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Himalamintha (Lamicaeae, Nepetoideae, Mentheae, Menthinae) – a new genus from the Himalayan region

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Abstract: *Himalamintha* is described as a new genus in subtribe Menthinae characterized in first place by a calyx that is tubular and only weakly bilabiate, not sigmoid and distinctly bilabiate. The new genus contains 6 rather poorly known species occuring throughout the Himalayan region from the Chinese Province of Yunnan in the East to the western Himalayan foothills of Pakistan in the West. They had been placed in no fewer than 6 different genera over time (*Calamintha*, *Clinopodium*, *Melissa*, *Micromeria*, *Satureja* or even *Thymus*), whereas more recently they were united under *Clinopodium*. The species form a well supported phylogenetic lineage dissociated from typical *Clinopodium* and the other genera. It is more closely related to *Ziziphora* in the plastid DNA analyses or *Cyclotrichium*, *Mentha* and the *Clinopodium abyssinicum* group (also not close to typical *Clinopodium*) in the nuclear ribosomal DNA analyses. An overview on the complex taxonomic history is provided, morphological differences to related groups are outlined and the biogeography is discussed. Revising the material available from herbaria, literature and online databases, the genus and its component species are described in detail and an identification key is provided. For each species full synonymy, types and typifications are cited and the 5 names *Calamintha barosma* W.W.Sm., *Calamintha euosma* W.W.Sm., *Clinopodium longicaule* Benth., *Micromeria wardii* C.Marquand & Airy Shaw, and *Thymus piperitus* D.Don are typified. Notes on the species´ flowering time, ecology, altitudinal range, and distribution are added. Finally, images of the types and other herbarium specimens (incl. images of details), living plants and line drawings of diagnostic calyx characters are intended to support species identification.

Zusammenfassung: *Himalamintha* (Lamicaeae, Nepetoideae, Mentheae, Menthinae) – eine neue Gattung aus der Himalaya-Region. – *Himalamintha* wird als neue Gattung innerhalb der Subtribus Menthinae beschrieben, die in erster Linie durch einen röhrenförmigen und nur schwach zweilippigen, nicht sigmoiden und deutlich zweilippigen Kelch gekennzeichnet ist. Die neue Gattung enthält 6 eher wenig bekannte Arten, die in der gesamten Himalaya-Region – von der chinesischen Provinz Yunnan im Osten bis zu den westlichen Himalaya-Vorgebirgen Pakistans im Westen – vorkommen. Im Laufe der Zeit wurden diese Arten in nicht weniger als sechs verschiedenen Gattungen geführt (*Calamintha*, *Clinopodium*, *Melissa*, *Micromeria*, *Satureja* oder sogar *Thymus*), zuletzt jedoch unter *Clinopodium* zusammengefasst. Die Arten bilden eine gut abgesicherte Abstammungslinie, die von der typischen Gattung *Clinopodium* sowie den anderen genannten Gattungen abgesetzt ist. Analysen der Plastiden-DNA zeigen eine nähere Verwandtschaft zu *Ziziphora*, während Analysen der nukleären ribosomalen DNA eine engere Beziehung zu *Cyclotrichium*, *Mentha* und der *Clinopodium abyssinicum* Gruppe (die ebenfalls nicht nahe

mit typischen *Clinopodium* Vertretern verwandt ist) nahelegen. Es wird ein Überblick über die komplexe taxonomische Geschichte gegeben, morphologische Unterschiede zu verwandten Gruppen aufgezeigt und die Biogeografie erörtert. Auf der Grundlage von Material aus Herbarien, Literatur und Online-Datenbanken werden die Gattung und die zugehörigen Arten detailliert beschrieben und ein Bestimmungsschlüssel bereitgestellt. Für jede Art werden die vollständige Synonymie sowie Typen und Typifizierungen aufgeführt; zudem werden die 5 Namen *Calamintha barosma* W.W.Sm., *Calamintha euosma* W.W.Sm., *Clinopodium longicaule* Benth., *Micromeria wardii* C.Marquand & Airy Shaw und *Thymus piperitus* D.Don typifiziert. Ergänzend werden Angaben zu Blütezeit, Ökologie, Höhenverbreitung und geografischem Vorkommen gemacht. Schließlich sollen Abbildungen von Typen und weiteren Herbarbelegen (inkl. Detailaufnahmen), Fotos lebender Pflanzen sowie Strichzeichnungen diagnostischer Kelchmerkmale die Bestimmung der Arten unterstützen.

Key words: Flora of Nepal, Pakistan, China, Yunnan, Tibet, Taxonomy, Revision, Identification key

Introduction

During extensive investigations into subtribe Menthinae (Lamiaceae, Nepetoideae, Mentheae) several genera were found to be poly- or paraphyletic (Bräuchler et al. 2005, 2010). Based on robust evidence from phylogenetic and morphological data considerable generic rearrangements have been suggested. Recircumscription of the genera *Micromeria* Benth. (Bräuchler et al. 2006, 2008a), *Satureja* L. and *Thymbra* L. (Bräuchler 2018a), accommodation of South African endemic taxa in the genus *Killickia* Bräuchler, Heubl & Doroszenko (Bräuchler et al. 2008b) and transfer of numerous taxa to *Clinopodium* L. (Bräuchler 2018b, c, Bräuchler et al. 2006) helped settle taxonomic controversies which have persisted in the literature since the days of G. Bentham (1800-1884) and J.I. Briquet (1870-1931). Their fundamentally different, yet equally influential treatments accepted either several separate genera (Bentham 1848) or united most of them under a broadly defined *Satureja* (Briquet 1896). Although recent results clearly favour the former approach, part of the problem was shifted to *Clinopodium*. While the recent concept encompasses far fewer taxa than the broadly circumscribed *Satureja*, *Clinopodium* has similarly become a ‚dustbin' genus. It remains highly polyphyletic with almost 20 genera intercalating (Bräuchler et al. 2010), including popular plants such as *Mentha* L. (mint) and *Monarda* L. (bee balm/bergamot).

The New World taxa currently included in *Clinopodium* all are clearly distinct from the typical Old World *Clinopodium* – as represented by the type of *C. vulgare* L. – both phylogenetically and morphologically. A lack of phylogenetic resolution among and between the New World *Clinopodium* species and numerous other well characterised genera, along with contrasting phylogenetic signals using different markers, leaves generic delimitations within the group an open question. By contrast, some progress has been made for the Old World taxa. Transfer of the species previously included in *Acinos* Mill. (and traditionally frequently considered part of *Clinopodium*) to *Ziziphora* L. (Melnikov 2016a, b, Bartolucci et al. 2019) was well justified (Bräuchler et al. 2010). Although the current phylogenetic resolution and placement suggests differently (Bräuchler et al. 2010), the genus *Drymosiphon* Melnikov, seggregated exclusively based on morphology (Melnikov 2015a), may prove to represent a natural unit. At least some of the new combinations made and taxa newly described in Old World *Clinopodium* by Melnikov (2013, 2014, 2015b, 2016c, 2020) are far less likely to do so. But even though his concept is phylogenetically inconsistent, and follows a splitting approach, (summarized in Melnikov 2017) it serves as a good basis from which to place and identify new taxa or lump some of those previously described.

In spite of the studies listed above, some Old World lineages which are well supported in the phylogenies are yet to be addressed. In preparation for the Lamiaceae treatment in the upcoming volume 7 of the Flora of Nepal, the present study focuses on a lineage which is restricted to the Himalayan region (here broadly defined to include the mountain ranges from the Hengduan Mountains in China to the Karakorum in Pakistan) and adjacent foothills and was informally named the *Clinopodium nepalense* group in Bräuchler et al. (2010). It is clearly distinguished from both typical *Clinopodium* and *Micromeria* and appears closer to *Ziziphora* in the plastid DNA analyses or *Cyclotrichium* (Boiss.) Manden. & Scheng., *Mentha* and the *Clinopodium abyssinicum* group (Ryding 2006) – another distinct lineage best considered as separate genus – in the nuclear ribosomal DNA analyses. Historically the 6 species included in the *Clinopodium nepalense* group have been placed in no fewer than 6 different genera over time (*Calamintha* Mill., *Clinopodium*, *Melissa* L., *Micromeria*, *Satureja* or even *Thymus* L.). More recently they were united under Clinopodium (Bräuchler et al. 2006). Affinities have been assumed between some of the species by Smith (1916: 89), Kudô (1929: 99), Doroszenko (1986: 282) and Li & Hedge (1994: 229), but they have not been grouped or revised together for various reasons.

A full, modern treatment of the group is still missing. The most comprehensive and recent work by Doroszenko (1986) never was effectively published and even there, taxa remained split between two genera (*Calamintha* and *Micromeria*). Later treatments only covered particular floristic regions (Hedge 1990, Li & Hedge 1994, Ohba et al. 2008) and thus never included all species. The plants seem to be rather rare and predominantly occur in places difficult to access. In consequence most of them are poorly represented in herbaria. While recent digitization events in herbaria around the worldwide help tracing the scattered material, so far images of living plants are available online for only three species. The present study compiles all details known about the group, describes it as a distinct genus new to science and provides an identification key to its species along with images of living plants (5 spp.) and herbarium specimens (6 spp.).

Materials and Methods

This study is based on investigations in more than 70 herbaria and extensive field work worldwide between 2003 and 2026. Material of the Himalayan taxa has been consulted as physical specimens at BM, E, HBG, K, LI, M, MSB, S, UPS, W & WU (acronyms according to Index Herbariorum 2026) and in the first author's own herbarium, with most of the work done in the years 2013 and 2024-2026. Micromorphological characters have been analysed using stereo microscopes and imaging facilities at E (2013) and LI (2024-2026) by the first author and at WU by Jasmin Rehrmbacher (2026). With a bit of experience, the species are fairly easy to identify using digital images of specimens. Therefore, these studies have been complemented by consulting the increasing number of images of both specimens and living plants available in the online repositories Chinese Virtual Herbarium (2026), eFloraofIndia (2026), Flora of Nepal (2026), Flora of Nepal Database (2026), GBIF.org (2026a, b, c, d, e), Herbarium Plant Database (2026), JACQ consortium (2004 ff.), Kew Data Portal (2026), NHM Data Portal (2026), NSII (2026), Open Herbarium (2026), RBGE Herbarium Catalogue (2026), Vascular Plants P (2026), ZOBODAT (2026). Records representing molecular data integrated into GBIF were discarded (19 IDs: 2250265217, 2250265451, 2250265857, 2250267593, 2250268002, 2250268058, 2250269304, 3349897936, 3442386070, 3442427621, 3443420667, 3443431708, 3818173387, 3818184445, 3818189317, 3818322609, 3969093266, 3987086728, 3987316627), for these are merely derivatives of specimens and frequently both the source specimen and the publication are not mentioned – especially for those harvested from GenBank (https://www.ncbi.nlm.nih.gov/genbank/) for BOLD (Barcoding of Life Systems at https://www.boldsystems.org/) and from there integrated into GBIF. Also some doubtful general or misidentified records (IDs provided under each species) had to be excluded. The authors´ own observations have been compared with all data published in the literature cited throughout the text. Ecological data like flowering time, habitat and elevation have been extracted from herbarium labels. Species descriptions are largely based on the treatments cited, modified to follow the same structure and amended where necessary.

Line drawings of calyx details have been created by Jasmin Rehrmbacher (Vienna) using available images from specimens and living plants as well as physical material. All records for the new genus used in this study are summarzied in Appendix 1, those excluded (due to misidentification or other reasons) are cited in the text directly. Individual records can be accessed following the hyperlinks provided, via the different repositories (e.g. by searching for the barcode/catalogue number) or, alternatively for GBIF, by adding the prefix https://www.gbif.org/occurrence/ to the nummerical ID provided. All articles cited in the text refer to the current version of the International Code for Algae, Fungi, and Plants ("Madrid code", Turland et al. 2025).

Taxonomic treatment

Himalamintha Bräuchler, gen. nov.

= *Melissa* sect. *Heteromelysson* Benth., Lab. Gen. Sp. 395 (1834) [quoad *M. longicaulis*]

≡ *Calamintha* sect. *Heteromelysson* (Benth.) Benth., Prodr. [A.P. de Candolle] 234 1848 [quoad *C. longicaulis*]

= *Satureja* sect. *Barosma* Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 99 (1929) [quoad *S. barosma*, *S. euosma*].

Diagnosis: The new genus has affinities towards *Clinopodium* and *Micromeria*. From most *Clinopodium* it differs in the leaves being cuneate or subcuneate at base and not rounded or obtuse with margins (sub)crenulate, not crenate, lax terminal spike- or head-like inflorescences, rather few-flowered cymes which are not condensed and never form dense, globose verticillasters, the calyces being tubular and weakly bilabiate, not sigmoid and bilabiate, and the calyx teeth subequal, straight or slightly spreading, not unequal and curved upwards. The African(-Arabian) *Clinopodium abyssinicum* group shares with *Himalamintha* the straight calyx tube, but differs either in flowers condensed in (sub)globose verticillasters with many-flowered cymes (*C. myrianthum* (Baker) Ryding, *C. robustum* (Hook.f) Ryding, *C. vernayanum* (Brenan) Ryding) or, if flowers arranged more loosely, thecae strictly parallel and tightly arranged (*C. abyssinicum* (Hochst. ex Benth.) Kuntze, *C. paradoxum* (Vatke) Ryding), not divergent. The more distantly related Mediterranean *C. album* (Waldst. & Kit.) Bräuchler & Govaerts has superficial similarities with some species of *Himalamintha*, but the calyx is narrow obconoidal (not tubular) with unequal, broadly triangluar teeth (not subequal, triangular to narrow triangular) and all four stamens clearly exserted from tube (not posterior ones hardly exserted). From *Micromeria* it differs in having stems which are usually taller and frequently arching, leaves not cordate or rounded at base with margin (sub)crenulate and shallowly toothed (thus sometimes appearing entire), not entire (except for smallest uppermost leaves) or cristate, never with a thickened, sclerenchymatic marginal vein and not all stamens clearly exserted from corolla tube.

Description: Herbs aromatic, perennial, suffrutescent. Underground parts a woody rootstock or rhizome. Stems up to 110 cm, green to purplish, erect, ascending or decumbent, simple to much-branched, frutescent at base and quadrangular-rounded to terete, 0.5-3 mm in diameter, puberulent to villose (sometimes glabrescent towards the base). Leaves very short to distinctly petiolate, petioles 0.5-10.5 mm, lamina suborbicular, ovate or rhombic, narrow-oblong or (ob)lanceolate, base usually (sub)cuneate, apex obtuse, 3-41 mm × 2-15 mm, glandular-punctate above and below, glabrous to pubescent or villose, margins frequently slightly revolute, sometimes appearing entire, but usually (sub)crenulate (with up to 4 very shallow teeth on either side). Inflorescences spike- or head-shaped, (sub)terminal, composed of several more or less close verticillasters, each with two rather few (1-12)-flowered cymes (neither the cymes nor the inflorescence as a whole are densely globose). Bracts leaf like. Peduncles very short to 10 mm, erect to spreading or curved. Bracteoles straight linear to subulate, up to 2 mm. Flowers pedicellate. Calyx green to purplish, sub-

bilabiate (sinuses between upper 3 teeth and lower two slightly deeper), 13-veined (two parallel, not connected veins spanning the sinus between lower teeth and each sinus between lower teeth and upper teeth, one branching vein each spanning the two sinuses between upper teeth, see Figs. 1 & 6) or 15-veined (parallel, not connected veins spanning all sinuses, see Figs. 1 & 10c), tubular (not gibbous at base), 4-9 mm × 1-1.5 mm, tube straight or slightly curved in one direction, but never sigmoid, (almost) glabrous or puberulent to villose outside, glabrous inside except for a ring of hairs at the throat (absent only in two species), formed by cilia at the base of each tooth, teeth subequal, 1-4 mm, more or less straight to slightly spreading, margins ciliate or not. Corolla violet, rosy to purple, yellow or white, bilabiate, slightly to long exserted, 9-18 mm, puberulent outside, tube (very) narrow obconoidal, upper lip two-lobed to retuse, sometimes shalowly spoon-shaped, straight to patent, lower lip three lobed, spreading to patent. Stamens 4, didynamous, free in apical half of corolla tube, anterior (lower) pair longer, usually exserted from tube and included under upper lip, rarely included in tube, posterior (upper) pair included or barely exserted. Style exserted, stigma equally or unequally 2-lobed. Nutlets brown to black-brown, (ovoid-)oblong 1-1.3 × 0.5 mm, glabrous.

Type: The generic name *Himalamintha* is typified here by Bräuchler by the nomenclatural type of *Thymus piperitus* D.Don, the first species described in the group, the name *Melissa* sect. *Heteromelysson* Benth. by the type of *Clinopodium longicaule* Benth. and *Satureja* sect. *Barosma* Kudô by that of *Calamintha barosma* W.W.Sm. respectively (see below for details).

Chromosome number: Unknown for most species. Only one count has been published for H. piperitum (Malla et al. 1977) based on a verified collection (KATH035909) with 2n = 24.

Distribution: Himalayan region from E to W with the species of the genus found isolated from each other along the Himalayas with a significant gap between Nepal and the Yarlung Tsangbo river in China (from the Indian Sikkim to Arunachal Pradesh through Buthan). Four species (*H. barosma*, *H. euosma*, *H. nepalensis*, *H. wardii*) are found in China´s provinces Xizang/ Tibet and Yunnan, two (*H. nepalensis*, *H. piperita*) at different elevations and in different parts of Nepal, and one (*H. hydaspidis*) in the western foothills of Pakistan and adjacent India (Kashmir).

Altitutdinal range: 1600 – 4000 m.

Discussion: Though placed differently in phylogenetic analyses based on plastid and nuclear ribosobal DNA sequences (Bräuchler et al. 2010), the new genus is clearly indicated as distinct lineage in both. It also differs morphologically from all other phylogenetically close groups in Menthinae (the *Clinopodium abyssinicum* group, *Cyclotrichium, Mentha* and *Ziziphora*), but also from more distantly related, remaining *Clinopodium* and *Micromeria* (the two genera the species of *Himalamintha* have been included prior to our studies), such that the group can be identified with some experience very easily at a first glance (in both living and preserved material). Single diagnostic characters can be found in individual species of other genera, but never in combination.

The number of calyx veins has frequently been used as a diagnostic character and within the genus 13 seems to be the predominant number, but 15 veins have also been reported (Li & Hedge 1994: 229). The number of specimens and thus the number of flowers available for dissection is very limited and handling the small flowers is a challenge. Hence only single or few flowers per species have been dissected at all and although Doroszenko (1986) left his preparations with the specimens he examined, it is not always possible to reuse them. Detailed drawings or images of dissected calyces allowing to infer the number of veins have not been published for the species treated here. Our results show that most specimens have 13 veins. Each calyx tooth has 3 veins that merge toward its tip, but stay separate all the way to the base of the calyx tube, hence the total number of veins expected would be 15. In most specimens, however the veins at both margins of the middle tooth of the upper calyx lip are fused with the marginal vein of the adjacent tooth each reducing the total number by 2. In some specimens, this fusion obviously did not happen and the veins stay completely separate. Our own observations question the specifity of this character state: whereas Hedge (1990) cited 13 veins for *H. hydaspidis*, our investigation clearly shows 15 (see Fig. 10c) and where Li & Hedge (1994: 229) stated 15 veins for *H. wardii*, the two calyces of different collections (Herbarium Bräuchler, Dickoré 4898; E00207249) investigated by us have 13 (e.g. Fig. 20). The frequency of 15-veined calyces needs further investigations using fresh plant material.

Etymology: The generic name is composed of the suffix "Himala-" derived from the Himalayas, the mountainous region where it is distributed, and the stem "-mintha" as reference to the aromatic mint scent of the plants.

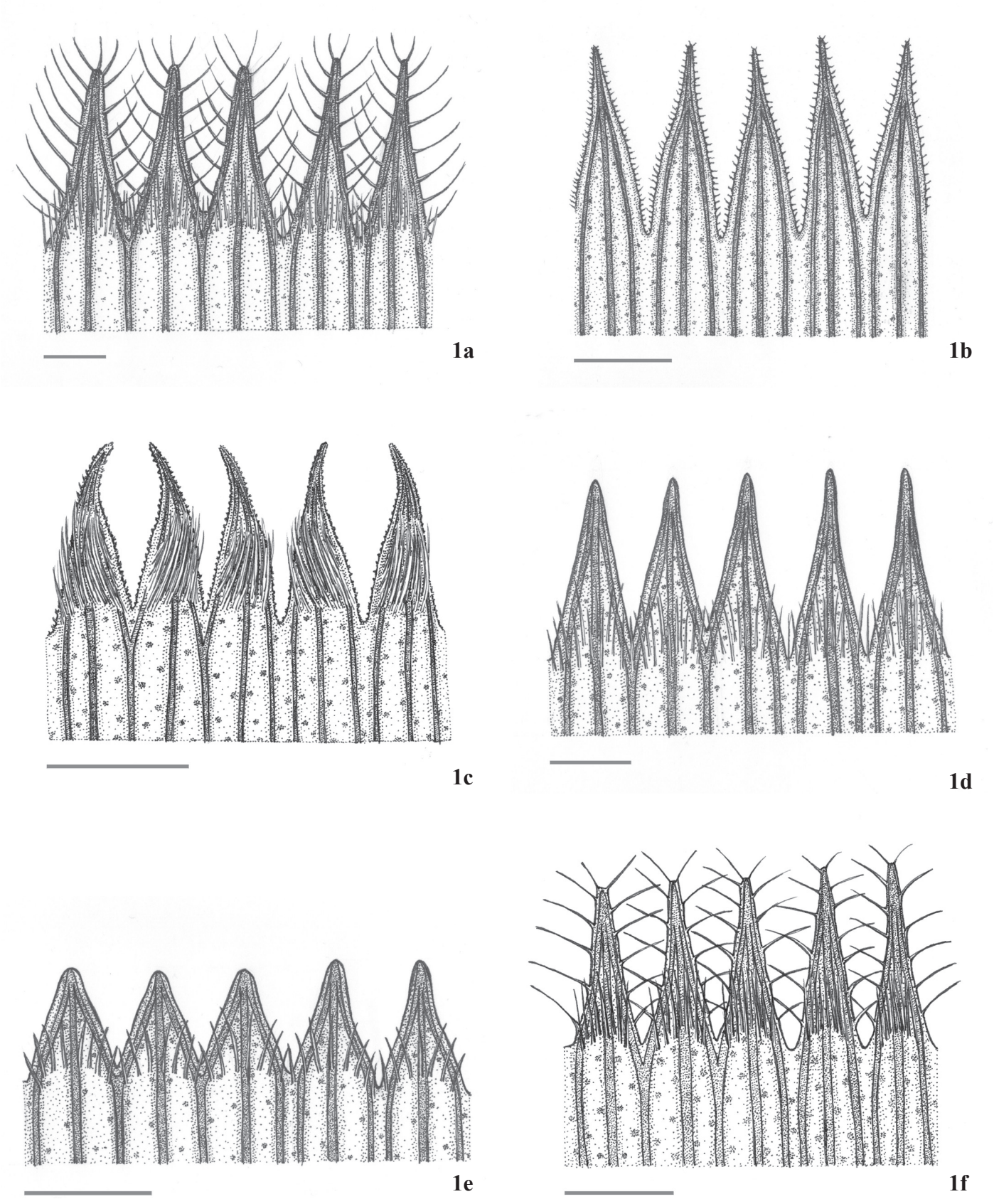


Fig: 1: Details of interior of calyx throat and teeth of *Himalamintha* spp. – upper three teeth always on the left and lower two on the right (line drawings by J. Rehrmbacher): a) *H. piperita*, b) *H. hydaspidis*, c) *H. nepalensis*, d) *H. barosma*, e) *H. wardii*, f) *H. euosma*; grey scale bars are 1 mm each.

Key to the species

1a Middle stem leaves (like all leaves) small, not longer than 6 mm, secondary veins not (or hardly) visible .... **4. *H. barosma***

1b Middle stem leaves bigger, longer than 10 mm (but uppermost leaves sometimes shorter), secondary veins clearly visible .. 2

2a Leaves oblanceolate to narrowly oblong, flowers creamy yellow ..... **3. *H. nepalensis***

2b Leaves (oblong-)ovate to suborbicular or rhomboid, flowers white or purplish 3

3a Calyx glabrous inside throat, calyx teeth about 2-2.5 mm, narrowly triangular with tips attenuate and straight, flowers white, never purplish ..... **2. *H. hydaspidis***

3a Calyx usually with a more or less dense ring of simple long hairs inside throat, if glabrous, corolla not white and calyx teeth ca. 1 mm, broadly trianglular with tips short subulate and spreading 4

4a Calyx teeth not ciliate at margin (but sometimes very few minute hairs at tip) ..... **5. *H. wardii***

4b Calyx teeth long ciliate at margin 5

5a Leaves sparsely pubescent with longer hairs evenly distributed above and restricted to the veins below, peduncles shorter than petioles of leaf like bracts, corolla tube much longer than calyx (up to twice as long), gradually widening from inside calyx tube ..... **1. *H. piperita***

5b Leaves minutely puberulent above and below, peduncles longer than petioles of leaf like bracts, corolla tube only little longer than calyx, abruptly widening at calyx throat ..... **6. *H. euosma***

Species descriptions

1. Himalamintha piperita (D.Don) Bräuchler, comb. nov. (Figs. 1a, 2-8)

[*Calamintha piperita* (D.Don) Doroszenko (1986: 320), ined.]

[*Marrubium piperitum* Buch.-Ham., in sched.]

≡ *Clinopodium piperitum* (D.Don) Murata, Acta Phytotax. Geobot. 28(1-3): 30. 1977; Press in Hara et al., Enum. Fl. Pl. Nepal 3: 150 (1982); Polunin & Stainton, Flowers. Him.: 334 (1984); Malla, Fl. Kath. Vall. 551 (1986); Shrestha & Press, Cat. Sp. Nep. 46 (2000).

≡ *Satureja piperita* (D.Don) Briq., Nat. Pflanzenfam. [Engler & Prantl] 4(3a): 301 (1896).

≡ *Thymus piperitus* D.Don, Prodr. Fl. Nep. 112 (1825).

Type: [Nepal] Narainhetty [Kathmandu], 8th March 1803, Buchanan-Hamilton s.n. (lectotype BM000950393, designated here by Bräuchler, Fig. 2).

Note: Don (1825) cites the collections of Buchanan-Hamilton from Nepal collected in 1802-3 (then kept in Lambert´s herbarium, now at BM) as basis of his descriptions as well as the locality and the manuscript name "Marrubium piperitum B." written on the label by Buchanan-Hamilton (as indicated by the "B." and an additional label stating "Napaul. Dr Buchanan"). Thus the material clearly represents a syntype. Since the loss of previously existing duplicates can never be fully excluded the present specimen is designated as lectotype here. In case a duplicate of this collection was part of the set donated to J.E. Smith (now at LINN) and is preserved, that would represent an (unstudied) isolectotype (see Fraser-Jenkins 2006).

= *Clinopodium longicaule* Benth. [in Wall. Cat. No 2131 (1830, nom. nud.] in Wall. Pl. As. Rar. 1: 66 (1830); Kitam. & Murata in Kihara, Fauna Fl. Nepal Himalaya 1: 214 (1955).

≡ *Calamintha longicaulis* (Benth.) Benth., Prodr. [A.P. de Candolle] 12: 234 (1848); Hook.f., Fl. Br. Ind. 4: 651 (1885), Mukerjee, Rec. Bot. Surv. Ind. 14: 146 (1940).

≡ *Melissa longicaulis* (Benth.) Benth., Lab. Gen. Sp. 395 (1834).

≡ *Satureja longicaulis* (Benth.) Benerji, Rec. Bot. Surv. Ind. 19(2): 77 (1966).

Type: Napalia, Wallich 1829 W.H. 2131 (lectotype K000193479, designated here by Bräuchler, fig. 3, isolectotype K001115271).

Note: At K there are two specimens collected by Wallich referring to his nr. 2131. The first is located in the Wallich herbarium (K001115271) with both a detailed original label by Wallich and a determination label ("2131. Clinopodium longicaule Benth. Napalia 1821") that simply was cut from a copy of Wallich (1829-1849). The second is a duplicate from Bentham´s herbarium (K000193479) with a rough copy of the locality "Napalia" (as cited in the protologue) and all of Bentham´s names with the oldest just above the locality and the later ones added subsequently above. The date "1829" written by Bentham certainly is an error that may have happened during copying from the original specimen or indicates the year Bentham received the specimen from Wallich. Since Bentham (1830) did not indicate a repository for the type, it is not clear whether he has only seen the specimen in his herbarium or also used Wallich´s duplicate. In this situation designating the specimen from Bentham´s herbarium as lectotype seems appropriate.

= *Thymus origanifolius* D.Don, Prodr. Fl. Nep. 113 (1825).

Note: The first to formally accept this synonymy was Press (1982). In spite of repeated efforts, no type material for this name could be traced at BM and it certainly is not kept in Wallich´s herbarium at K today. The specimen was probably collected by Gardner (Fraser-Jenkins 2007). Nonetheless the description allows to confirm the synonymy that has first been suggested with doubts by Bentham (1830).



Fig. 2: *Himalamintha piperita* – lectotype of *Thymus piperitus* D.Don (BM00095039), © The Trustees of the Natural History Museum, London, licensed under CC BY 4.0.



Fig. 3: *Himalamintha piperita* – lectotype of *Clinopodium longicaule* Benth. (K000193479), © The Trustees of the Royal Botanic Gardens, Kew, licensed under CC BY 4.0.





Fig. 4: *Himalamintha piperita* (SK2416) – a) habitus; b) lateral view of flowers (cymes very depauperate), © S.K. Kasaju, licensed under CC BY 4.0.

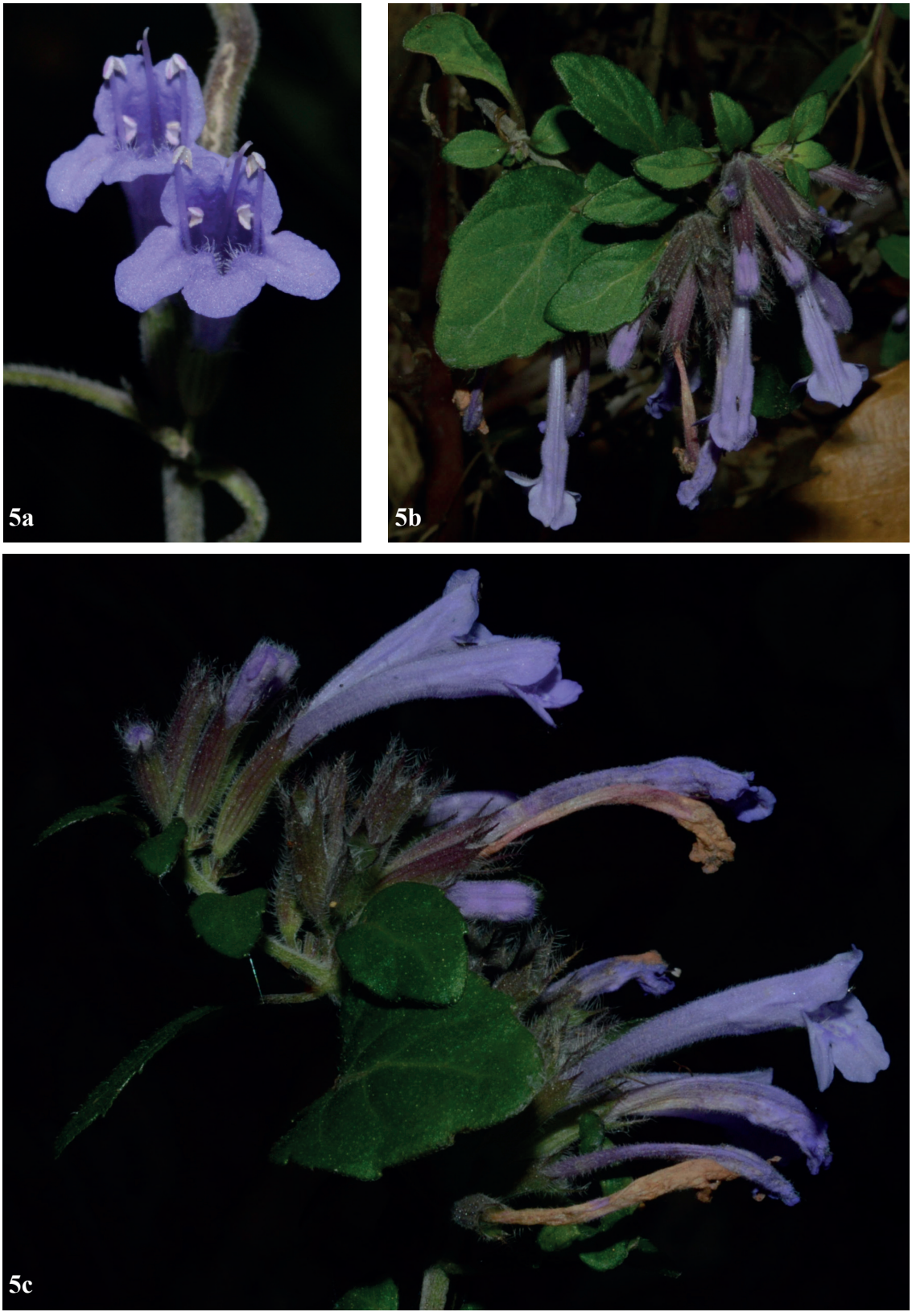


Fig. 5: *Himalamintha piperita* – a) flower frontal view (SK2416); b) view on cymes with more flowers from above, c) lateral view on cymes with more flowers (SK1853), all © S.K. Kasaju, licensed under CC BY 4.0.

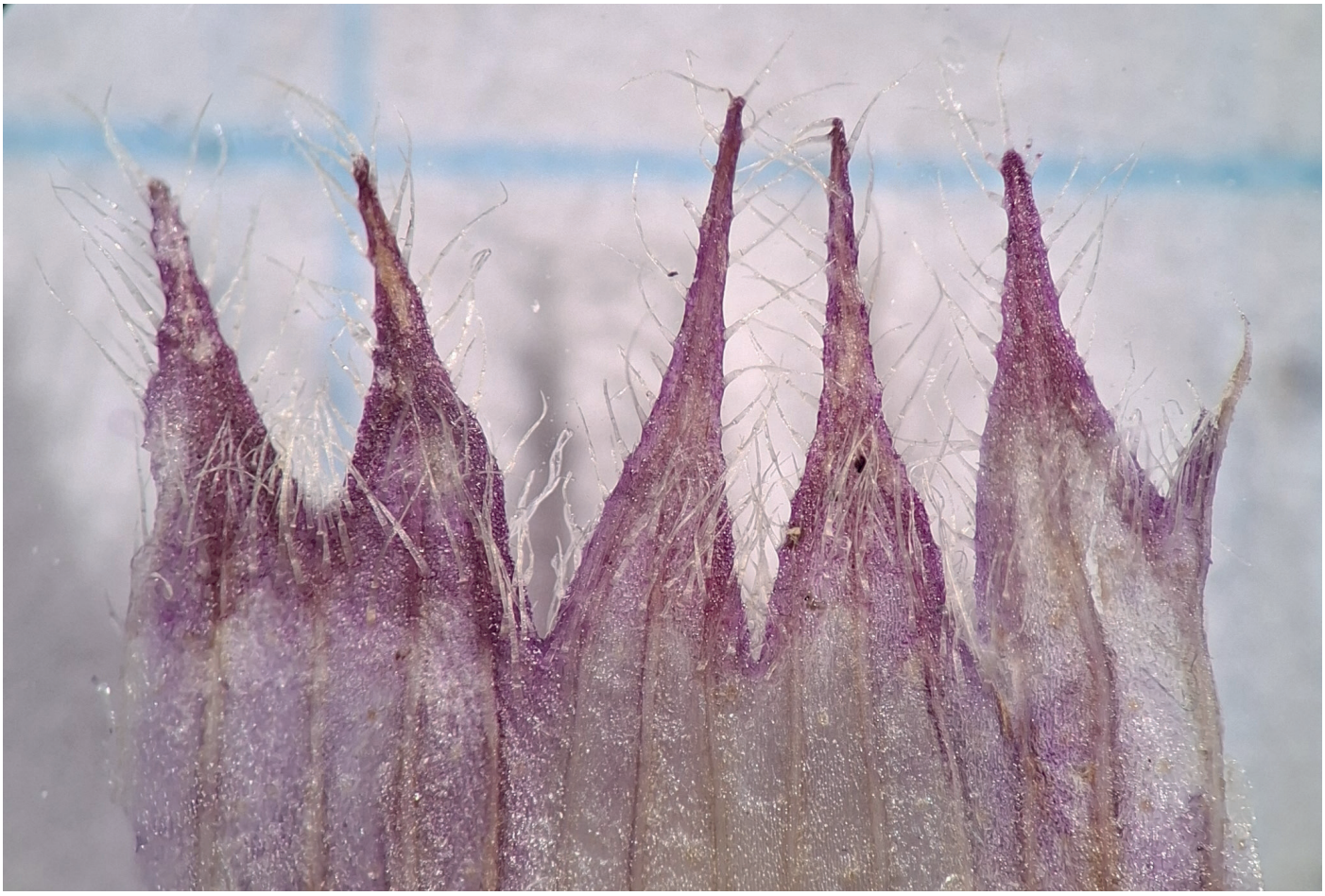


Fig. 6: *Himalamintha piperita* (LI08039675) – interior details of dissected calyx, © J. Rehrmbacher, licensed under CC BY 4.0.

Description (modified from Davies 2005 and largely amended): Herbs aromatic, perennial, with creeping, woody rhizomes. Stems up to 110 cm, few, green to purplish, decumbent to ascending, branched, frutescent with age towards base, quadrangular-rounded, sparsely (towards base) to densely (towards apex) covered with an indumentum of long (0.5-1 mm) white retrorse, rarely almost patent hairs (especially on side branches, possibly becoming retrorse with age). Leaves petiolate, petiole 1.5-10.5 mm, lamina ovate to rhomboid, base cuneate, apex acute to rounded and mucronate, 3-41 × 2.5-4.5 mm, gland dotted, covered with long, white antrorse hairs, scattered above, restricted to and denser on veins below, leaf margins entire to (sub)crenulate. Inflorescences head-shaped, mostly subsecund, composed of a few cymes arranged (sub) terminally on short side branches. Bracts leaf like. Peduncles short (shorter than petioles of bracts; 1-2 mm), spreading. Bracteoles subulate-linear-ensiform, 1.5-2.5 mm. Cymes 1-6 flowered. Pedicels 0.5-2 mm. Calyx green to purplish, sub-bilabiate (sinuses between upper 3 teeth and lower 2 slightly deeper), 13-veined, tubular, 6-12 × 1-1.5 mm, tube straight to very slightly curved, spreading-villose outside, glabrous inside except for a ring of hairs at the throat/base of the calyx teeth; teeth subequal, sometimes slightly spreading, attenuate, upper three 1-3 mm; lower two 2-4 mm, margin ciliate. Corolla bluish violet, bilabiate, 10-18 mm, short retrorse pubescent outside, glabrous inside in upper part and pubescent in lower part (along and between the two ridges extending from the base of the middle lobe of the lower lip), tube long exserted from calyx, gradually widening from inside calyx tube, straight to slightly curved, very narrow obconoidal, upper lip about half as long as lower lip, straight, retuse, margins broadly recurved, lower lip spreading, margins hardly recurved, lobes (sub)equal. Anterior stamens exserted from or just included under upper lip, filaments c. 4 mm, posterior stamens just included at throat of corolla tube, filaments c. 2 mm, anthers with divergent thecae. Style exserted, longer than stamens, stigma lobes equal, subulate. Nutlets not observed here.

Flowering time: November – June.

Note: Specimens exclusively fruting or sterile are very rarely collected. Due to the high overall number of flowers per individual, flowers in specimens are usually at different stages of anthesis. Fruiting starts slightly later than flowering and in most cases there is both flowers and fruits in a specimen. Hence flowering and fruiting times may have an offset of a week to a month, but are considered more or less identical here.

Ecology: Wet, shady river banks and rocky slopes, in mixed evergreen forest (*Quercus*, *Rhododendron* etc.) and at forest edges.

Altitudinal range: 1600 – 2700 m.



Fig. 7: *Himalamintha piperita* (E00570403) – interior of corolla, © C. Bräuchler, licensed under CC BY 4.0.

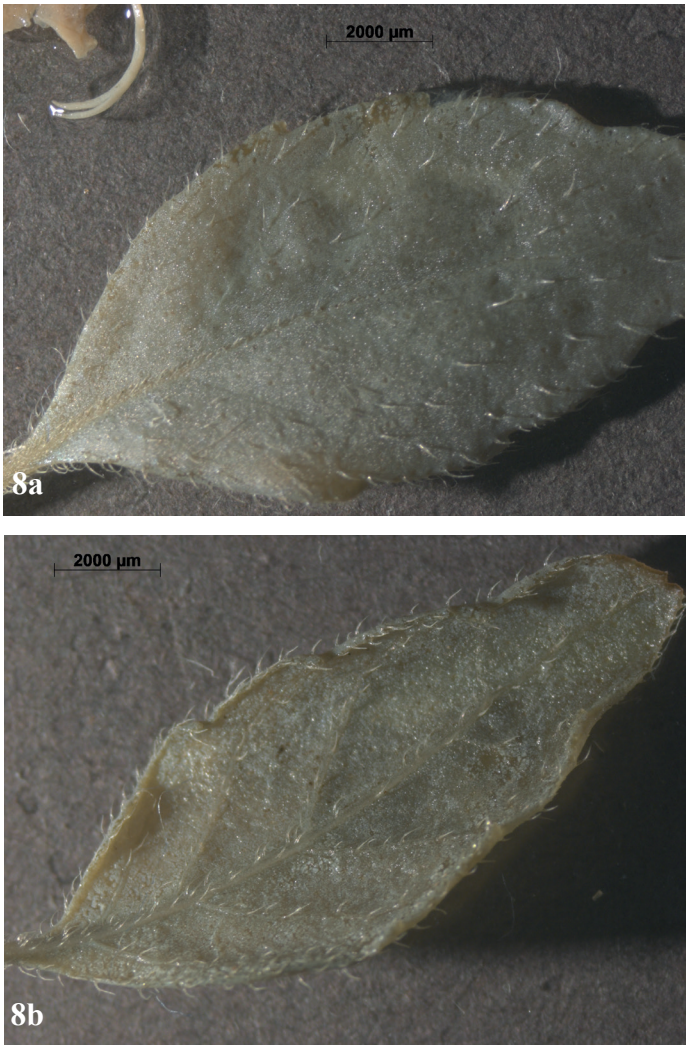


Fig. 8: *Himalamintha piperita* (E00570403) – a) adaxial leaf surface, b) abaxial leaf surface, © C. Bräuchler, licensed under CC BY 4.0.

Distribution: Western and Central Nepal. Not uncommon in, but endemic, to the region. The known range spans some 300 km from Lumsum in the W to Ramechhap in the E, yet most collections are from the forest regions in the larger Kathmandu area. Most likely this is an artefact of collecting density, and monitoring should detect more instances of *H. piperitum* in suitable habitats across its full range. Due to its unique combination of characters and absence of similar species in the region, the taxon has rarely been misidentified and certainly is the species best documented in the genus. Reports from India or Pakistan resulted from the misapplication of synonyms (*Calamintha longicaulis* etc.) to *H. hydaspidis* (see below).

Records/specimens: 129 (77 different records, 52 duplicates), 39 of these in GBIF.org (2026e), 91 in additional repositories; further 3 general distribution records in GBIF.org (2026e; IDs 1563396580, 1563386794, 1563380694) are of obscure origin and have been excluded here and another 5 had been misidentified with this name (IDs 4043928820, 4045268545, 465064267, 1843561385 and 1843549935).

2. Himalamintha hydaspidis (Falc. ex Benth.) Bräuchler, comb. nov., Figs. 1b), 9 & 10

≡ *Clinopodium hydaspidis* (Falc. ex Benth.) Kuntze, Revis. Gen. Pl. 2: 515 (1891).

≡ *Satureja hydaspidis* (Falc. ex Benth.) Briq., Nat. Pflanzenfam. [Engler & Prantl] 4(3a): 301 (1896).

≡ *Calamintha hydaspidis* (Falc. ex Benth.) Hedge, Fl. Pakistan 192: 237 (1990).

≡ *Micromeria hydaspidis* Falc. ex Benth., Prodr. [A.P. de Candolle] 12: 224 (1848).

Type: Pakistan, From Patlee to Mangha [Mangla Hamlet? 33.0947109, 73.6418473], valley of the Jhelum, Septr. 1837, Falconer 1250 (lectotype K000193437, designated by Hedge (1990: 238)).

Note: Bentham (1848) did not cite Falconer´s number, but the locality ("Ad Hydaspidem" = today´s Jehlum river), Falconer´s manuscript name ("Micromeria hydaspidis Fal.") and Falconer´s herbarium ("v. in herb. Falconer"). Falconer´s herbarium today is at K and contains a single specimen of "*Micromeria hydaspidis* Fal." with the number 1250. Since in such historical collections, previous existence of additional specimens can hardly be excluded, the present specimen should be considered a syntype. Though Hedge (1990) had not seen that specimen, his citation of "Falconer 1250" at K as "Type" must be accepted as formal designation of a lectotype (Art. 9.10 & 9.19). Falconer used transcribed local names that are difficult to match with a modern place name. We assume the type collection has been made within a range of 50 km up and down the Jehlum river from today´s Mangla Hamlet [a plausible interpretation for Mangha].

Description (modified after Hedge 1990): Herbs aromatic, perennial, with creeping, frutescent rhizomes. Stems few, rather slender, 30-40 cm, green, ascending to erect, branched, rounded-quadrangular, covered with an indumentum of short crisped eglandular retrorse hairs, often with small clusters of younger



Fig. 9: *Himalamintha hydaspidis* – lectotype of *Micromeria hydaspidis* Falc.ex Benth. (K000193437), © The Trustees of the Royal Botanic Gardens, Kew, licensed under CC BY 4.0.







Fig. 10: *Himalamintha hydaspidis* (W0018155) – a) flower, b) detail of flower, c) calyx interior, © J. Rehrmbacher, licensed under CC BY 4.0.

leaves in leaf axils. Leaves petiolate, petiole up to 5 mm, lamina oblong-ovate, thin-textured, base cuneate, 15-25 × 10-15 mm, gland-dotted above and below, with a sparse indumentum of very short eglandular hairs, margin subentire to irregularly crenulate. Inflorescence spike-shaped composed of loosely arranged verticillasters of two few-flowered cymes (3-6 flowers) each. Cymes pedunculate, peduncles 3-7 mm, erect. Calyx pale brown-green, narrow tubular, 7-8 mm × 1.5 mm wide, finely ribbed with very shortly puberulent outside, glabrous inside (ring of hairs at throat missing); teeth subequal, very narrow triangular, c. 2-2.5 mm (the lower slightly longer), acuminate, shortly pilose with very few longer hairs on the margin at the very base of the teeth. Corolla white, c. 15 mm long; tube c. 1 mm wide, gradually widening from inside calyx tube, long exserted beyond calyx teeth, covered with antrorse-curly hair outside. Anterior stamens exserted from tube, but included under upper lip, filaments c. 3 mm, posterior stamens just included at throat of corolla tube, filaments c. 2 mm, thecae glabrous, divergent. Nutlets c. 1.2 × 0.6 mm, brown, with a prominent V-shaped white attachment scar, scarcely trigonous, apically rounded.

Note: The very few longer hairs on the margin at the base of the calyx teeth probably was interpreted by Hedge (1990: 237) as equivalent to the beard found inside the calyx throat of other speices when describing the calyx with "tube somewhat villous within throat". Also, the specimens we examined had all divergent thecae, so maybe Hedge (1990: 238) investigated an immature flower when he cited them as "±parallel".

Flowering time: July – October (see note under *H. piperitum*).

Ecology: Shady cliffs and river banks in open forest.

Altitudinal range: 2000-2500 m.

Distribution: Pakistan (western Himalayan foothills, Kashmir, Hazara and Rawalpindi provinces), India (Jammu and Kashmir, Jammu division). There has been some confusion on whether this taxon so far is endemic to Pakistan and adjacent India. Most records from India obviously have been misplaced in the Indian part of Kashmir, while they clearly are located in today´s Pakistan. Only one specimen collected by F. Stoliczka (1838-1874) and found among the unidentified specimens of Lamiaceae at W (W0018155) by the first author, unquestionably is from India (Budravar [=Bhaderwah]), but the species seems restricted to the Jammu division (i.e. the S part) of Jammu and Kashmir. The species was confused with *H. piperitum* in the past due to superficial overall resemblance. Although clarified in the most recent treatment by Hedge (1990), this confusion perpetuates in collections where material has not been revised for a longer time, e.g. where specimens from Pakistan remain under *Calamintha longicaulis* and thus erroneously may still be considered to be *C. piperitum* whereas they truly represent *H. hydaspidis*. Due to the inaccessibility of the area of occurrence the species has rarely been collected and due to absence of proper reference material on site, it keeps getting confused with other species (see below for HUP).

Records/specimens: 11 (8 different records and 3 duplicates), 6 of these in GBIF.org (2026c), 4 in GBIF.org (2026e; IDs 1843561385, 1843549935, 4982423194 and 4982426365) misidentified as *Clinopodium piperitum*), and 1 additional from W. 4 records from HUP in GBIF.org (2026c; IDs 4078818026, 4078818029, 4078818032, 4078818036) and Open Herbarium (2026) had been misidentified and represent other species.

3. *Himalamintha nepalensis* (Kitam. & Murata) Bräuchler, comb. nov., Figs. 1c), 11-13

≡ *Clinopodium nepalense* (Kitam. & Murata) Bräuchler & Heubl, Taxon 55: 979 (2006), Ohba et al., Fl. Mustang: 270 (2008)

≡ *Micromeria nepalensis* Kitam. & Murata, Acta Phytotax. Geobot. 16(1): 3 (30 May 1955) & in Kihara, Fauna Fl. Nepal Himalaya 1: 214 (1955).

Type: Nepal, Bangu Khola, 3400 m [28°26´N – 84°26´E], 11.06.1953 S. Nakao (holotype KYO00106867, Fig. 11).

Description (modified after Ohba et al. 2008): Herbs aromatic, perennial, with creeping, woody rhizomes, stoloniferous. Stems soliltary to few, erect, 25-45 cm, branched distally, quadrangular-rounded, 1-3 mm thick, retrorsely hispid on angles (hairs 0.25-0.3 mm). Leaves subsessile to shortly petiolate, petiole up to 3 mm, lamina darker green above and paler green below, oblanceolate to narrowly oblong, base cuneate-attenuate, apex obtuse, 10-25 × 4-8 mm, glabrous above, with very short, antrorse hairs on veins below, glandular punctate all over, margin slightly revolute, entire to subcrenulate (with up to 4 very shallow teeth at margin). Bracts leaf like. Cymes in upper leaf axils, few flowered (1-4 flowers each), shortly pedunculate. Peduncle c. 1 mm, erect-spreading, bracteoles lanceolate (those of the terminal flowers in lower cymes bigger than in upper cymes) to subulate-linear, 1-4 mm, slightly longer than pedicels. Pedicels longer than peduncle, 2-2.5 mm. Calyx 13-veined, tubular, c. 3.5 mm at anthesis, 3.7-4 mm in fruit, tube straight to slightly curved, covered with short antrorse hairs outside and glabrous inside except for a dense ring of long white hairs in throat, teeth 1-1.5 mm, narrowly triangular in proximal half, acuminate-subulate in upper half, upper half spreading, margins not ciliate. Corolla creamy yellow, fragrant, bilabiate, 10-13 mm, tube obconoidal, gradually widening from inside calyx tube, lips (sub)equal in length (2-2.5 mm), upper retuse, straight and shalowly spoon-shaped, lower bent downwards to slightly recurved. Stamens exserted from tube, but included under upper lip (only fully exserted in cases where upper lip is for some reason curved back), filaments of anterior 2.5-3.2 mm, of posterior c. 1.7-2.3 mm, anthers purple, thecae divergent. Style long exserted, stigma lobes equal, subulate. brown, compressed ellipsoid, c. 0.8 mm.

Flowering time: June – October (see note under *H. piperitum*).

Ecology: Rocky, rather dry places on riverbanks and steep slopes, in grassland close to forests, open shrubland, forest edges or open *Quercus* or *Pinus* forest.

Altitudinal range: 2450-4000 m.

Distribution: Nepal, Central and West (slopes of the Himalaya main range and adjacent transverse valleys; China (Xizang/Tibet); the species was long believed to be restricted to Nepal, but has recently been collected in Tibet (Liu et al. 2020) - just N of Mustang in Nepal. With respect to the distribution of the species within Nepal, this was not too surprising and the species can still be considered a Himalayan endemic. The presence of the species in China has been overlooked by Rajbhandari et al.(2022).

Records/specimens: 79 (42 different records, 37 duplicates), 45 of these in GBIF.org (2026d), 34 in additional repositories; 1 record each in Herbarium Plant Database (2026; KATH133724) and Flora of Nepal Database (2026; TI10010962) has been misidentified with this name and was excluded, likewise 1 in GBIF.org (2026d; ID 1563386697) representing a general distribution record and another 6 entries from BM (IDs 615356965, 615356966, 615356967, 615356968, 615356969, 615356970) - the latter came to GBIF via the GMBA-HUP (2026) database, but had already been included directly in our study before. This highlights the importance of improving standard routines for deduplication in data aggregators. 17 specimens from P included in GBIF.org (2026d; IDs 439437727, 437771676, 438770694, 437439463, 437439462, 439104241, 439437726, 439104240, 437771675, 438770693, 437771674, 437106593, 438437848, 439437725, 439437724, 438104732, 437439461) obviously have been digitally mislabelled and also represent other species.



Fig. 11: *Himalamintha nepalensis* – holotype of *Micromeria nepalensis* KITAM. & MURATA (KYO00106867), © Kyoto University Museum Herbarium (KYO), licensed unter CC BY 4.0.

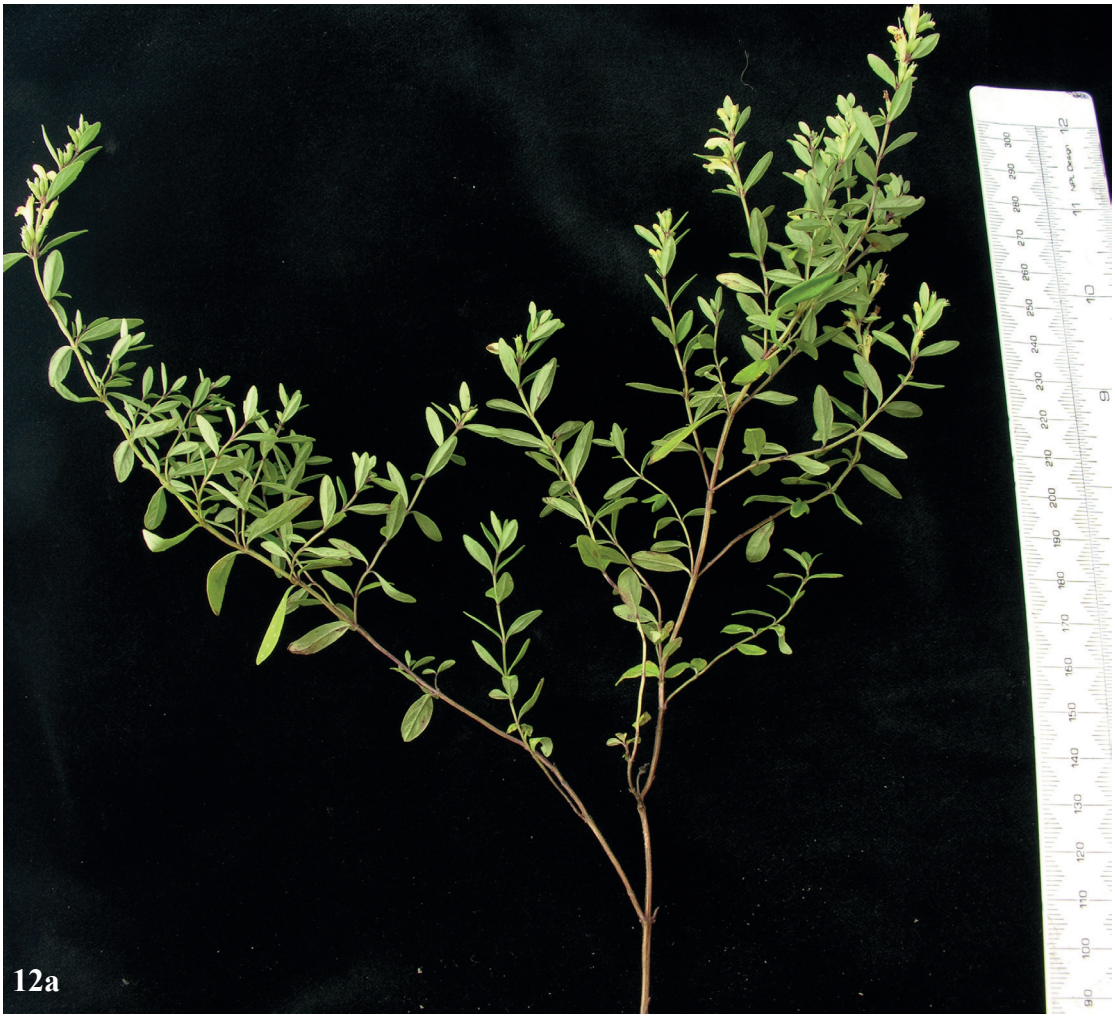








Fig. 12: *Himalamintha nepalensis* – a) habit, b) cymes lateral view, c) flower view from below (all E00274572), © Royal Botanic Garden Edinburgh, licensed under CC BY 4.0; d) detail of corolla ([UPS] V-620950), © J. Rehrmbacher, licensed under CC BY 4.0.





Fig. 13: *Himalamintha nepalensis* – ([UPS] V-620950) a) calyx detail outside, b) interior calyx details, © J. Rehrmbacher, licensed under CC BY 4.0.

4. Himalamintha barosma (W.W.Sm.) Bräuchler, comb. nov.; Figs. 1d), 14-16

≡ *Clinopodium barosmum* (W.W.Sm.) Bräuchler & Heubl, Taxon 55: 978 (2006).

≡ *Micromeria barosma* (W.W.Sm.) Hand.-Mazz., Symb. Sin. 7: 932 (1936), Doroszenko (1986: 283), Li & Hedge (1994: 229).

≡ *Satureja barosma* (W.W.Sm.) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 99 (1929).

≡ *Calamintha barosma* W.W.Sm., Notes Roy. Bot. Gard. Edinburgh 9: 88 (1916).

Type: China, Yunnan, "Stony pasture and on ledges of limestone cliffs on the mountains in the N.E. of the Yangtze bend, 27°45′N. Alt. 12,000 ft. July 1913" G. Forrest No. 10,371 (lectotype E00208089, designated here by Bräuchler, Fig. 17, isolectotypes A00146268, BM000793174, BM000793175, E00208090, HBG506331, K000193439, MO1884896, N2151C0001H00015031?, N2151C0001EB1027150?, PE00824219, U.1402521, US1279527, W1924-0000595).

Note: Smith (1916) cited the collections at E as basis for his descriptions. There are two duplicates of Forrest 10371 at E, one (E00208089) labelled "Type" on a revision label by Smith, the other one (E00208090) with "Co-Type" written on the label by Smith. Since the designation of E00208089 as holotype has not been effectively published (Art. 6.1, Art. 29-31), these specimens are to be considered syntypes (Art. 9.6). The formally incorrect citation of the "holotype" at E by Bräuchler et al. (2006) cannot be considered designation of a lectotype, for it lacks the term "lectotype" (Art. 9.23). To follow Smith´s intention E00208089 is formally designated here as the lectotype. The presence of isolectotypes (as well as three further collections, two by Forrest, one by Handel-Mazzetti) at N is plausible, for Nanching was capital of China by the time these botanists collected and they may well have had to leave duplicates there. Since the corresponding database entries in Chinese Virtual Herbarium (2026) are somewhat ambiguous and without images, their presence and identity need to be verified.

Description (modified after Li & Hedge 1994: 229): Herbs/subshrubs, aromatic, perennial, diffuse, tufted with woody rootstock. Stems numerous, slender, 20–40 cm, purple-red, base frutescent, radiately prostrate-ascending, much branched, terete, densely puberulent, white pilose (hairs retrose, c. 0.1 mm), upper branches longer. Leaves petiolate, petioles c. 0.5 mm; lamina lanceolate to oblanceolate, subpapery, 4–6 × 2–3 mm, base cuneate, decurrent, apex slightly obtuse, glabrous or with scattered, very short (< 0.5 mm), antrorse hairs, conspicuously impressed glandular, margin entire, revolute. Cymes shortly pedunculate, peduncles c. 1 mm, erect-spreading, 3–7 verticillasters close together (but not condensed) in terminal spikes (30-50 mm). Bracts similar to leaves, smaller, narrower; cymes 1- or 2-flowered. Bracteoles linear, c. 2 mm, shorter than or as long as pedicel. Pedicels c. 2 mm. Calyx ± purplish, subbilabiate, 13-veined, tubular, c. 9 mm, tube straight, veins puberulent, not pilose, golden glandular between veins, glabrous inside except for a dense ring of long white hairs in throat; teeth subulate, apiculate, subequal, puberulent, c. 2.2-2.5 mm, margin not ciliate. Corolla rose to red-purple,bilabiate, c. 18 mm, densely puberulent outside; tube long exserted, gradually widening from inside calyx tube, straight, slender, c. 12 mm, curved in exserted part, lips subequal in length, upper lip oblong, c. 6 × 3 mm; lower lip spreading, c. 7 mm, middle lobe elongated, oblong, lateral lobes ovate. Anterior stamens just exserted, filaments c. 6.5 mm, posterior stamens included, filaments c. 5 mm, thecae divergent.



Fig. 14: *Himalamintha barosma* – lectotype of *Calamintha barosma* W.W.Sm. (E00208089); © Royal Botanic Garden Edinburgh, licensed under CC BY 4.0.

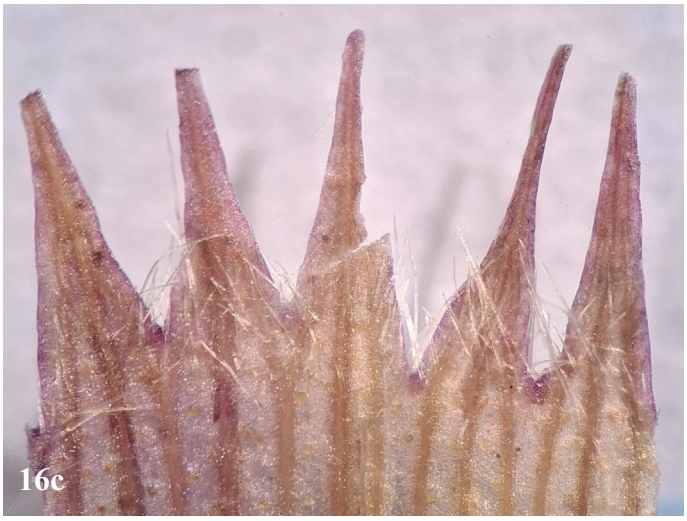


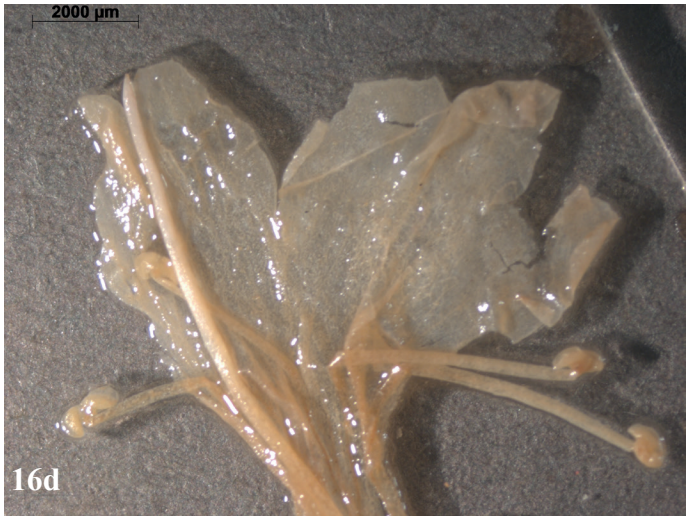
Fig. 15: *Himalamintha barosma* – habit (at Haba snow mountain); © C.-L. Xiang, licensed under CC BY 4.0).





Fig. 16: *Himalamintha barosma* – a) inflorescence (at Haba snow mountain), © C.-L. Xiang, licensed under CC BY 4.0.; b) flower detail outside, c) calyx interior details at throat, b-c: P04230105, © J. Rehrmbacher, licensed under CC BY 4.0; d) distal part of dissected flower showing free parts of stamens, E00504879, © C. Bräuchler, licensed under CC BY 4.0.





Ovary glabrous. Nutlets triquetrous, oblong, c. 1.3 mm, black-brown with 2 white scars at base, glabrous.

Flowering time: July – October (see footnote under *H. piperitum*).

Ecology: Dry rocky places in grasslands and pine forests, rocky crevices on limestone.

Altitudinal range: 2300–3800 m.

Distribution: China, Yunnan, seems restricted to the mountain ranges between Shangri-La and Lijiang (e.g. Haba Snow Mountain/Haba Xueshan and Jade Dragon Snow Mountain/Yulong Xueshan).

Records/specimens: 54 (20 different record, 34 duplicates; in case ISBC0583589 proves to be Forrest 20511, then 19 records and 35 duplicates), 42 of these in GBIF.org (2026a), 4 in NSII (2026) and 7 in Chrinese Virtual Herbarium (2026), where an additional 5 records from N (N2151C0001D00124367, N2151C0001EB1007822, N2151C0001EB1026020, N2151C0001EB1027150, N2151C0001H00015031) are to be verified (see also note under the type citation above) and 3 (GZTM0031998, GZTM0031999, PEY0047655) have been misidentified and represent another species. The latter also applies to 1 record from WTU in GBIF.org (2026a; ID 5887282484).





Fig. 17: *Himalamintha barosma* – (E00504879) a) leaf adaxial view, b) leaf abaxial view, © C. Bräuchler, licensed under CC BY 4.0.

5. Himalamintha wardii (C.Marquand & Airy Shaw) Bräuchler, comb. nov., Figs. 1e), 17-22

≡ *Clinopodium wardii* (C.Marquand & Airy Shaw) Bräuchler, Taxon 55: 980 (2006).

≡ *Micromeria wardii* C.Marquand & Airy Shaw, J. Linn. Soc., Bot. 48: 216 (1929).

Type: S.E. Tibet, Undershrub of bushy habit with powerfully scented leaves. On open rocky grass-clad slopes in the Tsang-po Gorge, ca. 2100 m, 28.11.1924, F. Kingdon Ward 6342 (lectotype K000193438, designated here by Bräuchler, Fig. 18, isolectotype E00208092).

Note: Marquand (1929) did not cite a repository, hence the duplicates known to exist today at E and K are syntypes (Art. 9.6). Bräuchler et al. (2006) erroneously cited the holotype as present at BM, but there is no BM duplicate and this was a mistake made when preparing the manuscript. Even if there had been a duplicate at BM, this would not qualify as "lectotype" since this term is not included (Art. 9.23). The K specimen has Kingdon Ward´s original label, the most complete plant and a flower dissection and is here designated as lectotype.

Description (modified after Li & Hedge 1994: 229): Herbs/subshrubs, aromatic, perennial, with creeping woody rhizomes. Stems erect, to 50 cm, few branched, terete, purplish, finely striate, white indumentum of sparse longer retrorse hairs (0.5 mm) and dense short spreading hairs (<0.1 mm). Petioles c. 1 mm; leaf blade ovate, 1–1.5 cm × 4–7 mm, densely impressed glandular, adaxially sparsely strigose, scabrid, base cuneate, margin subcrenulate, revolute (thus appearing entire from above), apex obtuse. Bracts leaf like. Verticillasters 2–6-flowered, widely spaced, in upper axils; cymes pedunculate. Peduncles erect-spreading, 1-2 mm. Bracteoles subulate. Pedicels subulate, 1–3 mm. Calyx 4–5 × 1–1.5 mm, purplish, veins puberulent, or almost glabrous in all parts, conspicuously 13-veined; teeth subequal, triangular, c. 1 mm, apex subulate, spreading, not ciliate at margin. Corolla blue-purplish, c. 14 mm, pubescent; tube slender, to 2 mm wide at throat, upper lip ovate, 2-lobed, straight; lower lip slightly longer, curved downwards. Anterior stamens exserted, but included under upper lip, filaments c. 3.5-4 mm, posterior stamens included, filaments c. 2-2.5 mm, thecae divergent. Ovary glabrous, style exserted, stigma lobes subulate, one slightly shorter than the other. Nutlets subtriquetrous, ovoid-oblong, c. 1.3 mm, glabrous.

Flowering time: July – November (see note under *H. piperitum*).

Ecology: On rocky ground on river banks, grassy slopes, thickets, in forest clearings and edges in pine or oak forest.

Altitudinal range: 1400-3700 m.

Distribution: China, Xizang/Tibet , valleys of the (Yarlung Tsangp-Po gorge and adjacent valleys and Parlung Tsangpo. Rather common in the area and the most widespread and variable of the 4 species occuring in China. The record from Parlung Tsangpo (Fig. 18b) seems to have almost glabrous calyces (also at the throat inside) and its status is subject to ongoing research.



Fig. 18: *Himalamintha wardii* – lectotype of *Micromeria wardii* C. Marquand & Airy Shaw (K000193438); © The Trustees of the Royal Botanic Gardens, Kew, licensed under CC BY 4.0.

Records/specimens: 68 (43 different records, 25 duplicates), 39 of these in GBIF.org (2026a; 1 additional, HNWP241593 without image, ID 4044749229, had either been misidentified or incorrectly georeferenced), 1 in NSII (2026; 1 additional, KUN217748, is unclear) and 24 in Chinese Virtual Herbarium (2026; 1 more KUN1388936 had been misidentified and represents another species).









Fig. 19: *Himalamintha wardii* – a) habit,(5231357552, iNaturalist 248573064; at Mainling); © Xinyu Luo, licensed under CC BY-NC 4.0; b) part of in florescence, Xizang/Tibet, Near Songzong, c) part of inflorescence, Xizang/Tibet, Paizhen, © C.-L. Xiang, licensed under CC BY 4.0; d) dried flower (Herbarium Bräuchler, Dickoré 4898), © J. Rehrmbacher, licensed under CC BY 4.0.

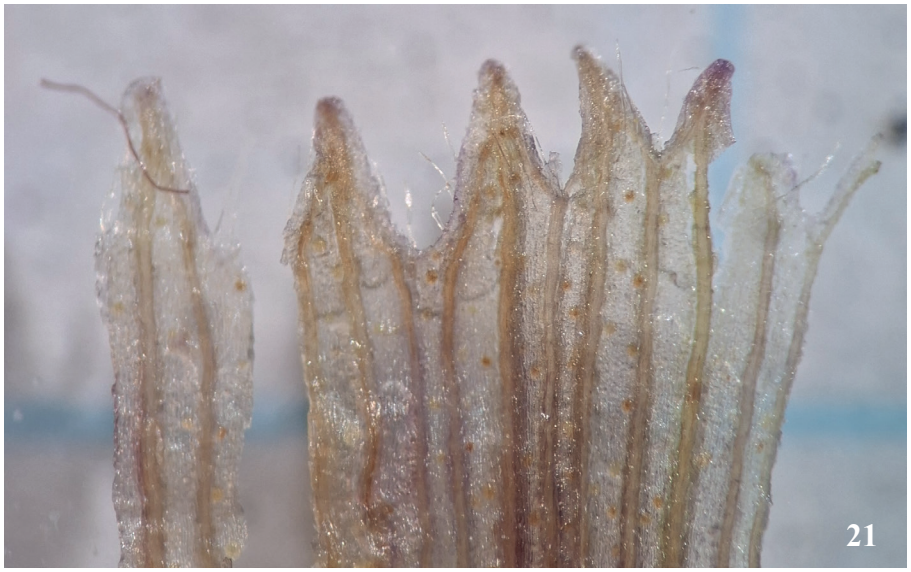
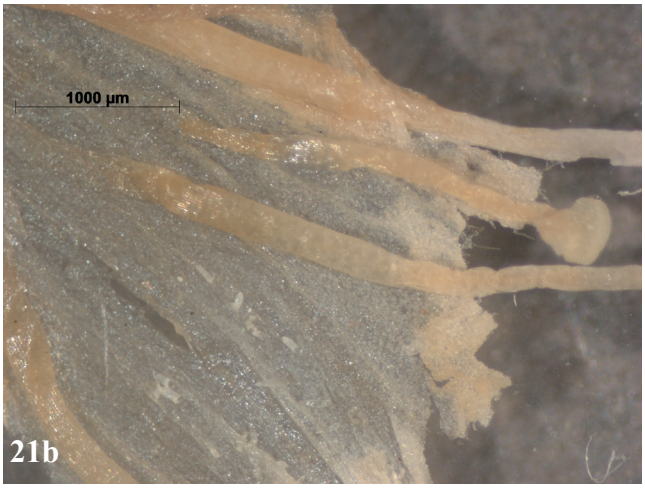


Fig. 20: *Himalamintha wardii* – distal calyx interior, details (Herbarium Bräuchler, Dickoré 4898); © J. Rehrmbacher, licensed under CC BY 4.0.









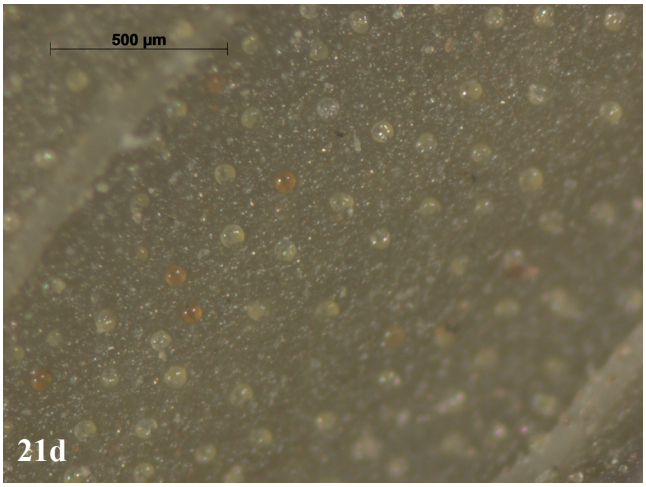


Fig. 21: *Himalamintha wardii* – E00207249 a) dissected corolla showing free part of anterior stamen, b) dissected corolla showing free part of posterior stamen, c) leaf adaxial view; d) leaf detail adaxial view, e) leaf abaxial view; © C. Bräuchler, licensed under CC BY 4.0.



Fig. 22: *Himalamintha euosma* – lectotype of *Calamintha euosma* W.W.Sm. (E00207258), © Royal Botanic Garden Edinburgh, licensed under CC BY 4.0.



Fig. 23: *Himalamintha euosma* – habit (at Jade Dragon Snow Mountain, Yunnan); © C.-L. Xiang, licensed under CC BY.

6. *Himalamintha euosma* (W.W.Sm.) Bräuchler, comb. nov., Figs. 1f), 22-24

≡ *Clinopodium euosmum* (W.W.Sm.) Bräuchler & Heubl, Taxon 55: 979 (2006).

≡ *Calamintha euosma* W.W.Sm., Notes Roy. Bot. Gard. Edinburgh 9: 89 (1916).

≡ *Satureja euosma* (W.W.Sm.) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 100 (1929).

≡ *Micromeria euosma* (W.W.Sm.) C.Y.Wu, Acta Phytotax. Sin. 10: 229 (1965).

Type: China, Yunnan, Open limey pasture in the mountains in the N.E. of the Yangtze bend, Lat. 27°45′ N. Alt. 11,000 ft. July 1913, G. Forrest No. 10,574 (lectotype E00207258, designated here by Bräuchler, fig. 21, isolectotype A00146269, E00208091, K000193440).

Note: Smith (1916) cited the collections at E as basis for his descriptions (as inferred from the title of the article). Since there are two duplicates of Forrest 10574 at E (E00207258, E00208091), these specimens are to be considered syntypes (Art. 9.6). The citation of the "holotype" from E in Bräuchler et al. (2006) is irrelevant, for it does not specify which of the two duplicates. E00207258 has all, original annotation as type by Smith, a fully developed individual and a flower dissection. It is formally designated here as the lectotype.

Description (modified after Li & Hedge 1994: 229): Herbs/subshrubs, aromatic, perennial, diffuse, tufted with woody rootstock. Stems numerous, slender, 15–30 cm, prostrate-ascending, unbranched or hardly branched, base frutescent, terete, densely glandular puberulent, purple-red. Petioles 2–4 mm, narrowly winged at apex; lamina ovate to suborbicular, bract-like toward stem apex, 10–20 × 0.5–1.3 mm, glabrous except for very short, antrorse hairs on margin and veins below, impressed glandular, base short cuneate to rarely rounded (in uppermost leaves), ± decurrent, apex rounded, margin remotely crenulate, revolute. Cymes (1–)3–5-flowered, distinctly pedunculate, peduncle erect-spreading, 3–7 verticillasters loosely arranged at stem tips. Peduncle 5–10 mm, bracts leaf like, but getting oblong and smaller towards apex (c. 5 × 1.5 mm). Bracteoles minute, linear. Pedicels curved, 2.5–4 mm. Calyx purplish, subbilabiate, conspicuously 13-veined (we could not verify the 15 nerves counted by Li & Hedge 1994), tubular, 4-6 mm, glandular puberulent, sparsely golden yellow glandular, veins shortly pilose, glabrous inside except for a dense ring of long white hairs in throat, teeth narrowly triangular, apex spinescent, subequal, c. 1.5 mm, margin ciliate. Corolla dark red, c. 10 mm, sparsely puberulent outside, conspicuously pilose inside; tube c. 6 mm, straight, slightly exserted, abruptly widening at calyx throat; lips unequal, strongly spreading (not straight), upper lip suboblong, c. 1.5 mm, 2-lobed to c. 1/2 its length; lower lip c. 5 mm, lobes unequal, margin undulate, middle lobe subobcordate, lateral lobes broadly ovate. Anterior stamens included to just exserted, posterior ones included filaments very short (anterior c. 1.2 mm, posterior c. 0.7 mm), anthers divergent. Ovary glabrous. Mericarps ("nutlets") brown, c. 1 mm, glabrous.

Flowering time: July – November (see note under *H. piperitum*).

Ecology: On dry, rocky places in open pastures, pine and oak forest of limestone mountains.

Altitudinal range: 3000–3600 m.

Distribution: China, Yunnan, Jade Dragon Snow Mountain (=Yulong Xueshan or sometimes Lijiang range). Seems to be a very narrow endemic and the rarest of all species in the genus.

Records/specimens: 17 (6 different records, 11 duplicates), 6 of these in GBIF.org (2026b), 5 in Chinese Virtual Herbarium (2026), 5 in NSII (2026), 1 field observation with image; 4 further records in Chinese Virtual Herbarium (2026; IBSC0921617, KUN1592983, PEY0047645, PEY0047646) had been misidentified and represent other species.

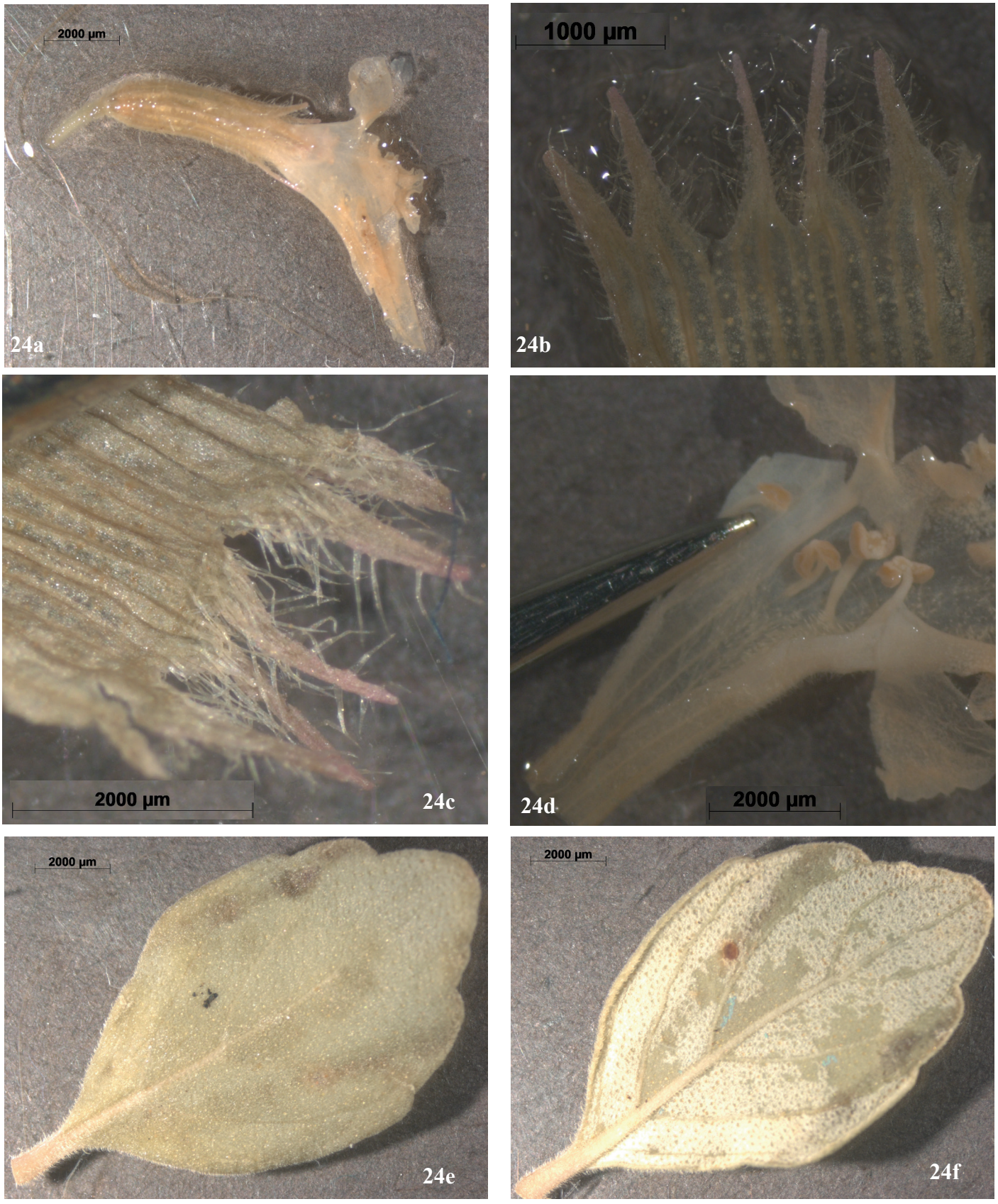


Fig. 24: *Himalamintha euosma* – (E00208091) a) single flower, b) distal part of dissected calyx, c) distal part of dissected calyx, d) dissected corolla showing position and length of stamens, e) leaf adaxial view, f) leaf abaxial view; © C. Bräuchler, licensed under CC BY 4.0.

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GBIF.org (2026b): GBIF Occurrence Download (18.02.2026) [*Clinopodium euosmum*] https://doi.org/10.15468/dl.4skkqv.

GBIF.org (2026c): GBIF Occurrence Download (18.02.2026) [*Clinopodium hydaspidis*] https://doi.org/10.15468/dl.ycyzsg.

GBIF.org (2026d): GBIF Occurrence Download (18.02.2026) [*Clinopodium nepalense*] https://doi.org/10.15468/dl.jexssn.

GBIF.org (2026e): GBIF Occurrence Download (19.02.2026) [*Clinopodium piperitum*] https://doi.org/10.15468/dl.kbfb75.

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Appendix 1: List of records included in this study

Column 1 „Species“: 1 = Himalamintha barosma; 2 = H. euosma; 3 = H. hydaspidis; 4 = H. nepalensis; 5 = H. piperitum; 6 = H. wardii

Column 2 „Institution (Acronym)/catalogue or barcode number“: institutional acronyms follow Index Herbariorum, mostly these acronyms are printed together with the number on a barcode label, but in some cases the acronym has been connected with the number solely for the purpose of this study. Where available, the number is linked to the data record at the housing institution. Observations of which images were received from online databases are linked in a similar manner, in cases where images were sent to the authors, only the institution acronym is indicated.

Column 3 „GBIF ID“: where available the GBIF occurence record number is provided and linked with the corresponding database entry. For observations not in GBIF „observation“ was entered here.

Column 6 „Date“: indicates the date of collecting or observation;“00“ was entered as placeholder where day or month were missing.

Column 7 „Country“: indicated by two letter codes according to the standard „ISO 3166-1 alpha-2“. CN = China (including Tibet); IN = India; NP = Nepal; PK = Pakistan

Species	Institution (Acronym)/ catalogue or barcode number	GBIF ID	Collector(s)	Collection number	Date	Country	Locality
1	BM000927117	1056534767	McLaren, H.D.	193	00.07.1933	CN	Yunnan Province, Yung Ning
1	E00207248	575042525	„	„	„	„	„
1	K005423336	5283762816	„	„	„	„	„
1	P04230105	474829371	„	„	„	„	„
1	PE00824221	919509700	Zhongdian-Team	239	9/24/1962	CN	Yunnan; Zhongdian County
1	KUN217723	-	Zhongdian-Team	2020	9/16/1962	CN	Yunnan; Zhongdian County
1	KUN217724	-	„	„	„	„	„
1	PE00824220	919509668	„	„	„	„	„
1	K005423335	5283759223	Schneider, C.K.	2187	00.08.1914	CN	[Yunnan,] In decliv. ad flum. Yangtze inter Chungtien et Lichiang
1	US 776413	1843563214	„	„	„	„	„
1	KUN217725	-	Zhongdian-Team	2239	9/24/1962	CN	[Yunnan,] In decliv. ad flum. Yangtze inter Chungtien et Lichiang
1	KUN217726	-	„	„	„	„	„
1	K005423340	5283755260	Schneider, C.K.	2356	00.08.1914	CN	[Yunnan, in campis inter flum. Yangtze et Chungtion]
1	KUN484537	1304010239	Feng, K.M.	2406	15.10.1939	CN	[Yunnan, Lijiang, Lijiang] To koo Ta chi On yangtze
1	PE00824217	919509701	„	„	„	„	„
1	WU0166124	5085244819	Handel-Mazzetti, H.R.E.v.	3843	00.00.1914	CN	[Yunnan,] imprimis in monte Yülung-schan
1	N2151C0001D00124367	-	„	„	„	„	„
1	WU0166123	5085245825	Handel-Mazzetti, H.R.E.v.	4352	7/31/1914	CN	[Yunnan,] In montis Yülung-schan supra vicum Lukudsche
1	A00146268	1998931181	Forrest, G.	10371	00.07.1913	CN	Yunnan Province, Mountain in the NE of the Yangtze bend.
1	BM000793174	1057325375	„	„	„	„	„
1	BM000793175	1057491138	„	„	„	„	„
1	E00208089	574885511	„	„	„	„	„

1	E00208090	575354154	„	„	„	„	„
1	HBG506331	4953320393	„	„	„	„	„
1	K000193439	912175623	„	„	„	„	„
1	MO1884896	1259142831	„	„	„	„	„
1	N2151C0001EB1027150	-	„	„	„	„	„
1	N2151C0001H00015031	-	„	„	„	„	„
1	PE00824219	1303664672	„	„	„	„	„
1	U.1402521	2517196385	„	„	„	„	„
1	US 1279527	1843532975	„	„	„	„	„
1	W1924-0000595	1230524025	„	„	„	„	„
1	E00504880	773979478	Forrest, G.	17077	00.10.1918	CN	Yunnan Province, Mountain in the NE of the Yangtze bend.
1	K005423339	5283770099	„	„	„	„	„
1	P03004425	437774533	„	„	„	„	„
1	AU086079	-	Forrest, G.	20511	00.07.1921	CN	[Yunnan, Zhongdian county] on the Bey-ti Shan
1	E00504879	773977134	„	„	„	„	„
1	K005423337	5283769330	„	„	„	„	„
1	N2151C0001EB1026020	-	„	„	„	„	„
1	NAS00223589	-	„	„	„	„	„
1	P03004424	439107063	„	„	„	„	„
1	P03004426	437442329	„	„	„	„	„
1	PE00824222	919509717	„	„	„	„	„
1	US 1278638	1843539679	„	„	„	„	„
1	A00235302	1998495606	Ching, R.C.	21260	8/4/1939	CN	[Yunnan, Lijiang, Lijiang] NE Likiang: Ta-koo (Ta-chi) on Yangtze.
1	KUN217722	1304034465	„	„	„	„	„
1	PE00824216	919509714	„	„	„	„	„
1	E00504882	773951441	Forrest, G.	22358	00.09.1922	CN	[Yunnan, Zhongdian county] on the N.W. flank on the Lichiang range
1	K005423338	5283769526	„	„	„	„	„
1	N2151C0001EB1007822	-	„	„	„	„	„
1	P03004423	438773539	„	„	„	„	„
1	PE00824218	-	„	„	„	„	„
1	US 1278639	1843533346	„	„	„	„	„
1	E00504881	773979601	Forrest, G.	30917		CN	Yunnan
1	PE01875809	-	Kham Expedition	10-2974	8/28/2010	CN	Province Yunnan
1	SABG007141	-	Fang, Z., Liu, L., Li, H., He, G., Shi, X., Zhao, W., Chen, J.	K-1743	9/28/2002	CN	Yunnan Province; Shangri-La City
1	HITBC078996	-	-	-	8/16/1962	CN	Yunnan
1	ISBC0583589	-	-	-		CN	Yunnan

1	KUN	observation	Xiang, C.-L.	-	9/13/2008	CN	Yunnan, Lijiang, Haba Snow Mountain
2	KUN217720	-	Zhongdian-Team	2154	9/28/1962	CN	Yunnan, Zhongdian county
2	KUN217721	-	„	„	„	„	„
2	PE00824267	919509697	„	„	„	„	„
2	KUN217714	-	Feng, K.M.	2492	11/3/1939	CN	Yunnan, Lijian
2	KUN217715	-	„	„	„	„	„
2	KUN217716	-	„	„	„	„	„
2	PE00824266	919509696	„	„	„	„	„
2	PE00824265	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	7476		CN	Yunnan
2	A00146269	1998347582	Forrest, G.	10574	00.07.1913	CN	Yunnan Province, N.E. of the Yangtzee bend
2	E00207258	575042527	„	„	„	„	„
2	E00208091	575295147	„	„	„	„	„
2	K000193440	912175607	„	„	„	„	„
2	KUN217717	-	South Tibet Exp.Team (Wu & Lin Xiaohua etc.)	21067	9/8/1944	CN	Yunnan, Lijiang
2	KUN217718	-	„	„	„	„	„
2	KUN217719	-	„	„	„	„	„
2	PEY0047643	-	„	„	„	„	„
2	KUN	observation	-	-	7/20/2008	CN	Yunnan, Lijiang, Jade Dragon Snow Mountain
3	HUP0003763	4078818030	Firdous, S.	4	7/23/2008	PK	Khyber Pakhtunkhwa, Abbottabad, Ayubia National Park
3	K005423420	5072787283	Kohli, P.N.	30	1/1/1938	PK	Kashmir
3	BM000927119	1056046549	Mohd, J.	133	9/8/1956	PK	Bandi Askot Range, Kishenganga Vy
3	MICH1791887	5936499728	„	„	„	„	„
3	K000193437	912175597	Falconer, H.	1250	01.09.1837	PK	From Patlee to Mangha [Mangla Hamlet; 33.0947109,73.6418473] Valley of the Jhelum
3	K005423419	5072785182	Stewart, R.R.	23536	8/27/1949	PK	Dunga Gali, Murree Hills
3	NY05138763	4982426365	„	„	„	„	„
3	US 2782296	1843561385	Stewart, R.R. & Nasir, E.	29155	8/27/1962	PK	Murree Hills.
3	US 2782304	1843549935	„	„	„	„	„
3	NY05138764	4982423194	Hafiz Khan, A.	-	00.09.1930	PK	Hazara [then NW India, today a region of Pakistan]
3	W0018155		Stoliczka, F.	-	00.10.1865	IN	Kashmir, Budrawar
4	BM000927161	1056409645	Sharma, K.N.	87	6/13/1931	NP	[West, Gandaki, Kaski]
4	E00432837	575154876	Dhwoj, Lall	87	00.00.1929	NP	Nepal
4	BM001053204	-	Sharma, K.N.	102	6/29/1931	NP	Nakihaley
4	E00432834	574966203	„	„	„	„	„
4	BM001053203	-	Miehe, G.	120	7/13/1977	NP	Mustang District: Kalopani
4	BM001053198	-	Gardner, P.C.	1199	7/9/1953	NP	Gorkha District: Nyak
4	E00432839	575175316	„	„	„	„	„

4	BM001053201	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	1531	7/4/1954	NP	Mustang District: Ghasa
4	E00432840	575069136	„	„	„	„	„
4	BM001053202	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	1675	7/10/1954	NP	Mustang District, Taglun
4	E00432833	575322761	„	„	„	„	„
4	[UPS] V-620950	1052135344	Einarsson, S., Skärby, L. & Wetterhall, B.	2490	8/1/1973	NP	Suli Gad
4	BM000927159	1056924249	„	„	„	„	„
4	BM000927163	1056017385	Polunin, O.V., Sykes, W.R. & Williams, L.H.J.	3300	9/9/1952	NP	Between Lunk and Lan
4	E00432835	575322759	„	„	„	„	„
4	BM001053200	-	Wraber, T.	3652	9/23/1969	NP	Manang District: Thangja
4	BM000927160	1056175650	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	4787	11.10.1954	NP	Rukum District: above Ghustung Khola
4	E00432836	575323893	„	„	„	„	„
4	P03004024	439104239	„	„	„	„	„
4	BM001053199	-	Stainton, J.D.A.	6024	10/5/1967	NP	Gorkha District: Budhi Gandaki River
4	FR-0044322	3046057215	„	„	„	„	„
4	BM001053197	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	7360	8/21/1954	NP	Mustang District: Kali Gandaki Valley
4	E00570279	773969864	„	„	„	„	„
4	BM000927164	1055545243	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	7834	9/14/1954	NP	Kali Gandaki, Chimgaon (N of Tukucha)
4	E00570278	773928270	„	„	„	„	„
4	E00432838	575242012	Stainton, J.D.A.	8871	8/23/1984	NP	Manang District: Marsyangdi River
4	[TI]8311031	-	Ohba, H., Kanai, H., Wakabayashi, M., Suzuki, M. & Akiyama, S.	8311031	8/4/1983	NP	Manang District: Humde-Bardang
4	KATH012706	-	„	„	„	„	„
4	[TI]8331173	-	Ohba, H., Kanai, H., Wakabayashi, M., Suzuki, M. & Akiyama, S.	8331173	8/4/1983	NP	Manang District, Marsyangdi Khola - Bardang
4	KATH133725	-	„	„	„	„	„
4	BM000927162	1056235245	Ohba, H., Kanai, H., Wakabayashi, M., Suzuki, M. & Akiyama, S.	8331193	8/4/1983	NP	[West, Gandaki, Kaski]
4	[TI]8350507	-	Ohba, H., Kanai, H., Wakabayashi, M., Suzuki, M. & Akiyama, S.	8350507	7/18/1983	NP	Mustang District, Kalopani - Tukche
4	[TI]8830501	5054084567	Suzuki, M. et al.	8830501	8/29/1988	NP	Mustang District, Kalopani - Tukche
4	[TI]9104444	5054085059	Minaki, M., Joshi, K.K., Kadota, Y., Sugita, H., Takahashi, A., Tsuda, Yagi, H. & Yonebayashi, C.	9104444	09.10.1991	NP	Dolpa District: Rachi - Ankhe
4	E00238535	575020936	„	„	„	„	„
4	KATH124060	-	„	„	„	„	„

4	[TI]9105121	5054071302	Minaki, M., Joshi, K.K., Kadota, Y., Sugita, H., Takahashi, A., Tsuda, Yagi, H. & Yonebayashi, C.	9105121	10/9/1991	NP	Dolpa District: Rachi - Ankhe
4	E00238536	574694587	„	„	„	„	„
4	KATH124048	-	„	„	„	„	„
4	[TI]9106155	5054071362	Minaki, M., Joshi, K.K., Kadota, Y., Sugita, H., Takahashi, A., Tsuda, Yagi, H. & Yonebayashi, C.	9106155	09.10.1991	NP	Dolpa District: Rachi - Ankhe
4	KATH133718	-	„	„	„	„	„
4	[TI]9109267	5054071464	Minaki, M., Joshi, K.K., Kadota, Y., Sugita, H., Takahashi, A., Tsuda, Yagi, H. & Yonebayashi, C.	9109267	05.10.1991	NP	Dolpa District: Daja - Camp Site
4	KATH124061	-	„	„	„	„	„
4	[TI]9109280	5054071462	Minaki, M., Joshi, K.K., Kadota, Y., Sugita, H., Takahashi, A., Tsuda, Yagi, H. & Yonebayashi, C.	9109280	10/8/1991	NP	Dolpa District: Camp Site - Rachi
4	KATH133719	-	„	„	„	„	„
4	[TI]9450106	5054075460	Suzuki, M., Acharya, N., Fujii, N., Joshi, L., Kajita, T., Kondo, N., Mikage, M., Noshiro, S. & Yoda, K.	9450106	12.08.1994	NP	Manang district, Bimtang-Tilche
4	KATH098935	-	„	„	„	„	„
4	[TI]9470237	5054075806	Suzuki, M., Acharya, N., Fujii, N., Joshi, L., Kajita, T., Kondo, N., Mikage, M., Noshiro, S. & Yoda, K.	9470237	28.07.1994	NP	Gorkha district, Ripche - Lungdang Gompa
4	KATH098887	-	„	„	„	„	„
4	[TI]9480210	5054075861	Mikage, M., Fujii, N., Kajita, T., Kondo, N., Noshiro, S. & Yoda, K.	9480210	25.08.1994	NP	Mustang District, Tukuche-Lower Lete
4	E00238560	574728877	„	„	„	„	„
4	KATH133721	-	„	„	„	„	„
4	KATH133722	-	„	„	„	„	„
4	L.3905118	2515026324	„	„	„	„	„
4	L.3905119	2515065854	„	„	„	„	„
4	L.3905120	2515127309	„	„	„	„	„
4	[TI]9550294	5054075942	Mikage, M., Anjiki, N., Kondo, N., Lacoul, R. & Yonekura, K.	9550294	9/20/1995	NP	Mustang District, valley of Yamkin Khola
4	BM000927128	1056565633	„	„	„	„	„
4	KATH021272	-	„	„	„	„	„

4	[TI]9666168	5054079695	Hoshino, T., Amano, M., Koba, H., Miyoshi, N., Rajbhandaru, K.R., Sato, M., Shrestha, P. & Takatsuki, S.	9666168	05.08.1996	NP	Mustang District, Marpha- Titigaon
4	E01198754	4420618251	„	„	„	„	„
4	KATH026962	-	„	„	„	„	„
4	KATH133720	-	„	„	„	„	„
4	[TI]9961297	-	Mikage, M., Yoshimitsu, M., Kaneda, A., Mouri, C., Tatsukawa, S., Asada, Y. & Senoo M.	9961297	8/22/1999	NP	Mustang District: Between Marpha & Kalopani
4	KATH133723	-	„	„	„	„	„
4	Herbarium Bräuchler [currently LI]	-	Ikeda, H., Kawahara, T., Yano, O., Yamamoto, N., Watson, M.F., Li, Z.H., Subedi, M.N. & Acharya, S.K.	20812153	8/1/2008	NP	Gorkha district: Namrung - Lho
4	KATH098836	-	„	„	„	„	„
4	KUN1482780	-	Liu, C., Zang, T. & Ya, J.D.	18CS17458	9/11/2018	CN	[Xizang/Tibet,] Jipu Grand Canyon, Jilong County
4	KUN1592842	-	„	„	„	„	„
4	E00649105	814306772	Sykes, W.R.	294/98	7/19/1998	NP	
4	E00262127	575079127	Jest, C.	71-8	10/3/1971	NP	Thonjya (Marsyandi)
4	E00274572	575358145	Pendry, C.A., Milne, R.I. & Adhikari, B. [Edinburgh Annapurna Expedition (2006)]	EA63	30.09.2006	NP	Mustang: south of Larjung
4	KATH068523	-	„	„	„	„	„
4	KYO00106904	-	Nakao, S.	-	6/11/1953	NP	Inter Rana et Dorzhong
4	KYO00106867	-	Nakao, S.	-	7/23/1953	NP	Bangu Khola
4	WHB (GMBA-HUP-175136)	615356974	Kriechbaum, M. & Holzner, W.		8/1/1989	NP	[Mid-Western, Rapti, Rukum] Dunai
4	WHB (GMBA-HUP-175137)	615356975	Kriechbaum, M. & Holzner, W.		8/8/1995	NP	[West, Gandaki, Syangja] Chame
4	WHB (GMBA-HUP-175138)	615356976	Kriechbaum, M.		8/8/1990	NP	[West, Gandaki, Syangja] Brathang
4	WHB (GMBA-HUP-176614)	615356955	Kriechbaum, M. & Holzner, W.			NP	[Mid-Western, Rapti, Rukum] Dunai
5	KATH127035	-	Rajbhandari, K.R., Chhetri, R. & Thapa, T.K.	3	3/16/2022	NP	Kakani-1, Nuwakot District
5	KATH127037	-	„	„	„	„	„
5	KATH127038	-	„	„	„	„	„
5	KATH127039	-	„	„	„	„	„
5	KATH127040	-	„	„	„	„	„
5	KATH127041	-	„	„	„	„	„
5	E00570403	773974071	Fell, K.R.	10	4/28/1957	NP	
5	KATH035899	-	Sharma, I., Subedi, M.N. & Pudasaini, M.P.	20	4/8/1996	NP	Bul danda, Ramechap
5	KATH035907	-	„	„	„	„	„

5	BM000926440	-	Einarsson, S., Skärby, L. & Wetterhall, B.	27	5/17/1973	NP	Lumsum
5	BM000926466	-	Gardner, P.C.	105	5/4/1953	NP	Hills round Katmandu
5	BM000926446	-	Proud, D.	170	00.02.1953	NP	Nepal Valley
5	BM000926441	-	Williams, L.H.J.	201	5/26/1969	NP	Meklajam
5	E00570395	774000009	Sharma, K.N.	209	4/20/1931	NP	Gulfughang
5	BM000926450	-	Proud, D.	262	00.02.1953	NP	Hills round Nepal Valley
5	KATH035909	-	Bhattarai, S., Saiju, H. & Gorkhali, M.	292	2/22/1976	NP	Phulchoki
5	KATH135355	-		292	2/20/1977	NP	Nagarjun, Kathmandu
5	K005907074	5077872901	Schilling, A.D.	317	5/5/1965	NP	Phulchoke Mt. SW. Kathmandu Valley
5	KATH035904	-	„	„	„	„	„
5	BM000926443	-	Stainton, J.D.A., Sykes, W.R. &Williams, L.H.J.	347	4/30/1954	NP	Okhai, Dunghagaon (S of Dhorpatan)
5	E00570393	773975563	„	„	„	„	„
5	BM000927118	1057448645	Vickery, A.R.	454	3/24/1974	NP	Lumsum, south side of Dar Khola
5	E00570398	773927823	„	„	„	„	„
5	KATH035872	-	Malla, S.B. & Rajbhandari, S.B	707	3/21/1962	NP	Manichur
5	KATH035874	-	„	„	„	„	„
5	KATH035887	-	„	„	„	„	„
5	E01249105	4420593409	AMA	709	4/11/1973	NP	Godavari
5	LI08039682	5795741642	Projektteam	1561	4/11/1994	NP	Godavari, Pulchoki
5	LI08039712	5795525489	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1562	4/20/1997	NP	Pulchoki
5	LI08039620	5795343220	Projektteam	1563	4/11/1994	NP	Godavari, Pulchoki
5	LI08039606	5796350201	Projektteam	1564	4/17/1994	NP	Shivaburi Watershed
5	LI08039583	5796691572	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1565	4/20/1997	NP	Pulchoki
5	BM000926445	-	Gardner, P.C.	1621	00.04.1953	NP	Between Bimphedi & Katmandu
5	LI08039736	5795843749	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1663	4/20/1997	NP	Pulchoki
5	LI08039637	5795943521	Projektteam	1664	4/11/1994	NP	Godavari, Pulchoki
5	LI08039644	5795422763	Projektteam	1666	4/11/1994	NP	Godavari, Pulchoki
5	E01653577	-	Miehe, G. & Miehe, S.	1679	5/8/1986	NP	Lower Langtang, above Syarpa
5	BM000926444	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	2562	4/24/1954	NP	near Lumsum
5	E00570397	773928039	„	„	„	„	„
5	BM000926464	-	Stainton, J.D.A., Sykes, W.R. & Williams, L.H.J.	2685	5/3/1954	NP	Nr. Bongakhani
5	E00570401	773927797	„	„	„	„	„
5	BM000926439	-	Nicolson, D.H.	2929	2/2/1967	NP	Kathmandu District, Sheopuri farm
5	KATH035888	-	„	„	„	„	„
5	US 2571680	1843577518	„	„	„	„	„
5	KATH035883	-	Shrestha, T.B.	3843	4/5/1965	NP	Shivapuri

5	KATH035886	-	„	„	„	„	„
5	KATH035889	-	„	„	„	„	„
5	KATH035893	-	„	„	„	„	„
5	BM000926447	-	Shrestha, T.B.	3948	3/20/1966	NP	Mahavir
5	KATH035877	-	„	„	„	„	„
5	KATH035881	-	„	„	„	„	„
5	W0221560	-	Hüttinger E. & Hüttinger J.	4157	4/7/1996	NP	Pulchoki Steinbruch>>Gipfel
5	BM000926449	-	Pradhan, P.	4269	3/17/1966	NP	Phulchoki
5	E00570394	774000008	„	„	„	„	„
5	KATH035900	-	„	„	„	„	„
5	KATH035912	-	Thapa, R.	4339	3/24/1966	NP	Shivapuri
5	BM000926448	-	„	„	„	„	„
5	KATH134744	-	„	„	„	„	„
5	KATH134745	-	„	„	„	„	„
5	KATH035901	-	Basukala, B.B.	5970	2/9/1967	NP	Vana Devi (Mainchur)
5	KATH035902	-	„	„	„	„	„
5	KATH035903	-	„	„	„	„	„
5	KATH035906	-	„	„	„	„	„
5	KATH035908	-	„	„	„	„	„
5	KATH035880	-	Pradhan, P. & Thapa, R.	6705	2/14/1967	NP	Phulchoki
5	KATH035891	-	„	„	„	„	„
5	KATH035894	-	„	„	„	„	„
5	KATH035895	-	„	„	„	„	„
5	KATH035869	-	Yonekura, K.	6771	5/16/2001	NP	Phulchoki
5	E00570399	773939047	Manandhar, R.K. & Party	6849	3/30/1967	NP	Phulchoki
5	KATH035879	-	„	„	„	„	„
5	KATH035897	-	„	„	„	„	„
5	KATH035905	-	„	„	„	„	„
5	E00207255	575022210	Stainton, J.D.A.	7320	3/20/1975	NP	Godavari
5	E00570400	773951377	Bista, M.S., Pradhan, P. & Thapa, R.	8230	2/20/1969	NP	Nagarjun
5	KATH035892	-	„	„	„	„	„
5	E00570396	774000691	Pradhan, P.	8254	9/9/1970	NP	Kunakhola
5	KATH035911	-	„	„	„	„	„
5	BM000926465	-	Polunin, O.V.	9551	00.00.1969	NP	Kakani, Nepal Valley
5	KATH035898	-	Rajbhandari, K.R., Bhattarai, S., Sainju, H.K., Joshi, L., Kayastha, M. & Joshi, R.	10380	4/29/1984	NP	Godawari, Phulchoki
5	KATH035873	-	Kanai, H.	11111	3/8/1969	NP	Nagarjong
5	KATH035882	-	„	„	„	„	„
5	E00570402	773958446	Shrestha, T.B., & Bista, M.S.	11579	4/7/1969	NP	Nagarjun

5	KATH035885	-	„	„	„	„	„
5	KATH035896	-	„	„	„	„	„
5	KATH035870	-	Shrestha, T.B. & Shakya.	11617	3/16/1970	NP	Sheopuri nr. Nagi
5	KATH035920	-	„	„	„	„	„
5	KATH035921	-	„	„	„	„	„
5	KATH035876	-	Amatya, M.M.	12786	3/17/1970	NP	Bhalkhore (Shivapuri)
5	KATH035916	-	„	„	„	„	„
5	KATH035922	-	„	„	„	„	„
5	KATH035910	-	Rolla, S.R.	13624	4/4/1958	NP	These to Bhandara
5	KATH035917	-	Amatya, M.M. & Bhattacharya, T.B.	13944	3/5/1973	NP	Bhumithan- Jareveer (Seopuri)
5	KATH035918	-	„	„	„	„	„
5	KATH035878	-	Silwal, P.N.	-	3/27/1961	NP	Kakani forest
5	KATH035884	-	„	„	„	„	„
5	KATH035890	-	„	„	„	„	„
5	LI08039675	5795531151	Projektteam	1191/0	4/17/1994	NP	Shivaburi Watershed
5	LI08039651	5795562514	Projektteam	1449/0	4/11/1994	NP	Godavari, Pulchoki
5	LI08039705	5795759397	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1449/1	4/20/1997	NP	Pulchoki
5	LI08039729	5795591512	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1449/2	4/20/1997	NP	Pulchoki
5	LI08039590	5796745709	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1449/3	4/20/1997	NP	Pulchoki, SE Godavari
5	LI08039613	5796431581	Projektteam	1450/0	4/11/1994	NP	Godavari, Pulchoki
5	LI08039668	5795721174	Projektteam	1450/1	4/17/1994	NP	Shivaburi Watershed
5	LI08039699	5795741392	Hüttinger, J., Tod, F.E. & Hüttinger, E.	1561-1	4/20/1997	NP	Pulchoki
5	KATH174755	-	Kaflr, R., Poudel, Y., Gupta, S. & Tiwari, K.	2023NBG70	6/1/2023	NP	Phulchowki
5	KATH035913	-	Amatya, M.M. & Bhattacharya, T.B.	73-21	3/15/1973	NP	Phulchoki area
5	KATH035915	-	„	„	„	„	„
5	KATH012676	-	Joshi, D.P.& Rajbhandari, K.R.	75/700	5/18/1975	NP	Sundarijal
5	KATH035875	-	„	„	„	„	„
5	KATH035914	-	Sharma, I., Saiju, H.K. & Karki, A.	78/205	4/23/1978	NP	Yarsato to Chisapani, Dolakha district
5	KATH035919	-	„	„	„	„	„
5	K001115271	1051250480	Wallich, N.	Cat. no. 2131		NP	Napalia
5	K000193479		„	„	„	„	„
5	E01249106	4420478401	Dobremez, J.F.	DBR NEP No. 3291	4/1/1974	NP	Kathmandu
5	[TI]10010623	5905126716	Watanabe, T. & Malla, K.J.	NPL SP030307(16)	3/7/2003	NP	Phulchoki
5	[TI]10010622		Watanabe, T. & Malla, K.J.	NPL SP030424(001)	11/24/2003	NP	Distr. Gorkha, Sagak gaon

5	BM000950393	1055509796	Buchanan-Hamilton, F.	s.n.	08.03.1803	NP	Narainhetty [Kathmandu]
5	US 02810019	1843550398	Scully, J.	-	00.00.1876	NP	Nepal, India.
5	eFlora of India	observation	Kasaju, S.	SK1068	3/27/2018	NP	Shivapuri National Park
5	eFlora of India	observation	Kasaju, S.	SK1853	4/20/2019	NP	Nagarjun Forest reserve, Kathmandu
5	eFlora of India	observation	Kasaju, S.	SK2416	1/7/2020	NP	Godawari
5	eFlora of India	observation	Kasaju, S.	SK242	3/2/2013	NP	Kakani
5	eFlora of India	observation	Kasaju, S.	SK952	3/30/2017	NP	Raniban, Balaju
5	eFlora of India	observation	Kasaju, S.	-	3/11/2023	NP	Kathmandu Valley
5	BM000926442	-	Bailey, F.M.	-	5/21/1935	NP	Bhag-Jowdra [Bhag-Jöndra?]
5	BM000926467	-	Fell, K.R.	-	4/28/1957	NP	Shivapuri
5	E00854074	1586991966	Sukhorukov, A.	-	3/9/2008	NP	Shivapuri National Park
5	MW0747147	1697864578	„	„	„	„	„
6	BJM0230233	-	-	209	7/27/2012	CN	Xizang/Tibet, Milin County
6	KUN210848	-	Yang, J.	252	7/21/1990	CN	Xizang/Tibet, Bomi County
6	PE00824259	2417698486	Zhang, Y. & Lang, K.	855	7/24/1965	CN	Xizang/Tibet, Bomi County
6	PE00824260	2417695072	„	„	„	„	„
6	PE01496128	4043953144	Qinghai-Tibet Team	1083	9/17/1974	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	PE00824254	-	Tibet team	1797	25.10.1961	CN	Xizang/Tibet
6	PE00824255	-	„	„	„	„	„
6	KUN217738	4043425548	Qinghai-Tibet Team	1926	8/25/1974	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	KUN217739	4043374079	„	„	„	„	„
6	KUN217736	4044749231	Qinghai-Tibet Team	3731	7/29/1974	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	KUN217737	4044656629	„	„	„	„	„
6	KUN217749	4043425542	Sun Hang, Zhou Zhekun, et al.	3874	2/23/1993	CN	[Qinghai, Golog Tibetan, Gadê] Xizang/Tibet, Medog County
6	E00570275	773956785	Ludlow, F., Sheriff, G. & Taylor, G.	5359	7/22/1938	CN	[Xizang/Tibet,] Kongbo Province, Cyala
6	US 2185125	2235760803	„	„	„	„	„
6	E00570271	773929054	Ludlow, F., Sheriff, G. & Taylor, G.	5459	7/28/1938	CN	[Xizang/Tibet,] Kongbo Province, Doshong-Deyang, Tsangpo valley
6	KUN217743	4044476563	Wu, Z.	5813	9/12/1976	CN	[Xizang/Tibet, Nyingtri, Bomi] Bomi County
6	KUN217747	4044476562	„	„	„	„	„
6	E00208092	575040762	Kingdon-Ward, F.	6324	28.11.1924	CN	Xizang/Tibet, Eastern Himalaya, Tsangpo Gorge
6	K000193438	912175560	„	„	„	„	„
6	E00570274	773979227	Ludlow, F., Sheriff, G. & Taylor, G.	6981	9/3/1938	CN	Xizang/Tibet, Pome province.
6	CDBI0191035	-	Gao, X., Tu, W., He, H. & Qiao, Y.	7224	9/11/2003	CN	Xizang/Tibet, Milin County
6	CDBI0191036	-	„	„	„	„	„
6	E00570273	773951084	Kingdom-Ward, J.	12082	7/29/1935	CN	Xizang/Tibet,Tongyuk

6	E00570272	773940813	Ludlow, F., Sheriff, G. & Taylor, G.	13228	7/1/1947	NP	Xizang/Tibet, between Tongyuk & Layoting
6	BM000927132	1055372466	Ludlow, F., Sheriff, G. & Elliot, H.H.	14234	9/7/1947	CN	Xizang/Tibet, Deyang, Tsangpo Valley.
6	E00207249	575042526	„	„	„	„	„
6	A 1126440	4053618403	Boufford, D.E., Kelley, S.L., Ree, R.H. & Wu, S.K.	29872	8/1/2000	CN	Xizang/Tibet, W of the city of Bomi (Pome)
6	HNWP241593	4044998199	Wu, Y.	38880	7/16/2007	CN	[Qinghai, Gyêgu Tibetan, Qumarleb] Qinghai
6	KUN217740	4043396967	Qinghai-Tibet Supplementary Point Group	751005	7/29/1975	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	KUN217741	4044749229	„	„	„	„	„
6	PE00824248	4043885911	„	„	„	„	„
6	PE00824249	4043898578	„	„	„	„	„
6	KUN217742	-	Qinghai-Tibet Supplementary Point Group	751201	8/3/1975	CN	[Xizang/Tibet, Nyingchi County
6	KUN217744	-	„	„	„	„	„
6	PE00824250	2417647760	„	„	„	„	„
6	PE00824251	2417651418	„	„	„	„	„
6	KUN217745	4044749227	Qinghai-Tibet Supplementary Point Group	751326	8/11/1975	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	KUN217746	4044656624	„	„	„	„	„
6	PE00824252	4043958548	„	„	„	„	„
6	PE00824253	4045295360	„	„	„	„	„
6	KUN1446701	-	Guo, Y., Zhang, Q., Qin, S., Zang, F. & Yang, Y.	16CS14375	11/9/2016	CN	Xizang/Tibet, Milin County, Pref. Nyingchi
6	KUN1486630	-	Liu, C., Zang, T. & Ya, J.D.	18CS17167	11/11/2018	CN	Xizang/Tibet, Medog County, Pref. Nyingchi
6	KUN1486628	-	„	„	„	„	„
6	PE00824256	4045526967	Tibet-Team	74-1926	8/25/1974	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	PE00824257	4044985578	Tibet-Team	74-3731	7/29/1974	CN	[Xizang/Tibet, Nyingtri, Mainling] Milin County
6	PE00824258	4044002580	„	„	„	„	„
6	IBSC0583592	-	Yang, J.	90-282	7/21/1990	CN	Xizang/Tibet, Tongmaixi, Bomi County
6	PE01927078	-	„	„	„	„	„
6	NAS00597975	-	Hu, J., Xiong, Y., Chen, Q. & Wang, D.-C.	HJ05296	16.10.2015	CN	Xizang/Tibet, Nyingchi County
6	NAS00597976	-	„	„	„	„	„
6	NAS00597977	-	„	„	„	„	„
6	NAS00597937	-	Hu, J., Xiong, Y., Chen, Q. & Wang, D.-C.	HJ05317	16.10.2015	CN	Xizang/Tibet, Nyingchi County
6	NAS00597938	-	„	„	„	„	„
6	PE02425163	-	Liu, E., Zou, J., Wang, C., Li, S., Yan, Q., Zhao, Z., Xu, W. & Zhang, X.	LED13328	8/12/2022	CN	Xizang/Tibet

6	KUN1388937	-	Luo, J., Wang, S. & Ren, D.	LiuJQ-09XZ-304	10/3/2009	CN	Xizang/Tibet, Linzhi County, Linzhi, Pref. Nyingchi
6	HNWP0288281	-	„	„	„	„	„
6	PE02328299	-	South Tibet Exp.Team (Jin Xiaohua etc.)	STET1453	7/28/2010	CN	Xizang/Tibet
6	PE02328300	-	South Tibet Exp.Team (Jin Xiaohua etc.)	STET1551	7/28/2010	CN	Xizang/Tibet
6	CDBI0295870	-	Zhao, F., Li, X. & Yuan, W.	YLZB09302	7/28/2023	CN	Xizang/Tibet, Nyingchi City
6	CDBI0295758	-	Zhao, F., Li, X. & Yuan, W.	YLZB09352	8/1/2023	CN	Xizang/Tibet, Milin County, Nyingchi City
6	iNaturalist_140289405	5230400380	Luo, X.	-	7/5/2017	CN	[Xizang/Tibet, Nyingtri, Mainling]
6	iNaturalist_248573064	5231357552	Luo, X.	-	10/7/2020	CN	[Xizang/Tibet, Nyingtri, Mainling]
6	KUN217748	-	-	-	8/10/1976	CN	Xizang/Tibet
6	MSB (GMBA-HUP-124257)	615356889	Dickoré, W.B.	4898	9/10/1989	CN	[Xizang/Tibet, Nyingtri, Mainling] Village Pei No. 4
6	Herbarium Bräuchler [currently LI]	-	„	„	„	„	„
6	MSB (GMBA-HUP-124776)	615356897	Dickoré, W.B.	5509	9/18/1989	CN	[Xizang/Tibet, Nyingtri, Mainling] Village Pei No. 4,
6	P01105882	4015933311	Boufford & D, E.	-	8/1/2000	CN	Xizang/Tibet, Bomi Xian : W of the city of Bomi (Pome)
6	KUN	observation	-	-	6/28/2026	CN	Xizang/Tibet, Medog County
6	KUN	observation	Xiang, C.-L.	-	9/15/2016	CN	Xizang/Tibet, Near Songzong, Bomi County, Nyingchi
6	KUN	observation	-	-	8/11/2025	CN	Xizang/Tibet, Linzhi, Milin county, Paizhen
6	KUN	observation	Xiang, C.-L.	-	8/22/2011	CN	Xizang/Tibet, Medog County