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REVISION OF THE GENUS VASCELLUM
(LYCOPERDACEAE)

PATRICIO PONCE DE LEON

A CONSPECTUS OF THE PALM GENUS
BUTIA BECC.

S. F. GLASSMAN

STUDIES IN AMERICAN PLANTS, II

DOROTHY N. GIBSON

TROPICAL AMERICAN PLANTS, XI

LOUIS O. WILLIAMS

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Revision of the Genus *Vascellum* (Lycoperdaceae)

PATRICIO PONCE DE LEON

ASSISTANT CURATOR, CRYPTOGAMIC HERBARIUM

During the course of my studies for a revision of the family Lycoperdaceae, I have come across a number of plants, previously included in *Lycoperdon*, which I believe should be referred to the genus *Vascellum*. I recognize nine species which seem to me to belong in Smarda's newly established genus. Three of these, *Lycoperdon subpratense* Lloyd, *L. cruciatum* Rostk., and *L. djurense* P. Henn., are being transferred to *Vascellum*. Two of these species were included by Lloyd in his heterogeneous section *Pratense* of *Lycoperdon*. Lloyd included, as well, four other species in his section *Pratense*: *L. pratense* Persoon, now considered to be a species of *Vascellum*; *L. wrightii* Berkeley, now *Vascellum curtisii*; *L. subincarnatum* Berkeley; and *L. fuligineum*, again a species of Berkeley's. The latter two are now usually included in the genus *Morganella*. *Lycoperdon acuminatum* Pers. is the only species of Lloyd's section *Pratense* which still remains in the genus *Lycoperdon*, although Kreisel in 1967 considered that to belong in *Bovista*.

There are three other species, *L. qudenii* Bottom., *L. rhodesianum* Vermoerd, and *L. angulatum* Dissing & Lange, which I believe, from the descriptions, must belong in the genus *Vascellum*. I have not, however, seen authentic material of these species. The other species is *V. abscissum* from South America, and was transferred from *Lycoperdon* by Kreisel.

I wish to thank the curators of the New York Botanical Garden, the National Fungus Collection, and the Farlow Herbarium for their kindness to me while studying the collections under their care.

VASCELLUM Smarda, Fl. CSR. B-1: 304. 1958. *Lycoperdon* Pers. Syn. Fung. 140. 1801, p.p.; *Utraria* Quel. Champ. Jura 2: 366. 1873, p.p.; *Lycoperdon* sect. *pratense* Lloyd, Myc. Notes 2: 207. 1905.

Library of Congress Catalog Card Number: 75-104624

Fructifications small, depressed, globose, turbinate or obconic; outer peridium white, pink or brown, spinose or furfuraceous, the spines of two kinds, long and short, the long ones converging at their apices to form stellate groups; inner peridium thin, papery, dehiscing generally by a wide pore, finally breaking and falling away until the upper portion of the peridium disappears; sterile base prominent, of large cells, at first white, later brownish or purplish; diaphragm present, dividing the fertile gleba from the sterile base, membranaceous, or papyraceous or sometimes very difficult to find after maturity; gleba at first white, later olive-brown or purple; capillitium none or scanty (present in *V. rhodesianum* and *V. qudenii*); paracapillitium threads hyaline, septate, and branched, with a delicate membrane, these filaments are easily stained by cotton blue (cyanophylous); glebal membranes are always present; spores pedicellate, globose, hyaline or light colored, smooth or delicately echinulate.

Type: *Vascellum pratense* (Pers. em. Quel.) Kreisel.

Habitat: In the edge of woods, and among grasses.

Distribution: Cosmopolitan.

Discussion: The distinguishing character used by Smarda to establish *Vascellum* is the presence of a diaphragm which separates the fertile portion of the gleba from the sterile, basal portion. To this, Kreisel added the characters of a very reduced capillitium which is replaced partially by a paracapillitium, and the dehiscence by a wide opening, not a pore.

These characters added by Kreisel do not occur in four of the nine species of the genus now known, as follows: *V. subpratense* has some true capillitium threads in the gleba; *V. qudenii* has a non-septate capillitium; *V. abscissum* presents true capillitium, paracapillitium, and glebal membranes (as in *Lycoperdon pyriforme*); and *V. rhodesianum* has an unbranched, non-septate, colored capillitium.

I do not feel that Smarda's character—dehiscence by a wide opening—is meaningful as it does not seem to be consistent in those specimens which I have examined, with the exception of *V. pratense*.

CONSPECTUS OF THE GENUS *VASCELLUM*

Sect. I.—*Vascellum*.

Capillitium nullum; paracapillitium abundans.

Capillitium absent; paracapillitium abundant.

Type: *Vascellum pratense* (Pers.) Kreisel.

V. pratense, *V. curtisii*, *V. subpratense*

Sect. II.—*Cruciatum* sect. nov.

Capillitium praesens; paracapillitium praesens.

Capillitium present; paracapillitium present.

Group *Cruciatum*. Fructifications globose.

Type: *Vascellum cruciatum* (Rostk.) P. Ponce.

V. cruciatum, *V. qudenii*, *V. angulatum*

Group *Abscissum*, Fructifications obconic.

V. abscissum, *V. djurense*

Species incertae sedis: *V. rhodesianum*.

I have not enough data to establish whether this species belongs in section *Cruciatum* or perhaps to one yet undescribed.

KEY TO THE SPECIES

- Exoperidium with spines; capillitium none or scanty; paracapillitium branched, hyaline, septate.
- Spines slender.
- Spines soft, not erect.
- Spines white.
- Paracapillitium thread of the same diameter as the spores. *Vascellum pratense*.
- Paracapillitium thread to two or three times the diameter of the spores. *Vascellum curtisii*.
- Spines dark *Vascellum subpratense*.
- Spines hard, erect, sharp.
- Exoperidium breaking up in small flakes at the median line or at every point *Vascellum cruciatum*.
- Exoperidium breaking up in flakes from the top downward.
- Spores echinulate *Vascellum angulatum*.
- Spores smooth *Vascellum abscissum*.
- Spines broad, united at the apex, breaking up in patches from the top downward; gleba purple *Vascellum djurense*.
- Exoperidium without spines, furfuraceous; capillitium present, colored, unbranched; nonseptate.
- Spores hyaline, smooth *Vascellum rhodesianum*.
- Spores olive-brown, verrucose *Vascellum quedenii*.

Vascellum pratense (Pers. em. Quel.) Kreisel, Feddes Rep. 64: 159. 1961. *Lycoperdon pratense* Pers. Syn. Fung. 140. 1801. *L. vitellinum* Fr. Symb. Gast. 7. 1817. *L. hirtum* Pers. Journ. Bot. 2: 20. 1809. *L. caelatum* Fr. Syst. Myc. 3: 32. 1829 (non Bulliard ex Vittadini, 1843). *L. hiemale* (Bull.) Vitt. Monogr. Lyc. 190. 1843. *L. depressum* Bon. Bot. Zeit. 15: 611. 1859. *Utraria pratensis* Quel. Champ. Jura 2: 368. 1873. *Globaria queletii* Schulzr. Hedwigia 24: 149. 1885. *Lycoperdon natalense* Cke. & Mass. Journ. Roy. Micr. Soc. 709. 1887. *L. kalchbrenneri* De Toni in Sacc. Syll. Fung. 7: 109. 1888. *Bovista queletii* De Toni l.c. 105. *Lycoperdon gemmatum* a. *pratense* Schroet. in Cohn, Krypt. Schles. 3 (1): 696. 1889. *Calvatia depressa* Moravec, Sydowia 8: 278. 1954. *Vascellum depressum* Smarda in Fl. CSR. B-1. 305. 1958.

This species is characterized by the obconic or cylindrical fructification, prominent membranaceous diaphragm, large cellular sterile portions of the gleba, the dehiscence of the endoperidium that starts with a pore which dilates until all the upper part disappears, the

absence of true capillitium, and the presence of abundant paracapillitium accompanied by glebal membranes. The spores are 3-4.5 μ in diameter, pale brown, and echinulate.

This species is separated from *V. subpratense* by the total absence of true capillitium, the wider and perfect diaphragm, and the large size of the fructification.

Material observed: UNITED STATES. NEW YORK: *Shear* s.n. (BPI); *Torrent* s.n. (BPI). MASSACHUSETTS: Mischener Coll. s.n., ex Herb. Schw. 2271-1 (BPI); Mischener Coll. 113, 2433 (BPI); *Mackintosh* s.n. (Lloyd 13207) (BPI); *Smith* s.n. (Lloyd 52629) (BPI). IOWA: *Buchanan* s.n. (BPI); *Macbride* 18 (Lloyd 51435) (BPI). CALIFORNIA: *Morse* s.n. 431-b as *L. depressum* (NY); *Wilder* 2 (Lloyd 51425) (BPI); *Stillinger* 409 (Lloyd 16461) (BPI); *Ehrhorn* s.n. (Lloyd 51426) (BPI); *Lane* s.n. (Lloyd 51427) (BPI). PENNSYLVANIA: *Herbst* s.n. (Lloyd 13208) (BPI). OREGON: *Zeller* 1854 (Lloyd 14863) (BPI); *Lake* s.n. (Lloyd 51417) (BPI). WASHINGTON: *Kauffman* 3 (Lloyd 51422) (BPI). CANADA. BRITISH COLUMBIA: *Maccoun* 29 (51422) (BPI); *Hill* s.n. (Lloyd 51424). EUROPE. No country cited: *Montane* 1383 (Lloyd 58799) (BPI); Herb. Persoon (Type of *L. hirtum*) (Lloyd 58800) (BPI). PORTUGAL. *Torrent* 7238 (Lloyd 51744), s.n. (Lloyd 50981), s.n. (Lloyd 50982) (BPI); *Rick* s.n. (Lloyd 52718) (BPI); *Desvaux* s.n. (BPI). HUNGARY. *Hollos* s.n., 7372, 6848, 7371, 7373 (BPI); *Hollos* s.n., s.n. as *L. hiemale*, s.n. as *L. depressum* (HF). ITALY. *Bressadola* 6149 (Lloyd 52788) (BPI); *Bezzi* 7114 (Lloyd 52791) (BPI); *Saccardo* 1103, 882, 225 (NY); *Bull* 936 (NY); *Massalonga* s.n. (Lloyd 50962), s.n. (Lloyd 51419) (BPI); *Mattirolo* s.n. (Lloyd 51418) (BPI); *Bezzi* s.n. (Lloyd 52793), s.n. (Lloyd 52794) (BPI). GERMANY. *Magnus* 5793, 5795 (BPI); *Schultze-W.* s.n. (Lloyd 50979) s.n. (Lloyd 50980), s.n. (Lloyd 51432), s.n. (Lloyd 51433), s.n. (Lloyd 52798) (BPI); *Jaap* s.n. (Lloyd 51430) (BPI); *Harz* s.n. (Lloyd 51431) (BPI); *Plottna* s.n. (Lloyd 52799) (BPI). FRANCE. *Patouillard* 5 (Lloyd 52797) (BPI); *Patouillard* s.n. ex *Ellis* Coll. (NY); *Romaguesi* 3308 (NY); *Masse* s.n. (NY); *Aclogue* s.n. (Lloyd 50973), s.n. (Lloyd 50976) (BPI); *Patouillard* s.n. ex *Ellis* Coll. (NY); *Romaguere* 3308 (NY); *sieck* s.n. (Lloyd 50975) (BPI); *Maire* s.n. (Lloyd 50977), 22 (Lloyd 51414) (BPI); *Felix* s.n. (Lloyd 50978) (BPI); *Bigard* s.n. (Lloyd 51410), s.n. (Lloyd 51411), s.n. (Lloyd 52796) (BPI); *Cepede* s.n. (Lloyd 51412) (BPI); *Maisset* s.n. (Lloyd 51413) (BPI); *Hemet* s.n. (Lloyd 51415) (BPI); *Wulff* s.n. (Lloyd 52643) (BPI); *Rolland* s.n.

(Lloyd 52795) (BPI). BELGIUM. *Bambeke* s.n. (Lloyd 50971), s.n. (Lloyd 50972), s.n. (Lloyd 52800) (BPI); *Rousseau* s.n. (Lloyd 52805) (BPI). ENGLAND. *Guyot* s.n. (NY); *Swanton* s.n. (Lloyd 13206), 8 (Lloyd 50594), s.n. (Lloyd 51404); *Torrent* s.n. (Lloyd 50965) (BPI); *Crosslend* s.n. (Lloyd 50966), s.n. (Lloyd 51408) (BPI); *Smith* s.n. (Lloyd 51405) (BPI); *Lapierre* s.n. (Lloyd 51406) (BPI); *Gardner* s.n. (Lloyd 51407) (BPI); *Hay* s.n. (Lloyd 51409) (BPI). SWEDEN. *Smith* s.n. ex Mus. Berlin (NY); *Smith* s.n. (HF); *Oxsholl* s.n. ex Herb. Kew (HF); *Romell* s.n. (Lloyd 50967), s.n. (Lloyd 50968), s.n. (Lloyd 50969), s.n. (Lloyd 51434) (BPI); *Lloyd* s.n. (Lloyd 50970) (BPI). SWITZERLAND. *Muller* 2141 ex Herb. *Barbey-Boissier* (HF). DENMARK. *Breitung* s.n. (Lloyd 51420) (BPI); *Lind* s.n. (Lloyd 52804). ROUMANIA. *Savulescu* 490 (HF). RUSSIA. *Boaholts* s.n. (HF); *Wulff* s.n. (Lloyd 51421). GREECE. *Maire* 1127 (Lloyd 51428). AZORES. *Trelease* s.n. (BPI). SOUTH AFRICA. *Verwoerd* 2 (Lloyd 34388) (BPI); *Duthie* 94 (Lloyd 52714), s.n. (Lloyd 52715), 93 (Lloyd 52716) (BPI). NATAL: *Nitenkage* 106 (BPI). TRANSVAAL. *Evans* s.n. (Lloyd 52713) (BPI). INDIA. *Koelz* 61-a (BPI); *Butler* s.n. (Lloyd 52717) (BPI). AUSTRALIA. *Cleland* 297 (Lloyd 3893), 855 (Lloyd 14373) (BPI); *Wilson* s.n. (Lloyd 52705), s.n. (Lloyd 52802); *Paul* s.n. (Lloyd 52706), s.n. (Lloyd 52707), s.n. (Lloyd 52708), s.n. (Lloyd 52712), s.n. (Lloyd 52808) (BPI); *McAlpine* s.n. (Lloyd 52709), s.n. (Lloyd 52710) (BPI); *Turner* s.n. (Lloyd 52711) (BPI); *Romell* s.n. (Lloyd 52803) (BPI); *Tepper* s.n. (Lloyd 52807) (BPI). TASMANIA: *Rodway* 924 (Lloyd 5184) (BPI). VICTORIA: *Semmens* 23 (Lloyd 14840), 22 (Lloyd 16460), 20 (Lloyd 50110) (BPI). NEW SOUTH WALES: *Mattirolo* s.n. (Lloyd 50964) (BPI); *Cleland* 356 (Lloyd 52704) (BPI). NEW ZEALAND. *Theissen* s.n. (HF); *Northcroft* s.n. (Lloyd 28949) (BPI); *Laing* s.n. (Lloyd 52693), s.n. (Lloyd 52694), s.n. (Lloyd 52695) (BPI); *Barker* s.n. (Lloyd 52696) (BPI); *Dunn* s.n. (Lloyd 52697), s.n. (Lloyd 52698), s.n. (Lloyd 52699) (BPI); *Duncan* s.n. (Lloyd 52700) (BPI); *Tennant* s.n. (Lloyd 52701) (BPI); *Brown* s.n. (Lloyd 52702), s.n. (Lloyd 52703), s.n. (Lloyd 51929) (BPI); *Barker* s.n. (Lloyd 52809) (BPI); *Schencenitz* 2257 (Lloyd 58586) (BPI); *Cunningham* 570 (Lloyd 14276), 699 (Lloyd 14372) (BPI); *Cunningham* 1130 (HF). PHILIPPINES. *Brown* 2401 (HF).

Vascellum subpratense (Lloyd) P. Ponce, *comb. nov.* *Lycoperdon subpratense* Lloyd, *Myc. Writ.* 2: 231. 1905. *L. multiceptum* Lloyd, *Letter* 53: 9. 1914. *Calvatia subpratense* (Lloyd) Coker & Zeller, *Myc.* 39: 305. 1947. *Vascellum pratense* (Pers.) Kreisel subsp.

subpratense (Lloyd) Kreisel, Feddes Rep. 68: 86. 1963. *Calvatia depressa* (Bon.) Zeller & Smith, Lloydia 27: 171. 1964.

Fructifications depressed globose or turbinate, 2.5–5 cm. high, 2–4 cm. broad; outer peridium white, covered with small, soft, dark-brown spines, united at their apices, mixed with tiny simple spines and furfuraceous granules which fall away at maturity; inner peridium thin, dark, inner surface at first densely felted with the bases of capillitium threads, but becoming shiny and metallic with age, dehiscing by several stellate lobes which break up and fall away until the upper portion of the peridium has disappeared; sterile base of gleba prominent, of large cells, at first white, then brownish or purplish, cup-shaped, separate from the fertile part of the gleba by a definite membranaceous diaphragm that becomes shining and metallic in old specimens; gleba white becoming yellowish-olive and finally light brownish-olive; capillitium scanty at maturity, attached to the inner surface of the peridium and the diaphragm, pale brown; paracapillitium irregular, up to 4 μ in diameter, sparingly branched, breaking up into short sections; spores spherical, smooth, pale olivaceous, 3.2–4.7 μ ; glebal membranes present.

Distribution: North America.

Type: A. B. Seymour 6087, Cambridge, Mass. (Lloyd 51437) as *L. pratense*.

Vascellum subpratense is one of the most common puffballs in lawns and pastures in North America; it often has been collected in Oregon and Washington by Zeller.

Discussion: I believe this is a valid species and not, as Kreisel thought, a subspecies of *L. pratense*. It differs in the persistent threads of the capillitium found mostly in the center of the gleba, and in the darker color of the exoperidial spines.

Material observed: UNITED STATES. MASSACHUSETTS: *Seymour* 6088 (Type) (Lloyd 51437) (BPI); *Mackintosh* s.n. (Lloyd 13207) (BPI); *Mischener* 1724 (BPI). OREGON: *Marsh* 8-273 (Lloyd 13178), 3581 (Lloyd 13179) (BPI); *Chambers* 7720 (Lloyd 13180) (BPI); *Gilbert* s.n. OSC Herb. 7146 (BPI); *Sprague* s.n. OSC Herb. 7792 (BPI); *Smith* 55617 (MICH); *Carpenter* 64c (MICH); *Zeller* 1854 (Lloyd 14863) (BPI); *Lake* 6122 (Lloyd 51417) (BPI); *Zeller* 8430, 8437, 8440, and 7 s.n. as *Calvatia subpratense*, 8397 as *Lycoperdon subpratense* (NY); *Murrill* 979, 974 as *Calvatia subpratense* (NY). WASHINGTON: *Piper* 629 (Lloyd 13181), 700 (Lloyd 13182) (BPI); *Suksdorf* 622 (Lloyd 13183), 1007 (Lloyd 13184), 674 (Lloyd 13185), 672 (Lloyd 13210) (BPI); *Kaufman* 3 (Lloyd 51422) (BPI); *Stillinger* 3650 (ex Herb. Long) (BPI); *Parker* 35 (NY). CALIFORNIA: *Hunt* 5484 (Lloyd 13186), 5861 (Lloyd 13187) (BPI); *Macoun* 29 (Lloyd 51423) (BPI); *Hill* 7129 (Lloyd 51424) (BPI); *Wilden* 2 (Lloyd 51425) (BPI); *Ehrhorn* 6404 (Lloyd 51426) (BPI); *Lowe* 7061 (Lloyd

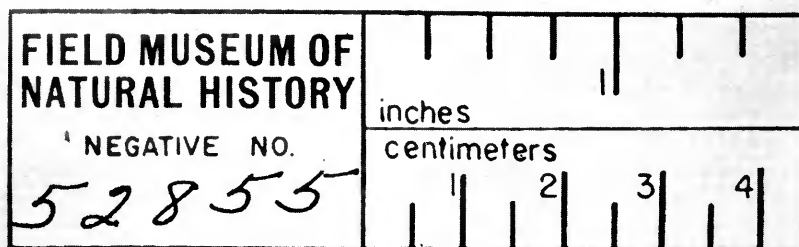


FIG. 1. *Vascellum curtisii* (Berk.) Kreisel. Wright 120. Japan. (As Type of *Lycoperdon plicatum* Berk. & Curt.) (FH)

51427) (BPI); Morse s.n. (NY); Clemens s.n. ex Zeller (NY); Morse 431b as *Lycoperdon depressum* (NY); Murrill 1117 as *Calvatia subpratense* (NY). IOWA: McBride 18 (Lloyd 51433), 7 (Lloyd 51436) (BPI). BRAZIL. Eiten 4480 (NY).

Vascellum curtisii (Berk.) Kreisel, Feddes Rep. 68: 86. 1963. *Lycoperdon plicatum* Berk. & Curt. Proc. Amer. Acad. Art. & Sci. 4: 125. 1859. *L. curtisii* Berk. Grevillea 2: 50. 1873. *L. wrightii* Berk. & Curt. Grevillea 2: 50. 1873.

This species had been considered to be identical to *Vascellum pratense*. It can be separated by its smaller fructification, less well-developed sterile base and thinner diaphragm.

Material observed: UNITED STATES. ILLINOIS: Moffat 1451 (F 1231416), 1040 (F 1231422), 1053 (F 321729), 1083 (F 1231696), 4345 (Lloyd 22919), 6439 (Lloyd 22920) (F); Harper 3425 (F 1286982), s.n. (F 1286988) (F); Schneck s.n. (BPI). MASSACHUSETTS: Sargent s.n. (BPI); Minins s.n. (BPI); Stevenson s.n. (BPI), Underwood 986 (NY); Davis 5765 (Lloyd 22900), 4312 (Lloyd 22901) (BPI); Fessenden 5565 (Lloyd 22902) (BPI); Jenks 7449 (Lloyd 22903), 6969 (Lloyd 22904) (BPI); Crosby 5716 (Lloyd 22905), 5466

(Lloyd 52256) (BPI). MARYLAND: *Lambert* s.n. (BPI); *Shear* s.n. (BPI); *Pollock* s.n. (BPI); *Parker* s.n. ex Hawaii Univ. Herb. 4344 (BPI). VIRGINIA: *Charles* s.n. (BPI); *Humphrey* s.n. (BPI); *Linder* s.n. (FH). MAINE: *Harvey* s.n. (BPI); *Pannel* s.n. (BPI); *Gould* s.n. (FH). NORTH CAROLINA: *Curtis* 558 (Lloyd 58714) (BPI); *Cooker*

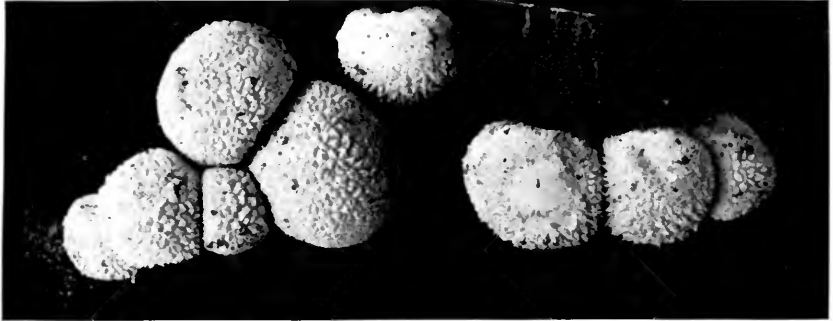


FIG. 2. *Vascellum curtisii* (Berk.) Kreisel. Harper 3425, Genesco, Illinois. (As *Lycoperdon wrightii* Berk. & Curt.) (F)

7549 ex Herb. Univ. N.C. (FH). DISTRICT OF COLUMBIA: *Stevenson* s.n. (BPI); *Rose* s.n. (BPI); *Braendle* 9 (Lloyd 13573), s.n. (Lloyd 13574) (BPI). DELAWARE: *Jackson* 1 (Lloyd 22915) (BPI). CONNECTICUT: *Wright* 1251 (ex type Kew as *L. curtisii*) (Lloyd 58779) (BPI). NEW YORK: *Dudley* s.n. (BPI); *Harper* s.n. (NY); *Underwood* s.n. (NY); *Banker* 1027 (NY); *Murrill* 1168 (NY); *Brown* 132 (ex Ellis Coll.) (NY); *Jackson* 46-D (NY); *Burt* s.n. (FH); *Lodewick & Bennington* 76 (Lloyd 16457); *Lloyd* 7136 (Lloyd 22917); *Clute* 4289 (Lloyd 22918) (BPI). NEW JERSEY: *Hames* s.n. (BPI); *Shear* s.n. (BPI); *Ellis* 45 (NY); *Peck* 5 (ex Ellis coll.) (NY); *Bates* 504 (NY); *W.S.S. Jr.* 378 (ex Ellis Coll.) (NY); *Ellis* s.n. (NY); *Ellis* 298, 5029, 1943, 298 (ex Ellis Coll.) (NY); *Ellis* s.n. (Lloyd 22912) (BPI). WEST VIRGINIA: *Lloyd* 5675 (Lloyd 13560) (BPI); *Boutlau* 55 (Lloyd 52262). PENNSYLVANIA: *Herbst* 5437 (Lloyd 13561), 5442 (Lloyd 22898) (BPI); *Burgin* 5768 (Lloyd 22899) (BPI). VERMONT: *Burt* s.n. (FH); *Bringle* s.n. (FH); *Lloyd* 7246 (Lloyd 52261) (BPI). NEW HAMPSHIRE: *Farlow* s.n. (FH); *Burnet* s.n. (FH); *Peck* s.n. (FH); *Trelease* s.n. (FH). TENNESSEE: *Sharp* 19550, 19555 (BPI); *Hesler* s.n. (BPI); *Murrill* 726 (NY). INDIANA: *Bechtel* 11 (Lloyd 25444) (BPI); *Stuart* s.n. (NY). ALABAMA: *Burke* 7 (Lloyd 52460) (BPI). KENTUCKY: *Lloyd* s.n. (Lloyd 14766) (BPI). OHIO: *Dawson* 6714 (Lloyd 13556), 6712 (Lloyd 22909), 6700 (Lloyd

52257) (BPI); *Lloyd* 4126 (Lloyd 13557), 2803 (Lloyd 22907), 1473 (Lloyd 22980) (BPI); *Moore* 5093 (Lloyd 13558), 5257 (Lloyd 13559) (BPI); *Graves* 1338 (Lloyd 14369) (BPI); *Smith* 8699 (Lloyd 22906) (BPI); *Bohn* 5790 (Lloyd 54261) (BPI); *Lloyd* s.n. ex Herb. Curtis (FH). MICHIGAN: *Trelease* s.n. (BPI); *Tucker* s.n. (BPI); *Weld* 6570 (Lloyd 13562) (BPI). WISCONSIN: *Trelease* s.n. (BPI); *Stillinger* s.n. (Long 10280) (BPI); *Stillinger* s.n. ex Herb. Mo. Bot. Gard. (BPI); *Schuster* s.n. (BPI); *Dodge* s.n. (NY); *Trelease* s.n. (FH); *Denniston* 43 (Lloyd 13571) (BPI). MISSOURI: *Trelease* s.n. (2) (BPI); *Glatfelter* s.n. (BPI); *Pammel* s.n. (BPI); *Demetrio* 14, 311 (ex Ellis Coll.) (NY); *Trelease* s.n. (ex Ellis Coll.) (NY); *Zeller* 1557 (NY); *Humphrey* s.n. (2) (FH); *Duggar* 4044 (Lloyd 13564) (BPI); *Demetrio* 6591 (Lloyd 22922) (BPI); *Zeller* 1557 (Lloyd 19266) (BPI). KANSAS: *Bartholomew* s.n. (2) (BPI), s.n. (FH), s.n. (Lloyd 22916) (BPI); *Bartholomew* in Ellis & Everhart Fungi Columbiani 895 (F). NEBRASKA: *Bartholomew* in Ellis & Everhart 2734 (NY), (F); *Bates* 6493 (Lloyd 13569) (BPI). MINNESOTA: *Cook* 6002 (Lloyd 22921) (BPI); *Crewe* 8740 (Lloyd 13565) (BPI); *Howe* 8-203 (Lloyd 53115) (BPI). SOUTH DAKOTA: *Williams* s.n. (BPI); *Carter* 5895 (Lloyd 22914) (BPI). NORTH DAKOTA: *Brenkle* s.n., 7682 (Lloyd 22913), 755 (Lloyd 13566), s.n. (Lloyd 13567), 95 (Lloyd 17925), s.n. (Lloyd 52263) (BPI); *Brenkle* 95, 58 ex Sydow, 775 (NY); *Crouch* 2 Ellis Coll. (NY). MONTANA: *Kelzey* 92, 50 Ellis Coll. (NY); *Hapeman* 6424 (Lloyd 13568) (BPI). TEXAS: *Long* 2040, 2064, 2115, 8912 (BPI); *Long* s.n. (Lloyd 22910), 2064 (Lloyd 22911) (BPI); *Fisher* 66 (Lloyd 52250) (BPI); *Gerald* 12 (Lloyd 52251) (BPI). NEW MEXICO: *Stouffer* in Herb. Long 8480, 8743, 8826, 8482, 9188, 9222 (BPI); *Wagot* in Long Herb. 7755 (BPI); *Piper* s.n. (BPI). COLORADO: *Ellis* 352 (NY); *Ellis* Fung. Columbiani 895 (Supplement and Inserted) (F); *Sterling* 5522 (Lloyd 13570) (BPI). ARIZONA: *Sanberg* in Herb. Long 8876 (BPI). CALIFORNIA: *Asheley* s.n. (BPI); *Copeland* s.n. (BPI); *Bonar* s.n. (BPI); *Zeller* 9043 (NY). OREGON: *Zeller* 2229 (NY). WASHINGTON: *Stillinger* s.n. (BPI). PUERTO RICO. *Harper* 9018 ex Herb. Illinois Univ. (NY); *Stevens* 7014 (NY); *Stevens* s.n. (NY). BERMUDA. *Seaver* 138 (NY). CANADA: *J.D.* 2417 in Ellis Coll. (NY); *Loveland* ex Myc. Herb. Ottawa 29472 (FH); *Macomb* 6836 (Lloyd 13563), 6835 (Lloyd 52462) (BPI). ECUADOR. *Miele* 6239 (Lloyd 53116), 6089 (Lloyd 53113) (BPI). EUROPE. No country cited: *Ravenel* 74, 91 (NY). ST. VINCENT, W. I. *Patterson* 7173 (Lloyd 53122) (BPI). TOBAGO. *Mellen* 7178 (Lloyd 53121) (BPI). PHILIPPINES. *Graff & Brown* 11003 (Lloyd 53129) (BPI). INDIA. *Mundker* s.n. (FH); *Butler*

294 (Lloyd 53110) (BPI). CEYLON: *Petch* 4417 (Lloyd 37977), 6208 (Lloyd 37978) (BPI). INDONESIA, Java. *Bernard* 10115 (Lloyd 53109), 8878 (Lloyd 53119) (BPI). SINGAPORE. *Chipp* 5489 (Lloyd 21075) (BPI). CHINA, NANKING: *Teng* 7487 (BPI). KUANGSI: *Deng* 4318 (BPI). JAPAN. *Gono* 8088 (Lloyd 53120) (BPI). *Nishida* 5 (Lloyd 30611) (BPI); *Yasuda* 11 (Lloyd 33128) (BPI); *Wright* 120 (Type of *L. plicatum*) (FH). AFRICA. No country cited: *Mattirola* s.n. (Lloyd 28933) (BPI). MAURITIUS: *O'Connor* 7031 (Lloyd 53112) (BPI). EAST AFRICA. *Brown* 5116 (Lloyd 53114) (BPI).

Vascellum cruciatum (Rostk.) P. Ponce, *comb. nov.* *Lycoperdon cruciatum* Rostk. in *Sturn*, *Deust. Fl.* 3 (12): 19. 1844. *L. separans* Peck, *Rep. N. Y. State Mus.* 26: 73. 1874. *L. wrightii* B. & C. var. *separans* Peck, l.c. 67. *L. pampeanum* Speg. *Teste Swoboda* (Kreisel 1962).

Fructifications globose or depressed, often plicate beneath, 1.2–4.5 cm. high and nearly always broader than high; outer peridium at first white, later pink, and finally clay to deep brown, composed of densely set, sharp, erect warts with their tips cohering, at maturity breaking up into large or small flakes, usually beginning in a median line but often rupturing everywhere or at many points at once; inner peridium olivaceous brown, covered with a brown furfurescence which disappears leaving the surface paler and shining, dehiscing by a wide stellate opening; sterile base composed of large cells, occupying the stem and lower part of the body, separated by a distinct line or a thin diaphragm from the fertile portion, and persisting after the top has disappeared; capillitium composed of light-colored, sparingly branched, septate threads; paracapillitium abundant, hyaline, septate and branched; spores globose, smooth, 4 μ in diameter, pedicel slender, caducous.

Distribution: Europe, North America, South America.

Habitat: In cultivated fields and in woods.

Discussion: This plant is very common in North America. It is known in Europe as *Lycoperdon cruciatum* Rostk. I do not think that it is referable to *L. candidum* or to *L. marginatum*, which it resembles in the way the exoperidium peels, but it has different capillitium (colored in the American plants) and a diaphragm that separates the two portions of the gleba, characters which do not occur in *L. candidum* or *L. marginatum*.

Material observed: UNITED STATES. NEW YORK: *Ellis* s.n., 2959C (NY); *Murrill* s.n. (NY); *Underwood* 254 (NY); *Fischer* s.n. (NY); *Fischer* 91 (Lloyd 53055) (BPI); *Latham* 478 (Lloyd 25424) (BPI); *Rhoads* 82 (Lloyd 19271) (BPI); *Pennington* 78 (Lloyd 50115)

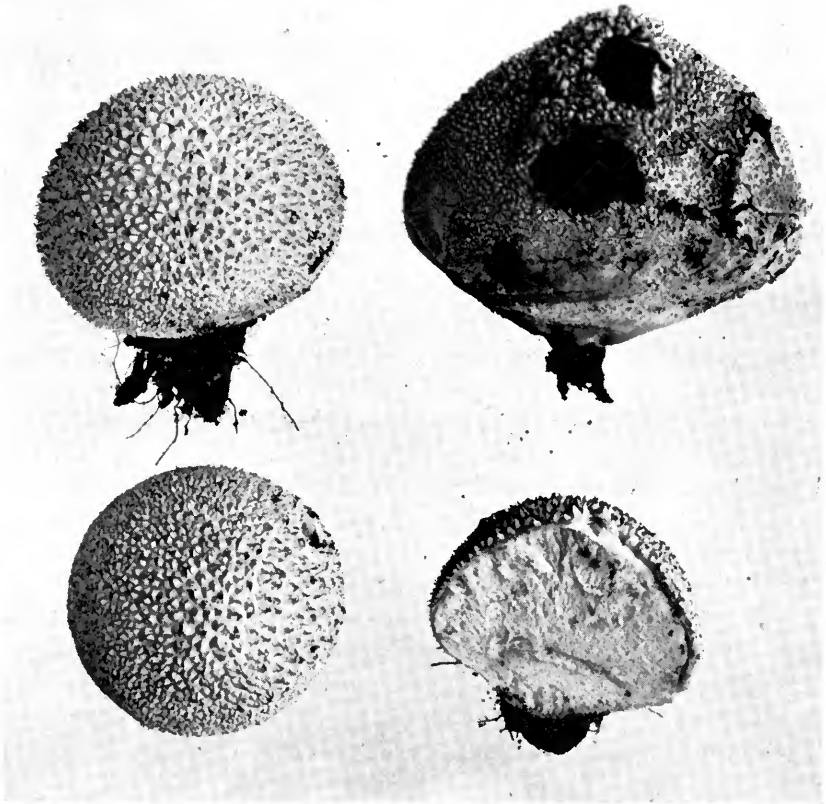


FIG. 3. *Vascellum cruciatum* (Rostk.) P. Ponce. Harper 3434-A, Geneseo, Illinois. (As *Lycoperdon cruciatum* Rostk.) (F)

(BPI); Peck 6007 (Lloyd 53056) (BPI). NEW JERSEY: *Ellis* s.n., 125 (NY); *Lloyd* 6621 (NY); *H. A. Bud* s.n. (Lloyd 6629) (NY); *Dallas* 6747 (Lloyd 51041) (BPI); *Bird* 6626 (Lloyd 53062) (BPI); *Sterling* 5424 (Lloyd 52776), 64 (Lloyd 5289) (BPI); *Rose* 245 (Lloyd 50116) (BPI). WEST VIRGINIA: *Lloyd* 5697 (Lloyd 51014), 5682 (Lloyd 51159), 0301 (Lloyd 52781) (BPI); *Walmesley* 3584 (Lloyd 52771) (BPI); *Selvy* 5847 (Lloyd 52772) (BPI). VIRGINIA: *Murrill* 7194 (NY). CONNECTICUT: *White* s.n. (NY); *Birch* 5477 (Lloyd 52639) (BPI); *Ely* 6385 (Lloyd 52765) (BPI). MASSACHUSETTS: *Mackintosh* 4362 (Lloyd 51021), 5944 (Lloyd 51025), 3593 (Lloyd 52756), 7087 (Lloyd 52757), 7083 (Lloyd 53041) (BPI); *Cummings*

6326 (Lloyd 51022) (BPI); *Jenks* 6687 (Lloyd 51024) (BPI); *Preston & Dean* 6462 (Lloyd 51023) (BPI); *Crosby* 05463 (Lloyd 51026), 5716 (Lloyd 51142) (BPI); *Davis* 5822 (Lloyd 51143), 6722 (Lloyd 51144), 5494 (Lloyd 51145), 5977 (Lloyd 52632), 5513 (Lloyd 52759), 5913 (Lloyd 52631), 5720 (Lloyd 52633), 5714 (Lloyd 53034), 6939 (Lloyd 53038) (BPI); *Warner* 5581 (Lloyd 51035) (BPI); *Sargent* 5583a (Lloyd 51146) (BPI); *Blackford* 4286 (Lloyd 52630) (BPI); *Seymour* 6087 (Lloyd 52755) (BPI); *Sargent* 5657 (Lloyd 52758) (BPI). MARYLAND: *Shear* s.n. (BPI); *Fisher* 1154 (Lloyd 52763), 11101 (Lloyd 52764) (BPI). VERMONT: *Humphrey* s.n., ex Herb. Sargent (FH); *Burt* (Authentic) (FH). MAINE: *Seaver* s.n. (NY); *Ricker* 5369a (Lloyd 51036) (BPI). PENNSYLVANIA: *Underwood* 821, 822 (NY); *Herbt* s.n. (FH); *Gardner* 5557 (Lloyd 51038) (BPI); *Burgen* 5628 (Lloyd 53052) (BPI); *Dallas* 6387 (Lloyd 51039), 5546 (Lloyd 51040) (BPI); *Baker* 6788 (Lloyd 52638) (BPI). NEW HAMPSHIRE: *Montgomery* 5649 (Lloyd 51017), 3641 (Lloyd 51155), 5648 (Lloyd 52626) (BPI); *Jones* 5608 (Lloyd 51154), 7724 (Lloyd 52644); *Theobald* 5113 (Lloyd 51156) (BPI); *Smith* 5001 (Lloyd 52766). SOUTH CAROLINA: *Rabel* 73 (NY); *Rolfs* 5348 (Lloyd 53050), 5360 (Lloyd 53051) (BPI). DISTRICT OF COLUMBIA: *Cook* s.n. (BPI); *Braendle* 6537 (Lloyd 51019) (BPI); *Sewall* 3554 (Lloyd 53046) (BPI). DELAWARE: *Chester* 5326 (Lloyd 52775) (BPI). NORTH CAROLINA: *Katzenstein* 6397 (Lloyd 51020) (BPI); *Lehman* 5018 (Lloyd 51160) (BPI); *Patest* 3620 (Lloyd 53054) (BPI). GEORGIA: *Benson* 523 (Lloyd 52780) (BPI). FLORIDA: *Pleas* 7227 (Lloyd 51010), 7516 (Lloyd 53032) (BPI); *Culbertson* 2119 (Lloyd 51135) (BPI); *Mead* 7025 (Lloyd 51137), 6733 (Lloyd 53034), 6634 (Lloyd 53035), 6636 (Lloyd 52654), 6748 (Lloyd 52760) (BPI); *Webster* 6148 (Lloyd 51138) (BPI); *Lloyd* 4845 (Lloyd 52648) (BPI); *Fisher* 10986 (Lloyd 53030), 7533 (Lloyd 53031), 7844 (Lloyd 52651), 7181 (Lloyd 52649), 10985 (Lloyd 52650) (BPI); *Hume* 5953 (Lloyd 53033) (BPI); *Baker* 6781 (Lloyd 53036), 6764 (Lloyd 52652), 6543 (Lloyd 52653) (BPI); *Noble* 3546 (Lloyd 51011), 6665½ (Lloyd 51136), 6704 (Lloyd 52761), 6666 (Lloyd 52762) (BPI). ALABAMA: *Earle* s.n. (2) (NY); *Underwood* s.n. (2), no. 5 (NY); *Baker* 10 ex Herb. Morgan (NY); *Bertolet* 7112 (Lloyd 51131) (BPI). TENNESSEE: *Percival* 6883 (Lloyd 52779) (BPI). MISSISSIPPI: *Piper* s.n. (Lloyd 25312) (BPI). ARKANSAS: *Brenckle* 4 (Lloyd 25332), 4a (Lloyd 50590) (BPI); *Howell* 5554 (Lloyd 52778) (BPI). OHIO: *Lloyd* 2655 (BPI); *Lloyd* s.n. (FH); *Lloyd* 1774 (Lloyd 51030), 4201 (51150), 4173 (Lloyd 51151), 20 (Lloyd 52635) (BPI); *Lawater* s.n. (Lloyd 3897), s.n. (Lloyd 14666), s.n. (Lloyd 14665), s.n. (Lloyd

14667) (BPI); *Arrick* 5530 (Lloyd 51149) (BPI); *Bohn* 5978 (Lloyd 51148) (BPI); *Brewer* 6710 (Lloyd 52634) (BPI); *Dawson* 6711 (Lloyd 52636) (BPI); *Smith* 8621 (Lloyd 52645) (BPI); *Holden* 6800 (Lloyd 52782) (BPI); *True* 5636 (Lloyd 52783) (BPI); *Morgan* 3099 (Lloyd 53049) (BPI). INDIANA: *Underwood* s.n. (NY); *Dorner* 5973 (Lloyd 51018), 7387 (Lloyd 53048) (BPI). MICHIGAN: *Bardslee* s.n. (2) (FH); *Bardslee* 5281 (Lloyd 51027) (BPI); *Longyear* 5376 (Lloyd 53060) (BPI). ILLINOIS: *Harper* 3434 (F 1286987) (F); *Moffat* s.n. (F 1231738) (F); *Moffat* 6433 (Lloyd 5147), 6430 (Lloyd 52757) (BPI); *Bertholet* 6953 (Lloyd 52637) (BPI); *McDougall* 44 (Lloyd 53058) (BPI). WISCONSIN: *King* s.n. (BPI); *Dodge* 626 (NY); *Denniston* 7356 (Lloyd 52641), 7357 (Lloyd 52770) (BPI); Wis. Myc. Club 6818 (Lloyd 52642) (BPI). MISSOURI: *Massee* s.n. (ex Herb. Trelease) (NY); *Zeller* s.n., 1559 (NY); *Zeller* 1559 (Lloyd 19256) (BPI); *Demetrio* 6619 (Lloyd 52773) (BPI); *Baldwin* 3567 (Lloyd 51037) (BPI); *Glatfelter* 5808 (Lloyd 52774) (BPI). KANSAS: *Bartholomew* s.n. (ex Herb. Flora of Kansas) (FH); *Bartholomew* 2300 (Lloyd 51028) (BPI). KENTUCKY: *Lloyd* 000 (Lloyd 52646) (BPI). TEXAS: *Fischer* s.n. (ex Herb. Banker) (NY); *Fisher* 90a (Lloyd 51033), 68 (Lloyd 53057) (BPI); *Ball* s.n. (BPI), 10172 (Lloyd 50782) (BPI); *Long* 1829 (Lloyd 51132), 7222 (Lloyd 51133), 8182 (Lloyd 52640), 1822 (Lloyd 53053) (BPI); *Stiles* 4239 (Lloyd 51134) (BPI). MINNESOTA: *Survey* 5932 (Lloyd 51013) (BPI); *Whetstone* 7434 (Lloyd 53442) (BPI); *Mead* 31 (Lloyd 53043) (BPI); *Ely* 5843 (Lloyd 52754) (BPI). NEW MEXICO: *Archer* 12 (Lloyd 50117) (BPI). IDAHO: *Stillinger* 1937 (Lloyd 5030) (BPI). IOWA: *Waldron* 5653 (Lloyd 52777) (BPI); *Clarke* 5191 (Lloyd 52647) (BPI). NEBRASKA: *Bates* 533 (Lloyd 51031), 6495 (Lloyd 51141), 6508 (Lloyd 52628) (BPI). COLORADO: *Bessey* 6526C (Lloyd 51042) (BPI). SOUTH DAKOTA: *Ernst* 5349 (Lloyd 51153) (BPI); *Carter* 5255 (Lloyd 52627) (BPI). WYOMING: *Davis* 12750 (Lloyd 53041). ARIZONA: *McClutchie* s.n. (NY). CALIFORNIA: *McClutchie* s.n. (NY); *McCabe* s.n. (F); *Rhoads* 7 (Lloyd 14829) (BPI); *Greata* 6362 (Lloyd 52625) (BPI); *Clancy* 1758 (Lloyd 53059) (BPI). OREGON: *Zeller* s.n., 2022 (NY). PUERTO RICO. ARECIBO: Los Caños, *Earle* s.n. (NY); *Earle* s.n. (NY); *Johnston* s.n. (Lloyd 53139) (BPI). ECUADOR. *Mille* 5959 (Lloyd 53144), 6090 (Lloyd 53145) (BPI). BRAZIL. *Rick* 160, 36 (Lloyd 53146), 6024 (Lloyd 50712) (BPI). URUGUAY. *Herter* 61104 (NY). ARGENTINA. *Stucker* 6034 (Lloyd 53143) (BPI). AUSTRALIA. *Cleland* s.n. (Lloyd 14675) (BPI); *Steward* 8 (Lloyd

53140) (BPI). INDIA. *Bulter* 5388 (Lloyd 53141) (BPI). CENTRAL AFRICA. *Hennings* s.n. (Lloyd 53142).

Vascellum djurense (P. Henn.) P. Ponce *comb. nov.* *Lycoperdon djurense* P. Henn. Beiblatt zur Hedwigia 40 (4): 100. 1901. *L. endotephrum* Pat. Bull. Soc. Myc. Fr. 300. 1902.

Fructifications subglobose, pulvinate or obconic, 2–5 cm. high, 1–2.3 cm. wide; outer peridium first white or yellowish, later pale brownish or greyish, covered with white, pyramidal warts which consist of groups of broad spines united at the apices, at maturity breaking up in patches from the apex downward; inner peridium first whitish, then greyish ochraceous, dried specimens brownish, aerolate when fresh but drying smooth, with an irregularly rounded opening; gleba white, becoming olivaceous brown to purplish, diaphragm membranaceous, sterile base cellular, whitish to pale brownish; paracapillitium hyaline, septate, 4–5 μ in diameter, sparingly branched; capillitium abundant, of long-branched threads; glebal membranes abundant, irregularly shaped; spores 3.5–4 μ in diameter, globose, verrucose, hyaline to purplish tinted, with one gutta and a 1–2 μ long pedicel.

Distribution: Central African Rep., Congo, and South Africa.

Habitat: On ground among grass, solitary or gregarious.

Type: *P. Henning* s.n. Central African Rep. (Lloyd 24660).

Discussion: This species has the capillitium and the spores hyaline or subhyaline, as in *Vascellum pratense* from which it differs in the purple color of the gleba and in the broadly oval spores.

Material observed: CENTRAL AFRICAN REP. *Henning* s.n. Type (Lloyd 24660) (BPI), ex type of Berlin (Lloyd 58720) (BPI). SOUTH AFRICA. PRETORIA: *Bottomley* 11860 (Lloyd 24058); NATAL: *Van der Byl* 462 (Lloyd 24659) (BPI). SOUTH RHODESIA. SALISBURY: *Duthie* 76 (Lloyd 51768), 302 (Lloyd 51767) (BPI).

Vascellum abscissum (R. E. Fries) Kreisel, Fedde Rep. 64: 159. 1961. *Lycoperdon abscissum* R. E. Fries, Ark. fur Bot. 8 (11): 8. 1909.

Fructifications subglobose, pulvinate, or obconic, 2–5 cm. high, 1–2.3 cm. wide; outer peridium first white or yellowish, later pale brownish or greyish color, covered with white, pyramidal warts which consist of groups of broad spines united at the apices; inner peridium greyish ochraceous, dried specimens brownish, smooth, with a wide, roundish opening; gleba white, becoming olivaceous brown to purplish, diaphragm membranaceous, sterile base cellular, whitish to pale brownish; paracapillitium hyaline, septate, 4–5 μ in diameter, sparingly branched; capillitium abundant, of long-branched threads 3–4 μ in diameter; glebal membranes abundant, irregularly shaped; spores 2.5–3 μ in diameter, globose, smooth, hyaline to purplish.

Distribution: South America.

Habitat: Open ground.

Type: *Fries* 243, southern Bolivia.

Discussion: This species is very close to *V. djurense*, from which it differs by its smooth spores and by its lack of a pedicel.

Material observed: SOUTH AMERICA: BOLIVIA (?). *Fries* s.n. ex Herb. Patouillard 1650 (Cotype) (FH). BOLIVIA. *Fries* 415, 258 (Lloyd 51750) (BPI). ARGENTINA. *Fries* s.n. ex Long Herb. 11160 (BPI).

Vascellum qudenii (Bottom.) P. Ponce, *comb. nov.* *Lycoperdon qudenii* Bottom. *Bothalia* 4: 359. 1948.

The presence of a well-defined diaphragm places this species in *Vascellum*, and except for the sparsely branched nonseptate capillitium it appears to be related to *Vascellum pratense*.

Vascellum angulatum (Dissing & Lange) P. Ponce, *comb. nov.* *Lycoperdon angulatum* Dissing & Lange, *Bull. Jard. Bot. Etat Bruxelles* 32: 352. 1962.

The presence of a diaphragm between the gleba and the sterile base and the hyaline or faintly pale brownish violet capillitium place this species in *Vascellum*. This species is closely related to *V. cruciatum*.

Vascellum rhodesianum (Verwoerd) P. Ponce, *comb. nov.* *Lycoperdon rhodesianum* Verwoerd, *S. African Journ. Sci.* 25: 237. 1928.

Because of the furfuraceous exoperidium and the unbranched, uniform, non-septate, brown capillitium, this species apparently has no close relationship to any other species of *Vascellum*.

LIST OF ACCEPTED NAMES AND SYNONYMS

Accepted names in **bold face**

Synonyms in *italics*

<i>abscissum</i> R. E. Fries (<i>Lycoperdon</i>)	Vascellum abscissum
abscissum (R. E. Fries) Kreisel	Vascellum
<i>angulatum</i> Dissing & Lange (<i>Lycoperdon</i>)	Vascellum angulatum
angulatum (Dissing & Lange) P. Ponce	Vascellum
<i>caelatum</i> Fries (<i>Lycoperdon</i>)	Vascellum pratense
<i>cruciatum</i> Rostk. (<i>Lycoperdon</i>)	Vascellum cruciatum
cruciatum (Rostk.) P. Ponce	Vascellum

<i>curtisii</i> Berk. (<i>Lycoperdon</i>).....	Vascellum curtisii
curtisii (Berk.) Kreisel.....	Vascellum
<i>depressa</i> (Bon.) Zeller & Smith (<i>Calvatia</i>).....	Vascellum subpratense
<i>depressa</i> Moravec (<i>Calvatia</i>).....	Vascellum pratense
<i>depressum</i> Bon. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>depressum</i> (Bon.) Smarda (<i>Vascellum</i>).....	Vascellum pratense
<i>djurensis</i> Henn. (<i>Lycoperdon</i>).....	Vascellum djurense
djurense (Henn.) P. Ponce.....	Vascellum
<i>gemmatum a. pratense</i> Schroet. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>hiemale</i> Bull. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>hyemale</i> Vitt. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>hirtum</i> Pers. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>kalchbrenneri</i> De Toni (<i>Lycoperdon</i>).....	Vascellum pratense
<i>multiseptum</i> Lloyd. (<i>Lycoperdon</i>).....	Vascellum subpratense
<i>natalense</i> Cke. & Mass. (<i>Lycoperdon</i>).....	Vascellum pratense
<i>pampeanum</i> Speg. (<i>Lycoperdon</i>).....	Vascellum cruciatum
<i>plicatum</i> Berk. & Curt. (<i>Lycoperdon</i>).....	Vascellum curtisii
<i>pratense</i> Pers. (<i>Lycoperdon</i>).....	Vascellum pratense
pratense (Pers.) Kreisel.....	Vascellum
<i>pratense</i> (Pers.) Kreisel subsp. <i>subpratense</i> (Lloyd) Kreisel (<i>Vascellum</i>).....	Vascellum subpratense
<i>pratensis</i> Quel. (<i>Utraria</i>).....	Vascellum subpratense
<i>qudenii</i> Bottom. (<i>Lycoperdon</i>).....	Vascellum qudenii
qudenii (Bottom.) P. Ponce.....	Vascellum
<i>queletii</i> De Toni (<i>Bovista</i>).....	Vascellum pratense
<i>queletii</i> Schultz. (<i>Globaria</i>).....	Vascellum pratense
<i>rhodesianum</i> Verwoerd (<i>Lycoperdon</i>).....	Vascellum rhodesianum
rhodesianum (Verwoerd) P. Ponce.....	Vascellum
<i>separans</i> Peck (<i>Lycoperdon</i>).....	Vascellum cruciatum
<i>subpratense</i> Lloyd (<i>Lycoperdon</i>).....	Vascellum subpratense
<i>subpratense</i> (Lloyd) Coker & Zeller (<i>Calvatia</i>).....	Vascellum subpratense
subpratense (Lloyd) P. Ponce.....	Vascellum
<i>vitellinum</i> Fries (<i>Lycoperdon</i>).....	Vascellum pratense
<i>wrightii</i> B. & C. (<i>Lycoperdon</i>).....	Vascellum curtisii
<i>wrightii</i> B. & C. var. <i>separans</i> Peck (<i>Lycoperdon</i>).....	Vascellum cruciatum

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ADDENDUM

During the examination of material recently borrowed from National Fungus Collection for my study on *Morganella*, I observed that *Lycoperdon vanderystii* Bresadola presents all the characteristics of *Vascellum*.

Dissing and Lange (1962) were correct in their observation that the gleba is separated from the subgleba, but contrary to their opinion, a diaphragm is present. The isotype of *Lycoperdon vanderystii* from Kisantu, Belgian Congo, in the Pathological and Mycological Collection, Beltsville, Maryland, presents a well-defined diaphragm dividing the subgleba from the gleba. Based on this material, I consider *Lycoperdon vanderystii* Bresadola to belong in the genus *Vascellum* and propose for it the name **Vascellum vanderystii** (Bresadola) P. Ponce.

Material observed: DEMOCRATIC REPUBLIC OF CONGO: Kisantu, *Vanderyst s.n.* ex Herb. Bresadola 39 isotype (BPI). BRASIL: Pernambuco: Casa Forte Recife, *Barros Wanderley 2005* (BPI).

Discussion: This species is very close to *Vascellum curtisii* (Berkeley) Kreisel but differs in its oval spores with long pedicels.

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