

Original Paper

## Lectotypification of three names in *Aeschynomene* (Fabaceae), a new species from Odisha, India and a new combination in *Ctenodon*

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**Abstract:** Lectotypes are designated for *Aeschynomene microphylla* Desv. ex DC., *A. pilosa* Poir. and *A. villosa* Poir. A new combination is made for *A. microphylla* Desv. ex DC. under the genus *Ctenodon* Baill. as *C. microphylla* (Desv. ex DC.) R.Kr.Singh & Sanjeet Kumar. *Aeschynomene odishae* Devi & Sanjeet Kumar (Fabaceae), a new species from Odisha state, India is described and illustrated.

**Keywords:** *Aeschynomene microphylla*, *Aeschynomene pilosa*, *Aeschynomene villosa*, Daya River, Khordha district

### Introduction

The genus *Aeschynomene* L. (family Fabaceae, subfamily Papilionoideae, tribe Dalbergieae) is represented by about 115 species worldwide in tropics and subtropics regions (POWO, 2024). In India, the genus is represented by five species, viz. *A. americana* L., *A. aspera* L., *A. indica* L., *A. manipurensis* Kumar & Thorat and *A. villosa* Poir. (Sanjappa, 2020; Kumar & Thorat, 2018, 2020). Except *A. manipurensis* and *A. villosa*, other three species of *Aeschynomene* are reported from Odisha. While working on the floristic diversity of the coastal region of Odisha (Devi *et al.*, 2023), specimens of an unidentifiable species of *Aeschynomene* were collected and photographed from the Daya River areas, Dhauli regions, Khordha district, Odisha, India. After a thorough analysis of relevant literature and herbarium specimens of all the *Aeschynomene* species of India and adjacent countries, proved it to be a new species hitherto unknown to science, which is described here as a novelty. The specimens were processed using standard herbarium methods and voucher type specimens were deposited in CAL and the herbarium of Ambika Prasad Research Foundation. Morphological observations and measurements

were made on both freshly collected and dried specimens. The micromorphological characters were studied with a stereomicroscope. During the study of protologues, relevant literature and type specimens of *Aeschynomene* species, we realized the necessity of lectotypification of three names *A. microphylla* Desv. ex DC., *A. pilosa* Poir. and *A. villosa* Poir. to fix the identity and to avoid misapplication of names, because no specific herbarium specimen was cited as holotype in the protologue of these names and also yet not typified. In lectotypifications, the guidelines and recommendations of Article 9 of ICN (Turland *et al.*, 2018) were followed. *A. microphylla* is treated as a synonym of *Ctenodon falcatus* (Poir.) D.B.O.S.Cardoso, P.L.R.Moraes & H.C.Lima, but after the study of protologues and type specimens of both names, we found that both are different taxa and *Aeschynomene microphylla* should be transfer to the genus *Ctenodon* Baill. under recent circumscription. Therefore, a new combination is made for *Aeschynomene microphylla* under the genus *Ctenodon* as *C. microphylla*.

### Novelty

***Aeschynomene odishae*** Sanjeet Kumar & Devi, *sp. nov.* (Figure 1 & 2)

Holotype: India, Odisha, Khordha district, Dhauli region, Daya River areas, 20°19' 60.9" N, 85°84' 38.4" E, 7 m, 15 March 2020, *S. Kumar & R.S. Devi 17* (Herbarium of Ambika Prasad Research Foundation); isotype CAL!.

The new species is morphologically allied to *Aeschynomene aspera* L., but differs by its decumbent mature branches (vs. erect); flowers 25–30 mm across (vs. 15–20 mm); standard petal 9–10 × 14–16 mm, elliptic, apex 3–5-lobulate (vs. 12–14 × 12–15 mm, obovate, round or emarginated); androecium 17–20 mm long (vs. 12–15 mm); gynoecium 18–21 mm long, glabrous (vs. 13–16 mm long, pubescent or tomentose); loment glabrous (vs. echinulate); seed 2.5–3 mm long (vs. 5–6 mm).

Perennial subshrub up to 0.6–2 m high. Stem erect when young, decumbent when mature, glabrous, lenticellate, fistulose; stipules 5–7 × 3–5 mm, medifixed, lanceolate, setaceous, caducous. Leaves 3–6 cm long, pinnate, alternate; leaflets 24–84, 4–6 × 2–3 mm, oblong, apex rounded, base oblique, margins entire, venation brochidodromous, midvein slightly eccentric, secondary veins inconspicuous; petioles 5–10 mm long, glabrous or sparsely pubescent; rachis 2–5 cm long, glabrous. Racemes 4–8 cm long, axillary, with 1–4 flowers, straight when young, later become pendent; flowers 25–30 mm long, with yellow petals; bracts 1–1.5 × 0.8–1 mm, ovate, light green, apex acute, margin entire, glabrous; bracteoles 0.8–1.2 × 0.6–0.8 mm, ovate, light green, apex short acuminate, glabrous; pedicels 4.5–6 mm long, pubescent or glabrescent; calyx light green, hairy with viscid trichomes, margin entire, bilabiate, subequal; abaxial lip bifid, 3.5–4 × 9–9.7 mm, curved; adaxial lip trifid 2–4 × 9–9.5 mm; standard 9–10 × 14–16 mm, elliptic, apex 3–5-lobulate, glabrous; claw 1–1.2 mm long; wings 2.5–3 × 6.5–7 mm, obovate, apex rounded, base auriculate on vexillar margin; keel petal 15–19 × 6–8 mm, falcate, apex rounded, base auriculate on vexillar base, blade densely to sparsely hairy with viscid trichomes; androecium 17–20 mm long, yellow; filaments alternately longer and shorter; gynoecium 18–21 mm long, linear-oblong, glabrous, stipitate, flattened, with 5–7 ovules; style incurved. Loments 4–5 cm long, 5–6-articled, both margins straight, glabrous, straight. Seeds 2.5–3 × 1–1.5 mm, reniform, brownish-black on maturity.

**Flowering and fruiting:** February to April.

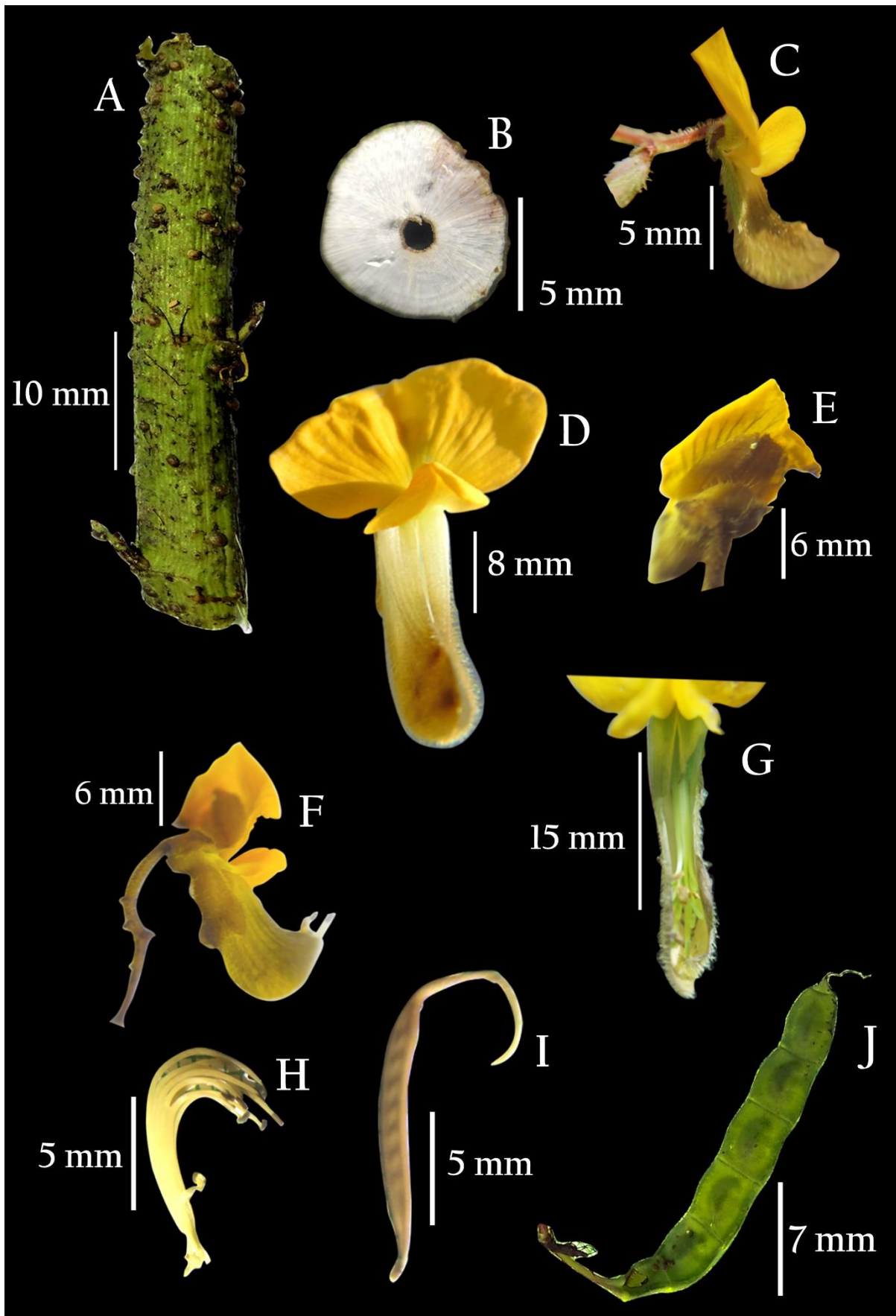


Figure 1: *Aeschynomene odishae*: A. Stem; B. Cross section of the stem; C. Flower lateral view; D. Flower front view; E. Flower back view; F. Flower lateral view; G & H. Androecium; I. Gynoecium; J. Loment



Figure 2: *Aeschnomene odishae*: A. Habitat; B. Habit; C. Close up of flower buds; D & E. Close up of flower; F. Androecium and gynoecium; G. Seed



**Distribution and habitat:** *Aeschynomene odishae* is only known from Dhauli Region, Khordha district, Odisha, Eastern India, India. It grows along wetlands and riverbanks, in a small population of about 75 mature individuals. This species was found growing in association with *Ludwigia adscendens* (L.) H.Hara, *Nymphaea nouchali* Burm.f., *Nymphoides aquatica* (J.F.Gmelin) Kuntze, *N. indica* (L.) Kuntze, *Persicaria barbata* (L.) H.Hara, *Rottboellia cochinchinensis* (Lour.) Clayton and *Salvinia cucullata* Roxb. ex Bory.

**Etymology:** The specific epithet refers to the Indian state Odisha from where the new species was collected.

**Conservation status:** The current knowledge of the distribution and populations of *Aeschynomene odishae* is based only on a few collections from the type locality and is not sufficient to assess the IUCN status. Presently, the species is assessed as Data Deficient (DD). Moreover, the type locality is threatened by human activities and tourism.

**Additional specimens examined (paratypes):** India, Odisha, Khordha district, Dhauli region, Daya River areas, 20°19' 60.9" N, 85°84' 38.4" E, 7 m, 16 March 2020, S. Kumar & R.S. Devi 18, 19 & 20 (Herbarium of Ambika Prasad Research Foundation).

### New combination and lectotypification

***Ctenodon microphylla*** (Desv. ex DC.) R.Kr.Singh & Sanjeet Kumar, *comb. nov.*

≡ *Aeschynomene microphylla* Desv. ex DC., Prodr. 2: 322. 1825.

Type citation in protologue: "Brasiliã" "Desv ! ined. in herb. Mus. Par."

**Lectotype (designated here):** Brazil, *s.d.*, A.N. Desvaux *s.n.* (P026274!, Figure 3); isolectotype P02913967! (Figure 4).

**Distribution:** Endemic to Brazil.

**Notes:** Candolle (1825) described *Aeschynomene microphylla* based on the specimens housed at Paris herbarium, collected from Brazil by N.A. Desvaux (1784–1856). Two original specimens collected from Brazil by N.A. Desvaux were traced at P (P026274 and P02913967). Of these, P026274, being the best preserved and most fitting the protologue description, is designated here as the lectotype.

In Tropicos (<https://www.tropicos.org/name/13024918>), *Aeschynomene microphylla* Desv. ex DC. is treated as a synonym of *Ctenodon falcatus* (Poir.) D.B.O.S.Cardoso, P.L.R.Moraes & H.C.Lima (Figure 5 & 6), which is not correct because in *C. falcatus* the leaflets are obovate, less than 6 pairs (vs. oblong, 15–30 pairs or more) and loment 4–9-articled (vs. 1–2-articled).

### Lectotypifications

***Aeschynomene pilosa*** Poir., Encycl. [J. Lamarck & al.] 4(2): 450. 1798.

Type citation in protologue: "Cette plante croît dans les Indes, & e ete envoyee par Sonnerat au citoyen Lamarck".



Figure 3: Lectotype of *Aeschynomene microphylla* Desv. ex DC. (P026274, © Muséum National d'Histoire Naturelle, Paris)



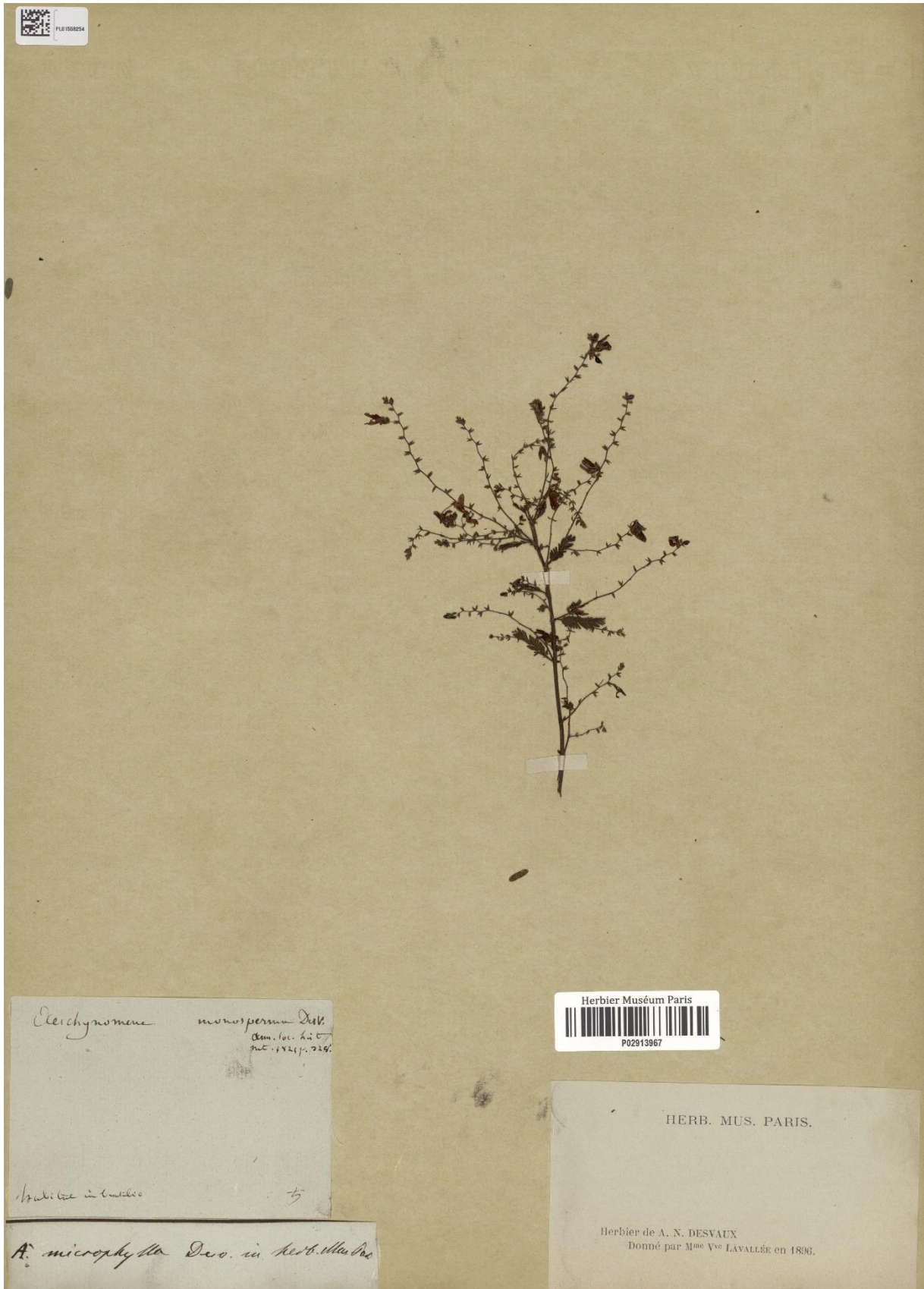


Figure 4: Isolectotype of *Aeschynomene microphylla* Desv. ex DC. (P02913967, © Muséum National d'Histoire Naturelle, Paris)





Figure 5: *Ctenodon falcatus* (Poir.) D.B.O.S. Cardoso, P.L.R. Moraes & H.C. Lima (syntype of *Hedysarum falcatum* Poir., P00678648, © Muséum National d'Histoire Naturelle, Paris)



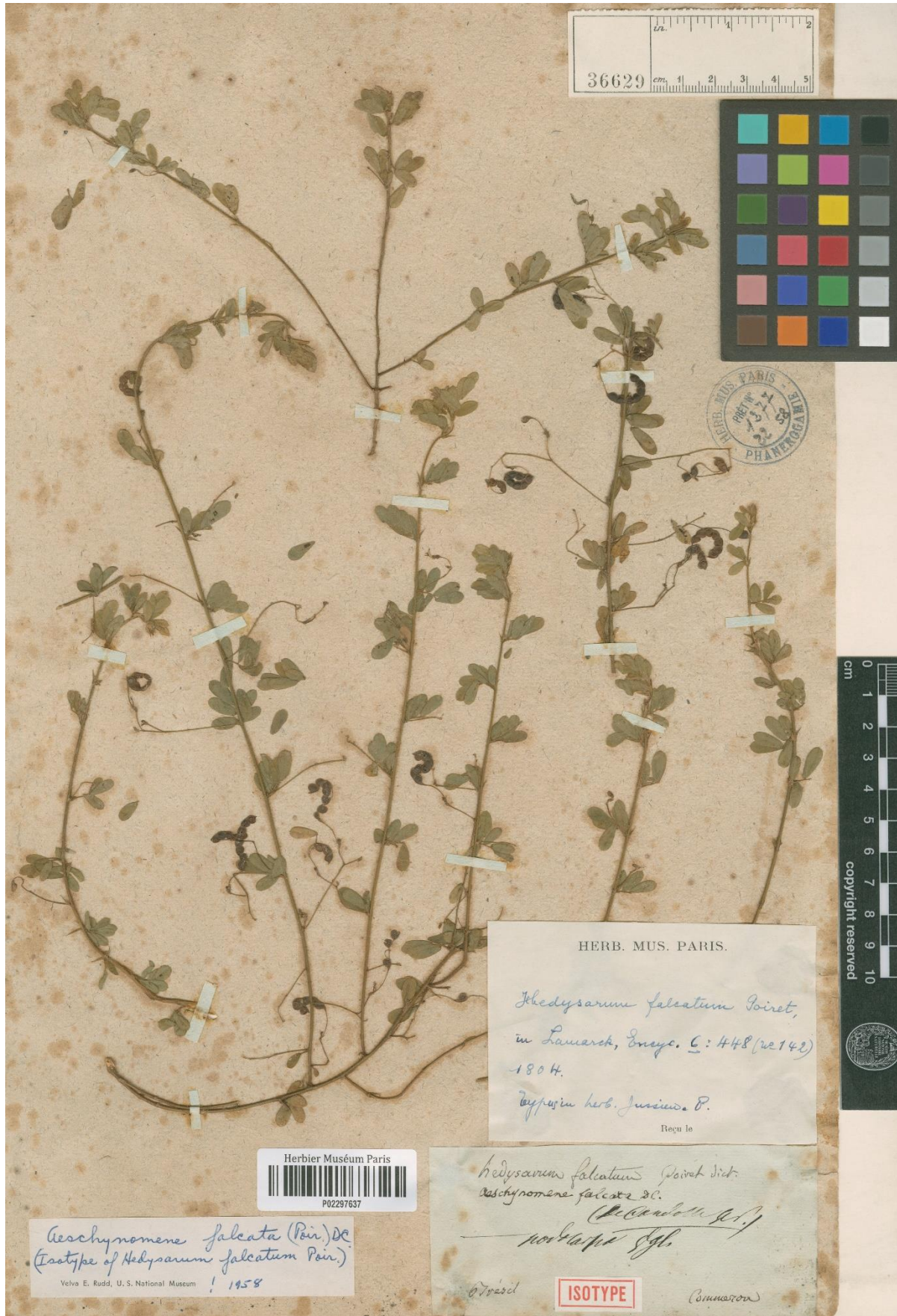


Figure 6: *Ctenodon falcatus* (Poir.) D.B.O.S.Cardoso, P.L.R.Moraes & H.C.Lima (syntype of *Hedysarum falcatum* Poir., P02297637, © Muséum National d'Histoire Naturelle, Paris)





Figure 7: Lectotype of *Aeschynomene pilosa* Poir. (P00296611, © Muséum National d'Histoire Naturelle, Paris)





Figure 8: Isolectotype of *Aeschynomene pilosa* Poir. (P00296612, © Muséum National d'Histoire Naturelle, Paris)



Figure 9: Lectotype of *Aeschynomene villosa* Poir. (left hand side specimen of P02297842, © Muséum National d'Histoire Naturelle, Paris)



**Lectotype (designated here):** Réunion, Bourbon island, *s.d.*, (herbarium Lamarck) *P. Sonnerat s.n.* (P00296611!, Figure 7); isolectotype P00296612! (Figure 8).

**Distribution:** Réunion, Isle de Bourbon (Bourbon Island).

**Notes:** Candolle (1825), Poiret (1798) and POWO (2024) mentioned the distribution for *Aeschynomene pilosa* as India, but this species is not reported from India and also not included in India works (Baker, 1876; Sanjappa, 1992, 2020).

The locality mentioned on the type specimens is Isle de Bourbon (Bourbon Island) and was collected by P. Sonnerat (1748–1814) during his travels to the East Indies and China. Therefore, it is clear that A.P. de Candolle and J.L.M. Poiret misunderstood the type locality as India because P. Sonnerat works in Yanam and Pondicherry (Puducherry), French settlements in India.

*Aeschynomene pilosa* was described by Poiret (1798) based on the specimens in Lamarck's herbarium, collected by P. Sonnerat. Two specimens in herbarium Lamarck, collected by P. Sonnerat were traced (P00296611 and P00296612). The specimen P00296611, is well preserved, contains mature stem, leaves, well-developed flowers, and fruits, and the annotation of locality name and species number as "Dict. n. 8". The number 8 corresponds to the Encyclopedie Methodique number of this species. Thus, it is designated here as the lectotype for the name *A. pilosa* Poir., as it agrees well with the protologue.

***Aeschynomene villosa*** Poir., Encyc. [J. Lamarck & al.] Suppl. 4. 76. 1816.

Type citation in protologue: "Cette plante croît dans les savannes à Porto Rico, où elle a été découverte par M. Lendru".

**Lectotype (designated here):** Puerto Rico, *s.d.*, *A.P. Ledru s.n.* (left hand side specimen of P02297842, Figure 9); isolectotype right hand side specimen of P02297842!.

**Distribution:** Native of tropical and subtropical America, introduced in some Asian countries and Australia. In India reported from Andaman & Nicobar Islands, Gujarat, Karnataka, Kerala and Maharashtra (Daver, 2004; Shende *et al.*, 2013; Sanjappa, 2020).

**Notes:** Poiret (1816) described *Aeschynomene villosa* based on the specimens collected from Puerto Rico by A.P. Ledru (1761–1825). Two original specimens collected by A.P. Ledru from Puerto Rico and pasted on one herbarium sheet is extant at P (P02297842). The left-hand side specimen of P02297842, is better preserved and contains mature stem, leaves, well-developed flowers, and fruits, and therefore is chosen here as the lectotype.

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