



ISSN 1859 - 4735

JOURNAL OF MEDICINAL MATERIALS

No. 3 - Vol. 30
6/2025

NATIONAL INSTITUTE OF MEDICINAL MATERIALS

3B QUANG TRUNG - HOAN KIEM - HANOI - VIETNAM
TEL: (+84-24) 38247058 FAX: (+84-24) 39348740
Email: tapchiduoclieu@nimm.org.vn; tapchiduoclieu@gmail.com

JOURNAL OF MEDICINAL MATERIALS (Print and Electronic Journals)

EDITORIAL BOARD (Term 2025-2030)

*(Attached to Decision No. 666/QĐ-VĐL dated April 24, 2025 signed by the Director
of Vietnam National Institute of Medicinal Materials)*

EDITOR-IN-CHIEF

Assoc. Prof. PhD. Do Thi Ha

I. Subcommittee of Pharmacognosy - Traditional Medicine

• **Assoc. Prof. Dr. Sci. Nguyen Minh Khoi - Head of Subcommittee**

- Assoc. Prof. PhD. Nguyen Thuong Dong - Member
- Prof. PhD. Nguyen Minh Duc - Member
- Prof. PhD. Tran Cong Luan - Member
- Prof. PhD. Won Keun Oh - Member
- Assoc. Prof. PhD. Tran Hung - Member
- Assoc. Prof. PhD. Nguyen Thi Bich Thu - Member
- Assoc. Prof. PhD. Phuong Thien Thuong - Member
- Assoc. Prof. PhD. Phan Minh Giang - Member
- Assoc. Prof. PhD. Le Nguyen Thanh - Member
- Assoc. Prof. PhD. Le Viet Dung - Member
- Assoc. Prof. PhD. Nguyen Quoc Huy - Member
- Assoc. Prof. PhD. Nguyen Thu Hang - Member
- PhD. Tran Minh Ngoc - Member
- PhD. Nguyen Van Tai - Member
- Assoc. Prof. PhD. Le Dinh Chi - Member
- PhD. Nguyen Tuan Hiep - Member.

II. Subcommittee of Pharmacology - Clinical Pharmacy

• **Assoc. Prof. PhD. Pham Thi Nguyet Hang - Head of Subcommittee**

- Assoc. Prof. Dr.Sci. Do Trung Dam - Member
- Assoc. Prof. PhD. Nguyen Thi Thu Huong - Member
- Assoc. PhD. William R. Folk - Member
- Assoc. Prof. PhD. Pham Thi Van Anh - Member
- Assoc. Prof. PhD. Nguyen Thuy Duong - Member
- Assoc. Prof. PhD. Le Van Minh - Member
- PhD. Tran Thi Hien - Member.

III. Subcommittee of Agriculture - Biology

• **PhD. Nguyen Van Khiem - Head of Subcommittee**

- PhD. Phan Thuy Hien - Member
- Assoc. Prof. PhD. Nguyen Van Tap - Member
- Assoc. Prof. PhD. Pham Thanh Huyen - Member
- Prof. PhD. Tran The Bach - Member.

IV. Subcommittee of Secretariat Administration

• **Assoc. Prof. PhD. Le Nguyen Thanh - Head of Subcommittee**

- PhD. Le Thi Xoan - Academic Secretary
- BSc. Nguyen Thi Minh Loc - Administrative Secretary.

Page	SCIENTIFIC RESEARCH
147	Alkaloid and Phenolic Compounds from the Stems of <i>Gouania javanica</i> Miq. - Le Thi Loan, Dang Minh Tu, Ha Van Oanh, Nguyen Van Tai
152	Cytotoxic Activity of Xanthonenes from the Twigs and Leaves of <i>Cratoxylum cochinchinensis</i> (Lour.) Blume - Nguyen Manh Khoa, Trinh Thi Quynh Anh, Nguyen Thi Kim Oanh, Nguyen Thi Thu, Nguyen Tra My, Ngo Thi Thuy, Nguyen Hung Son, Nguyen Manh Tuyen, Do Thi Ha
157	Antimicrobial Megastigmanes and Nucleosides Isolated from the Leaves of <i>Thespesia populnea</i> - Nguyen Phuong Thao, Kieu Thi Phuong Linh, Duong Thu Trang, Pham Thanh Binh, Nguyen The Cuong, Nguyen Van Thanh
163	Research on Morphological Characteristics, Microscopic Characteristics and Chemical Composition of “Buoi Bung” (<i>Acronychia pedunculata</i> (L.) Miq.) Collected in Quang Ninh Province - Dinh Thi Van, Bui Thi Thuy Luyen, Ha Van Oanh, Chu Thi Thanh Huyen, Le Thien Kim, Dang Hoang Phong, Bui Van Truong, Nguyen Tran Mai Phuong, Nguyen Thi Phuong Vien, Ta Ha Ngan, Nguyen Van Thang, Vu Thanh Binh, Nguyen Manh Tuyen
172	Method Development for Simultaneous Quantification of Naringin and Melitidine in Young Pomelo Fruits by HPLC-PDA - Nguyen Thi Anh Nguyet, Nguyen Kieu Quynh Trang, Nguyen Tan Phat, Nguyen Hoai Sang, Nguyen Le Hoang Son, Hoang Ngoc Cuong, Huynh Loi, Tran Thi Van Anh, Le Van Huan
179	Optimization of Daphnoretin Extraction from <i>Wikstroemia indica</i> (L.) C.A.Mey Twigs and Leaves Using Response Surface Methodology - Luong Le Uyen Trang, Pham Van Tan, Nguyen Tra My, Vu Thi Diep, Nguyen Thi Thu, Nguyen Van Lieu, Nguyen Hoang Tuan, Do Thi Ha
185	HPLC Method for Simultaneous Quantification of Ursolic Acid and Scopoletin in Noni Fruit (<i>Morinda citrifolia</i> L.) - Tran Thi Van Anh, Ca Khoi Ha, Phan Van Ho Nam
192	Developing HPLC-DAD Methods for Simultaneously Determining Content of Lycopene and β-Carotene in Gac Seed Aril Using External Standards and QAMS - Pham Thi Hien, Nguyen Thi Lan Hoa, Ta Thi Thao, Le Thi Thu Hang, Ho Hoai Thuong, Pham Thi Khuyen, Nguyen Thi Ha Ly
200	Simultaneous Quantification of Schaftoside and Isoschaftoside from <i>Herba Desmodii styracifolii</i> by UPLC-PDA - Nguyen Thi Ai Nhan, Huynh Loi, Le Văn Huan, Le Đình Phu, Pham Đông Phuong
209	Progesterone-Like Effects of <i>Haplopteris flexuosa</i> (Fée) E.H. Crane on Vaginal Bleeding in an Experimental Murine Model - Dinh Thi Minh, Vu Minh Chau, Dang Ngoc Tuan Anh, Dinh Thi Huyen Trang, Pham Thi Nguyet Hang
216	<i>Primula pellucida</i> Franch. (Primulaceae): A New Record for the Flora of Vietnam - Dang Viet Cuong, Nguyen Van Hieu, Nguyen Hai Van, Luong Vu Duc, Pham Ngoc Khanh, Hoang Thi Nhu Nu, Nguyen Minh Khoi
218	Rutin Ethosomes by Sole Solvent Injection: Preparation Method, Physical Properties, Drug Loading, Deformation, and <i>in-vitro</i> Membrane Permeability - Nguyen Hong Van, Bui Thi Hong Thuy

**PRIMULA PELLUCIDA FRANCH. (PRIMULACEAE):
A NEW RECORD FOR THE FLORA OF VIETNAM**

**Dang Viet Cuong^{1,2,*}, Nguyen Van Hieu¹, Nguyen Hai Van¹, Luong Vu Duc¹,
Pham Ngoc Khanh¹, Hoang Thi Nhu Nu¹, Nguyen Minh Khoi^{1,*}**

¹National Institute of Medicinal Materials (NIMM), Hanoi, 11022, Vietnam;

²VNU University of Medicine and Pharmacy

*Corresponding authors: nguyenminhkhoei.nimm@gmail.com, vietcuongtistr@gmail.com

Received March 25th, 2025

Accepted June 05th, 2025

Summary

Primula pellucida Franch. (Primulaceae), a new record for the flora of Vietnam, is described here, with additional information on its distribution and habitat accompanied by photographic illustrations. A key to the species of *Primula* in Vietnam is also provided.

Keywords: *Primula pellucida*; New record; Primulaceae; Vietnam.

1. Introduction

The genus *Primula* L. (comprising approximately 500 species) is the largest genus within the family Primulaceae. It is predominantly distributed across the temperate regions of the Northern Hemisphere, with only a few species occurring in the mountainous areas of Africa (Ethiopia), tropical Asia (Indonesia, New Guinea), and South America [1]. Members of this genus contain flowers at corolla tube cylindric, not constricted at the throat and longer than calyx, limb 5-lobed, campanulate, lobes 2-cleft, margin entire [1],[2]. Recent phylogenetic studies of Primulaceae have revealed that *Primula* is not monophyletic [3],[4]. In traditional medicine, *Primula* species have been widely utilized for the treatment of various ailments (asthma, infection, diabetes, ulcers, and UTI disorders), owing to the presence of rich sources of secondary metabolites including saponins and flavonoids. *Primula* constituents have antimicrobial, antiproliferative, cardioactive, and antidiabetic properties. Infusions, decoctions, and tinctures derived from *P. veris*, *P. radix*, and *P. elatior* are valued for their antitussive, mucolytic, and secretolytic properties [5]. In Vietnam, six species of *Primula* have been documented, including *P. cardioeides* W.W.Sm. & H.R.Fletcher, *P. carolinehenryae* S.O'Brien (syn. *P. henryi* (Hemsl.) Pax), *P. chapaensis* Gagnep., *P. petelotii* W.W.Sm., *P. ngghialoensis* D.W.H. Rankin, and *P. gracilituba* C.M. Hu & Nuraliev [2],[6],[7],[8].

During our recent survey of medicinal plant resources in Cao Chai, Ta Tong, Muong Te district, Lai Chau province, northern Vietnam, we found some samples of *Primula* that we were unable to identify as any known species. After close scrutiny of the available literature and examination of the type specimens in the P herbaria [1],[2],[6],[7],[8],[9], we found that these

samples belong to *Primula pellucida* Franch., and this is the first record of *P. pellucida* in Vietnam.

2. Material and methods

Material: The morphological analysis was based on field observations and samples collected from Cao Chai, Ta Tong, Muong Te District, Lai Chau Province, northern Vietnam, as well as reference materials from neighboring countries (*Primula pellucida* Franch. China: 30 May 1996, Chen Zhiduan, Feng Min, Ma Xintang 960748 (PE01646797); 16 Dec 1933, Y. Tsiang 13932 (NAS00049477); 20180331 Zhu Xinxin, Yi Sirong, Wang Jun CZ0006, (CSH0153927); 01 April 1902, Ducloux F. 2020 (E00024166); 1913, Ducloux F. 562 (E00024167, E00024806); 10 May 2018, Zhang Lushui, Mao Xingxing, Li Jialiang, Chen Chunlin SUZLS03408 (KUN1562728). The specimens are deposited at the National Institute of Medicinal Materials Herbarium (NIMM), Hanoi, Vietnam.

Method: We have applied the morphological comparison method in this study.

3. Results and discussion

Primula pellucida Franch. is here described as a new record in Vietnam.

Primula pellucida Franch., Bull. Soc. Bot. France 35: 428. 1888; Qiming Hu & Sylvia Kelso, FOC Vol.15: 117. 1996. Type: China, Yunnan, Tchen-fonchan, 11 July 1882, Delavay No. 2274 (P).

Perennial herbs, efarinose. Leaves forming a rosette of 6-15 cm in diameter; petiole 1-3 cm long, narrowly winged, sparingly pilose; leaf blade broadly ovate to oblong, 1.5-4 × 1-3 cm, sparsely pilose mainly along veins abaxially, apex rounded, base cordate, margin crenate-dentate with acute or subobtusate teeth, lateral veins 6-8 on each side of midvein, almost at right angles to the midvein, reticulation of veins prominent on both surfaces. Scapes 1-2 per plant, slender, 5-10 cm long, sparsely

pubescent; umbels 3-9-flowered, superimposed; bracts subulate, 2-4 mm long, apex acute; pedicel 1.3-2.3 cm long. Flowers heterostylous. Calyx broadly campanulate, 3-5 mm long, glabrous, parted to $\pm$ middle; lobes triangular to ovate-lanceolate, apex acute. Corolla pink, limb 1-1.5 cm across, lobes obovate, deeply emarginate; tube 8-9 mm long; thrum flower with stamens 7-7.5 mm long, inserted in the upper part of the corolla tube; style slightly longer than calyx; pin flower with stamens 2-2.5 mm long, inserted at middle of the corolla tube (Fig. 1).

Distribution: northern Vietnam (Lai Chau), China (Yunnan). Ecology and habitat: the species grows in forests at 850-1300 m alt.

Specimen examined: Vietnam, Lai Chau province, Muong Te district, 27 September 2024, Nguyen Van Hieu, Pham Ngoc Khanh, Nguyen Hai Van, Luong Vu Duc, MT03 [NIMM].

Key to the species of *Primula* in Vietnam.

1. Petioles short and winged, tapering all the way to the base or without a distinct demarcation with the blade2
 - Petioles 0.5-30 cm long3
2. Corolla white, with a green eye; petioles broadly winged, usually without a distinct demarcation with the blade; leaf blade $0.8-1.5 \times 0.5-1$ cm*P. gracilituba*
 - Corolla blue, with a bright orange-yellow eye; petioles winged, tapering all the way to the base; leaf blade $2.5-6 \times 1.5-4$ cm*P. nghialoensis*
3. Scapes 15-30 cm; petioles 0.5-10 cm long, apex acuminate4
 - Scapes 2.5-13 cm long; petioles 12-30 cm long, apex rounded5
4. Leaf blade cuneate or rounded at base; calyx ca. 3 mm*P. henryi*
 - Leaf blade cordate at base; calyx 7-10 mm*P. chapaensis*
5. Petioles 5-10 cm long, lateral veins 4-5 on each side*P. cardioeides*

- Petioles 0.5-4 cm long, lateral veins 6-8 on each side6
- 6. Calyx 3-5 mm long; leaf blade ovate, oblong*P. pellucida*
- Calyx 9-10 mm long; leaf blade obovate, suborbicular*P. petteloti*



Fig. 1. *Primula pellucida* Franch. (A) Flowering plant, (B-D) Flowers (MT03, NIMM). Photographs: (A-D) photographed by N.V. Hieu.

4. Conclusion

We provide the original reference and relevant citations, type information, detailed morphological descriptions, distribution and habitat, examined specimens, color photographs, and a key to the species of *Primula* in Vietnam. This study represents a new record for the flora of Vietnam.

Acknowledgments: This research is funded by the Ministry of Science and Technology of Vietnam under grant number NVQG-2023/ĐT.08, hosted by the National Institute of Medicinal Materials.

References

1. Wu Z., Raven P. H. (1996) Flora of China, Science Press (Beijing) & Missouri Botanical Garden Press (St. Louis), 15: 1-387.
2. Pham H. H. (1999) An Illustrated Flora of Vietnam, Youth Publishing House, 1: 710-711.
3. Larson D. A., Chanderbali A. S., Maurin O., Gonçalves D. J. P., Dick C. W., Soltis D. E., Soltis P. S., Fritsch P. W., Clarkson J. J., Grall A., Davies N. M. J., Larridon I., Kikuchi I. A. B. S., Forest F., Baker W. J., Smith S. A., Utteridge T. M. A. (2023) The phylogeny and global biogeography of Primulaceae based on high-throughput DNA sequence data. *Molecular Phylogenetics and Evolution*, 182, 107702.
4. Yan H. F., Liu T. J., X. Yuan, Xu Y., Zhang S. Y., Hao G., Ge X. J. (2025) Revisiting the phylogeny of Primulaceae s.l. using whole plastid genomes: Highlighting phylogenetic conflicts and their implications. *Journal of Systematics and Evolution*, <https://doi.org/10.1111/jse.13154>.
5. Alam F., Din K. M., Sarfraz M., Qudoos A., Malik S. (2024) Genus *Primula* and its role in phytomedicine; a systematic review. *Phytomedicine Plus*, 4(1), 100510.
6. Nguyen T. B. (2003), *Checklist of Plant Species of Vietnam*, Agriculture Publishing House, 516.
7. Nuraliev M. S., Kuznetsov A. N., Kuznetsova S. P., Hu C. M. (2020), *Primula gracilituba* (Primulaceae), a new species from northern Vietnam. *Nordic Journal of Botany*, 38(10), e02885.
8. Rankin D. W. H. (2010) 674. *Primula nghialoensis*. *Curtis's Botanical Magazine*, 27, 132-139.
9. Société Botanique de France (1888), *Bulletin*, Paris, 35, 428.