

## Three New Species of *Lojkania* from Xinjiang, China\*

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Three new lignicolous species of *Lojkania*: *L. ascomipersicaria*, *L. dimidiata* and *L. fusiformis* are described from Xinjiang, China. A key to Chinese species is given.

Keywords: *Lojkania*, Fenestellaceae.

The genus *Lojkania* Rehm was introduced by Rehm (Noveny Kozl. 4: 2. 1905) for *L. melasperma* (Cooke) M. E. Barr (as *L. hungarica* Rehm). For a period, the genus was regarded as a synonym of *Herpotrichia* Fuckel (von Arx & Müller, 1975; Hawksworth & al., 1983; Sivanesan, 1972, 1984). This genus was separated from *Herpotrichia* by Barr (1984), based mainly on the trabeculate hamathecium, and was placed in a different family and order, Fenestellaceae, Melanommatales (Barr, 1987). Barr's disposition was accepted by Eriksson & Hawksworth (1990).

Nine north American species of *Lojkania* have been described (Barr, 1984, 1990), but only one species is recorded from Xinjiang, China. This is *L. decorticata* (Cooke & Harkn.) M. E. Barr [as *Amphisphaeria decorticata* (Cooke & Harkn.) Berl. & Voglino; Teng, 1963; Eriksson & Yue, 1988]. Three additional lignicolous species were also collected from Xinjiang, China. The taxa had two-celled ascospores with longitudinal germ slits which may suggest affinities with *Delitschia* Auerswald. However, species of *Delitschia* are mostly coprophilous with rather thin membranous or coriaceous ascomatal walls. *Delitschia corticola* Romero & Samuels (Sydowia 43: 244. 1991), while a corticolous species, is superficial on the substrate. In addition, it differs from the Chinese taxa in shape and size of ascospores. These latter fungi, while possessing germ slits in the ascospores, are immersed to erumpent from the substrate and have a

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stout peridium, much as in species of *Lojkania*. A slide preparation of Rehm: Ascomyceten 1030 [*Rhynchostoma julii* var. *vestitum* Rehm, a synonym of *Lojkania melasperma* (Cooke) Barr] showed faint germ slits, not usually extending the entire length of the ascospore. This observation was made by J. D. Rogers, who kindly contributed both slide and information to the junior author (MEB). We, consequently, assign these Chinese taxa to the genus *Lojkania*.

The holotype of one species is deposited in the Herbarium of Mycology, August 1st Agricultural College (HMAAC), Urumqi, Xinjiang, China. Holotypes of the other two species are deposited in the National Herbarium of Canada in Ottawa (DAOM), with isotypes in HMAAC and in the New York Botanical Garden (NY).

### Key to species of *Lojkania* occurring in Xinjiang, China

1. Ascospores without germ slit, wall verruculose or verrucose, surrounded by gel coating, 14–20 x 8.5–10  $\mu\text{m}$  . . . *L. decorticata*\*
1. Ascospores with germ slit, wall smooth, no gel coating . . . . . 2
2. Ascospores deeply constricted at septum, readily separating at maturity into two hemispores, 26–32 x 10–12  $\mu\text{m}$  . . . *L. dimidiata*
2. Ascospores not constricted at septum or constricted, but not separating into two hemispores . . . . . 3
3. Ascomata peachstone-shaped, ascospores ellipsoidal, 15–20 x 8–10  $\mu\text{m}$  . . . . . *L. ascomipersicaria*
3. Ascomata spherical, ascospores ellipsoid-fusiform, 14–26 x 7–10  $\mu\text{m}$  . . . . . *L. fusiformis*

\* The data on this species are based on descriptions by Teng (1963) & Barr (1990).

***Lojkania ascomipersicaria* Z. Q. Yuan & M. E. Barr, sp. nov. – Fig. 1a–1c.**

Ascomata erumpentia, discreta vel raro gregaria, formam putaminis *Pruni persicae* imitantia, papillata, 360–520  $\mu\text{m}$  lata, 250–420  $\mu\text{m}$  alta. Peridium laterale 40–50  $\mu\text{m}$  vel ad 100  $\mu\text{m}$  crassum, cellulis brunneis, rotundatis vel angulatis crassitunicatis compositum. Asci 140–180 x 10–12  $\mu\text{m}$ , cylindrici. Pseudoparaphyses 240 x 2  $\mu\text{m}$ , eseptatae. Ascosporae 15–20 x 8–10  $\mu\text{m}$ , monostichae, fuscae, ellipsoideae, 1-septatae, ad septum constrictae; exosporio laevi; fissura germinationis longitudinem cellulae aequans.

Holotypus in ramis decorticatis *Populi talassicae* Kom., in montibus 'Tianshan', dictis, Urumqi, provincia Xinjiangensis, Sina, 14. VII. 1991, Z.Q. Yuan 910363, HMAAC 782.

**E t y m o l o g y .** – Refers to the similarity of the ascomatal form to the nutshell of *Prunus persica*.

**A s c o m a t a** erumpent with base embedded in decorticated branches, separate or lightly gregarious, peachstone-shaped, 360–520  $\mu\text{m}$  wide, 250–420  $\mu\text{m}$  high, papillate. – **P e r i d i u m** of thick-walled round to angular cells, dark brown in peripheral cells and pallid at inner layers, 40–50  $\mu\text{m}$  wide, up to 100  $\mu\text{m}$  wide laterally. – **A s c i** 140–180  $\times$  10–12  $\mu\text{m}$ , 8-spored, cylindric. – **P s e u d o p a r a p h y s e s** trabeculate in gel matrix. – **A s c o s p o r e s** 15–20  $\times$  8–10  $\mu\text{m}$  (mean: 16.4  $\times$  8.4  $\mu\text{m}$ , N=100), uniseriate, dark-brown, ellipsoidal, with a median septum, constricted at the septum; wall smooth; germ slit through length of cells.

This new species is close to *L. nuda* (Ellis & Everh.) M. E. Barr and *L. utahensis* (Petr.) M. E. Barr (1990); it differs in the presence of germ slits and the form of ascomata, particularly in shape of the papilla and the laterally thickened peridium (Fig. 1b). In addition, ascospores are smaller than those in *L. nuda* and shorter than those in *L. utahensis*.

***Lojkania dimidiata*** Z. Q. Yuan & M. E. Barr, sp. nov. – Fig. 1d–1f.

Ascomata immersa vel erumpentia, gregaria, sphaerica, 240–550  $\mu\text{m}$  diam. Peridium 24–40  $\mu\text{m}$  crassum, cellulis brunneis crassitunicatis compositum. Asci 160–200(–230)  $\times$  12–16(–18)  $\mu\text{m}$ , cylindrici, apicibus paulum incrassatis. Pseudoparaphyses 180–220  $\times$  2  $\mu\text{m}$ , eseptatae. Ascosporae 26–32  $\times$  10–12  $\mu\text{m}$ , monostichae, primum brunneolae, demum fuscae, ellipsoidei-fusifformes, extremis acutis, 1-septatae, ad septum constrictae et ad maturitatem frequenter rumpentes, exosporio laevi; fissura germinationis longitudinem cellulae aequans.

Holotypus in ramis decorticatis *Myricariae squamosae* Desv., in montibus ‘Tianshan’ dictis, Urumqi, provincia Xinjiangensis, Sina, 9. V. 1991, Z. Q. Yuan 910222 (DAOM; Isotypi: HMAAC 778, NY).

**E t y m o l o g y .** – Refers to the ascospores separating into two hemispores.

**A s c o m a t a** immersed with papilla prominent or erumpent, gregarious, spherical, 240–550  $\mu\text{m}$  diam. – **P e r i d i u m** of dark brown thickened cells, 24–40  $\mu\text{m}$  wide. – **A s c i** 160–200(–230)  $\times$  12–16 (–18)  $\mu\text{m}$ , 8-spored, cylindric, with thick apex. – **P s e u d o p a r a p h y s e s** trabeculate, in gel matrix, 180–220  $\times$  2  $\mu\text{m}$ . – **A s c o s p o r e s** 26–32  $\times$  10–12  $\mu\text{m}$  (mean: 28  $\times$  10.1  $\mu\text{m}$ , N=100), uniseriate, ellipsoidal to fusoid with ends acute, 1-septate, light-brown with one large guttule in each cell, becoming dark-brown with a germ slit per cell at

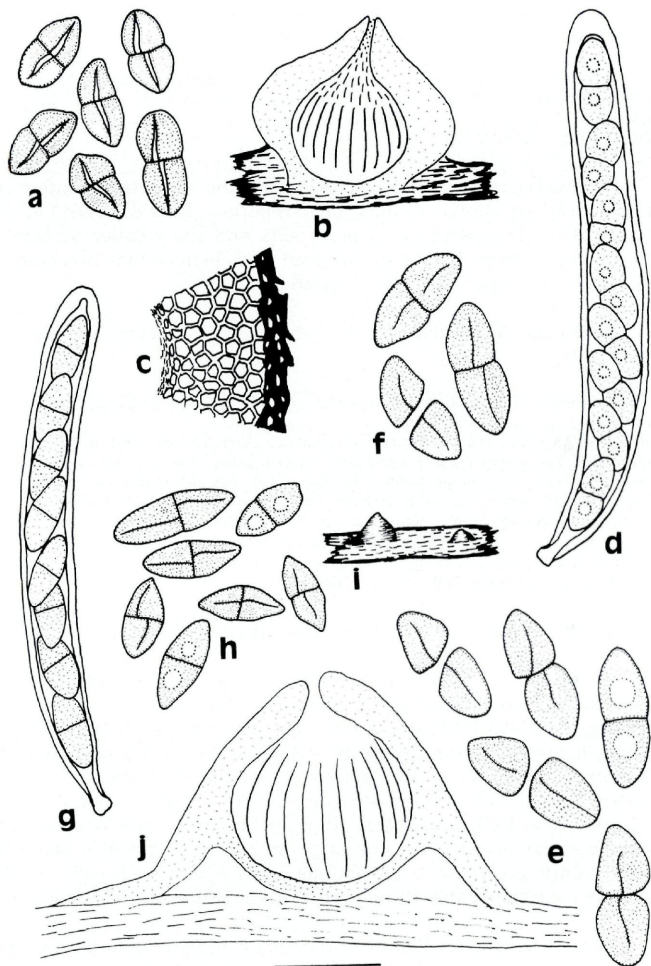


Fig. 1. - a-c. *Lojkania ascomipersicaria*. - a. ascospores, b. ascoma in vertical section, c. detail of peridium. - d-f. *L. dimidiata*. - d. ascus, e. ascospores (holotype), f. ascospores (HMAAC 779). - g-j. *L. fusiformis*. - g. ascus, h. ascospores, i. habit, j. ascoma in vertical section. - Bar = 20  $\mu$ m for a, e-h; 40  $\mu$ m for c, d and 200  $\mu$ m for b, j. - Habit sketch not to scale.

maturity, constricted deeply at the median septum and often separating into two hemispheres at maturity; wall smooth.

Additional specimens examined. – CHINA, Tianshan Mountain, on decorticated wood of *Picea schrenkiana* Fisch. et Mey., 1 VII 1990, Z. Q. Yuan HMAAC 779; on decorticated branches of *Spiraea hypericifolia* L., 9 V 1991, Z. Q. Yuan 910220, HMAAC 780.

The ascospores of this species, separating at maturity into two hemispheres, are similar to those of *L. separans* (Ellis & Everh.) M. E. Barr (1990). The presence of germ slits and the smaller ascomata (240–550  $\mu\text{m}$  diam) in this species lead us to believe that it is closely related to, but separate from, *L. separans*.

***Lojkania fusiformis*** Z. Q. Yuan & M. E. Barr, sp. nov. – Fig. 1g–1j.

Ascomata immersa ad erumpentia, discreta vel gregaria, sphaerica, 400–700(–1000)  $\mu\text{m}$  diam, papilla conica. Peridium 30–60  $\mu\text{m}$  crassum, cellulis brunneis, parvulis, crassitunicatis compositum. Asci 90–110(–125)  $\times$  10–13  $\mu\text{m}$ , cylindrici. Pseudoparaphyses eseptatae, ramificantes, 200  $\times$  2  $\mu\text{m}$ . Ascospores 14–26  $\times$  7–10  $\mu\text{m}$ , monostichae, brunneae ad fuscae, ellipsoidei-fusiformes, 1-septatae, ad septum non vel leviter constrictae, septum 0.5–0.7  $\mu\text{m}$  lato, exosporio laevi; fissura germinationis obliqua, longitudinem cellulae aequans.

Holotypus in ligno *Haloxylis ammodendri* (C.A. Mey.) Bunge, loco 'Fukang' dicto, Urumqi, provincia Xinjiangensis, Sina, 1 V 1991, Z. Q. Yuan et Z. Y. Zhao 910042 (DAOM; Isotypi: HMAAC 777, NY).

**E t y m o l o g y .** – Refers to the fusiform ascospores.

Ascomata immersed to erumpent, with base embedded in decorticated wood, separate to gregarious, spherical with a conical papilla, 400–700(–1000)  $\mu\text{m}$  diam. – Peridium 30–60  $\mu\text{m}$  wide, of small, brown thick-walled cells. – Asci 90–110(–125)  $\times$  10–13  $\mu\text{m}$ , 8-spored, cylindric. – Pseudoparaphyses branched in gel matrix, 200  $\times$  2  $\mu\text{m}$ . – Ascospores 14–26  $\times$  7–10  $\mu\text{m}$  (ean = 17.3  $\times$  8.1  $\mu\text{m}$ , N = 100), uniseriate, ellipsoid-fusiform, with one median septum, clear brown with one large or 2–3 small guttules per cell, finally dark brown with an oblique germ slit in each cell, not or slightly constricted at septum; septum 0.5–0.7  $\mu\text{m}$  wide; wall smooth.

This species is similar to *L. utahensis*, but the ascospore shape and presence of a germ slit separate it from that species.

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