

PAPER • OPEN ACCESS

Diversity of Acanthaceae in the Lowland Area of the Kluet River, South Aceh, Aceh

To cite this article: Jasmidar *et al* 2026 *IOP Conf. Ser.: Earth Environ. Sci.* **1639** 012014

View the [article online](#) for updates and enhancements.

You may also like

- [Leaf Morphological Variation of *Acanthus* in Some Estuarine Areas of Cilacap](#)
W Herawati, P Widodo, Sukarsa et al.
- [Acanthocephaliasis And Sparganosis Occurrence in An Asian Vine Snake \(*Ahaetulla prasina*\): A Perspective of Neglected Zoonotic Disease](#)
Aditya Yudhana, Ratih Novita Praja and Arif Supriyanto
- [Variations of Enzymatic Activity and Main Quality Components During the Fermentation Process of *Acanthopanax senticosus* Tea](#)
K W Wu, Q Y Xu, L J Zhu et al.

Diversity of Acanthaceae in the Lowland Area of the Kluet River, South Aceh, Aceh

Jasmidar¹, Zulfan Arico^{1*} and Sri Jayanthi²

¹ Department of Biology, Universitas Samudra, Langsa, Indonesia

² Department of Biology Education, Universitas Samudra, Langsa, Indonesia

*E-mail: aricozulfan@unsam.ac.id

Abstract. Acanthaceae is a plant that has not been studied much in Indonesia. One of the distributions of Acanthaceae in Indonesia is in Sumatra. This research was conducted to record and describe Acanthaceae species in the South Aceh region. One area that has not been widely explored for Acanthaceae is Aceh Province. To complete data on Acanthaceae diversity in the province, taxonomic research was carried out through literature studies, herbarium observations and exploration in South Aceh from January to October 2024. Then, re-exploration took specimens in the field in five areas, namely Tuha Field, Pasie Kuala Ba'u, Jambo Manyang, Ujung Batu Beach, Gunung Pudung and Lawe Melang. The species found were six from five research locations in the South Aceh region, including *Asystasia gangetica* (L.) T.Anderson which was found in Tuha Farm at an altitude (280 meters above sea level), *Justicia gendarussa* Burm.f. which was found in Pasie Kuala Ba'u at an altitude of (280 meters above sea level), *Ruellia simplex* C. Wright which was found in Jambo Manyang at an altitude of (320 meters above sea level), *Ruellia tuberosa* L. which was found at Ujung Batu Beach at an altitude of (280 meters above sea level), *Strobilanthes alternata* (Burm.f.) Moylan ex J.R.I. Wood which was found on Mount Pudung at an altitude of (280 meters above sea level) and *Thunbergia erecta* (Benth.) T.Anderson which was found in Lawe Melang at an altitude of (160 meters above sea level). The habitat of Acanthaceae is found on roadsides, on the edge of ditches, and in house yards.

1. Introduction

Acanthaceae is one of the most taxonomically diverse families of flowering plants, with a wide geographical distribution. Acanthaceae is also diverse in terms of morphology and ecology. There are 191 genera in Acanthaceae and an estimated 5,000 species worldwide. This family is distributed in tropical to subtropical regions and has high economic value, especially as ornamental plants [1]. Acanthaceae are plants that have not been widely studied in Indonesia. One of the distributions of Acanthaceae in Indonesia is in Sumatra. According to the literature, there are 52 species in Sumatra, 26 of which are endemic to Sumatra [2]. Of these, three are species newly discovered after 2000, namely *Rostellularia procumbens* (L.) Nees, *Strobilanthes paniculata* (Ness) Miq. and *Strobilanthes capillipes* C.B. Clarke ex Ridl. The discovery of these new species illustrates that Acanthaceae has not been fully explored in Sumatra.

The province of Aceh is one of the Acanthaceae habitats that has not been extensively explored. Based on previous research [3], 17 Acanthaceae species have been found in Aceh, and there are several specimens that have not been identified to the species level. Specifically in South Aceh, the presence of Acanthaceae in the Kluet River area is represented by three species, namely



Hemigraphis sp., *Justicia alternifolia* C.B. Clarke, and *Staurogyne* sp. Knowledge of local plants is being lost, and documentation remains inadequate. Therefore, research on the Acanthaceae family in Aceh is relevant not only for floristics but also for conservation. Based on this data, it can be said that further research is needed to explore the South Aceh region so that the data on Acanthaceae can be more complete.

2. Materials and Methods

2.1 Research location

The research was conducted in the areas of Ladang Tuha, Lembang, Pasie Kuala Ba'u, Jambo Manyang, Ujung Batu Beach, Mount Pudung, and Lawe Melang (Figure 1). Taxonomic research was carried out through literature studies, herbarium observations and exploration in South Aceh from January to October 2024.

2.2 Field specimen collection

Specimen collection was carried out using the free exploration method [4]. Specimen collection was carried out by observing potential habitats, namely the ground surface, rock

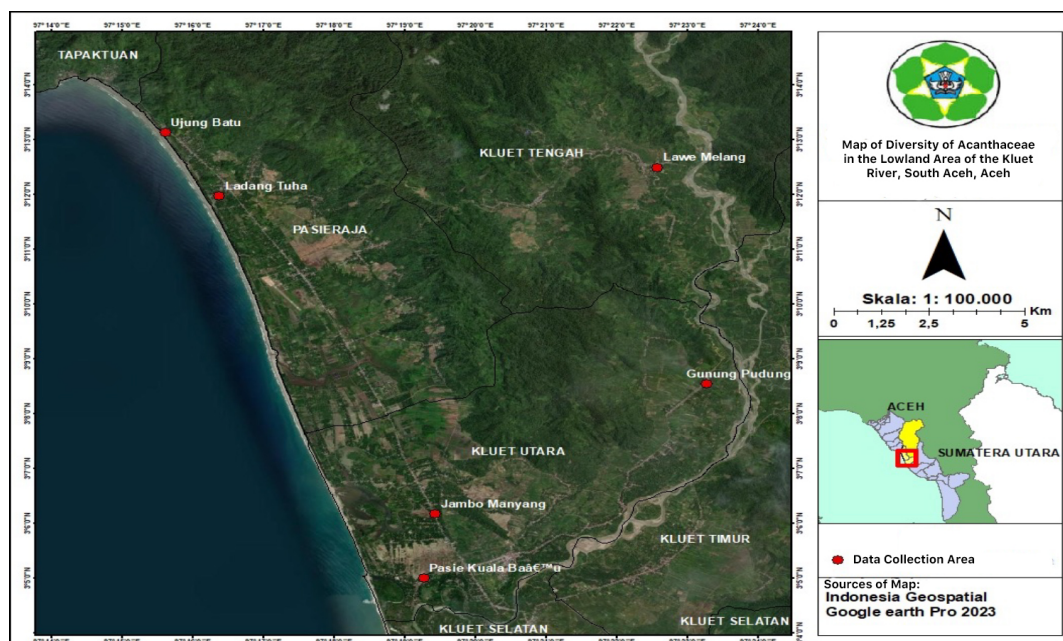


Figure 1. Richness of tree species in the research area

surface, cliffs, and waterfall walls, while also collecting field data such as habitat, ecology, coordinates, and morphological notes. Morphological characteristics recorded included stem type, leaf shape, color, shape, and other prominent features. Field data were recorded in a field notebook according to collection number.

Specimens found were photographed in their entirety, from the habitat, leaves, and flowers to the fruit. Specimens were then collected for the dry herbarium and wet collection for fruit and flowers. Three duplicates of dry herbarium specimens are collected and given hanging labels containing collection number information. The specimens are spread out on newspaper and stacked in groups of three to eight specimens, then placed in plastic bags and sprayed with 70%

alcohol until all parts are wet. Next, the specimens are dried in an oven. Once dry, the herbarium specimens can be observed for their generative organs.

2.3 Preparation of morphological descriptions and identification

Morphology includes the complete characteristics of the specimen summarized in a paragraph. The morphological description is arranged starting from the appearance, plant height, stem shape and size, leaf stalks and leaf blades, inflorescence, flowers, and fruit. Identification keys are used to identify plants that have been found down to the species level. Specimen identification is carried out by distinguishing contrasting morphological characteristics that can be compared with photographs, herbariums that have been identified by previous researchers, and existing Acanthaceae taxonomy journals [5:6:7:8:9:10:11:12:13:14:15:16:17:18]. The morphological data described were used to compare with previous species and to create an identification key.

3. Results and discussions

3.1 Diversity of species

Based on the results of the research conducted, there are seven species of Acanthaceae recorded from all exploration locations (Table 1). The number of specimens obtained from the latest exploration conducted in the lowland area of the Kluet River and its surrounding area, South Aceh, from January to October 2024, amounted to 20 specimens collected. Research conducted by De Wilde in 1974 found the species *Justicia alternifolia* C.B. Clarke in the Kluet River, located in the Lembang area at an altitude of 5-10 meters above sea level. Meanwhile, the latest exploration was conducted in seven locations in the lowlands of the Kluet River and surrounding areas in South Aceh from January to October 2024. The seven species found during the exploration in the lowlands of the Kluet River and surrounding areas in South Aceh were *Asystasia gangetica* (L.) T. Anderson, *Justicia alternifolia* C.B. Clarke, *Justicia gendarussa* Burm.f., *Ruellia simplex* C. Wright, *Ruellia tuberosa* L., *Strobilanthes alternata* (Burm.f.) Moylan ex J.R.I. Wood, and *Thunbergia erecta*

Table 1. Acanthaceae plants found in the lowlands of the Kluet River and surrounding areas, South Aceh

Species	Local Distribution	Local name	Habitat	Habitus	Elevation (asl)
<i>Asystasia gangetica</i> (L.) T. Anderson	Ladang Tuha	Dandan	Roadside	Herb	280
<i>Justicia alternifolia</i> C.B. Clarke	Lembang	Besi besi	Near River	Shurb	5-10
<i>Justicia gendarussa</i> Burm.f.	Pasie Kuala Ba'u	Bebesi	Ditch Edge	Herb	280
<i>Ruellia simplex</i> C. Wright	Jambo Mayang	Tubo Lintah	Home Garden	Herb	320
<i>Ruellia tuberosa</i> L.	Pantai Ujung Batu	-	Roadside	Herb	280
<i>Strobilanthes alternata</i> (Burm.f.) Moylan ex J.R.I. Wood	Mount Pudung				280
<i>Thunbergia erecta</i> (Benth.) T. Anderson	Lawe Melang	Lemayong Merecino	Home Garden Home Garden	Herb/Creeping Herb/ Creeping	160

(Benth.) T. Anderson. Based on data from the L herbarium [2], two unidentified Acanthaceae genera have been found in the lowlands of the Kluet River, South Aceh, at the species level. These two genera are *Hemigraphis* sp., found in the Pucuk Lembang area, and *Staurogyne* sp., found in the Pucuk Lembang and Kandang areas.

3.2 Identification key

- 1a. Leaves alternate, not opposite..... J. *alternifolia*
- 1b. Leaves alternate, opposite..... 2
- 2a. Flower corolla glabrous on outer surface..... T. *erecta*

- 2b. Flower corolla with fine hairs on the outer surface..... 3
- 3a. Inflorescence stalk glabrous..... R. simplex
- 3b. Inflorescence stalk with fine hairs..... 4
- 4a. Leaf tip blunt-rounded..... R. tuberosa
- 4b. Leaf tip pointed..... 5
- 5a. Flower petals rounded..... S. alternata
- 5b. Flower petals linear..... 6
- 6a. Leaf base cuneate..... J. gendarussa
- 6b. Leaf base rounded to rounded-cuneate..... A. gangetica

According to the Global Invasive Species Database [19], Acanthaceae found in the South Aceh region that are not native to Sumatra include *Asystasia gangetica*, *Justicia alternifolia*, *Justicia gendarussa*, *Ruellia simplex*, *Ruellia tuberosa*, *Strobilanthes alternata*, and *Thunbergia erecta*. *Asystasia gangetica* is a plant native to India and Australia [20]. In Indonesia, *Asystasia gangetica* is an invasive or introduced plant species and must be planted with caution. *Justicia alternifolia* is native to the Indo-China region to the Malaysian Peninsula [20]. *Justicia gendarussa* is thought to be native to South Asia, Southeast Asia, including the Malay Archipelago. In Jakarta, *Justicia gendarussa* appears to be commonly cultivated and used as an ornamental plant and also for hedges [19]. *Ruellia simplex* is a plant native to Mexico to Tropical America [20]. In Indonesia, *Ruellia simplex* has been found on the island of Java in Cimenyan (Bandung), Rancaekek (Bandung), Pasir Mulya (Bogor) and Leuwiliang (Bogor). *Ruellia simplex* is cultivated as an ornamental plant [19]. *Ruellia tuberosa* is naturally distributed in Tropical America and has been naturalized in various parts of the world [19]. In Indonesia, *Ruellia tuberosa* is found in Jakarta, where this species is commonly found as a wild plant [19]. *Thunbergia erecta* is a plant native to Western Tropical Africa to the Northwest and Tanzania [20]. *Thunbergia erecta* is cultivated as an ornamental plant. *Strobilanthes alternata* is a plant native to Malesia in northern Kalimantan [20]. The presence of Acanthaceae in Sumatra, which was brought from other places (naturalized), and some people deliberately planted it as an ornamental plant in their yards.

Acanthaceae species in the lowlands of the Kluet River and surrounding areas in South Aceh are found in lowlands at an altitude of (0–150 m above sea level), low hills (150–400 m above sea level), medium hills (300–900 m above sea level), to sub-mountainous areas with an altitude of (800–1400 meters above sea level). This zone is part of the forest ecosystem for species found in lowland areas at an altitude of around (300–900 meters above sea level) and (1400–1500 meters above sea level). Acanthaceae grows in various habitats, found on roadsides, ditch edges, near rivers, and in yards. Species that live on roadsides are *Asystasia gangetica* and *Ruellia tuberosa*. Species that live on the edges of ditches and near rivers are *Justicia gendarussa* and *Justicia alternifolia* C.B.Clarke. Species that live in yards are *Ruellia simplex*, *Thunbergia erecta*, and *Strobilanthes alternata*.

3.3 Description of species

1. *Asystasia gangetica* (L.) T.Anderson

Synonyms: *Asystasia gangetica* var. *gangetica*, *Asystasia gangetica* var. *krishnae* Tandyekk., Pandur. & N. Mohanan, *Justicia gangetica* (L.), *Ruellia gangetica* (L.) R.Br.

Morphology: Stature: Creeping or climbing herb, 12–30 cm tall. Stem: Quadrangular, fleshy, branched, jointed and covered with hairs. Leaves: Single, alternate, ovate to oblong, 1.7–5 × 1.6–2.5 cm, base cuneate to rounded, apex acuminate, margin entire, pubescent, thin texture, green, upper surface light green, veins green and lower surface pale green, pinnate venation, number of secondary veins 5–8 pairs; petiole 1–1.5 cm long, finely hairy. Inflorescence: Arranged in racemes up to 25 cm long; racemes emerge from the axils and tips of the stems. Pedicel 1.5–2 cm long, finely hairy. Flowers: Hermaphroditic, with single symmetry, pedicel 1 cm long, finely hairy, flowers open, 1.4–2 × 1.2–1.4 cm, number of flowers per pedicel 4–7, texture thin, apex obtuse, margin

entire. Sepals divided into 5 linear-lanceolate lobes, covered with hairs. The corolla is white, fused into a tube, with a cylindrical base that gradually widens. The corolla segments are obovate or nearly round, and the lip is purple or maroon. There are 4 stamens, none of which are fertile, all protected within the corolla tube. The filaments are attached to the corolla tube. The ovary is oblong, 3.6 mm long, with a 1.7 cm long style and covered with dense fine hairs. Fruit: capsule, cylindrical, 2 cm long, outer surface covered with hairs, 4–6 fruits per stalk. Young fruit: green, mature fruit: brown, fruit splits when ripe.

Distribution and Habitat: India and Australia. Sumatra, Aceh Bohorok at an altitude of 200 m above sea level. At the research site in South Aceh, *Asystasia gangetica* was found in Ladang Tuha, Pasie Raja District at an altitude of 280 m above sea level. This species grows wild and is found in shrub habitats along roadsides.

Note: *Asystasia gangetica* can be identified by its morphological characteristics, which include a white corolla and small flowers. The distinguishing species is *Ruellia tuberosa*, which has wide, light purple flowers.

Specimen observed: SUMATRA, Aceh, South Aceh, Pasie Raja, Ladang Tuha (3°11'58.0"N 97°16'22.9"E), 280 m, 18.1.2023, Midar et al. 011 (LGS).

2. *Justicia alternifolia* C.B. Clarke

Synonyms: *Justicia henicophylla* C.B. Clarke and *Justicia viridiflora* Ridl.

Morphology: Stature: Shrub, 25 cm tall. Stem: Hollow, branched, jointed, glabrous. Leaves: Single, alternate, oblong-elliptic, 7–10 × 2–3 cm, base asymmetrical (uneven), tapered tip, flat edges, glabrous, thin texture, green, dark green upper surface, green veins and light green lower surface, pinnate venation, number of secondary veins 6–8 pairs; petiole 5–8 mm long.

Distribution and Habitat: Indo-China to the Malay Peninsula [43]. Sumatra, Southeast Aceh, Sungai Alas at an altitude of 50–80 m above sea level. At the research site in South Aceh, *Justicia alternifolia* was found in Lembang, South Kluet District at an altitude of 5–10 m above sea level. The habitat of this species is found near river streams.

Note: *Justicia alternifolia* can be identified by its morphological characteristics of oval-oblong leaf blades. The distinguishing species is *Justicia gendarussa*, which has narrow lanceolate leaf blades.

Specimen observed: SUMATRA, Aceh, South Aceh, South Kluet, Lembang (3°4'59"N), 5–10 m, 20.7.1985, De Wilde et al. 20870 (BO).

3. *Justicia gendarussa* Burm.f.

Synonyms: *Adhatoda subserrata* Ness, *Dianthera subserrata* Blanco, *Dicliptera rheedei* Kostel., *Ecbolium gendarussa* (Burm.f.) Kuntze, *Ecbolium gendarussa* var. *angustifolium* Kuntze *Ecbolium subserratum* Kuntze, *Gendarussa vulgaris* Nees, *Justicia dahona* Buch. Ham. ex Wall., *Justicia gendarussa* L.f., *Justicia gendarussavar. angustifolia* (Kuntze) Hochr., *Justicia salicina* Vahl ex Nees.

Morphology: Appearance: Herb or subshrub, 17–25 cm tall. Stem: Quadrangular, branched, thickened at the nodes, glabrous. Leaves: Single, alternate, lanceolate narrowing, 6.5–10.5 × 1.7–2.2 cm, base cuneate, apex acuminate, margin entire, glabrous, thin texture, green, upper surface dark green, veins green and lower surface light green, pinnate venation, number of secondary veins 6–7 pairs; petiole 1–1.5 cm long. Inflorescence[45]: Compound, arranged in a long raceme 3–12 cm long, emerging from the leaf axils or branch tips. Flowers: Hermaphroditic, bilaterally symmetrical; Flower segments modified into two lips, with the lower lip wider than the upper lip; Sepals divided into 5 segments, each segment linear, 3–4 mm long; Corolla white or purplish, tubular, 12–15 mm long; 4 stamens protruding from the corolla tube; filaments attached to the corolla tube. The ovary is sessile, glabrous, with a 1 cm long style and a 2-lobed stigma; Fruit and Seeds: Capsule, club-shaped, fruit length about 1.2 cm.

Distribution and Habitat: Tropical Asia. Sumatra, Mount Lauser Aceh at an altitude of 50–125 m above sea level. At the research site in South Aceh, *Justicia gendarussa* was found in Pasie Kuala

Ba'u, North Kluet at an altitude of 280 m above sea level. The habitat of this species is found on the edge of ditches.

Note: *Justicia gendarussa* can be identified by its morphological characteristics, which include narrow lanceolate leaf blades. The distinguishing species is *Asystasia gangetica*, which has ovate to oblong leaf blades.

Specimen observed: SUMATRA: Aceh, South Aceh, North Kluet, Pasie Kuala Ba'u, (3°04'59.7"N 97°19'16.5"E), 280 m, 15.1.2023, Midar et al. 004 (LGS).

4. *Ruellia simplex* C. Wright

Synonyms: *Arrhoxylum microphyllum* Nees, *Cryphiacanthus angustifolius* Nees, *Ruellia angustifolia* (Nees) Lindau, *Ruellia brittoniana* Leonard, *Ruellia coerulea* Morong, *Ruellia ignorantiae* Herter, *Ruellia longipes* Urb., *Ruellia malacosperma* Greenm., *Ruellia microphylla* (Nees) Lindau, *Ruellia spectabilis* Britton, *Ruellia tweedyana* Griseb.

Morphology: Habit: erect herb, reaching 20–32 cm in height. Stem: quadrangular, branched, jointed, glabrous. Leaves: Single, alternate, oblong, lanceolate to elliptic-linear, 7.5–11 × 1–1.5 cm, base tapering or pointed, apex sharply pointed, margin flat, glabrous, thin texture, dark green, upper surface dark green, veins green and lower surface light green, pinnate venation, number of secondary veins 5–6 pairs; petiole 5 mm–1 cm long, glabrous. Inflorescence: Emerges from leaf axils, limited, arranged in racemes, peduncle 1–2 cm long, glabrous. Flowers: Hermaphroditic, actinomorphic, pedicel 1.5–3 cm long, glabrous; flowers open, 3–5 × 2.5–3 cm, number of flowers per pedicel about 3–5, finely hairy, thin texture; sepals fused at base; corolla trumpet-shaped, corolla light purple; Corolla lobes 5, lobes narrowly triangular-oblong, lobes rounded, lobes fused together; Stamens 4, 2 pairs of unequal length, stamens white; Anthers oblong; Filaments attached to corolla tube. Fruit: not observed.

Distribution and Habitat: Mexico to Tropical America. At the research site in South Aceh, *Ruellia simplex* was found in Jambo Manyang at an altitude of 320 m above sea level. This species is cultivated in home gardens along ditches.

Note: *Ruellia simplex* can be identified by its morphological characteristics, which include a light purple corolla and sharply pointed leaves. The distinguishing species is *Thunbergia erecta*, which has tubular or trumpet-shaped flowers and a blue corolla.

Specimen observed: SUMATRA, Aceh, South Aceh, North Kluet, Jambo Manyang (3°06'09.9"N 97°19'26.2"E), 320 m, 25.1.2023, Midar et al. 006 (LGS).

5. *Ruellia tuberosa* L.

Synonyms: *Cryshiacanthus barbadensis* Nees, *Dipteracanthus clandestinus* (L.) C.Presl, *Ruellia clandestina* L., *Ruellia lysimachia* Nees, *Ruellia paniculata* Scop. ex Nees, *Ruellia picta* G. Lodd., *Ruellia tuberosa* var. *humilis* M. Gomez

Morphology: Stature: Herbaceous, reaching 25–30 cm in height. Stem: Quadrangular, branched, jointed, short-haired. Leaves: Simple, alternate, oblong and slightly rounded ovate, 6–12 × 2.8–5.5 cm, green, base cuneate, apex obtuse, margin flat-wavy, finely hairy, texture thin, green, upper surface dark green with green veins, lower surface slightly faded green; pinnate venation, number of secondary veins 8–10 pairs; petiole 1–1.3 cm long, finely hairy. Inflorescence: Emerging from leaf axils, arranged in a limited inflorescence, peduncle 1–1.5 cm long, finely hairy. Flowers: Hermaphroditic, almost actinomorphic, pedicel 1.5–2 cm long, finely hairy, light purple; Flowers have ornamental parts in multiples of 5, blooming, 4–5.7 × 2–3 cm, number of flowers per pedicel 2–5, finely hairy, thin texture; Sepals fused into a tube up to 5 mm long; lobes rounded, sepal lobes 1–2 cm long; corolla fused, 5-lobed; stamens 4, 2 pairs unequal in length; filaments attached to corolla tube. Ovary superfuse and stigma composed of two flattened lobes. Fruit and Seeds: Fruit is a capsule, linear-oblong in shape, pedicel 3 cm long, and fruit 2 cm long, number of fruits per

pedicel 4–8, young fruit green, mature fruit brown, finely hairy; seeds are disc-shaped and approximately 2 mm in size, splitting when ripe.

Distribution and Habitat: Mexico to South America and Peru, Caribbean. Sumatra, Mount Lauser Aceh at an altitude of 200 m above sea level. At the research site in South Aceh, *Ruellia tuberosa* L. was found at Ujung Batu Beach, at an altitude of 280 m above sea level. This species grows in humid and dry habitats found along roadsides.

Note: *Ruellia tuberosa* can be identified by its morphological characteristics, which include a light purple corolla and oval leaves that are slightly rounded at the tip. A distinguishing species is *Strobilanthes alternata*, which has grayish-green upper leaves and burgundy lower leaves.

Specimen observed: SUMATRA, Aceh, South Aceh, Pasie Raja, Ujung Batu Beach (3°16'02.5"N 97°16'48.1"E), 500 m, 10.2.2023, Midar et al. 012 (LGS).

6. *Strobilanthes alternata* (Burm.f.) Moylan ex J.R.I. Wood

Synonyms: *Blechum cordatum* Leonard, *Goldfussia colorata* (Blume) Moritzi, *Hemigraphis alternata* (Burm.f.) T.Anderson, *Hemigraphis colorata* W. Bull, *Hemigraphis colorata* (Blume) Hallier f., *Ruellia alternata* Burm.f., *Ruellia colorata* Blume.

Morphology: Stature: Creeping/climbing herb reaching 17–22 cm. Stem: Hollow, fleshy, prostrate, branched, jointed, short-haired. Leaves: Single, alternate, ovate, 4–7 × 3–4 cm, rounded at base, slightly pointed tip, serrated edges, fine hairs, thin texture, green-red, grayish-green upper surface, green veins and wine-red lower surface, pinnate venation, 5–8 pairs of secondary veins; petiole 3.8–4.5 cm long, finely hairy. Inflorescence: Arranged in a raceme, 1.5–2 cm long, finely hairy, emerging from the stem tip. Flowers: Compound, bisexual, monosymmetric, cylindrical below, swollen above, pedicel 8 cm long, short-hairy, flowers 1.5–1.7 × 1–1.5 cm, thin texture; fine-hairy, 2–4 flowers per pedicel; The calyx is divided into 5 segments; The corolla is funnel-shaped, white, 10–12 mm long, with 5 lobes; There are 4 stamens, protruding from the corolla tube; The filaments are attached to the corolla tube. Fruit: not observed.

Distribution and Habitat: Malesia. Java Island at an altitude of 1000–2500 m above sea level. At the research site in South Aceh, *Strobilanthes alternata* was found on Mount Pudung at an altitude of 280 m above sea level. This species grows in home gardens in open areas that receive plenty of sunlight.

Note: *Strobilanthes alternata* can be identified from its morphological characteristics, which are arranged in a raceme. The distinguishing species is *Asystasia gangetica*, which has inflorescences arranged in a raceme.

Specimen observed: SUMATRA, Aceh, South Aceh, North Kluet, Mount Pudung (3°08'32.1"N 97°23'16.5"E), 280 m, 20.2.2023, Midar et al. 015 (LGS).

7. *Thunbergia erecta* (Benth.) T.Anderson

Synonyms: *Meyenia erecta* Benth., *Thunbergia ikbaliana* De Wild., *Thunbergia mestdaghi* De Wild.

Morphology: Habit: Creeping herb, reaching 23–30 cm in height. Stem: Hollow, woody and hard, angular, branched, jointed, glabrous. Leaves: Single, opposite, lanceolate to elliptical, 4.8–5.7 × 1.5–2 cm, base narrowed, apex pointed, margin flat, glabrous, thin texture, green, upper surface dark green with green veins, lower surface pale green; pinnate venation, number of secondary veins 3–4 pairs; petiole 8 mm–1 cm long, glabrous. Inflorescence: Emerging from leaf axils, limited, peduncle 1–1.3 cm long, glabrous. Flowers: Hermaphroditic, symmetrical, solitary, pedicel 1.2 cm long, glabrous; flowers 3–4.8 × 2.8–3.2 cm, thin texture; only 1–2 flowers per pedicel, glabrous; sepals fused at base; Corolla curved, funnel-shaped, flower crown rounded-wavy, flower crown blue, base white-yellowish; corolla lobes rounded, corolla 5; stamens 4, stamens white; anthers hairy; filaments attached to corolla tube. Pistil head with two holes; Fruit buds attached to leaf stalks. Fruit: capsule, egg-shaped, stalk 1 cm long, fruit 1.5 cm long, 1–2 fruits per stalk, greenish-yellow, glabrous; fruit splits open when ripe.

Distribution and Habitat: Tropical West Africa to Northwest and Tanzania. At the research site in South Aceh, *Thunbergia erecta* was found in Lawe Melang, Central Kluet at an altitude of 160 m above sea level. The habitat of this species is found in home gardens growing in dry places.

Note: *Thunbergia erecta* can be recognized by its morphological characteristics of having a creeping herbaceous habit. The distinguishing species is *Ruellia simplex*, which has an erect herbaceous habit.

Specimen observed: SUMATRA, Aceh, South Aceh, Central Kluet, Lawe Melang (3°12'29.0"N 97°22'34.4"E), 160 m, 15.2.2023, Midar et al. 007 (LGS).

4. Conclusions

Seven species of Acanthaceae were found in the lowland area of the Kluet River and its surroundings in South Aceh, namely *Asystasia gangetica* (L.) T.Anderson found in Ladang Tuha, *Justicia alternifolia* C.B.Clarke found in Lembang, *Justicia gendarussa* Burm.f. found in Pasie Kuala Ba'u, *Ruellia simplex* C. Wright found in Jambo Manyang, *Ruellia tuberosa* L found in Pantai Ujung Batu, *Strobilanthes alternata* (Burm.f.) Moylan ex J.R.I. Wood found in Gunung Pudung, and *Thunbergia erecta* (Benth.) T.Anderson found in Lawe Melang. In previous studies, seventeen species of Acanthaceae had been recorded in Aceh. Based on the results of exploration conducted in South Aceh, seven species were obtained. The total number of Acanthaceae obtained from previous studies to the latest research currently recorded in Aceh is twenty-four species. One invasive species found was *Asystasia gangetica*.

References

- [1] Manzitto-Tripp AE Darbyshire I Daniel TF Kiel AC and McDade AL. 2022. Revised classification of Acanthaceae and world wide dichotomous keys. *Taxon*. **71** 1
- [2] Mustaqim WA Saputra R Al Farishy DD Tianara A Ahmad RPP Kartonegoro A Ronaldo A Sitepu BISA Randi A and Ardi WH. 2021. onwards. Digital Flora of Indonesia. www.indonesiaplants.org
- [3] Jasmidar. 2022. Acanthaceae Sumatra dan Nusa Tenggara L Herbarium Digital [Data set]. *Zenodo*. <https://doi.org/10.5281/zenodo.6673522>
- [4] Bremekamp CEB. 1960. New Bornean Acanthaceae. *Blumea*. **10** 1
- [5] Bremekamp CEB. 1948. Notes on the Acanthaceae of Java. *Nederl. Akad. Wet., Verh. (Tweede sectie)*. *Dl. XLV*. 2
- [6] Barker RM. 1986. A taxonomic revision of Australian Acanthaceae. *Journal. Adelaide Bot. Gard*. 9
- [7] Duke, N.C. 1991. A systematic revision of the Mangrove genus *Avicennia* (Avicenniaceae) in Australasia. *Aust. Syst. Bot.* 4
- [8] Bennet JR and Scotland RW. 2003. A revision of *Strobilanthes* (Acanthaceae) in Java. *Kew Bull.* **58**: 1–82.
- [9] Wood JRI Bennett JR and Scotland RW. 2003. Notes on *Strobilanthes*: The Sympagis Group. *Kew Bull.* **58** 1
- [10] Wasshausen DC and Wood JRI. 2004. Acanthaceae of Bolivia. *Contrib US. Natl. Herb.* 49
- [11] Shanker M and Shendagedan Yadav SR. 2010. Revision of the genus *Barleria* (Acanthaceae) in India. *Rheedea*. **20** 2
- [12] Girmansyah D. 2014. Validation, Distribution and Potential uses of Acanthaceae in Java. *Berita Biologi*. **13** 1
- [13] Tan JPC Kiew R Saw LG and Ummul-Nazrah AR. 2014. Three new species from Gunung Kanthan, a limestone tower karst in Perak, Malaysia. *Phytotaxa*. **177** 3
- [14] Ragavan P Saxena A Mohan PM Jayaraj RSC and Ravichandra K. 2015. Taxonomy and distributions of species of the genus *Acanthus* (Acanthaceae) in Mangroves of the Andaman and Nicobar Island, India. *Biodiversitas*. **16** 2
- [15] Somprasong W Vajrodaya J and Chayamarit K. 2015. Taxonomic study of the Subtribe *Andrographinae*, Tribe *Ruellieae*, family Acanthaceae in Thailand. *Thai Agric. Res. Journal*. **33** 1
- [16] Dhruvan T Pandurangan AG and Mohanan N. 2019. *Asystasia gangetica* var. *Krishnae* (Acanthaceae): A new variety from kerala, India. *Journal. Indian Assoc. Anglo. Taxon*. **29** 2.
- [17] Rueangsawang K Suddee S Chantharanonthai P and Simpson DA. 2020. A synopsis of *Rungia* (Acanthaceae) in Thailand. *Thai Forest Bull. (Bot)*. **48** 1
- [18] Nilanthi RMR Rajathewa Rajathewa RAMPM Jayawardana N Wijesundara DS. and Bandaranayake PCG. 2021. New addition, different habitats, distribution range and diversity of genus *Strobilanthes* (Acanthaceae) in Sri Lanka. *Journal. Trop. Forest. Environ.* **11** 1
- [19] Gisd [Internet]. 2023. Global Invasive Species Database. Available from <https://www.iucngisd.org/gisd/>
- [20] Powo [Internet]. 2023. Plants of the World Online. [cited 2023 Sep 25]. Available from: <https://powo.science.kew.org/>