

# ***Lescuraea morrisonensis* (Takaki) Nog. fo. *sichuanensis* Wang, Hu & Redfearn, a synonym of *Actinothuidium hookeri* (Mitt.) Broth.**

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**Abstract.** *Lescuraea morrisonensis* (Takaki) Nog. fo. *sichuanensis* Wang, Hu & Redfearn reported from mainland China is synonymized to *Actinothuidium hookeri* (Mitt.) Broth. Filiform branched paraphyllia and triangular stem-leaves which characterize *A. hookeri* are distinguishable from unbranched foliose paraphyllia and ovate-lanceolate stem-leaves of *Lescuraea morrisonensis*.

**Keywords:** *Actinothuidium hookeri*; China; *Lescuraea morrisonensis* fo. *sichuanensis*; Synonym.

Wang et al. (1993) published a new taxon, *Lescuraea morrisonensis* fo. *sichuanensis*, from mainland China. Their account, however, provided no detailed description or illustration of morphological features except for the filiform paraphyllia. The absence of information on leaf shape and areolation has caused difficulty in assessing this new forma, although the authors did emphasize its close affinity to *Lescuraea morrisonensis* (Takaki) Nog. On the other hand, the type specimen of *Pseudopleuropus morrisonensis* Takaki (= *L. morrisonensis*), a rarely known taxon, was not even examined when they added a new form to this species. A recent revision on *Pseudopleuropus* (Chiang, 1998) provided us an opportunity to re-examine the type materials. As a matter of fact, the illustration drawn in Wang et al. (1993) revealed the taxon may be more allied to the Hylocomiaceae or Thuidiaceae than the Leskeaceae. After examining the type materials, we synonymized *L. morrisonensis* fo. *sichuanensis* to *Actinothuidium hookeri* (Mitt.) Broth. based on the filiform branched paraphyllia and triangular stem-leaves.

***Actinothuidium hookeri* (Mitt.) Broth.** in Engler & Prantl, Nat. Pflanzenfam. 1(3): 1020 (1908).

(Figure 1)

*Lescuraea morrisonensis* (Takaki) Nog. fo. *sichuanensis* Wang, Hu & Redfearn, Bryologist 96: 640. f. 1. 1993. *syn. nov.*—TYPE: CHINA. Sichuan Province. Li Co.: 4,270–4,300 m alt., Redfearn 34969 (holotype: HSNUI; isotypes: FH!, MO!)

Plants robust, 5–8 cm long, regularly pinnately branched, monopodial; branches 1.5–2.2 cm long, attenuate; central strand absent; paraphyllia numerous, filiform,

branched. Primary stem-leaves broadly ovate to triangular-ovate, with a curved lanceolate acumen, deeply plicate, costa 4/5 leaf-length, margins serrulate; secondary stem-leaves ovate-lanceolate, with a long, tapering acuminate apex; branch-leaves ovate, with a short apex; margins serrulate to denticulate. Median laminal cells rhomboidal, thin-walled, with a single papilla at upper end; alar cells differentiated, rectangular; basal cells pitted. Sporophytes not seen.

*Distribution.* Taiwan, China, Nepal, Himalayas.

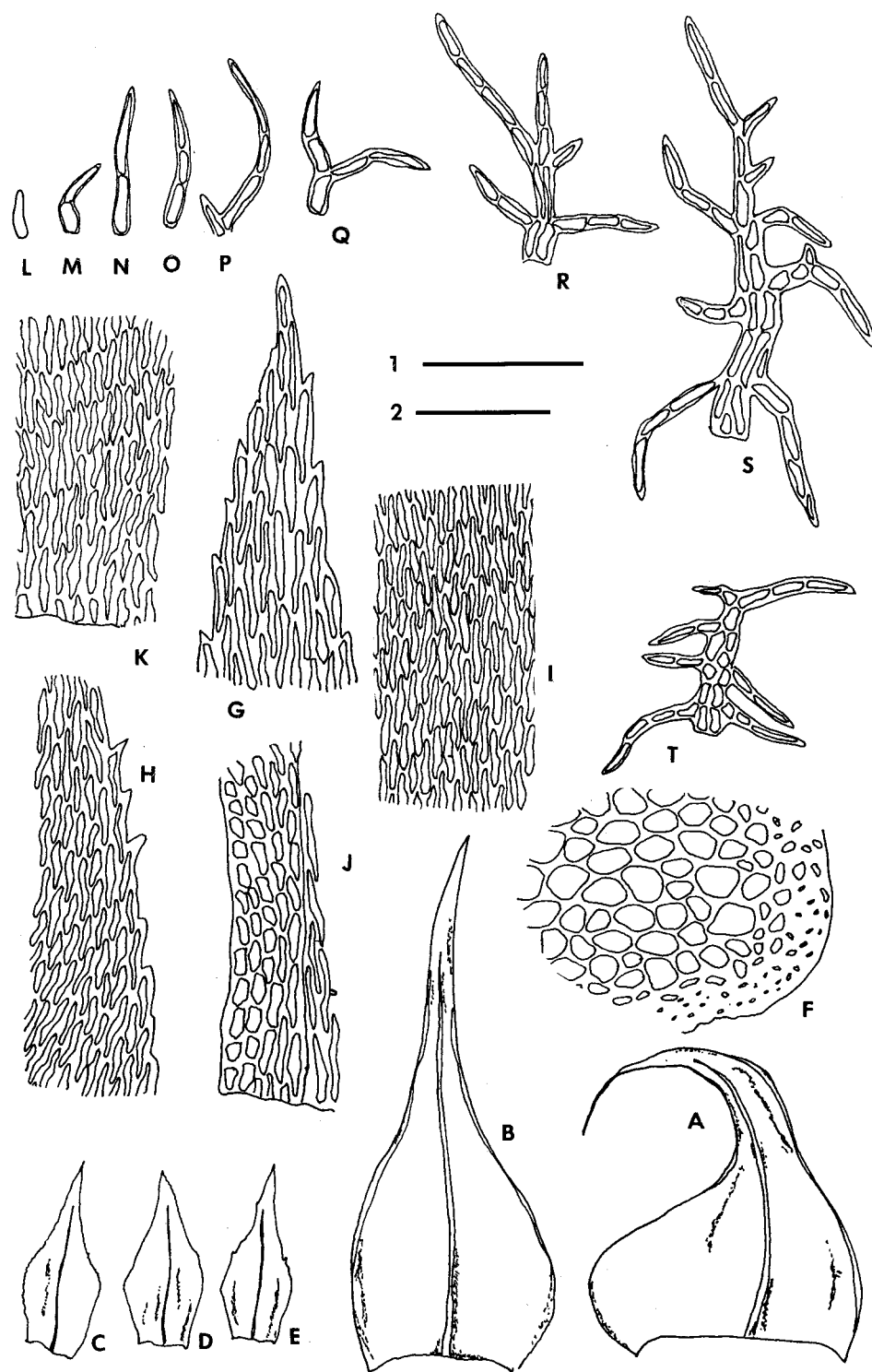
*Illustrations.* Watanabe (1972): Pl. 30; Anonymous (1977): f. 185; Li (1985) f. 146.

*Other specimens examined.* **BHUTAN.** Bartholomeu 149 (MO); **NEPAL.** Kanai 476 (MO); **CHINA.** Sichuan, Maire s. n., Redfearn & Si 1369, Redfearn 34948a (MO).

*Additional specimens examined.* *Pseudopleuropus morrisonensis* Takaki—TYPE: **TAIWAN.** Mt. Morrison, Takaki 16285 (holotype: NICH!).

*Notes.* *Actinothuidium hookeri*, a species of the Thuidiaceae, is characterized by the filiform, branched paraphyllia, absence of central strands in stems, and differentiated primary and secondary stem-leaves and branch-leaves as well. In contrast, *Lescuraea morrisonensis* of the Leskeaceae is diagnosable by its sympodial growth-form, phyllodioicous sexuality, unbranched, foliose paraphyllia, and differentiated central strand in stems. The monopodial growth-form, regularly branching pattern, stems without differentiated central strands, well differentiated primary and secondary stem-leaves, and multi-branched, filiform paraphyllia observed from the type materials obviously support the conspecificity of *L. morrisonensis* fo. *sichuanensis* to *Actinothuidium hookeri*. As noted by Rohrer (1985) and Watanabe (1972) no sporophytic features of *A. hookeri* have been observed so far except for

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**Figure 1.** *Actinothuidium hookeri* (Mitt.) Broth. A, primary stem leaf; B, secondary stem leaf; C–E, branch leaves; F, cross section of stem; G, apical cells of branch leaf; H, marginal cells of branch leaf; I, median cells of branch leaf; J, alar cells of branch leaf; K, basal cells of branch leaf; L–T, various stages of paraphyllia. Scale 1: 0.74 mm (A–E); 2: 0.053 mm (F–T) (Drawn from Redfearn 34969, holotype).

the illustration of Brotherus (1925). Gametophytic features such as leaf differentiation and morphology of paraphyllia indicate its taxonomic position in the Thuidiaceae.

It is worth noting that the morphology of paraphyllia of *Lescuraea morrisonensis* has been described and illustrated differently by bryologists. In the original description paraphyllia were illustrated as forked and branched (see Fig. 5:8 in Takaki, 1955). Three paraphyllia, with two unbranched and one somewhat forked at apex, were also illustrated (Figure 1:c, Noguchi, 1985). Nevertheless, no such branched paraphyllia have ever been observed in our own examination of type material and other collections from Taiwan (*T. Y. Chiang* 5083). The unbranched paraphyllia and other morphological features indicate a close relationship between *L. morrisonensis* and *Miehea* species, which is discussed elsewhere in detail (Chiang, 1997, 1998).

In this study, we synonymized *L. morrisonensis* fo. *sichuanensis* to *Actinothuidium hookeri* and excluded it from the Leskeaceae.

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