insertion-cell  $375-470 \mu$ . Appendages  $175-200 \mu$ .

On *Ega* sp., Paris Mus. No. 151, Acapulco, Mexico. On *Ega Sallei* Chev., Brit. Mus. No. 705, Biologia Coll., Paso Antonio and Champerico, Guatemala. On elytra.

*Laboulbenia equatorialis* nov. sp.

Perithecium free, hyaline becoming tinged with brown, slender and elongate; the basal wall-cells forming a well marked though not clearly differentiated hyaline stalk; a median and subterminal external prominence; the rather broad tip more or less deeply tinged with blackish brown, rather abruptly differentiated and bent outward, the lip-edges hyaline, the inner lip-cells prominent, more deeply suffused. Receptacle very long and slender, cell I short, cell II greatly elongated, cells III and VI about equal. Insertion-cell broad, deeply blackened. Outer appendage consisting of a somewhat rounded basal cell, which is hyaline externally, distally suffused with blackish brown, and bears two branches antero-posteriorly; the outer of which consists of a nearly isodiametric basal cell, opaque except its upper inner angle, from which arise two branches, the inner simple, becoming red-brown, its two lower cells inflated inward, the outer consisting of a small basal cell, opaque, except its inner upper hyaline angle and bearing two branches, an inner dark red-brown and slender, an outer curved outward and upward, more slender, deep red-brown, opaque toward the base, usually broken: the inner branch from the basal cell of the outer appendage consists of a basal cell like that of the outer branch, which bears distally two branches red-brown, about equal, the lower two cells inflated inward. The inner appendage consists of a slightly smaller basal cell bearing a branch on either side, the basal cell of each branch shorter, and giving rise typically to two branchlets from the basal cells of which the large, long, slender deep red-brown antheridia are produced in pairs. Perithecia  $400-760 \mu$ . Total length to tip of perithecium, average  $550 \mu$ ; longest over 1 mm.; average breadth  $50 \mu$ . Appendages, longest  $375 \mu$ .

On *Casnonia* sp., Brit. Mus. No. 502, Amazon River. On upper surface of prothorax, at base of elytra and on legs.



*Laboulbenia erecta* nov. sp.

Perithecium pale yellowish brown, slightly and evenly rounded, united to the receptacle as far as its subterminal cells, the nearly symmetrical tip rather broad, often flattened distally, becoming deeply suffused with blackish, except the narrow translucent margins of the lips. Receptacle pale yellowish, cell I short and stout, distally suffused with blackish brown; cell VI very small, cell V free from the perithecium, sometimes lateral as in *L. paupercula*. Insertion-cell thick and black, sometimes carried forward opposite the apex of the perithecium through the elongation of cells IV and V. Outer appendage consisting of a large basal cell several times longer than broad, which may bear terminally one or two branches, the outer sometimes once branched, the branchlets very long, slender, tapering, hyaline or pale yellowish, more or less flexuous: the inner appendage sometimes laterally placed, usually single, simple, consisting of two or three short cells with one or two lateral antheridia and sometimes producing longer branchlets, the basal cell much smaller than that of the outer appendage. Perithecia  $110-120 \times 35-40 \mu$ . Total length to tip of perithecium  $200-275 \mu$ ; to insertion-cell  $200-250 \mu$ . Appendages, longest  $675 \mu$ .

On "*Colpodes agilis* Chd.," Jalapa, Mexico, Brit. Mus. (Biologia Coll.), No. 696; on *C. evanescens* Bates, U. S. National Museum, Biologia Coll., Mexico. Elytra.

*Laboulbenia falcata* nov. sp.

Perithecium free or nearly so, mostly very large, pale yellowish, the inner half or more suffused with smoky brown, darker toward the margin, the base more or less strongly curved so that the perithecium is directed outward nearly at right angles to the axis of the receptacle or even recurved, basally inflated along the inner margin, tapering gradually from about the lower third to the apex; the tip not differentiated from the body of the perithecium, the lip-cells with darker longitudinal brown shades. Receptacle short, straight or nearly so, the basal cell broad, sometimes slightly inflated, a slight constriction often present between cells II and III, all the remaining cells unusually small in proportion. Outer appendage consisting of a small rounded basal cell bearing a single branch separated from it by a blackened septum and consisting of a hyaline externally blackened basal cell bearing two branchlets; an outer (usually broken) externally blackened and bearing several vertical branchlets; an inner usually simple, hyaline or yellowish. Inner appendage consisting of a



basal cell similar to that of the outer or slightly smaller, producing a branch on either side, each usually once branched, all the branches pale yellowish with occasional brown suffusions, the longest not greatly exceeding the tip of the perithecium. Spores  $35 \times 3 \mu$ . Perithecium  $150-200 \times 35-55 \mu$ . Total length to tip of perithecium  $275-380 \mu$ ; to insertion-cell  $140-190 \mu$ . Width  $34-40 \mu$ . Appendages  $175-275 \mu$ .

On *Casnonia* sp., Paris Mus. No. 116 bis, Bahia, Brazil. At base of elytra and on superior prothorax.

*Laboulbenia fallax* nov. sp.

Perithecium becoming dark dirty olive-brown, the tip blackened, bent outward, the lips hyaline. Receptacle becoming concolorous with the perithecium except the hyaline slender basal cell, the remaining cells usually short and stout except cell V, which extends up along the inner margin of the perithecium nearly to its tip, its inner margin continuing the curvature of the tip down to the insertion of the appendages, so that the perithecium seems at first sight twice its actual size. Insertion-cell unmodified, forming a slight rounded external prominence within which the basal cells of the appendages form an evenly curved base from which arises a single antero-posterior row of branches about twelve in number, their lower cells slightly inflated, hyaline with dark septa, usually twice branched; the ultimate branchlets above the third or fourth septum slender without dark septa, scarcely exceeding the tip of the perithecium. Perithecium  $100-120 \times 35-40 \mu$ . Total length to tip of perithecium  $190-325 \mu$ ; to insertion-cell  $120-250 \mu$ . Greatest width  $85 \mu$ . Appendages  $50 \mu$ . (The larger measurements are from the Amazon specimens.)

On *Gyretes acutangulus* Sharp, Brit. Mus. No. 771 (Biologia Coll.), Bugaba, Panama; on *Gyretes* sp., Brit. Mus. No. 477, Amazon River; on *Gyretes* sp., Hope Coll. No. 229, Rio de Janeiro. At tips of elytra.

*Laboulbenia finitima* nov. sp.

Perithecium one half to two thirds or more free, olivaceous brown, lighter distally, becoming wholly dark brown, straight or curved outward rarely inward; the tip broad, rounded, generally not well differentiated, blackish. Receptacle relatively small, the basal cell hyaline or yellowish, the rest concolorous with the perithecium; cells III-V lighter, cell VI extending down almost to cell I. Appendages brownish or pale olivaceous, the outer simple, its basal cell twice as long as broad, externally more deeply tinged with brown; the basal cell of the inner appendage



half as large, bearing a branch like the outer appendage on either side: all the branches erect, closely associated, and often bent terminally across the tip of the perithecium which they scarcely exceed. Perithecia, average  $125 \times 45 \mu$ . Total length to tip of perithecium, average  $240 \mu$ ; to insertion-cell  $145-150 \mu$ ; greatest width  $48-50 \mu$ . Appendages  $30 \mu$ .

On *Pericallus guttatus* Chev., Paris Museum, No. 78, Brit. Mus. No. 571, Java; on *P. cæruleovirens* Tat., Brit. Mus. No. 570, Singapore. On the legs.

#### *Laboulbenia fissa* nov. sp.

Perithecium three fourths or more free, short and stout, slightly bent toward the appendages, dirty olive-brown becoming deeply suffused with blackish brown except distally just below the tip, which is abruptly distinguished, long, narrow, hyaline below its black distal portion, furcate, the inner fork formed by the upgrowth of one of the inner (right) lip-cells which grows outward and abruptly upward beside the deep black blunt-tipped projection formed by the other three which it may equal in length, though narrower and somewhat paler. Receptacle short, the basal cell largest, pale yellowish or hyaline, of about the same diameter throughout, broader than cell II, which is short, narrow, of equal diameter throughout, hyaline or yellowish at the very base, the rest opaque and indistinguishable from the remainder of the receptacle, which expands abruptly above, becoming opaque except the upper part of cell IV and cell V. Insertion-cell much narrower than cells IV-V. Outer appendage consisting of several superposed cells, which form a black opaque axis, usually broken off, curved outward, each cell producing a short hyaline or brown edged branchlet distally on the inner side; the inner appendage consists of a smaller basal cell, which gives rise on either side to a branch much like the outer appendage, its main axis less deeply blackened, curving outward on either side of the perithecium, the hyaline branchlets arising from its convex side mostly once branched. Perithecia, average  $150 \times 48 \mu$ , including the tip, which is about  $45 \times 18-20 \mu$ . Total length to tip of perithecium  $290-300 \mu$ ; to insertion-cell  $185 \mu$ ; greatest width  $70 \mu$ . Appendages about  $110 \mu$ .

On *Pericallus guttatus* Chev., Paris Museum, No. 78; Brit. Mus. No. 571; Hope Collection, No. 301, Java. On *P. flavoguttulus* Dej., E. Indies. On elytra.



*Laboulbenia forficulata* nov. sp.

Perithecium free, straight or somewhat curved, slightly inflated, brown except the basal wall-cells which form a mostly hyaline well developed narrow neck-like stalk less than one third as long as the ascigerous portion, the latter tapering rather abruptly at the tip, two of the lip-cells prolonged to form a pair of erect pointed hyaline symmetrical apposed outgrowths which resemble the tips of a pair of shears. Receptacle short, stout, subtriangular, cell I hyaline below, forming a short slender usually curved pedicel; the body of the receptacle suffused deeply below with blackish brown, the more deeply suffused portions coarsely punctate with darker spots. Appendages arising much as in *L. palmella*, the outer consisting of a basal cell from the blackened upper and outer margin of which arise usually three branches in an antero-posterior series, which are curved slightly outward and give rise from their convex side to secondary branches which in turn may bear branchlets in a similar fashion: of the primary branches the inmost is more copiously branched, the outmost being small, usually broken; all the branches black externally and brown on the inner margins, or wholly opaque, usually constricted on the inner side at the blackened septa, the terminal cells of some of the ultimate branchlets abruptly inflated at the base: the basal cell of the inner appendage gives rise to a branch on either side, the two divergent and very similar in character and mode of branching to those of the outer appendage. Perithecium exclusive of neck,  $150-200 \times 28-38 \mu$ ; the neck  $35-50 \mu$  long. Total length to tip of perithecium  $300-450 \mu$ ; to insertion-cell  $100-150 \mu$ ; greatest width  $50-70 \mu$ . Appendages  $175-200 \mu$ .

On *Thyreopterus striatus* Guer., Hope Collection, No. 302, Madagascar. On elytra.

*Laboulbenia geniculata* nov. sp.

Perithecium free, long and narrow, translucent olive-brown except the short somewhat constricted hyaline neck, the tip well distinguished blackish brown bent outward, the lips coarse subhyaline oblique outward. Receptacle nearly hyaline, except cell II and sometimes the upper part of cell I, long and slender geniculate above cell II. Insertion-cell broad, black, close to base of perithecial neck. Outer appendage consisting of a larger basal subtriangular cell becoming more or less suffused with olive-brown, surmounted by a series of five or six obliquely superposed hyaline cells which curves inward toward the perithecium; each cell of the series bearing externally a simple branch consisting of two short faintly brownish basal cells constricted at the blackish septa, and a



terminal hyaline tapering portion about twice as long: the inner appendage consisting of a basal cell blackened below, from which arises on either side a series of superposed cells like that of the outer appendage and similarly branched except that one or two of the lower cells of the series bear antheridia, single, sessile or on a one-celled stalk. Perithecia  $200-285 \times 37 \mu$  (the neck,  $18-20 \mu$ , included). Total length to tip of perithecium  $500-670 \mu$ ; to insertion-cell  $275-370 \mu$ ; greatest width  $55 \mu$ . Spores  $65-70 \times 5 \mu$ . Appendages  $150-175 \mu$ .

On *Galerita* sp., Paris Museum, No. 160, Rosario, Argentine Republic. On left side of inferior prothorax.

*Laboulbenia gibbifera* nov. sp.

Perithecium free or nearly so, somewhat narrower than in *L. Dercyli*, the apex narrower and more abruptly distinguished, the lips distinct, turned slightly inward; an external outgrowth just below the blackened tip, which it may exceed in length, forming a free protuberance straight or bent sidewise or inward, its apex evenly rounded or slightly inflated, its outer margin continuous with the nearly straight margin of the perithecium. Receptacle much as in *L. Dercyli*, more slender and shorter, the appendages pushed outward by the enlargement of cell V. Appendages much as in *L. Dercyli*, the basal cells projecting upward more prominently, a group of branches in almost all cases arising apparently from cell V or from a small cell separated from it, the lower segments of the branches clearly differentiated and bearing externally three to six external and terminal branchlets. Perithecium  $150-167 \times 50 \mu$ . Total length to tip of perithecium  $400-450 \mu$ ; to insertion-cell  $275-340 \mu$ . Appendages  $150 \mu$ .

On *Dercylus tenebriosus* Laf. (*Eurysoma tenebrioides*?), Hope Coll. No. 328, Para; Brit. Mus. No. 586, "S. America." Inferior surface of thorax and prothorax near base of two anterior pairs of legs. Possibly a variety of *L. Dercyli*.

*Laboulbenia heterocheila* nov. sp.

Perithecium olive-brown united to cell IV nearly to its base, rather short, inflated below, tapering distally, the tip not abruptly differentiated, blackened below, the four lip-cells all differently modified: of the two inner lips one produces an erect rather slender brown finger-like terminal outgrowth, the other a shorter much broader paler outgrowth turned inward nearly at right angles: of the two outer lips one forms merely a rounded



prominence while the other grows out into a large prominent brown blunt-tipped tooth-like projection which becomes bent slightly outward and sideways. Receptacle rather long and slender, suffused with brown, the darker distal portion marked by fine transverse indistinct striations. The basal cells of the appendages more or less indistinguishable and giving rise to indistinct prominences bearing numerous branches, the basal cells of which are short, inflated distally, and bear a terminal and external series of closely septate branchlets; the latter once or twice branched, the septa dark, the whole forming a dense tuft about half as long as the perithecium. Spores  $60 \times 6 \mu$ . Perithecium  $200 \times 70 \mu$ . Total length to tip of perithecium  $550 \mu$ ; to insertion-cell  $400 \mu$ . Longest lip-prominence  $35 \mu$ .

On *Dineutes*? sp., Brit. Mus. No. 486, Timor, E. Indies. Elytra.

*Laboulbenia imitans* nov. sp.

Perithecium free, long, rather slender, curved slightly outward, suffused with dark smoky brown, tapering rather abruptly to a somewhat truncate tip, the inner lip-cells darker, the basal cells forming a hyaline well developed neck. Receptacle short, stout, subtriangular, usually abruptly bent above the basal cell, becoming deeply suffused with blackish brown, coarsely and conspicuously punctate, except where quite opaque, the opacity first involving the anterior and lower portions above the hyaline basal cell: cells IV and V nearly equal, cell IV bulging outward more than half its upper surface, being free from and external to the black insertion-cell. Appendages not reaching the tip of the perithecium; the outer consisting of a hyaline basal cell which gives rise to an antero-posterior series of rigid rather slender slightly incurved branches about six in number, arising from a deeply blackened ridge of insertion; the branches becoming deeply suffused with blackish brown, except along their inner margins, closely septate, the lower cells giving rise distally and inwardly to secondary branches similar to the primary ones and often developing short hyaline branchlets in a similar fashion. The inner appendage consisting of a basal cell which gives rise on either side to a series of from two to three branches similar in character to those of the outer appendage: the whole forming a somewhat crest-like dense tuft. Spores  $42 \mu$  long. Perithecium (exclusive of neck)  $150-155 \times 28 \mu$ ; the neck  $20-30 \times 20 \mu$ . Total length to tip of perithecium  $270-340 \mu$ ; to insertion-cell  $100 \mu$ ; greatest width  $50 \mu$ . Appendages, average  $45 \mu$  long.



On *Nycteis* sp., Paris Museum, No. 29, Madagascar. On legs, elytra, and abdomen. Resembling a species of *Corethromyces* in general appearance.

*Laboulbenia insularis* nov. sp.

Perithecium one third or more free, inflated, dark brown, becoming almost opaque, tapering to the rather pointed apex, the lip-edges hyaline. Receptacle elongate, the distal portion concolorous with the perithecium; cell I suffused with brown above and below, cell II hyaline except for a brown suffusion at its base and distal end. Outer appendage consisting of a large subconical basal cell becoming dark brown and bearing terminally a single short erect slender branch, the two basal cells of which are dark blackish brown, the septa usually oblique; the distal cell somewhat longer than the rest of the appendage, hyaline and soon broken. The inner appendage consisting of a very small basal cell, usually producing a single short hyaline branch about as long as that of the outer appendage. Perithecium  $85-95 \times 40 \mu$ . Total length to tip of perithecium  $215-275 \mu$ ; to insertion-cell  $200-250 \mu$ . Appendages, longest  $100 \mu$ .

On *Bembidium sublimatum* Woll., and *B. Grayanum* Woll., Brit. Mus. No. 409, Island of St. Helena.

*Laboulbenia intermedia* nov. sp.

Perithecium about three fourths free, suffused with yellowish brown deeper below the apex, rather stout, slightly inflated, the apex very broad, rounded, often almost flat, short, wholly blackened, the lips indistinguishable, the wall-cells with a slight spiral twist. Receptacle short and stout, at first hyaline below, becoming concolorous with the perithecium. Outer appendage consisting of a rather large subisodiametric cell bearing distally two or three antero-posterior branches, once or twice branched, the external branchlets brown, basally deeply blackened. Inner appendage consisting of a basal cell similar to that of the outer and producing usually two simple or once branched branches placed antero-posteriorly, the ultimate branchlets in both appendages elongate, tapering slightly distally, hyaline. Perithecia  $95-105 \times 35-40 \mu$ . Total length to tip of perithecium, average  $190 \mu$ ; to insertion-cell  $120 \mu$ . Appendages, longest  $300 \mu$ .

On *Anisodactylus tricuspидatus* A. Mor., Paris Museum, No. 199, Mon-Pin, (China?). Margin of the elytra.



*Laboulbenia Italica* nov. sp.

Perithecium free except at its base, rather short and stout, the upper half or third curved strongly outward, the tip large, sulcate, blackened, the lips coarse, nearly equal, subhyaline. Receptacle concolorous with the perithecium, the base nearly hyaline, usually bent between cells I and II, short, abruptly expanded above cell II, the anterior margin straight above cell I. Appendages arranged very much as in *L. orientalis*, the basal cells subtriangular, the outer producing externally an oblique row of about four superposed branches from a blackened area of insertion, the branches erect mostly twice subdichotomously branched, all the lower septa blackened and constricted, the inner appendage similar to the outer: the insertion-cell normally placed, broad, subhyaline, close to base of perithecium. Antheridia brown, the venter much inflated, the neck becoming pointed,  $23 \times 8 \mu$ . Perithecia  $100 \times 42 \mu$ . Total length to tip of perithecium  $275 \mu$ ; to insertion-cell  $175 \mu$ . Appendages  $140 \mu$ .

On *Brachinus explodens* Duft., Florence Museum, Florence, Italy.

*Laboulbenia Javana* nov. sp.

Perithecium about two thirds or less free, sessile, tinged with brown, paler in the middle, the distal portion hyaline and tapering considerably to the greatly modified tip, which is deeply suffused with blackish brown and bears two often symmetrically placed divergent outgrowths, the inner broader at the base and much shorter than the outer which is finger-like, with a hyaline area above, close beside the subterminal pore: the outer of these two projections appears, through a twist in the perithecium, to lie on the inner side. Receptacle pale yellowish with brownish shades, the deeply suffused base of the perithecium opposite the upper half of cell III or lower; the distal portion usually so twisted and bent in conjunction with the perithecium that it crosses the latter and the appendages at a considerable angle. Insertion-cell higher than the middle of the perithecium. Appendages concolorous with the receptacle, consisting of an outer basal cell which bears a single simple branch, slightly nodulose above and below the septa, the basal cell of the inner appendage smaller, bearing a single branch on either side which may be once branched. Perithecia about  $100 \mu$  long exclusive of outgrowth,  $27 \mu$  broad. Total length to tip of perithecium  $190 \mu$ ; to insertion-cell  $140 \mu$ . Appendages  $130 \mu$ . Distance from tip to tip of perithecial outgrowths  $45-48 \mu$ .

On *Pericallus cicindeloides* MacLeary, Paris Museum, No 143, Tongou, Java. On inferior surface of thorax.



*Laboulbenia leucophæa* nov. sp.

Perithecium dark brown, almost opaque, rather small, hardly more than the tip free from the receptacle; the tip relatively large and long, bent slightly outward, not abruptly differentiated, black except around the pore, the right inner lip forming a hyaline nearly median blunt outgrowth which is bent slightly outward. Receptacle sometimes twisted at the distal end of and above cell II; cell I hyaline; cell II suffused with brown, in some cases with deeper brown tranverse elevations on one side; the lower half of cell III and cell VI hyaline, the rest of the receptacle concolorous with the perithecium. The outer appendage simple, its basal cell four or more times as long as broad, curved toward the perithecium; the basal cell of the inner appendage very small, bearing in general a single short branch, both appendages pale yellowish. Perithecium to tip of outgrowth  $130-150 \times 35-40 \mu$ . Total length to tip of perithecium  $325-375 \mu$ ; to insertion-cell  $250-290 \mu$ ; greatest width  $55-65 \mu$ . Appendages about  $200 \mu$ .

On *Serrimargo guttiger* Schaum., Hope Collection, No. 300, Sumatra. Mid-elytron and base of legs.

*Laboulbenia Loxandri* nov. sp.

Perithecium about three fourths free, suffused with brownish, translucent, the distal half narrow and strongly curved inward, especially at the tip, the latter externally and distally blackened, the lip-edges hyaline. Receptacle rather stout, pale dirty brownish; cell II basally and distally and cell VI externally more deeply suffused. Cells IV and V elongated so that they become parallel and carry the insertion-cell upward and outward free from the perithecium. Outer appendage consisting of a rounded basal cell bearing a single terminal branch, the basal cell and one or two cells above it rounded, constricted at the mostly blackened septa, simple or each of the lower cells producing distally on the inner side a branchlet, the branchlets and the terminal portion of the main branch hyaline, slender, thin-walled, tapering. Inner appendage consisting of a basal cell like the outer and like it producing a branch on either side. Spores about  $45 \times 4 \mu$ . Perithecium  $140 \times 40 \mu$ . Total length to tip of perithecium  $340 \mu$ ; to insertion-cell  $275 \mu$ . Appendages, longest  $120 \mu$ .

On *Loxandrus unistigma* Bates, Brit. Mus. No. 659 (Biologia Coll.), Paso Antonio, Guatemala. Elytra.



*Laboulbenia maculata* nov. sp.

Perithecium free, dark brown becoming nearly opaque, the outer margin more convex than the inner; somewhat constricted at the base, the tip rather abruptly distinguished externally, the margins nearly straight, the inner lips small and prominent, the outer broad, straight, oblique. Receptacle abnormal, cell I short, slender, curved, opaque; cell II nearly hyaline in the middle, brownish above, coarsely spotted with blackish brown below, becoming darker and indistinguishable from cell I at its base; cell VI distally nearly hyaline and narrow, extending down beside cell II nearly if not quite to cell I, its base spotted as in cell II; cell VII (the "secondary stalk-cell") external to it, the margin blackish brown especially distally, extending down beside cell VI to within a short distance of its base where it is similarly punctate towards its base or throughout; cell III narrow, external to the upper two thirds of cell II, punctate below, its distal end close beside the corresponding termination of cell II; the base of cell IV overlapping cell III so that a cross section in this region would cut cells II, III, IV, VI, and VII: distal portion of the receptacle concolorous with the perithecium or somewhat paler. The perithecium bent toward and partly or wholly overlapping the insertion-cell. Appendages directed across the lower half of the perithecium sometimes at right angles; consisting of a large outer basal cell sometimes slightly inflated, bearing distally one or usually two antero-posterior simple branches which are slender, rather rigid, their diameter much less than that of the basal cell: the inner appendage consisting of a smaller basal cell which may produce one or two branches similar to those of the outer appendage; all the branches slender, rather rigid and straight, parallel and closely approximated, tapering but slightly. Perithecia  $225 \times 60 \mu$ . Total length to tip of perithecium  $560 \mu$ ; to insertion-cell  $375 \mu$ ; greatest width  $140 \mu$ . Appendages about  $200\text{--}250 \mu$ .

On *Serrimargo guttiger* Schaum., Brit. Mus. No. 559, Penang, East Indies. On anterior legs.

*Laboulbenia Madagascarensis* nov. sp.

Perithecium free, mostly straight, the inner margin more convex, uniformly clear dark brown or blackish except just below the black tip, abruptly distinguished from and contrasting with the receptacle; the tip rather abruptly distinguished, straight or bent slightly inward, with hyaline lip-margins, the wall-cells with a slight spiral turn. Receptacle



hyaline or finally yellowish, cells III and VI about equal. Insertion cell opposite base of perithecium. Outer appendage consisting of a rather small basal cell, its outer wall blackened, the blackening continuous with the insertion cell, producing distally usually two branches, an outer blackened externally or suffused with brown at its base and once branched, and an inner usually simple and hyaline. The inner appendage consists of a basal cell like that of the outer, and produces a single branch on either side which may be once branched, all the branchlets of both appendages rather stout and stiff, tapering, slightly curved outward, hyaline or becoming dirty yellowish. Perithecia  $100-120 \times 40-45 \mu$ . Total length to tip of perithecium  $240-270 \mu$ ; to insertion-cell  $140-155 \mu$ . Appendages, longest  $250 \mu$ .

On a Carabid allied to *Harpalus*, Paris Museum, No. 3, Madagascar. On margins of both elytra.

*Laboulbenia Madeiræ* nov. sp.

Perithecium united to receptacle for about two thirds of its length, pale straw-yellow becoming brownish yellow, the whole tip clear contrasting black or blackish brown, the hyaline lip-edges turned outward. Receptacle concolorous with perithecium, rather short, normal. Cell V relatively large, its upper margin free between the perithecium and the insertion-cell, the latter oblique, clear black, contrasting. Outer appendage often simple, elongate, sometimes once branched above its subbasal cell; the branches divergent: inner appendage consisting of a basal cell smaller than that of the outer, and bearing one or two short branches commonly three-celled. Spores  $75 \times 6 \mu$ . Perithecia  $100-130 \times 35-40 \mu$ . Total length to tip of perithecium  $225-250 \mu$ ; to insertion-cell  $175-210 \mu$ . Appendages, longer  $350 \mu$ .

On *Calathus complanatus* Dej., Paris Museum, No. 211, Madeira. On elytra.

*Laboulbenia Malayensis* nov. sp.

Perithecium clear translucent brown with a slight olive tinge, becoming almost opaque; united to the receptacle except the abruptly distinguished tip which is hyaline, except the blackened lips; the latter turned abruptly usually to the right, forming a lateral somewhat irregularly four-lobed papilla in which the hyaline pore is central. Cells I and II of the receptacle about equal in length, nearly hyaline, often distally olivaceous; cells III and IV relatively large, translucent olive-brown, cell IV bulging distally so that the dark but not opaque inser-



tion-cell is turned obliquely toward the tip of the perithecium; cells VI and the basal cells of the receptacle more or less tinged with olive-brown forming an elevation so that the perithecium appears indented below, all the cells except cell I marked by fine transverse striations. Outer appendage simple, the basal cell rather large, often externally indented near the base, the second and third cells nearly equal, narrower than the basal cell and the cells immediately above them; the rest of the appendage tapering to the hyaline attenuated elongate distal portion; the inner appendage consisting of a basal cell one third as large as that of the outer and bearing a single branch on either side, one or both of which may be elongate much like the outer appendage, bearing one or two short slender antheridial branches near the base which are bent rather abruptly upward from their point of origin; the branches all distally hyaline and attenuated; the basal cells faintly reddish. Perithecia, average  $110 \times 37 \mu$ . Total length to tip of perithecium  $260-280 \mu$ ; to insertion-cell  $250-275 \mu$ ; greatest width  $75 \mu$ . Appendages, longest  $375 \mu$ .

On *Pericallus cæruleovirens* Tat., Brit. Mus. No. 570, Singapore. At base of posterior legs.

#### *Laboulbenia melanaria* nov. sp.

Perithecium nearly free, uniformly suffused with clear blackish brown, straight or bent slightly outward; the tip more deeply colored, the lip-edges hyaline, contrasting, externally oblique. Receptacle hyaline becoming yellowish, often suffused with blackish brown except the lower portions of cells I, III, and VI, and usually cell V. Outer appendage consisting of a basal cell mostly free, bearing terminally a single branch typically once branched above its basal cell, the branchlets elongate, thick-walled, rigid, more or less tinged with brown. The inner appendage consisting of a much smaller basal cell, producing either a short two-celled branch with one or two terminal antheridia, or two longer branches which may be once branched; the branches like those of the outer appendage but shorter. Perithecium  $120 \times 35 \mu$ . Total length to tip of perithecium  $275 \mu$ ; to insertion-cell  $150 \mu$ . Appendages, longest,  $550 \mu$ .

On *Diachromus germanus* Linn., Florence Museum, Florence, Hope Coll. No. 344½, 319, France, Portugal; on *Anisodactylus militaris*, No. 315, Sardinia; on *A. heros* Fabr., No. 316, "Europe."



*Laboulbenia melanopus* nov. sp.

Perithecium free except at the base, large, rather deeply suffused with smoky brown, translucent, not contrasting; the subdistal wall-cells lighter, tapering abruptly to the narrow somewhat incurved tip, the inner lip-cells only deeply blackened. Receptacle somewhat curved, tapering below to the short slender basal cell which is smoky black except at its base, the distal cells gradually suffused with yellowish brown. Insertion-cell opaque only externally, the basal cells of the appendages becoming apparently divided into several cells which are opaque or nearly so and indistinguishable in the mature plant, giving rise to numerous branches the basal cells of which are distally inflated and bear terminally numerous branchlets (about six to ten), the latter very slender, flexuous, not as long as the perithecium. Spores about  $60 \times 4.5 \mu$ . Perithecium  $290 \times 70 \mu$ . Total length to tip of perithecium  $675 \mu$ ; to insertion-cell  $400 \mu$ . Appendages, longer  $140 \mu$ .

On Carabid (allied to *Harpalus*?), Paris Mus. No. 115, Africa. On tip of abdomen.

*Laboulbenia microscopica* nov. sp.

Perithecium one half or wholly free, pale olivaceous, somewhat inflated, tapering to the relatively long narrow subtruncate blackened tip which is bent slightly inward. Lower half of receptacle greatly reduced in size, the basal cell hyaline or nearly so, the rest suffused with dark brown, cell III paler, cell II broader than long, cells III to V relatively large, bulging prominently outward beyond and below the insertion-cell. Outer appendage consisting of a basal cell which becomes sub-triangular through the protrusion of its upper outer angle which renders its distal margin twice as broad as the basal cell of the single branch which rises from its upper inner half. The inner appendage arising from a much smaller basal cell which produces two branches. Spores about  $35 \times 3 \mu$ . Perithecia  $75-93 \times 27-34 \mu$ . Total length to tip of perithecium  $120-140 \mu$ ; to insertion-cell  $75-90 \mu$ . Greatest width  $45-60 \mu$ . Appendages about  $70 \mu$ .

On *Pelmatellus nitescens* Bates, Brit. Mus. (Biologia Coll.), No. 683, Vera Paz, Guatemala. On elytra.

*Laboulbenia microsoma* nov. sp.

Perithecium free, several times as large as the receptacle, smoky brown darker basally and distally, the longitudinal septa subhyaline, the outer margin concave, the inner convex; a subterminal external small rounded



elevation; the tip very broad, short, almost flat-topped, the outer angle almost a right angle, the inner rounded. Receptacle consisting of a basal cell which is nearly hyaline, above which cells II, III, and VI form an almost transverse row; cell II median, triangular, lying between the other two, the receptacle abruptly expanded in this region; cells III and IV small and flattened; cell V hardly distinguishable. Insertion-cell and basal cells of the appendages nearly opaque and indistinguishable from one another, the outer basal cell apparently producing two branches antero-posteriorly; the inner a branch on either side, all the branches (broken) brown, stiff, erect or slightly divergent. Perithecium  $185 \times 66 \mu$ . Total length to tip of perithecium  $295 \mu$ ; to insertion-cell  $90 \mu$ ; greatest width  $65 \mu$ .

On *Serrimargo guttiger* Schaum., Brit. Mus. No. 560, Penang, East Indies. At base of posterior legs.

*Laboulbenia minimalis* nov. sp.

Perithecium free, becoming olivaceous brown, mostly straight, the basal wall-cells forming a very short stalk, the tip rather abruptly distinguished, mostly straight symmetrical black, distally hyaline. Receptacle olivaceous yellow with brown suffusions; cell I slightly suffused with brown, somewhat longer than cell II, both rather narrow; the receptacle expanding rather abruptly above cell II; cells III, IV, and V nearly equal becoming rather deeply suffused with brown. Insertion-cell broad, blackened. Outer appendage consisting of a large triangular basal cell becoming deep blackish brown, above which four to six small nearly hyaline cells obliquely superposed, or with their long axes nearly vertical, form a series which runs obliquely toward the perithecium, each cell producing externally a single branch; the branches either simple and mostly three-celled or branched above their basal cells; the branchlets two in number, mostly four-celled, their basal and terminal cells very small, all the septa somewhat dark, slightly constricted: the inner appendage consisting of a basal cell bearing on either side a short series of cells like that of the outer appendage and similarly branched, except that the three or four lower branches consist of a single cell bearing terminally a pair of rather stout long-necked antheridia; the three series closely apposed or united. Perithecia  $100 \times 30 \mu$ . Total length to tip of perithecium  $200-235 \mu$ ; to insertion-cell  $110 \mu$ ; greatest width  $45 \mu$ . Appendages  $60-75 \mu$ .

On *Galerita* sp., Paris Museum, No. 74, Venezuela. On mid-elytron.



*Laboulbenia Misceli* nov. sp.

Perithecium free, long and slender, translucent, pale brownish olive, narrowed at the base to form a short paler stalk which lies opposite the insertion-cell; the tip long, not very abruptly distinguished, paler below, straight or turned slightly outward, distally blackened on the inner side; the lips variable, rather prominent. Receptacle rather short and stout, darker olive-brown; the basal cell pale yellowish. Insertion-cell nearly as broad as cells IV–V. Basal cell of outer appendage blackish brown externally, bearing a single terminal branch of less diameter externally suffused with blackish brown, slightly curved outward and bearing two or three branchlets from the inner side which are hyaline, the basal cells somewhat suffused with brown; the basal cell of the inner appendage smaller than that of the outer, nearly hyaline and bearing a branch on either side similar to the outer appendage. Perithecia including base 145–180  $\mu$ . Total length to tip of perithecium 240–300  $\mu$ ; to insertion-cell 90–130  $\mu$ ; greatest width 35–40  $\mu$ . Appendages, longer 150  $\mu$ .

On *Miscelus* sp., Paris Museum, No. 114, Isles des Moluques. At base of posterior legs.

*Laboulbenia obtusa* nov. sp.

Perithecium about three fourths free, becoming opaque, black-brown, very stout, the outer margin slightly and more or less symmetrically convex, the inner bulging prominently distally and curved abruptly to the brown blunt rounded hardly differentiated apex, the pore external. Receptacle short, cell VI together with the basal cells of the perithecium concolorous with the latter, becoming indistinguishable; cell VI extending to or towards the base of cell II, which is mostly suffused above, hyaline and contrasting below as is cell I; cells III and IV with median brown shades. Insertion-cell black-brown. Appendages hyaline becoming tinged with brown, the outer basal cell twice as long as the inner, each bearing one to two branches which form a compact group curved toward and against the perithecium. Perithecium  $120 \times 65 \mu$ . Total length to tip of perithecium, average 260  $\mu$ ; to insertion-cell 175  $\mu$ . Appendages, broken, 35  $\mu$ .

On *Aerogenidion Bedeli* Tsch., Paris Museum, No. 198, Mon-Pin, (China?). On left inferior margin of prothorax.

*Laboulbenia Œdodactyli* nov. sp.

Perithecium free except at the base, pale transparent amber-yellow, somewhat inflated at the base and tapering gradually thence to the



slender tip, a blackish shade below the nearly hyaline lips which are turned slightly outward. Receptacle amber-colored, deeper anteriorly, cell II sometimes elongate, cell VI very short, so that the base of the perithecium comes opposite cell III. Insertion-cell and the inner margin of cell V usually free from the perithecium. The outer appendage simple divergent, the basal cell very large; the basal cell of the inner appendage much smaller, bearing one to two short branchlets. Spores  $35-40 \times 41 \mu$ . Perithecia  $120 \times 35 \mu$ . Total length to tip of perithecium  $175-380 \mu$  (longest); to insertion-cell  $115-275 \mu$ .

On "*Edodactylus fuscobrunneus*," Brit. Mus. No. 397, Chili. On elytra.

*Laboulbenia Oopteri* nov. sp.

Perithecium three fourths or more free, translucent blackish brown, the inner margin evenly curved outward, the outer margin with slight elevations at the septa and curved abruptly inward to form the well differentiated tip which is pale brownish, with dark inferior suffusions. Receptacle concolorous with perithecium, except that cells I and II are usually hyaline, the suffused portions sparsely and rather coarsely and distinctly punctate. Insertion-cell broad and black. Basal cell of the outer appendage for the most part very long, bearing distally an outer and an inner branch, the former with blackened basal septum, simple, or once branched in which case the basal septum of the outer branchlet is also blackened. Inner appendage consisting of a very small basal cell bearing a short branch on either side. Perithecia  $95-110 \times 30-35 \mu$ . Total length to tip of perithecium  $175-275 \mu$ ; to insertion-cell  $85-160 \mu$ . Appendage broken,  $200 \mu$ , probably much longer.

On *Oopterus rotundicollis* White, Brit. Mus. No. 613, New Zealand. On elytra.

*Laboulbenia Ophoni* nov. sp.

Perithecium free except at the base, short and stout, pale straw-colored or nearly hyaline, somewhat inflated; the inner margin more convex, the black tip abruptly differentiated on its inner side, black, contrasting, the lip-edges hyaline turned slightly outward. Receptacle short, stout, normal, concolorous with the perithecium. Insertion-cell black, contrasting. The outer appendage divergent, simple or once to three times branched, the ultimate branchlets distally attenuated; the inner appendage consisting of a basal cell half as large as that of the outer, bearing a short branch on either side which may be several times branched, the antheridia borne in small groups. Spores  $28 \times 3 \mu$ . Perithecia  $70 \times 30-34 \mu$ . Total



length to tip of perithecium  $165\ \mu$ ; to insertion-cell  $85\text{--}100\ \mu$ ; width  $40\ \mu$ . Appendages, longest  $200\ \mu$ .

On *Ophonus obscurus* Fabr., *O. brevicollis* Dej., *O. azureus* Fabr., *Harpalus neglectus* Dej., *H. serripes* Quensel, *H. sulphuripes* Germ., *H. tardus* Panz., in Florence Museum collection of Italian Coleoptera. On *Ophonus* sp.?, Interlaken, Switzerland. On *Ophonus* sp., Paris Museum, No. 37, Algeria. On elytra, inferior thorax and prothorax, and abdomen.

*Laboulbenia Orectochili* nov. sp.

Perithecium free except at the base, more or less evenly suffused with smoky brown, with a subterminal external blackish patch, nearly symmetrical and straight, slightly inflated, tapering gradually to the hyaline tip which is surmounted by a median straight pointed purplish tooth-like projection formed by the outgrowth of one of the lip-cells; the inner lip-cells forming a small hyaline or partly purplish lateral papilla. Receptacle elongate, cells I and II stout, the latter slightly if at all narrower distally, cells IV and V and the basal cells of the perithecium darker brown, the rest very pale yellowish or purplish brown, finely punctate, the dots scarcely visible except in the more deeply suffused areas. The insertion-cell broad, blackened, extending completely across the distal margins of cells IV and V. Appendages consisting of an inner and outer basal cell, giving rise in all to from five to ten erect subconical prominences, each of which becomes separated as the basal cell of a very short two-celled branch of which only a blackened basal portion remains in mature specimens, the rounded purplish slightly inflated terminal portion of the upper cell usually breaking off above its blackened slightly constricted basal half. Of the branches that borne by the protuberance first formed from the outer basal cell is always somewhat larger and more prominent than the rest. Perithecia  $190 \times 59\ \mu$ . Total length to tip of perithecium  $475\text{--}680\ \mu$ ; to insertion-cell  $400\text{--}550\ \mu$ .

On *Orectochilus cordatus* Reg., Paris No. 99, "Asia." On elytra.

*Laboulbenia orientalis* nov. sp.

Perithecium straight, its base free from and higher than the insertion of the appendages, straight to strongly recurved, becoming suffused with pale brownish; the tip blackish brown in normal specimens, well distinguished, with prominent lips (when curved, not abruptly distinguished, somewhat pointed, with ill defined lips), the translucent edges dirty brown. Receptacle hyaline or concolorous with the perithecium, sometimes be-



coming dark smoky brown; cell V often as large as cell IV, pushing the small subtriangular unmodified insertion-cell outward so that it may become lateral, with its transverse diameter vertical, cell VII unusually large. Appendages consisting of an outer and an inner basal cell, the two free from one another except at the base, mostly several times as long as broad and overlapping slightly; the outer bearing an external row of superposed branches, usually seven or eight in number, formed by the successive proliferation of the tip of the basal cell, and separated from it by broadly blackened septa; the branches successively subdichotomously branched several to eight or more times, the basal and sometimes the subbasal cell often producing more than two branchlets (two to four) superposed in a single row. The inner appendage like the outer, the basal cell producing a single similar row of branches fewer (usually two to four) in number, overlapping those of the outer appendage and bearing antheridia in groups of from one to eight not characteristically grouped, the venter rather abruptly distinguished from the straight cylindrical purplish neck: the branches of both appendages directed outward, hyaline or distally reddish or purplish, constricted at the lower purplish septa. Perithecia (largest)  $230 \times 55 \mu$ ; average  $170 \times 40 \mu$ . Total length to tip of perithecium very variable, from  $275 \mu$  to 1 mm. Appendages 200–350  $\mu$ . Antheridia  $16 \times 4 \mu$ .

On *Brachinus Chinensis* Chaud., Paris Museum, Nos. 58, 59, Manila, Philippine Islands, and Macao, China. Brit. Mus. Nos. 536 (bis), China. Hope Coll. No. 244, China. On *Brachinus* spp., Brit. Mus. Nos. 537, 539, 540, China and Philippine Islands. Usually on inferior surface of thorax and prothorax.

#### *Laboulbenia Orthomi* nov. sp.

Perithecium free, long and straight, slender, sometimes slightly inflated distally, deep clear brown; the tip broad, prominent, not abruptly differentiated; the lips rather large and prominent, the lower wall-cell as a rule elongated to form a hyaline neck, usually well marked and contrasting with the body of the perithecium. Receptacle shorter than the perithecium, olive-brown, except the hyaline or slightly yellowish basal cell. Insertion-cell not as broad as cell IV. The outer appendage consisting of a basal cell longer than broad, blackened externally, producing usually a single simple terminal branch, the two lower cells of which are blackened externally and sometimes give rise to erect simple branchlets. The inner appendage consisting of a basal cell similar to that of the outer, and producing on either side a straight hyaline erect branch. Spores  $50 \times$



4  $\mu$ . Perithecia  $130-140 \times 30-35 \mu$  exclusive of the variably developed neck, which may be  $18 \mu$  long. Total length to tip of perithecium  $260 \mu$ ; to insertion-cell  $100 \mu$ ; width  $40 \mu$ . Longer appendages  $200-270 \mu$ .

On *Orthomus aquilus* Coquer, Algeria?, Paris Museum, No. 41. On margin of elytra.

*Laboulbenia pallida* nov. sp.

Perithecium almost wholly free from the receptacle, colorless becoming faintly yellowish, bent outward; the prominent tip abruptly distinguished, coarse lipped, hyaline except for an inner blackish patch. Receptacle concolorous with the perithecium, the basal cell large and broad, longer than cell II, the cells of the distal portion relatively small, cell III roundish, about as large as cells IV and V together. Insertion-cell thick, contrasting purplish black. Outer appendage consisting of a basal cell, rectangular or distally enlarged and producing usually two, sometimes but one branch, the branches once or even twice branched, the ultimate branchlets sometimes very elongate and attenuated: the inner appendage consisting of a basal cell much smaller than that of the outer and sometimes lateral in position, bearing one or two branches which may be short or elongate like those of the outer appendage. Perithecia  $70 \times 25 \mu$ . Total length to tip of perithecium  $110-175 \mu$ ; to insertion-cell  $85-120 \mu$ . Appendages, longest  $285 \mu$ .

On a Carabid allied to *Harpalus*, Paris Museum, No. 94, Java. On elytra.

*Laboulbenia Papuana* nov. sp.

Perithecium nearly two thirds free, straight or curved slightly outward, the inner margin convex; pale brownish yellow, the tip rather well differentiated, blackish; the hyaline irregularly prominent lip-edges turned inward. Receptacle elongate, cell II, and cell I except at its base, conspicuously tinged with blackish and faintly marked by fine transverse striations, the rest of the receptacle concolorous with the perithecium; cell IV externally concave, the whole receptacle more or less prominently bent anteriorly in the region of cells III and VI. Insertion-cell broad, horizontal, black, narrower than cells IV-V. The basal cells of the appendages simple and distinct, the outer producing a single branch which may branch once; the branchlets short; the basal cell of the inner appendage producing two small branches which may be once branched. Spores about  $65 \times 5.5 \mu$ . Perithecium  $160-200 \times 55-65 \mu$ . Total length to tip of perithecium  $650-880 \mu$ ; to insertion-cell  $544-700 \mu$ . Appendages, longest seen,  $140 \mu$ .



On *Morio* sp., Paris Museum, No. 112, New Guinea. On anterior inferior surface of thorax on right side.

*Laboulbenia Pericalli* nov. sp.

Perithecium becoming almost opaque, its upper fourth, sometimes only the tip, free from the receptacle, relatively small, the tip more or less prominent, sometimes subconical, short, and wholly black (often more prominent, abruptly distinguished, the rounded lips well defined with hyaline edges). Receptacle normal, cells III and IV large and broad, concolorous with the perithecium; cells I and II together with the lower end of cell VI pale yellowish. Outer appendage mostly simple, stout, the lower cells slightly inflated; inner appendage consisting of a much smaller basal cell, bearing a usually simple branch on either side very similar to the outer appendage; all the branches yellowish or becoming tinged with brown, especially toward the base. Perithecia  $110-130 \times 37-45 \mu$ . Total length to tip of perithecium  $200-300 \mu$ ; greatest breadth about  $75 \mu$ .

On *Pericallus guttatus* Chev., Paris Museum, No. 78, Java; on *Miscelus* sp., Paris Museum, Nos. 113, 114, 115, New Guinea.

*Laboulbenia platystoma* nov. sp.

Perithecium free except at the very base, straight, rather long and narrow, pale amber-yellow becoming slightly tinged with brown, slightly and symmetrically inflated; the tip black, opaque, the lip-cells forming an abruptly spreading almost flat symmetrical termination with a slight median indentation, two of the lips forming a small median hyaline truncate cone, the other two arching over them from the outer and inner side, wholly opaque except their inner margins, the blackened part not quite meeting in the median line, the whole resembling the end of a pair of horizontal cut plyers. Receptacle medium, pale amber-yellow becoming tinged with brown distally. Outer appendage mostly simple, the basal cell about twice as long as broad, often slightly inflated, the rest of the appendage much narrower, straight, rigid, tinged with brown tapering somewhat distally; the inner appendage consisting of a basal cell about half as long as that of the outer, producing a branch on either side; the branch usually bearing an antheridial branchlet near its base, the branches and the outer appendage similar, often curved slightly outward, becoming tinged with brown. Perithecia  $175 \times 40 \mu$ ; the tip  $37 \mu$  broad. Total length to tip of perithecium  $325-400 \mu$ ; to insertion-cell  $185-230 \mu$ ; greatest width  $55-63 \mu$ . Appendages about  $175 \mu$  (longest).



On *Catoscopus* sp., Paris Museum, No. 119, New Guinea. On inferior surface.

*Laboulbenia Polyhirmæ* nov. sp.

Perithecium rather slender, almost wholly free, nearly hyaline or faintly brownish yellow; tapering slightly toward the moderately well differentiated tip which is usually bent slightly outward, more or less blackened on the inner side, sometimes wholly black, the inner lips often prominently rounded and terminal. Receptacle concolorous with the perithecium, marked by faint transverse striations, long and slender; cell II usually greatly elongated; the distal portion small and normal. Outer appendage consisting of a small basal cell more or less rounded and producing distally from two to four branches, usually four; an outer and an inner, the two others placed between them one on either side, the branches simple or usually not more than once branched above the basal cell; the branchlets slender, often flexed, rather closely septate, hardly tapering: the inner appendage consisting of a smaller rounded basal cell which produces on either side a single branch, which may branch several times and bears hyaline lateral or terminal antheridia singly or in pairs; all the branches nearly hyaline. Perithecia  $130-190 \times 30-40 \mu$ . Total length to tip of perithecium  $400-700 \mu$ , average  $500 \mu$ , to insertion-cell  $275-450 \mu$ . Appendages, longest  $350-400 \mu$ . Greatest width  $40-50 \mu$ .

On *Polyhirma* sp., Paris Museum, Nos. 5, 6, and 168, Tangar, Algeria. On inferior surface of abdomen and thorax especially in depressions at base of posterior legs.

*Laboulbenia prominens* nov. sp.

Perithecium short and stout, less than half free from the receptacle, nearly opaque blackish brown lighter distally, the short broad blunt black tip rather abruptly distinguished on the inner side. Receptacle rather stout, cells I and II dirty yellowish or subhyaline, the rest more or less deeply suffused with blackish brown; all the cells except cell I marked by fine transverse striations more distinct on the suffused portions; cells III and IV large and prominent, the insertion-cell broad but narrower than cells IV-V. Outer appendage consisting of a short irregular cell abruptly narrowed distally and bearing two branches antero-posteriorly, the outer externally deep blackish brown, once branched; the outer branchlet also branched, the inner consisting of a short basal cell which bears an inner and an outer branchlet, the branchlets pale



brown, curved outward: the inner appendage consisting of a basal cell smaller than that of the outer, irregular and bearing a branch on either side; each once branched, the branchlets like those of the outer appendage. Perithecia  $150 \times 52 \mu$ . Total length to tip of perithecium  $310-330 \mu$ ; to insertion-cell  $275 \mu$ . Greatest width  $95-100 \mu$ .

On *Pericallus guttatus* Chev., Brit. Mus. No. 571, Java. On legs.

*Laboulbenia protrudens* nov. sp.

Perithecium smoky brown with a tinge of olive, the outer margin concave, relatively small; the tip only free from the receptacle, short, rounded, not abruptly differentiated, bent slightly outward, black except around the pore. Receptacle dirty olivaceous; cell I, except at the base, concolorous with perithecium; cells IV and V forming a somewhat angular protrusion which carries the insertion-cell out free from and beyond the tip of the perithecium. Insertion-cell less than half as broad as the adjacent distal margins of cells IV and V, which form a flat surface in which the insertion-cell is mostly central. Outer appendage arising from a small roundish basal cell, simple or once branched, the branches short, tapering nearly hyaline; the basal cell of the inner appendage very small bearing one or two short tapering hyaline branches. Perithecia  $95-110 \times 34 \mu$ . Total length to tip of perithecium  $280 \mu$ ; to insertion-cell about the same measurement; greatest width  $66 \mu$ .

On *Pericallus cicindeloides* MacLeary, Paris Museum, No. 144, Tongou, Java. On mid-elytron.

*Laboulbenia Pseudomasci* nov. sp.

Perithecia dark rich brown, slightly and rather evenly inflated, divergent, free from the receptacle except at the very base, the broad opaque tip hardly differentiated; the lip-edges nearly hyaline, not prominent, turned slightly outward. Receptacle colorless or yellowish below, distally brownish, slender, its axis coincident with that of the appendages; cell I usually larger and longer than cell II, the rest of the receptacle relatively unusually small, the inner margin of cell V partly free from the perithecium. Insertion-cell free, black. Outer appendage consisting of a basal cell several times longer than it is broad, which may branch above its basal or subbasal cell one to three times successively, the branchlets divergent; the inner appendage consisting of a much shorter basal cell bearing one or rarely two branches, sometimes simple, mostly one to three times branched, all the branches becoming more or



less suffused with brown. Spores about  $65 \times 45 \mu$ . Perithecia  $120-165 \times 60 \mu$ . Total length to tip of perithecium  $225-300 \mu$ ; to insertion-cell  $170-240 \mu$ . Appendages, longest  $100 \mu$ .

On *Pseudomascus nigrita*, Fab., Paris Museum, No. 201, Mongolia. Near upper inferior margin of prothorax on left side.

*Laboulbenia punctata* nov. sp.

Perithecium free, straight, translucent brown becoming almost opaque, except the broad short neck formed by the basal wall-cells, which is nearly hyaline and as broad as the ascigerous portion; the lower half or more of the suffused body of the perithecium covered with irregular more or less rounded dark spots, irregularly distributed, the lower larger; the tip rather abruptly distinguished, narrow, black, distally translucent. Receptacle rather short and stout, the basal cell rather narrow and hyaline or yellowish, contrasting; the rest of the receptacle subtriangular and deeply suffused; cell VI paler, cells III and IV side by side, nearly vertical, almost opaque, except the upper edge; cell V very large, subhemispherical, becoming opaque; all the suffused cells where not opaque, more or less conspicuously and rather coarsely punctate. Insertion-cell very broad, black, close beside the base of the perithecial stalk. Outer appendage consisting of a large triangular basal cell externally blackish brown, forming the base of a series of (eight or less) much smaller cells obliquely superposed, which curves toward the perithecium; each cell producing externally a single simple erect branch, rather closely septate, the (usually six) septa dark, constricted, the terminal cell short with rounded apex. The inner appendage consisting of a basal cell giving rise to a series of cells on either side like that of the outer appendage, but shorter, one to three of the lower branches consisting of a single cell bearing terminally a long slender flask-shaped brown antheridium. Perithecia  $200-220 \times 40 \mu$ ; smaller  $130 \times 48 \mu$  (including the neck about  $35 \mu$ ). Total length to tip of perithecium, average  $350 \mu$ ; to insertion-cell  $145 \mu$ ; greatest width  $75 \mu$ . Appendages  $110-130 \mu$ .

On *Galerita* sp., Paris Museum, No. 74, Venezuela, No. 136, "South America." On head.

*Laboulbenia punctulata* nov. sp.

Perithecium about three fourths free, dark brown translucent, curved toward the appendages which cross it obliquely, the broad short flat-



topped snout-like tip slightly upcurved. Receptacle short and stout, the basal cell small, short, hyaline, contrasting, the rest concolorous with the perithecium, but darker and distinctly punctate with dark brown spots. Outer appendage consisting of a series of from three to about six successively smaller superposed cells, from each of which a simple tapering brown branch arises, blackened about its subbasal septum, the successive branches superposed in a vertical external row as in *L. Pachytelis*, the basal cell of the inner appendage producing usually a short one-celled antheridial branch. Perithecia  $120 \times 45 \mu$ . Total length to tip of perithecium  $200-220 \mu$ ; to insertion-cell  $125 \mu$ . Appendages  $100-120 \mu$ .

On *Pachyteles parallelus*, Chaud., Brit. Mus. No. 575, Para: on *P. porrectus* Chaud., Brit. Mus. No. 670 (Biologia Coll.), Pantaleon, Guatemala. On legs.

*Laboulbenia pygmæa* nov. sp.

Perithecium dark brown becoming almost opaque, coarsely punctate throughout or only toward the base, the basal wall-cells forming a well defined hyaline contrasting short neck slightly narrower than the body of the perithecium, the tip usually not very abruptly distinguished and bent very slightly outward, or straight, rather blunt, the lip-edges translucent, the lip-cells blackened below, especially on the inner side. Receptacle very short and subtriangular, cell I short, slender, curved, hyaline at the base, distally becoming opaque blackish and indistinguishable from cell II, which is wholly opaque. Cells III and IV elongated and lying obliquely side by side, cell III forming a more or less prominent rounded projection a little below the insertion-cell, both cells becoming opaque; cell V rather large, at first hyaline, becoming later suffused with brown; all the other suffused parts rather coarsely punctate. Insertion-cell black, very broad, often becoming indistinguishable from the basal cells of the appendage. Outer appendage consisting of a subtriangular basal cell distally rounded, becoming deeply suffused with blackish brown, prominent externally; surmounted by a series of obliquely superposed cells close set, their long (transverse) axes sometimes almost perpendicular, each bearing externally a single simple branch, the two lower cells of which are longer than broad, tinged with brown, the septa dark and often oblique; the distal portion hyaline, twice as long, blunt-tipped: the inner appendage consisting of a smaller basal cell also becoming almost entirely suffused, surmounted on either side by a series of cells like that of the outer appendage and similarly branched,



except that the two or three lowest cells of the series bear a short one-celled branch terminated by usually three slightly curved brown antheridia. Spores  $52 \times 4 \mu$ . Perithecia  $110 \times 22\text{--}150 \times 33 \mu$ , exclusive of neck which is  $20\text{--}30 \mu$ . Total length to tip of perithecium  $175\text{--}300 \mu$ ; to insertion-cell about  $90\text{--}110 \mu$ ; greatest width  $40\text{--}55 \mu$ . Appendages  $90\text{--}130 \mu$ .

On *Trichognathus* sp., Paris Museum, No. 72, Venezuela. On "*T. marginatus*," Brit. Mus. No. 526, Brazil; on *T. marginipennis* Latr., Brit. Mus. No. 525, Tamaz, S. America; on *Galerita occidentalis* Oliv., Brit. Mus. No. 515, Bolivia; on *Galerita* sp., Hope Coll., No. 258, Bahia, Brazil. On all parts of host.

*Laboulbenia rhinophora* nov. sp.

Perithecium large and stout, dirty smoky brown, the lower half much deeper and united to the receptacle, the base nearly opaque, one of the subterminal wall-cells forming a terminal blunt finger-like brown outgrowth, close beside the rather small internally blackened tip, which it exceeds in length. Receptacle stout, the basal cell small hyaline; a blackish brown suffusion becoming opaque involves the upper part of cell II, cells III, VI, and VII, as well as the basal cells of the perithecium; cells IV and V very large and nearly parallel, translucent; the suffused parts, when not opaque, marked by darker transverse dots and striæ. Insertion-cell very large, triangular, quite unmodified. Appendages consisting of two basal cells concolorous with insertion-cell, the outer usually somewhat larger, both protruding upward and slightly overlapping, producing directly numerous branches (four to eight from each cell) which arise in more than one row from their outer surfaces; all the branches once to twice branched, the lower segments deeply constricted at the purplish septa, the distal cells without constrictions at the hyaline septa. Spores  $75 \times 5 \mu$ . Perithecia to tip of protuberance  $275\text{--}300 \times 85 \mu$ ; to insertion-cell  $300\text{--}340 \mu$ . Appendages about  $200 \mu$ .

On *Brachinus* sp., Hope Coll. No. 252, Madagascar. On legs.

*Laboulbenia rostellata* nov. sp.

Perithecium about one half free, becoming more or less deeply suffused with blackish brown, relatively small, narrow and curved toward the appendages, the tip monstrously developed, bulging terminally and externally to form a rounded prominence from the inner side of which a blunt blackened outgrowth is developed, the hyaline contrasting tip of



which is bent slightly upward. Receptacle more or less suffused, sometimes deeply colored with blackish brown, cells I and II paler, slender, of nearly equal width, cell II longer; cells IV and V very broad, carrying out the insertion-cell free from the receptacle so that it becomes oblique or even vertical and lateral. Outer and inner appendages similar, bent away from the perithecium, their bases overlapping; consisting of a series of superposed cells which are successively smaller from below up, each bearing distally and externally a short tapering branch; all the branches brown, the subbasal septa blackened, all simple except the lower branch of the outer appendage which bears two to three short branchlets; the basal cell of the inner appendage bears a short antheridial branch from its inner side; the outer appendage somewhat longer than the inner, the superposed cells usually eight in number. Perithecia  $140-190 \times 40-45 \mu$ . Total length to tip of perithecium  $400-550 \mu$ ; to insertion-cell  $270-450 \mu$ . Appendages,  $140-170 \mu$ . Tip of perithecium, including outgrowth,  $50-60 \mu$ .

On *Brachinus lateralis* Dej., Hope Coll. No. 246, "North America"; on *Brachinus* sp., Eustis, Florida, October. At base of anterior legs.

*Laboulbenia separata* nov. sp.

Perithecium pale olivaceous, the inner margin convex, the outer nearly straight; the tip rather abruptly distinguished, blackened, but not uniformly, below the inner lip-edges, prominent olivaceous translucent, the right inner lip prolonged to form a slender nearly hyaline projection, the tip of which is blunt and somewhat swollen. Receptacle dull olivaceous, cells II, III, and IV sometimes becoming blackish brown externally, cells III and IV rather large; the insertion-cell close to the base of the perithecium, half as broad as cells IV and V. Appendages much as in *L. fissa*, the outer curved strongly outward, opaque and indistinguishable from the insertion-cell, bearing three or four branches from its convex side which are mostly once branched (the outer appendage usually broken); the inner appendage consisting of a small basal cell, bearing a branch on either side externally blackened, somewhat curved outward, and bearing three or four branchlets which are curved toward the perithecium, externally or wholly brownish toward the base. Perithecia  $100-110 \times 25-30 \mu$ . Total length to tip of perithecium  $220-260 \mu$ ; to insertion-cell  $130-165 \mu$ ; greatest width  $55 \mu$ . The prolongation of the lip-cell extending about  $20 \mu$  or more beyond the tip of the perithecium.

On *Pericallus guttatus* Chev., Brit. Mus. No. 571, Java. Margins of elytra.



*Laboulbenia Serrimarginis* nov. sp.

Perithecium about three fourths free, dull olive-brown, the outer margin nearly straight, the inner bent rather abruptly below the tip; the latter not abruptly distinguished, broad, blunt, the lips not well defined, dull blackish. Receptacle dull olive-brown, except the almost hyaline rather slender basal cell; the rest of the receptacle short and stout, concolorous with the perithecium, cell VI broad and extending down to cell I beside cell II, cell VII extending half way down cell VI externally, the septa of cells III and IV oblique; cell III extending up to the base of cell V. Appendages as in *L. maculata*, stouter, brown, darker or blackish toward the base. Perithecia  $136 \times 50 \mu$ . Total length to tip of perithecium about  $300 \mu$ ; to insertion-cell  $190 \mu$ ; greatest width  $85 \mu$ . Appendages  $260 \mu$ .

On *Serrimargo guttiger* Schaum., Brit. Mus. No. 558, Penang, East Indies. At base of anterior legs.

*Laboulbenia speciosa* nov. sp.

Perithecium free, long and narrow, the inner half or less hyaline, the outer dark clear blackish brown; the basal wall-cells forming a short hyaline stalk narrower than the ascigerous portion; the tip hardly distinguished, bluntly rounded, slightly oblique outwardly, black, hyaline about the pore. Receptacle very elongate, hyaline except cells IV and V which are tinged with amber-color and indistinctly punctate, as is cell III; cell II very elongate. Insertion-cell black, just free from the stalk of the perithecium through the slight enlargement of cell V. Outer appendage consisting of a series (in the unique type) of eight cells superposed not very obliquely, the basal one larger tinged with brown below, the rest hyaline; all the cells producing externally a single simple branch, the lower three cells of which are mostly not longer than broad, constricted at the black septa, distally faintly brownish yellow; the inner appendage consisting of a basal cell which bears on either side a series of four cells like that of the outer appendage, and bearing similar branches in a similar fashion, the three series quite distinct from one another. Perithecium, including its short neck,  $280 \times 55 \mu$ . Total length to tip of perithecium  $925 \mu$ ; to insertion-cell  $650 \mu$ . Appendages about  $200 (-250) \mu$ .

On *Galerita unicolor* Dej., Brit. Mus. No. 517, Brazil. On inferior surface of the prothorax.



*Laboulbenia spiralis* nov. sp.

Perithecium one half to one third (sometimes only the tip), free from the receptacle, dark dull amber-brown with dirty brown suffusions, rather stout, the tip moderately well distinguished, rather short and stout, deep black-brown, except the distal hyaline lip-edges. Distal portion of the receptacle concolorous with the perithecium; cells I and II much paler; cell I longer than cell II, the two forming a rather slender stalk of about the same diameter throughout, above which the distal portion of the receptacle is somewhat abruptly distinguished; the lighter portions marked by fine transverse striations not visible in the deeply colored often opaque distal region. Outer appendage consisting of a main straight divergent axis formed by usually three nearly equal cells, deeply blackened externally, bearing distally and from each of their upper inner angles a very long slender erect simple branch which is reddish brown, paler and spirally twisted distally. The inner appendage consisting of a basal cell about as large as that of the outer appendage and bearing on either side a branch which may give rise to one or two erect simple branchlets similar to the branches of the outer appendage. Perithecia about  $150 \times 55 \mu$ . Total length to tip of perithecium  $300-390 \mu$ ; to insertion-cell  $275-325 \mu$ . Appendages, longest  $480-610 \mu$ .

On *Hexagonia* sp.?, Hope Coll., No. 288, Ceylon (Thwaites).

*Laboulbenia strangulata* nov. sp.

Perithecium one third to one half free, dark brown, concolorous below with the distally almost opaque receptacle; symmetrical, straight; the tip undifferentiated, bluntly rounded except for a hyaline flattish terminal papilla formed by the projection of one of the external lip-cells. Receptacle slender, cell I usually basally curved, broader at the distal end where it is rather deeply suffused with brown; cell II much longer, its lower two thirds often distinctly inflated, deep brown distally, rather abruptly constricted to less than half its greatest diameter, the constricted portion hyaline, the short remaining portion above the constriction becoming deep brown, concolorous with the upper portion of the receptacle. Insertion-cell normal as in *L. Orectochili*, oblique, often concave above, the appendages consisting of an outer and an inner basal cell, the two producing in all from three to six outgrowths as in *L. Orectochili*, somewhat narrower, hyaline except the first one formed from the outer basal cell which is always external to those subsequently formed and is



often divergent, deep brown, the suffusion involving the basal cell which bears it: each branch consists of a single simple cylindrical cell the distal portion of which is usually broken off leaving the deep brown contrasting base. Spores  $60 \times 4.5 \mu$ . Perithecium  $120-140 \times 40-45 \mu$ ; to insertion-cell, average  $275 \mu$ . Appendages  $100 \mu$ .

On *Orectochilus*?, Brit. Mus. Nos. 480 and 484, Timor, East Indies. Margin of elytra.

*Laboulbenia subconstricta* nov. sp.

Perithecium less than one half free, rather small, curved strongly and evenly toward the appendages, evenly suffused with dark brown or lighter distally; the tip black, not abruptly distinguished, the lips distinct with a broad hyaline margin about the pore. Receptacle dull amber-yellow, cells IV and V, sometimes cell III, less deeply suffused with brown; cell I narrow, straight, but slightly enlarged distally; cell II abruptly much larger, symmetrically and prominently constricted in the middle; cells III and IV large and broad. Outer appendage simple, the basal cell moderately large; externally or wholly blackened; the rest of the appendage straight, rigid, directed across the tip of the perithecium: inner appendage consisting of a smaller basal cell which bears one or two branches similar to the outer appendage. Perithecia  $85 \times 25 \mu$ . Total length to tip of perithecium about  $200 \mu$ ; to insertion-cell  $165 \mu$ ; greatest width  $50 \mu$ . Appendages, broken, about  $150 \mu$  or a little more.

On *Catoscopus* sp., Paris Museum, No. 116, New Guinea. On anterior inferior margin of thorax on the right side.

*Laboulbenia Sumatræ* nov. sp.

Perithecium small, pale amber-colored, darker and somewhat inflated below, tapering distally; the tip only free from the receptacle not distinguished from the body of the perithecium, long, nearly hyaline below, the lip-cells abruptly spreading, contrasting, black except about the pore and peculiarly modified, the two outer broadly rounded, the two inner developing outgrowths which grow inward and upward; that on the right side longer than the left, narrower and indented near the base on the inner side. Receptacle concolorous with the perithecium, paler below, marked by faint fine transverse striations. Appendages concolorous with the receptacle, the outer simple, stiff, curved slightly outward, the inner consisting of a basal cell smaller than that of the outer and bearing on either side a branch which may be once branched at the base.



Perithecium  $92 \times 22 \mu$ . Total length to tip of perithecium  $200 \mu$ ; to insertion-cell  $166 \mu$ . Appendages about  $185 \mu$ .

On "*Catoscopus cupripennis* Thom.," Hope Collection, No 291, Borneo No. 299, Sumatra. At base of anterior legs.

*Laboulbenia Tænodemæ* nov. sp.

Perithecium nearly free, slightly inflated, clear translucent brown; the tip abruptly differentiated, externally black with an inner inferior hyaline patch, the lips well distinguished hyaline, the inner prominent, rounded, the pore external. Receptacle long and slender through the elongation of cell II, pale dirty yellowish brown or nearly hyaline. Insertion-cell large, free, blackish, hardly narrower than cells IV and V. Appendages concolorous with the receptacle, the outer consisting of a large basal cell which bears distally as a rule two antero-posterior branches; the inner simple, the outer furcate above its basal cell; the branches stout, slightly tapering, elongate, the inner erect, the outer divergent; its branchlets curving upward: the inner appendage consisting of a much smaller basal cell, rounded and bearing one or two short branchlets. Spores about  $70 \times 5 \mu$ . Perithecia  $125-155 \times 35-50 \mu$ . Total length to tip of perithecium  $400-650 \mu$ ; to insertion-cell  $300-400 \mu$ . Appendages, longest about  $600 \mu$ .

On *Tænodema* sp., Brit. Mus. No. 391. Ega, Amazon. On elytra and superior prothorax.

*Laboulbenia tenuis* nov. sp.

Perithecium relatively small and narrow, dull amber-yellow to brown, the upper half or more free from the receptacle, tapering somewhat distally, curved toward and partly across the appendages; the tip not well distinguished, broad, its distal margin often concave, the lips projecting slightly on either side, the lip-cells black except about the pore. Receptacle slender amber-yellow, becoming tinged with brown especially distally, strongly curved throughout, the concave side anterior. Insertion-cell black and thick, narrower than cells IV-V. Appendages as in *L. platystoma*, the basal cell of the outer appendage blackened externally, all the branches erect and lying across the tip of the perithecium which is bent toward them. The material on *Catoscopus* much larger and darker than that on *Miscelus*. Perithecia  $90-130 \times 22-26 \mu$ . Total length to tip of perithecium  $250-500 \mu$ ; to insertion-cell  $425-185 \mu$ . Greatest width  $37-55 \mu$ . Appendages more than  $200 \mu$  (broken).



On *Miscelus Javanus* Klug., Hope Collection, No. 308, Java; on *Miscelus* sp., Paris Museum, Nos. 114 and 115, New Guinea; on *Catoscopus*? sp. Brit. Mus. No. 663, Assam, India. On the elytra and inferior surface.

*Laboulbenia Thyreopteri* nov. sp.

Perithecium nearly free, proportionately large, dull amber-brown, straight, narrower at the base, the inner margin slightly convex, the outer concave through the presence of a prominent subterminal hump, which is suffused with blackish brown, the suffusion often involving a fainter discoloration of the subbasal wall-cell below it; the tip small, prominent, and abruptly differentiated, blackish with broad hyaline lips. Receptacle slender, the basal cell black, opaque, mostly curved below, very slender; the subbasal cell broader, suffused with blackish, mostly verrucose or coarsely punctate, the remaining cells normal and concolorous with the perithecium. Insertion-cell thick and narrow. The outer appendage simple, its basal cell long, undifferentiated; the basal cell of the inner appendage shorter bearing a branch distally on either side, all the branches similar crowded, concolorous with the perithecium, erect, straight or bent slightly toward the perithecium, the inmost in contact with it. Spores  $55 \times 4 \mu$ . Perithecia  $140-175 \times 14-25 \mu$ . Total length to tip of perithecium  $340-400 \mu$ ; to insertion-cell  $250-270 \mu$ . Appendages  $120-140 \mu$ .

On *Thyreopterus flavosignatus* Dej., Brit. Mus. No. 561, Port Natal, Africa. On *Thyreopterus* sp., Paris Museum, No. 125, Africa. On elytra.

*Laboulbenia tibialis* nov. sp.

Perithecium deeply suffused with blackish brown, somewhat inflated, the small tip rather abruptly distinguished. Receptacle stout, deeply suffused with blackish brown except cell I and the lower part of cell II, which are hyaline or nearly so, abruptly contrasting, and cell V which is yellowish; cells IV and V broad, the insertion-cell broad and in contact with the base of the perithecium. Appendages as in *L. rostellata* except that the inner is larger and longer than the outer without overlapping it at the base and the lower branch of the outer is simple. Perithecia  $150-175 \times 60-70 \mu$ . Total length to tip of perithecium  $300-325 \mu$ ; to insertion-cell  $200-225 \mu$ . Appendages exclusive of the branches, inner  $100-120 \mu$ , outer  $85 \mu$ .

On *Brachinus* sp., Eustis, Florida, October. On the legs.



*Laboulbenia tortuosa* nov. sp.

Perithecium with hardly more than the tip free, relatively small, externally suffused with smoky brown and concave through the presence of a well defined subterminal hunch, above which the somewhat pointed well defined outwardly oblique blackish-brown tip is abruptly differentiated, the lip-edges pale brown translucent. Receptacle very pale reddish or yellowish, variously bent, sometimes at right angles or at an angle of forty-five degrees above cell II; cells I and II straight or more frequently cell II curved strongly, while there is often a less pronounced curvature in the opposite direction immediately above it. Insertion-cell horizontal, about opposite the external hunch of the perithecium. Outer appendage consisting of a very large basal and somewhat broader sub-basal cell, the two commonly as broad as or broader than any portion of the receptacle with which they are concolorous; the upper outer angle of both cells marked by the black insertion of a short simple branch, usually broken off, the subbasal cell surmounted by a small flattish cell which bears a simple terminal branch with blackened base like those developed laterally below it: the inner appendage consists of a very small basal cell which usually produces directly a pair of relatively large antheridia with inflated venters and brown necks. Perithecia  $85 \times 27 \mu$ . Total length to tip of perithecium about  $275 \mu$ . Appendage, to upper blackened septum  $50 \mu$ , by  $28 \mu$  wide.

On *Pachyteles testaceus* Horn, U. S. National Museum, Arizona. Along the adjacent inferior margins of the thorax and prothorax, on left side.

*Laboulbenia Trichognathi* nov. sp.

Perithecium free, generally straight, long, narrow and of nearly equal diameter throughout to the base of the rather abruptly differentiated tip, (sometimes however shorter, stout and slightly inflated,) pale yellowish or becoming rather deep, evenly translucent smoky brown; the basal wall-cells forming a very short scarcely noticeable stalk; the tip obliquely black below the rather coarse and prominent hyaline lips. Receptacle generally very long and slender, pale yellowish, the basal cell tinged with brown; cells IV and V amber or often becoming wholly amber-brown or smoky brown; cells IV and V large, prominently marked by short transverse lines or patches which are less numerous and distinct on the other cells. Insertion-cell carried out free from the perithecium by the enlargement of cell V, well differentiated, black. Outer appendage consisting of a series of obliquely superposed cells three to ten in number,



the basal one subtriangular and blackish, the rest hyaline or yellowish, each producing distally and externally a single simple straight branch, slightly constricted at the three to four lower black septa; the distal portion without black septa, sometimes short, sometimes elongate and tapering. The inner appendage consists of a basal cell usually giving rise on either side to a series of superposed cells similar to those of the outer appendage, but mostly shorter and similarly branched; the three series in general partly united at least at the base, the basal cell in some cases bearing more than two such series so that a very dense tuft of branchlets results. Perithecia  $165 \times 55\text{--}350 \times 90 \mu$ , average  $275 \times 60 \mu$ . Receptacle very variable. Total length to tip of perithecium  $425\text{--}1480 \mu$ ; to insertion-cell  $275\text{--}1260 \mu$ . Appendages, longest  $600 \mu$ , average about  $400 \mu$ .

On *Trichognathus marginipennis* Latr., Hope Collection, No. 267, Columbia, Brit. Mus. No. 525, "Tamaz," S. America; on "*T. marginatus* Latr." Brit. Mus. No. 526, Brazil, Hope Collection, No. 266, "S. America"; on *Trichognathus* sp. indet., Paris Museum, Nos. 70, 71, and 135, Venezuela and "S. America." On all parts of host.

#### *Laboulbenia triordinata* nov. sp.

Perithecium usually wholly free from the receptacle, very variable, amber-brown or usually becoming almost black, generally elongate, often with the wall-cells showing a distinct spiral twist, the basal wall-cells forming a hyaline or less deeply suffused neck; the tip wholly black except the lip-edges, which may be translucent and more or less distinctly differentiated. Receptacle elongate or rather short, pale amber-brown or amber-yellow, gradually tapering from the base to the very broad distal portion, or more commonly cells I and II forming a slender stalk above which the rest of the receptacle expands abruptly, the unmodified triangular insertion-cell carried up and out free from the receptacle through the enlargement of cell V, the inner margin of which is mostly free. Outer appendage consisting of a series of about seven to ten obliquely superposed cells, each bearing distally and externally a single simple branch; the branches constricted at the first, second, and third septa, which are deeply blackened; the second less broadly, the first and second cells variably suffused with clear brown especially near the septa, the distal portion of the branch hyaline, tapering, its cells longer, the lower swollen below the septum: inner appendage consisting of a basal cell which gives rise on either side to a branch resembling the outer appendage often with fewer cells (sometimes only 3-celled) similarly branched,



except that the lower branchlet of each branch bears a single large terminal antheridium which becomes brown; the outer appendage and the two branches of the inner erect and close together or more or less strongly and irregularly divergent. Perithecia, average  $200 \times 52 \mu$  ( $110-260 \times 45-60 \mu$ ) including stalk. Total length to tip of perithecium  $260-600 \mu$ ; to insertion-cell  $185-370 \mu$ ; greatest width  $65-100 \mu$ . Appendages  $220-330 \mu$ .

On *Calophæna bifasciata* Oliv., Brit. Mus. No. 509, South America; on *Calophæna* sp., Brit. Mus. No. 512, Nanta, Amazon; on *Cordistes bicinctus* Dej., Hope Collection, No. 268, Columbia; on *Cordistes?* sp., U. S. National Museum, Central America; on *Helluomorpha melanaria* Reich., Brit. Mus. No. 527, Ega, Amazon.

#### *Laboulbenia tuberculifera* nov. sp.

Perithecium deeply suffused with smoky brown, free except the lower fifth; the tip not abruptly distinguished, nearly black, the distal margin somewhat oblique, mostly straight with an outer more or less ill defined tooth-like prominence; in general variable, the lip-cells not prominent. Receptacle rather long and slender, cell I quite hyaline below, distally tinged with deep brown and coarsely punctate; cell II tinged with brown and punctate below, otherwise nearly hyaline, except for the presence of a series of deep brown short tubercular transverse ridges on one side of cell IV and the basal cells of the perithecium which are deep brown, the rest subhyaline, cell IV bulging. Outer appendage simple, slender, the basal cell sometimes long and somewhat inflated: the inner appendage consisting of a small basal cell with a short branch on either side. Perithecia about  $140 \times 50 \mu$ . Total length to tip of perithecium, average  $340 \mu$ ; to insertion-cell, average  $225 \mu$ ; greatest width  $60 \mu$ . Appendages  $225 \mu$  (longest).

On *Serrimargo guttiger* Schaum., Brit. Mus. No. 558, Penang, East Indies. On base of elytra.

#### *Laboulbenia uncinata* nov. sp.

Pale yellowish, becoming tinged with pale reddish yellow. Perithecium more than one half free, stout, nearly oblong, the blackened lip-cells recurved externally through the rounded upgrowth of the inner distal portion of the perithecium which makes them almost lateral in position, the outer lip-cell often twice as long as the others and more prominently recurved, its projecting portion translucent, rounded. Receptacle





Thaxter, Roland. 1899. "Preliminary diagnoses of new species of Laboulbeniaceae I." *Proceedings of the American Academy of Arts and Sciences* 35, 151–209.

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