tention was the phenology because *Bulgaria mexicana* was collected in September while *U. padeniana* usually fruits from spring to early summer.

All these incongruities led us to revise the type specimen of *Bulgaria mexicana* housed in the Herbarium of the New York Botanical Garden (NY). After this revision, all these doubts have been confirmed in that *Sarcosoma mexicanum sensu* Paden and other authors represents a different, still undescribed species.

Materials and methods

Microscopic characters are based on dry specimens. Three optical microscopes were used: Olympus CX41 trinocular, Olympus CH-2 binocular, and Optika B353 trinocular with plan-achromatic objectives 4×, 10×, 40×, 100× in oil immersion. The following main reagents were used: Melzer's reagent, cotton blue, Congo red. Water mounts were used for the observation of the pigmentation and spore size. Spores were mainly measured from spore print.

Description

Urnula padeniana M. Carbone, Agnello, A.D. Parker & P. Alvarado, *sp. nov.* – MB 801355

Misapplied names (*sensu* Paden & Tylutki (1969) *et auct. plur.*): *Sarcosoma mexicanum* (Ellis & Holw.) Paden & Tylutki, *Mycologia*, 61: 689 (1969); *Plectania mexicana* (Ellis & Holw.) Paden, *Fl. Neotrop., Monogr.*, 37: 7 (1983).

≠ *Urnula mexicana* (Ellis & Holw.) M. Carbone, Agnello & A.D. Parker, *comb. nov.* – MB 801356. Basionym: *Bulgaria mexicana* Ellis & Holw., *Bot. Gaz.*, 24: 37 (1897). (See discussion).

Original diagnosis

Ascome blackish, massive, fleshy, rubbery, up to 9 cm wide and up to 7 cm high, context gelatinous. Spores (23-) 25-30 (-32) × 11-13 µm, elliptical to slightly subfusoid, often slightly inequilateral, hyaline, smooth, with 1-3 (-4) guttules; paraphyses closely septate especially toward the tips; hymenial hairs straight, not-septate; flesh divided into a brownish subhymenium of thick textura intricata, a medullary excipulum of loose, hyaline, highly gelified *textura intricata*, a brown ectal excipulum of *textura globulosa* to *subglobulosa*; external hairs mainly hyphoid, heavily encrusted by a brownish crystalloid pigment, but also olivaceous true hairs are present, although in a less percentage. Differs from *Sarcosoma globosum* in black colors and the absence of moniliod external hairs; from *Plectania* species in bigger size, more gelatinous flesh, and a different morphology of the external hairs. Holotype in Washington University Herbarium, accession number WTU-F-33051.

Etymology: We named it in honor of the American mycologist John Wilburn Paden, definitely the major researcher who treated this species.

Macroscopic characters

Apothecium epigeous, irregularly radially symmetrical, turbinate to discoid and deflexed in age, up to 9 cm in diameter and up to 7 cm high. **Hymenium** plane to somewhat concave with an upturned margin, brownish-black to blackish, glabrous, folded in age. **External surface** with large radial folds not reaching margin, surface tending to form cracks exposing the gelatinous interior, brownish-black, glabrous at the naked eye but finely rough if magnified, with patches of very fine grey matted tomentum visible within the folds. **Stipe** not present; overmature specimens which have lost all the watery interior could show a small central pseudostipe at their base. **Flesh** solid, highly gelatinous, translucent with a slight olive-brown tint.

Microscopic characters

Spores (23–) 25–30 (–32) × 11–13 µm, Q = 1.91–2.75, Qm = 2.32, heterogeneous in shape depending on the position of the spores inside the asci, but mainly elliptical to slightly subfusoid, often slightly inequilateral, hyaline, smooth, with 1–3 (–4) guttules (one bigger than the others), content granular, walls thickened up to 0.8 (–1) µm. **Asci** cylindrical, operculate, inamyloid, eight-spored, 415–590 × 13–15 (–20) µm, tapering toward the base. **Paraphyses** 2.5–3 (–3.5) µm in diameter, cylindrical, anastomosing, some branched, closely septate especially in the upper part; elements can be 7.5–12 µm long but also up to 55, slightly swollen, regular or with nodules and irregular protuberances especially toward the tips; some paraphyses are affected by fourtoulism being the elements inflated up to 10 µm and constricted at the septa; in dried specimens the paraphyses are united in bundles by an amorphous extracellular amber-brown pigment. **Hymenial hairs** cylindrical, 3–4.5 µm in diameter, apex only slightly enlarged, with a sole septum at the very base; they share the same pigment as the paraphyses. **Subhymenium** of thick *textura intricata* composed by cylindrical, septate hyphae; brown at low magnifications. **Medullary excipulum** of loose *textura intricata* made up by, cylindrical, hyaline, septate hyphae, 3–5 µm in diameter, with walls on average 0.3–0.4 µm thick, immersed in a gelatinous matrix; in dried specimen some hyphae are twisted and other, especially in the lower half, are covered by subhyaline to light greenish pyramidal crystals. **Ectal excipulum** very thin, of *textura globulosa* to *subglobulosa* made up of elements spherical to elliptical and constricted in the middle, with walls up to 0.8 (–1) µm thick, brown due to both epimembranaceous and extracellular pigment. **External hairs** mainly hyphoid, 3–5 µm in diameter, thin-walled, subhyaline but heavily encrusted by a brownish crystalloid pigment; although in a less percentage, true hair type is also present, 6–8 µm in diameter, olivaceous due to an epimembranaceous pigmentation, with smooth walls up to 0.5 µm. **Subiculum** 4–6 µm in diameter, cylindrical, septate, smooth, walls up to 1 µm thick, brown.

Studied collections and ecology

USA, Washington, Pend Oreille County, Roosevelt Cedar Grove, Forest Service Rd. 302, 48° 46′ 04″ N, 117° 03′ 38″ W, on needle duff under old growth *Thuja plicata*, at 1185 m. a.s.l., 11 June 2006, *leg. et det*. A.D. Parker (WTU-F-33051, **holotype**). Pend Oreille County, Roosevelt Cedar Grove, Forest Service Rd. 302, 48° 46′ 04″ N, 117° 03′ 38″ W, on needle duff under old growth *Thuja plicata*, at 1185 m. a.s.l., 30 June 2012, *leg. et det*. A.D. Parker (WTU-F-33050). Pend Oreille County, Upper Cedar Creek, 48°49.711 N, 117°29.860 W, cespitose to scattered in widely spaced groups under old growth *Thuja plicata* and *Tsuga heterophylla*, at 1416 m. a.s.l. on a north facing slope; understory was open and consisted of low shrubs and herbs. In the immediate vicinity were *Oplopanax horridus*, *Gymnocarpium dryopteris*, *Trillium ovatum* and *Clintonia uniflora*, 24 June 2012, *leg. et det.* A.D. Parker (WTU-F-33052).

Discussion

Similar or related species

As stated in the introduction, Paden & Tylutki (1969) rightly noted that Seaver (1928) first recorded *Bulgaria globosa* from Ontario (Canada) that seems to be the real ***Sarcosoma globosum*** but then Seaver (1942) reported and figured (again as *Bulgaria globosa*) some collections from Oregon and Idaho definitely representing *Urnula padeniana*. *Sarcosoma globosum*, or at least a very similar macromorphological species, is surely present in northeastern America, as can be seen in Bessette *et al.* (1997) and previously reported by

[1] Constricted at regular intervals so as to resemble a string of beads of a necklace.