Ixora auricularis Chun & F. C. How ex W. C. Ko (Rubiaceae): A new record to Flora of Vietnam

Thieu Thi Huyen Trang, Tran The Bach¹, Nguyen Dinh Hai², Sangho Choi and Sangmi Eum*

International Biological Material Research Center, Korea Research Institute of Bioscience and Biotechnology, Daejeon 34141, Korea

¹Institute of Ecology and Biological Resources, Vietnam Academy of Sciences and Technology, Hanoi, Vietnam

²Xuan Lien Natural Reserve, Thanh Hoa Province, Vietnam

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Ixora auricularis Chun & F. C. How ex W. C. Ko: 베트남 미기록종

Thieu Thi Huyen Trang · Tran The Bach¹ · Nguyen Dinh Hai² · 최상호 · 엄상미*

한국생명공학연구원 해외생물소재센터,

¹Institute of Ecology and Biological Resources, Vietnam Academy of Sciences and Technology,

²Xuan Lien Natural Reserve

ABSTRACT: *Ixora auricularis* (Rubiaceae), previously recognized as endemic to Yunnan (China), was reported in Vietnam. This plant differs from the closely related species *Ixora coccinea* in its auriculate shape of the base leaf, greater number of secondary veins, shorter stipules, calyx having more appendices, shorter corolla tube, and the oblanceolata shape of the corolla tip. Detailed information about its description as well as illustrations, color photographs and a species key of related species of *Ixora* in Vietnam are provided.

Keywords: *Ixora auricularis*, Rubiaceae, new record, Vietnam

적 요: 중국 운남의 고유종으로 알려진 꼭두서니과의 *Ixora auricularis* Chun & F. C. How ex W. C. Ko가 베트남에서 발견되었다. 이 종은 *Ixora coccinea*와 형태적으로 가장 비슷하지만, 잎의 기저는 이저이고, 측맥의 수가 많으며, 탁엽의 길이가 길고, 꽃받침 통의 길이가 짧으며, 화관의 끝이 도피침형, 화관내부의 부속체의 수가 더 많은 점에서 구분된다. 본 종에 대한 기재, 도해, 컬러사진과 함께 근연식물의 검색표를 제시하였다.

주요어: *Ixora auricularis*, 꼭두서니과, 미기록종, 베트남

Ixora is the third largest genus of the family Rubiaceae, comprising of about 500 species (Mouly et al., 2009) and commonly distributed in tropical Africa, America, Asia, Madagascar and Pacific islands (Tao and Taylor, 2011). Thirty four taxa of *Ixora* are confirmed in Indochina regions (Ganepain, 1923) and twenty three species and six varieties are distributed in Vietnam (Pham, 2003).

Recently, while checking herbarium specimen of *Ixora* in Herbarium of the Institute of Ecology and Biological Resources

(HN) Hanoi, unidentified specimen which was collected from Van Ban (Lao Cai) in 2008 was found. At the same time, the same plant was also found during our recent field work from Xuan Lien Natural Reserve, Thuong Xuan district, Thanh Hoa province (19°59'32.78"N, 105°1'18.41"E) at an elevation of 510 m (Fig. 1, Fig. 2). The plant differs from a closely related species *Ixora coccinea* in auriculate shape of base leaf, more number of secondary veins, shorter stipules, calyx having more number of appendices, shorter corolla tube, oblanceolate shape

*Author for correspondence: sangeum@gmail.com

Fig. 1. *Ixora auricularis* Chun & F. C. How ex W. C. Ko. **A.** Flowering twig. **B.** Leaf. **C.** Stipule. **D.** Flower triads. **E.** Flower. **F, G.** Calyx. **H.** Calyx lobe having six appendices. **I.** Stigma. **J.** Stamen. **K.** Young fruit (draw by Le Kim Chi, based on specimens VN 1965 (VN)).

Fig. 2. *Ixora auricularis* Chun & F. C. How ex W. C. Ko. **A.** Habitat. **B.** Flowering branch. **C.** **D.** Stipule. **E.** Leaf. **F.** Apical part of leaf. **G.** Base part of leaf. **H.** Flower. **I.** Inflorescence units. **J.** Calyx. **K.** Longitudinal section of flower. **L.** Stamen. **M.** Stigma. **N.** Longitudinal section of fruit. **O.** Cross section of fruit (**A**, Photo by Trịnh Ngọc Bon; **B–O**, photos by Thieu Thi Huyen Trang).

Table 1. Morphological comparison of *Ixora auricularis* and *I. coccinea*.

Morphological characters	<i>I. auricularis</i>	<i>I. coccinea</i>
Secondary veins	10–13 pairs	6–10 pairs
Base leaf	Cordate-auriculate	Cordate, round
Stipule (mm)	3–5	7–18
Calyx tube (mm)	1–1.5	2–2.5
Corolla tip	Oblanceolata-oblong, acute	Lanceolata, ovate-lanceolata, acute
No. of appendices on calyx lobe	6	4–5

of corolla tip (Table 1). On the basis of available literatures (Pham, 2003; Tao and Taylor, 2011) and carefully studying a type specimen of the plant, finally it was identified as *Ixora auricularis* Chun & F. C. How ex W. C. Ko for the first time from Vietnam. Previously its distribution has been known only in Yunnan of China. In this study, we reported *Ixora auricularis* as a newly added taxon to the Flora of Vietnam and its description, habitat, color photographs, illustrations and key of related taxa are provided.

Taxonomic Treatment

Ixora auricularis Chun & F. C. How ex W. C. Ko, Guihaia 19: 99–100, 1999.—TYPE: China. Sino-Russian Exped. 2347 (SCBI).

Shrubs or small trees up to 6–10 m high. Young branches glabrous, green. Leaves opposite, sessile; blade oblanceolate, oblong elliptic, or obovate-elliptic, 10–23 × 5–9 cm, glabrous on both surfaces, base cordate-auriculate, apex shortly acuminate, drying thinly papery, brown adaxially, pale abaxially; secondary veins 10–13 pairs; stipules broadly triangular, 7–18 mm, awn of stipules 5–7 mm, seta inside. Inflorescences terminal, corymbose, 6–15 cm wide; axis pubescence; peduncle 3–5 cm, articulate near base, at articulation with reduced leaves ca. 3 cm; bracteoles linear-lanceolate, ca. 1 mm; pedicels 2–3 mm. Flowers sessile or pedicellate. Calyx with hypanthium obconic, tube 1–1.5 mm; limb deeply lobed; lobes 4, ligulate, 0.5 mm long, having 6 appendices. Corolla purplish red; tube 2–3.5 cm, glabrous at throat; lobes oblanceolate-oblong, 7 × 3 mm, apex acute, sparse hair at base. Stamens 4, short filaments 1 mm; anthers 3 mm, acute at tip, bilobate at base. Ovary 2 loges, one ovule per loge; stigma bipartite. Drupe globose, 6–8 mm in diam..

Habitat: The species growing in evergreen forested.

Flowering: May–Jun.

Distribution: Vietnam (Lao Cai, Thanh Hoa), China (Yunnan).

Specimens examined: VIETNAM. Lao Cai province: Van Ban, 2008, Nguyen Quoc Binh et al. *VN 1965* (VN); Thanh Hoa province: Thuong Xuan, 2016, Nguyen Dinh Hai et al. *Trang-005* (VN).

A key to *Ixora auricularis* and its related taxa in Vietnam

1. Petiole 0–2 mm.
 2. Stipule 3–5 mm, calyx tube 1–1.5 mm *I. auricularis*
 2. Stipule 7–18 mm, calyx tube 2–2.5 mm.
 3. Leaves longer than 5 to 20 cm; wider than 3 to 5 cm.
 4. Secondary veins of leaves 6–10 pairs *I. coccinea*
 4. Secondary veins of leaves 12–16 pairs *I. coccinea* var. *caudata*
 3. Leaves shorter than 2 to 4 cm; narrower than 1 to 1.5 cm *I. coccinea* var. *compacta*
1. Petiole longer than 5 mm.
 5. Calyx lobe longer than ovary *I. eugenoides*
 5. Calyx lobe shorter than ovary or same length.
 6. Pubescence at corolla throat *I. laotica*
 6. Glabrous at corolla throat.
 7. Petiole 1–2 cm, stem slightly stout, style hairy in the middle *I. casei*
 7. Petiole 0.5–0.8 cm, stems slender, style glabrous *I. fulgens*

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