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Research Article

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Plagiomnium succulentum (Mitt.) T. J. Kop. (Family Mniaceae): New Moss for Nilgiri hills, Tamil Nadu, South India

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Abstract

Plagiomnium succulentum (Mitt.) T. J. Kop. is a corticolous taxa, growing on the bark of higher plants. The species is characterized by glossy, yellowish green, pleurocarpous, epiphytic, creeping, leaves distantly arranged on stem, oblong-ovate, margin throughout minutely dentate with distinct border; costa single, beglieter cells present; leaf-cells rounded-hexagonal to quadrate 2-3 row of narrow elongated, thick walled cells forming a distinct border throughout the leaf. During the present study taxon has been critically investigated and identified from Nilgiri Hills. It is reported for the first time from Nilgiri Hills.

Keywords: Corticolous, Moss, Mniaceae, Nilgiri hills, South India

1. Introduction

The Nilgiri Hills, located in the southern state of Tamil Nadu, represent a prominent hilly district and stand as one of India's most significant treasure troves of flora and fauna, second only to the Eastern Himalayas in terms of biodiversity richness[1-3]. Also known as the "Nilgiris"—which translates to "Blue Mountains"—the region derives its name from the striking bluish-purple bloom of *Strobilanthus kunthianus* (Acanthaceae), which blankets the hillsides in a vibrant hue during its flowering season. Nestled within these hills is the popular hill station of Ootacamund, more commonly known as Ooty and often referred to as the "Queen of Hill Stations." The Nilgiri Hills also form the heart of India's first and oldest biosphere reserve—the Nilgiri Biosphere Reserve—which plays a critical role in the conservation and diversification of the region's unique ecological heritage..

Plagiomnium is represented by four species in India[4, 5] out of which three species have been earlier reported from south India[4]. In Nilgiri hills only *Plagiomnium rhynchophorum* (Harv.) T. J. Kop. has been earlier reported[4]. However, in the course of the present study, *Plagiomnium succulentum* has been collected and documented for the first time from this region, marking a significant addition to the known bryoflora of the area. This new record highlights the unexplored richness of bryophyte diversity in the Nilgiri Hills and underscores the need for continued bryological exploration in the region. Such findings contribute valuable insights into the distribution patterns and ecological preferences of moss species in South India.

2. Materials and Methods

The plant specimens were collected carefully with the help of sharp edged knife from different localities of Nilgiri hills, Tamil Nadu, South India. The collected materials were kept in brown paper packets in case of dried specimens and blotting papers used in case of highly wet specimens. The collected materials were air dried at room temperature. After drying the specimens were kept in brown paper packets (Size '6 x 4' Inch) which were labeled with complete details like collection numbers, localities, altitude, habitat, plant's name, date of collection and name of collectors. After this process, all specimen packets were deposited in herbarium boxes (Size '15 x 6' Inch). The collected plants have been successfully preserved in the Lucknow University Bryophyte herbarium (LWU). The observations were under stereoscopic binocular and Leica microscope.

1.1. Taxonomic description

Plagiomnium succulentum (Mitt.) T. J. Kop.

Plagiomnium succulentum (Mitt.)T. J. Kop., *Ann. Bot. Fennici* 5: 145. 1968.

Synonym: *Mnium succulentum* Mitt. *J. Linn. Soc. Bot. Suppl.* 1: 143. 1859.5

(Plate 1, Figs. 1-10)

Plants glossy, yellowish green, pleurocarpous, epiphytic, lax, creeping, 3-4.5 cm long and 2-3 mm wide with leaves; cross-section of stem circular, 0.43-0.50 mm in diameter, two rows of outer cortical cells slightly thick walled, small, brown in colour, inner cortical cells thin walled, large, 22-45 x 19-26 µm, central strand well developed with small, hyaline and thin walled cells; leaves distantly arranged on stem, oblong-ovate, 4.1-6.1 x 1.5-2.5 mm; margin throughout minutely dentate with distinct border; costa single, percurrent, beglieter cells present; leaf-cells rounded-hexagonal to quadrate, apical cells 11-19 x 8-15 µm, middle cells 15-22 x 11-22 µm, basal cells rectangular, 19-38 x 12-20 µm, 2-3 row of narrow elongated, thick walled cells forming a distinct border throughout the leaf. Plants are vegetative.

1.2. Habitat:

Plants are epiphytic, growing on bark as pure population.

1.3. Range

India, East Nepal, Tonkin, Sumatra, Java, China, New Guinea, Philippines, Taiwan, Vietnam and Japan[7, 8].

1.4. Distribution in India

Eastern Himalaya: Assam, West Bengal: Darjeeling, Meghalaya: Khasia Hills & Arunachal Pradesh. Western Himalaya: Uttarakhand: Mussoori. South India: Tamil Nadu: Palni Hills[5, 7, 9].

1.5. Specimens examined

South India: Tamil Nadu, Nilgiri Hills, Upper Bhawani: Avalanche, alt. ca. 2100 m, S. C. Srivastava & Party, 9 October, 2000, 12530A/00, 12560/00, 12561/00, 12562/00 (LWU).

2. Discussion

The taxa *Plagiomnium succulentum* was described earlier as *Mnium succulentum* Mitt. by Gangulee[7]. Kopenon5 described Mnium succulentum Mitt. as *Plagiomnium succulentum*. Daniels[5] reported *Mnium succulentum* as *Plagiomnium succulentum* which is a valid name till now. It is widely distributed taxa within country[7]. In Tamil Nadu it has been earlier reported from Palni hills by Daniels[5]. During present study it has been collected from Avalanche locality in Nilgiri hills. The species is characterized by creeping plant habit, oblong-ovate leaves with distinct border, costa and a group of beglieter cells (Plate 1, Figs. 1, 2, 5-8, 10).

3. Conclusion

Plagiomnium succulentum (Mitt.) T. J. Kop. is being recorded as new record for Nilgiri hills, South India based on the results of the current study.

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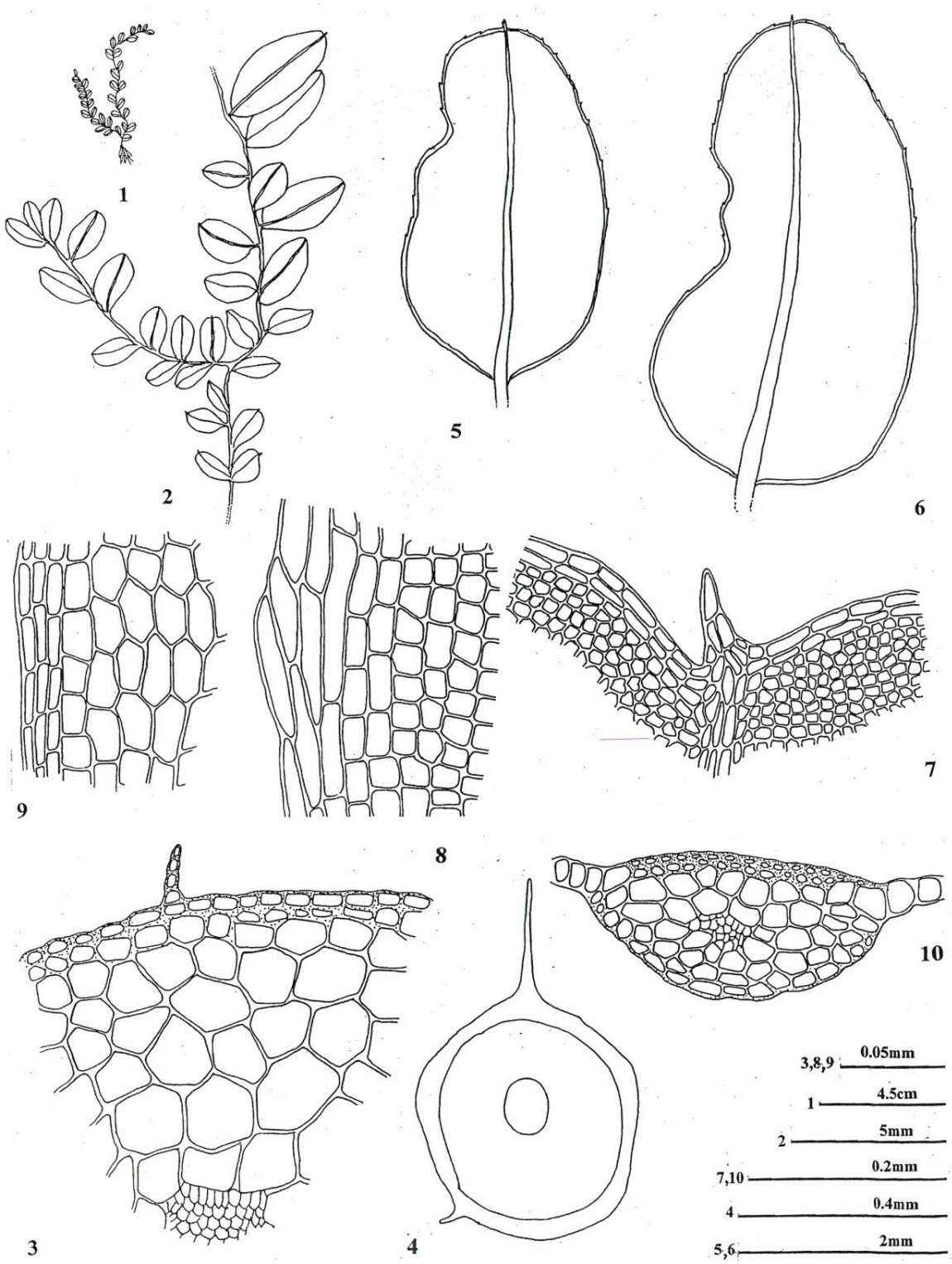

Plate 1, Figs. 1-10: *Plagiomnium succulentum* (Mitt.) T. J. Kop.: 1, 2. Habit of plants. 3, 4. Cross-sections of stem. 5, 6. Leaves. 7. Apical leaf-cells. 8. Median leaf-cells. 9. Basal leaf-cells. 10. Cross-section of leaf. All figures drawn from 12560/2000 (LWU).

Conflicts of interest

Not Applicable.

Authors Contribution

Not Applicable.

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